

NO. B-126,986

RUSSELL H. ALLEN, ET AL. § IN THE DISTRICT COURT OF
 §
 §
vs. § JEFFERSON COUNTY, TEXAS
 §
AMERICAN PETROFINA, INC., §
ET AL. § 60TH JUDICIAL DISTRICT

INSTANT ACCESS
TRANSCRIPTIONID

VIDEOTAPED DEPOSITION OF:
HAROLD ROBERT HOYLE
FEBRUARY 18, 1991
VOLUME I OF III

NO. A-134,614

FRENCH HICKS, ET UX IN THE DISTRICT COURT OF

vs. JEFFERSON COUNTY, T E X A S

BETHLEHEM STEEL CORPORATION,
ET AL. 58TH JUDICIAL DISTRICT

NO. E-t37,587

DELLA BAKER, ET AL.
vs.
CELOTEX CORPORATION, ET AL.
IN THE DISTRICT COURT OF
JEFFERSON COUNTY, TEXAS
172ND JUDICIAL DISTRICT

JOSEPH A. CLEBERT
GLORIA GOMEZ CLEBERT

vs.

SUIT NUMBER 38,744 DIV. "B"

18TH JUDICIAL DISTRICT

PARISH OF IBERVILLE
MCCARTY CORPORATION, ET AL. STATE OF LOUISIANA

LORRAINE PEGGY WILLIAMS SUIT NUMBER 39,404 DIV "D"
18TH JUDICIAL DISTRICT vs.
PARISH OF IBERVILLE MCCARTY CORPORATION, ET AL. STATE OF LOUISIANA
SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF ALMEDA

DONALD J. SANDERS AND
WINNIE SANDERS,
Plaintiffs,

vs. CASE NO. 590826-0

FIBREBOARD CORP., ET AL.,
Defendants.

WINNIE SANDERS,
Plaintiff,
vs. CASE NO. 621950-3

PG&E, ET AL.,
Defendants.

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF ALMEDA

BARBARA WHITFIELD, ET AL.,
Plaintiffs,

vs. CASE NO. 670704-4

FIBREBOARD CORP., ET AL.,
Defendants.

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF SAN FRANCISCO

SYCBERT S. FAIRCHILD, ET AL.
Plaintiff,

vs. CASE NO. 925508

ABEX CORPORATION, ET AL.,
Defendants.

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12 Material," by E. J. Schneider,
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13 Hoyle 8 Three letters: 10/7/68 to
14 H. R. Hoyle from R. C. Middleton;
15 10/30/68 to Richard F. Falk from
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VIDEOTAPED DEPOSITION OF HAROLD ROBERT

HOYLE, called as a witness by Defendant Dow Chemical Company, taken before Emanuel A. Fontana, Jr., Certified Shorthand Reporter in and for the State of Texas, at the DeLand Hilton, 350 International Speedway Boulevard, DeLand, Florida, on the 18th day of February, 1991, beginning at 9:38 a.m., pursuant to Notice, the Texas, Louisiana and California Rules of Civil Procedure, and the following stipulation and waiver of counsel:

Mr. Herschel L. Hobson, of the Law Offices of Herschel L. Hobson, 2190 Harrison, Beaumont, Texas, 77701,, appearing for the Allen Plaintiffs.

Mr. George R. Covert, of the law firm of Messrs. Covert & Braud, P. O. Box 82080, Baton Rouge, Louisiana, 70844-2080, appearing for the Clebert and Williams Plaintiffs.

Ms. Denise Abrams, of the law firm of Messrs. Kazan, McClain, Edises & Simon, 171 Twelfth Street, Third Floor, Oakland, California, 94607, appearing for the Sanders Plaintiffs.

Ms. Sandra F. Clark, of the law firm of Messrs. Mehaffy & Weber, 2615 Calder Avenue, Beaumont, Texas, 77704, appearing for Defendant Dow Chemical Company.

Mr. Duncan S. Stuart, In-House Counsel for The Dow Chemical Company, 2030 Willard H. Dow Center, Midland, Michigan, 48674, appearing for Defendant The Dow Chemical Company.

Mr. Robert H. Hood, of the Hood Law Firm, 172 Meeting Street, Charleston, South Carolina, 29401, appearing for the CCR Defendants.

Mr. J. Thad Heartfield, of the law firm of Messrs. Benckensteinl Oxford & Johnson, Third Floor, First Interstate Bank Building, P. O. Drawer 150, Beaumont, Texas, 77704, appearing for Defendant M. H. Detrick Company.

Ms. Gail C. Jenkins, of the law firm of Messrs. Benckenstein, Norvell, Bernsen & Nathan, 2615 Calder, Sixth Floor, Beaumont, Texas, 77702, appearing for Defendants Mobil Oil Corporation and Fina Oil & Chemical Company.

Mr. William E. Schweinle, Jr., of the law firm of Messrs. Stubbeman, McRae, Sealy, Laughlin & Browder, Inc., 2400 NCNB Center, 700 Louisiana, Houston, Texas, 77002, appearing for Defendants American Petroleum Institute, Texas Chemical Council, Chemical Manufacturers Association and National Petroleum Refiners Association.

Mr. John J. Hainkell III, of the law firm of Messrs. Lemle & Kelleher, 21st Floor, Pan-American Life Center, 601 Poydras Street, New Orleans, Louisiana, 70130-6097, appearing for Owens-Corning Fiberglas Corporation.

Mr. J. Wiley George, of the law firm of Messrs. Strasburger & Price, 4300 NCNB Plaza, 901 Main Street, Dallas, Texas, 75202, appearing for Defendant The Travelers Insurance Company.

Ms. Kathy Kubach, of the law firm of Messrs. Dunn, Kacal, Adams, Pappas & Law, 2929 Allen Parkway, Suite 2600, Houston" Texas, 77019, appearing for Defendants DuPont Corporation and PPG Industries, Inc.

Mr. Kristopher E. Fernandez, of the law firm of Messrs. Blackwell & Walker, 777 South Harbour Island Boulevard, Suite 780, Tampa, Florida, 33602-5707, appearing for Defendant Owens-Corning Fiberglas Corporation.

Ms. Katherine Armstrong, of the law firm of Messrs. Shadden, Arps, Slate, Meagher & Flom, 919 Third Avenue, New York, New York, 10022, appearing for Defendant Metropolitan Life Insurance Company.

Mr. Thomas W. Duesler, of the law firm of Messrs. Adams & Duesler, 550 Fannin, Suite 830, P. O. Box 7505, Beaumont, Texas, 77726-7505, appearing for Defendants Badger Engineering Corporation and Charter Oil Corporation.

Mr. James H. Powers, of the law firm of Messrs. Roberts, Markel, Folger & Powers, 1010 Twenty-Four Greenway Plaza, Houston, Texas, 77046, appearing for Defendant Aber Company.

Mr. Gary A. Bezet, of the law firm of

Messrs. Kean, Miller, Hawthorne, D'Armond,
McCowan & Jarman, Twenty-Second Floor, One
American Place, Baton Rouge, Louisiana, 70421,
appearing for Defendant Exxon Corporation.

Mr. David W. Ledyard, of the law firm of
Messrs. Strong, Pipkin, Nelson & Bissell, San
Jacinto Building, Beaumont, Texas, 77701-3255,
appearing for Defendants Exxon Corporation and
Chevron Corporation.

Ms. Ann L. Burkey, of the Law Offices of
William M. Koziol, Rt. 22 and Kemper Dr., Long
Grove, Illinois, 60049-0001, appearing for
Defendant John Crane, Inc.

Mr. Christopher A. Conkling, USS-POSCO
Industries, P. O. Box 471, 900 Loveridge Road,
Pittsburg, California, 94565, appearing for
Defendants USX Corooration and USS-POSCO
Industries.

Mr. Peter Boyd Wells, III, of the law
firm of Messrs. Wells, Peyton, Beard, Greenberg,
Hunt & Crawford, 550 Fannin, 6th Floor, Beaumont,
Texas, 77001, appearing for Defendants
Bridgestone/Firestone and Bethlehem Steel.

Mr. D. Allan Jones, of the law firm of
Messrs. Orgain, Bell & Tucker, 470 Orleans
Street, Beaumont, Texas, 77701, appearing for
Defendants Atlantic Richfield Company, Quantam
Chemical Company, Temple-Inland Forest Products
Corporation and Gulf States Utilities Company.

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IT IS STIPULATED and agreed by and
between counsel for the respective parties hereto
that the deposition of the witness named in the
caption hereto may be taken at this time and
place before the officer named in the caption
hereto; that said deposition, or any part
thereof, when so taken, may be used on the trial
of this case with the same force and effect as if

the witness were present in court and testifying
in person;

THAT the necessity for preserving
objections at the time of taking is waived, and
that any and all legal objections to this
deposition, or any part thereof, may be urged at
the time same is sought to be offered in evidence
on the trial of this cause; except, however, that
objections to the form of the question and/or
responsiveness of the answer must be made at the
time of taking, or else such objections are
waived;

THAT the original of this deposition
shall be presented to Ms. Clark, who shall in
turn submit it to the witness for his examination
and signing, and thereafter, shall return same to
the officer taking this deposition;

THAT if the signed original is not
presented to Ms. Clark prior to the time of
trial, a copy may be used in lieu thereof.

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1 (Whereupon, Hoyle Exhibit Nos. 1, 2

and 3 were marked for identification.)

THE VIDEOGRAPHER: The time is
9:38 a.m.

On the record.

HAROLD ROBERT HOYLE

was called as a witness by Defendant Dow Chemical
Company and, being first duly sworn, testified as
follows:

1 2

MS. CLARK: I believe, at this
time, we're going to do appearances of counsel.
My name is Sandra Clark, and I'm here on behalf
of the Dow Chemical Company.

MR. STUART: My name is Duncan
Stuart. I am in-house counsel for the Dow
Chemical Company.

MR. HEARTFIELD: I'm Thad
Heartfield. I'm counsel for M. H. Detrick.

MS. JENKINS: I'm Gail Jenkins.
I'm counsel for Mobil oil Corporation and Fina
Oil and Chemical Company.

MR. SCHWEINLE: I am Bill

1 4

Schweinle. I'm counsel for the American
Petroleum Institute, the Texas Chemical Council,
the Chemical Manufacturers Association, and the
National Petroleum and Refiners Association.

MR. HAINKEL: I'm John Hainkel,
counsel for Owens-Corning Fiberglas Corporation.

MR. HOOD: I'm Bobby Hood. I'm
counsel for CCR.

MS. KUBACH: I'm Kathy Kubach,
counsel for DuPont and PPG Industries.

MR. FERNANDEZ: I'm Kristopher
Fernandez and I'm with Owens-Corning Fiberglas,
on behalf of Owens-Corning.

MR. COVERT: I'm Gerry Covert in
the Louisiana cases, Clebert and Stewart.

MS. ABRAMS: Denise Abrams for

17 Plaintiffs, the Sanders, from California, in the
18 case of the Plaintiffs.

19 MS. ARMSTRONG: Kathy Armstrong for
20 Metropolitan Life Insurance Company.

21 MR. GEORGE: Wiley George for The
22 Travelers.

23 MR. HOBSON: Herschel Hobson,
24 representing the Plaintiffs in the Allen case.

25 MR. DUESLER: Tom Duesler, for

1 5
1 Badger Engineering and Charter Oil.

2 MR. POWERS: Jim Powers for the
3 Aber Company.

4 MR. BEZET: I'm Gary Bezet for
· Counsel Exxon in the Louisiana cases.

6 MR. LEDYARD: David Ledyard,
7 counsel for Exxon, Texaco, Chevron, and others in
8 the Allen case, and Exxon in the Louisiana
· cases .

10 MS. BURKEY: Ann Burkey for John
11 Crane, Inc.

12 MR. CONKLING: Chris Conkling for
13 USX Corporation and USS-POSCO Industries, in
14 connection with the Fairchild litigation in
15 California.

16 MR. WELLS: I'm Boyd Wells. I'm
17 representing Firestone in the Russell Allen case,
18 and Firestone and Bethlehem Steel in the French
19 Hicks case.

20 MR. JONES: I'm Allan Jones. I'm
21 here for a group of four Defendants in the Allen

22 case and for a group of -- a larger group of
23 Defendants in the Baker and Hicks cases.
24 MS. CLARK: Is that everybody?
25 THE VIDEOGRAPHER: Yes.

1 6

1 MS. CLARK: I believe, before we
. begin the deposition, that someone wanted to make
3 an objection on the record.

4 MS. ABRAMS: Denise Abrams for the
. Plaintiffs Sanders. I object to the use of this
6 witness in any capacity as an expert, and I also
7 object to his testifying regarding, either
a implicitly or explicitly, any documents that have
. not been provided to counsel.

10 I understand that the witness reviewed a
11 number of documents in a Michigan case, many of
12 which are currently under seal, and to my
13 knowledge, remain under seal, and I would ask
14 that those documents be provided to counsel prior
15 to cross-examination, so that we can have an
16 opportunity to know what he is relying on for his
17 information.

18 MR. COVERT: I, too, would like to
19 make an objection, Gerry Covert. I would enter a
20 general objection, at this time, to any documents
21 other than those relating to the Dow facility
22 file-.

23 MR. HAINKEL: John Hainkel for
24 Owens-Corning Fiberglas. I'm only here in the
25 Clebert case.

1 7

1 MR. HOBSON: Is this noticed in
. French Hicks?
3 MS. CLARK: Yes. Is it noticed in

4 French Hicks, did you say?
MR. HOBSON: Yes.
MS. CLARK: Yes.
MR. HOBSON: Have you got it?
MS. CLARK: Do I have the notice?
MR. JONES: That lady in the corner
has a copy.
MS. CLARK: We can get a -- we'll
get a copy of it. I don't have it with me right
now, but we'll get it to you this morning.
MS. JENKINS: Sandra, I assume, for
the record, that all of us are only making
appearances in the case in which our clients are
parties and were properly noticed. We probably
didn't specify that when we were going around the
room, but I want to make that clear.
MS. KURACH: I want to make that
clear for the record, too.
MR. STUART: It's noted.
MS. CLARK: Are we ready?
THE VIDEOGRAPHER: Yes, ma'am.

1 8

DIRECT EXAMINATION

QUESTIONS BY MS. CLARK:
Q. Mr. Hoyle, would you state your full
name, please?
A. My name is Harold Robert Hoyle.
Q. Mr. Hoyle, my name is Sandra Clark, and
we're here today to take your deposition
concerning your experience at Dow and your
experience as industrial hygienist.
Just as a way of introduction, would you
state your age, please, and tell us whether
you're married, and if you're married, how long
you were married, and that sort of thing?
A. Well, I'm seventy-nine years old. I am
married. My wife's name is Eleanor. We have two
children, one named John, and the other one named
Susan.
Q. I understand --
A. I've been married for --
Q. Go ahead.
A. -- not quite 50 years. We're going to
celebrate it on the 28th of March.
Q. Okay. Thank you.
Are you currently employed?

1 9

A. No.
Q. All right. Are you retired?
A. I'm retired.
Q. And when did you retire?
A. I retired at the -- my first day of

6 retirement was October 1st., 1976.

7 Q. Were you ever employed by the Dow
8 Chemical Company?

9 A. I was.

10 Q. And when were those years, please?

11 A. I was first employed by Dow in 1941, for

12 the summer. At the time, I was a schoolteacher.

13 I returned to Dow in 1942 for another summer

14 project, and I stayed on from that time on

15 Q. What position

16 A. -- until I retired.

17 Q. All right. What position did you hold

18 most of the time that you worked at Dow?

19 A. I was an industrial hygienist.

20 Q. Well, would you explain to the jury when
21 and how you became an industrial hygienist?

22 A. Yes. Before I became an industrial
23 hygienist, I was a safety engineer. And the
24 industrial hygiene activity at Dow was being
25 taken care of on a case-by-case basis by Dr.

2 0

1 Edgar Adams, who was head of the Toxicology

· Laboratory.

3 In 1948, there came a time when they

4 needed someone to work at industrial hygiene

· full-time, and my background was that of a

6 chemist working in safety, and industrial hygiene

7 was a specialized part of safety in that it had

8 to do with the recognizing and evaluating and

· controlling of health hazards in the work

10 environment.

11 Q. I was going to ask you that, basically

12 to explain to the jury what an industrial

13 hygienist is and what one does.

14 A. Well, as I've said, by definition,

15 was the science of recognizing, evaluating and

16 controlling health hazards in the work

17 environment,. And what we did was to go into th

18 workplace, observe@-- first find out what

19 chemicals and forms of energy were present in

20 that workplace, then study the various jobs in
21 terms of levels of exposure which might e
22 the-various chemicals and forms of energy
23 And then decisionmaking depended
24 threshold limit values. Early on, when I first
25 become an industrial hygienist, we called them

2 1

1 concentration- -i
2 Q. All right. Well, I'll ask you about

3 that in just a minute, but --

4 A. M-h'm.

5 Q. -- what I did want to ask you, or just
6 point out that you became an industrial
7 hygienist, then, in 1948 or approximately 1948?

8 A. It was 1948, March, and I believe it was
the 8th day of March.

10 Q. And then how long did you keep that
11 position with Dow?

12 A. Until I retired, approximately 35 years.

13 Q. What were the goals and objectives of
14 industrial hygiene at Dow?

15 A. I think I -- it wasn't 35 years as an
16 industrial hygienist, because there was a period
17 of time when I was a safety engineer.

18 Q. All right.

19 A. So it was from 1948 until 1976. The --
20 the arithmetic wouldn't come out right.

21 Q. Okay. Well, it might if I did it, but
22 anyway.

23 So from 1948 to 1976, you were an
24 industrial hygienist?

25 A. M-hlm.

2 2

1 Q. What were the goals or objectives the
Industrial Hygiene Program at Dow?

3 A. Our purpose was to gather informa n ful
4 that would allow us to provide a safe, hea h
5 work environment for Dow employees and furn uld
6 information to Dow customers, so that they

7 use what they bought from us in a safe man
8 based on the data -- information we could
furnish.

10 Q. All right.

11 A. And our other interest was in the public
12 in general, particularly concerning the
13 surrounding landscape around Dow operations, but
14 not -- but not limited to that.

15 Q. All right. How did the Industrial
16 Hygiene Program develop at Dow? You started to
17 tell us -- I believe, earlier you said that you
18 went to work with Dr. Adams; is that right?

19 A. Yes.

20 Q. And then how did it develop from there?
21 A. Well, I was a one-man Industrial Hygiene

22 Department for about six months, and then I was
23 joined by another man, Ed Schneider, and it
24 developed as the company grew, and as the
25 interest in controlling health hazards in the

2 3

1 work environment grew, generally.

2 Q. And where was your department located?

3 A. We were a part of the Biochemical
4 Research Laboratory. And the Biochemical
5 Research Laboratory included several different
6 laboratories, of which one was toxicology.

7 When I first started, industrial hygiene
8 was not well separated from toxicology in the
9 structure. Later on, it became separate.

10 Q. And this was -- what town was all this
11 located in?

12 A. I was -- I was in Midland, where --
13 which is the home of the Dow Chemical Company.

14 Q. Okay. In --

15 A. Midland, Michigan.

16 Q. In Midland, Michigan, not Midland,

17 Texas?

18 A. Not Midland, Texas.

19 Q. All right. So you fit into the program
20 as being the industrial hygienist; is that
21 correct?

22 A. I was the first full-time industrial
23 hygienist at Dow.

24 Q. What kind of did you have to
25 become an industrial St?

2 4

1 A. Well, at the time I became an industrial
2 hygienist, and there was very little formal
3 training available in the United States, so my
4 training was that of a chemist. Many people
5 doing industrial hygiene were engineers, although
6 there were quite a few chemists involved, and
7 quite a few biochemists. my training was that of
8 a chemist.

9 Q. All right. And you -- you had a college
10 degree in chemistry; is that correct?

11 A. Yes, I did.

12 Q. Where did you go to college?

13 A. Central Michigan University.

14 Q. All right.

15 A. And I had graduate training at the

16 University of Michigan.

17 Q. All right. In chemistry?

18 A. No. In education.

19 Q. All right. That's right.

20 What about other training that you had,

21 other than training on the job?

22 A. Well, there were,, from time to time,
23 seminars and short courses, I guess you might
24 call them. And when they were available, I

25 availed myself of them, and

2 5

1 Q. Do you have

2 A. Go ahead.

3 Q. Do you have any estimates of how many of

4 those seminars and training courses that you
 . might have attended in your 28 or 30 years as an
 6 industrial hygienist?

7 A. Oh, at least a hundred, I think. Many
 B of them, I was a lecturer, but I usually stayed
 . for the full length of the seminar and learned
 10 quite a bit each time.

11 Q. Are you a member of any industrial
 12 hygiene professional organizations?

13 I'm a member of the American -- AIHA,
 14 n Industrial Hygiene Association, and als
 15 dustrial Hygie

16 Q. What is the American Academy of

17 Industrial Hygiene?

18 A. Well, people who are certified in
 19 industrial hygiene become members of the Academy.

20 Q. And what do you mean, "people who are
 21 certified"?

22 A. Well, there's an American Board of
 23 Industrial Hygiene which certifies people for the
 24 practice of industrial hygiene.

25 Q. Are you board-certified in indus@ial

2 6

1 hygiene?

2 A . I am.

3 Q. And about how long have you been
 4 board-certified in industrial hygiene?

5 A. As long, almost, as there has been a
 6 certification available. I was grandfathered in.

7 Q. All right. When was that available?

8 A. The exact time, I guess, I can't tell
 . you. It was sometime in the 150's.

10 Q. In the 150's -- so it's since the
 11 150's --

12 A. I think so.

13 Q. -- you've been --

14 A. I don't remember exactly when. I can

15 look that up, I guess.

16 Q. No. That's all right. The jury is
 17 probably going to hear of an organization called
 18 the American College of Industrial Hygienists, or
 19 the ACGIH?

20 A. I think that was American Conference of
 21 Industrial Hygienists.

22 Q. Oh, thank you.

23 A. They were a group of industrial
 24 hygienists who limited the membership to those
 25 who were Government employees, and the only

1 exception to that I that know of is that they

allowed some academics in who were technically
being paid out of tax money.

Q. All right. So you were not a member of
-the ACGIH?

A. I was not allowed to be. I was not
eligible.

Q. But were members of the ACGIH members of
the other industrial hygiene group of which you
were a member?

A. They were members of AIHA, and many of
them were certified and, therefore, became
members.

Q. So you were -- you had associations and,
meetings with the ACGIH?

A. Oh, yes.

Q. Okay. Well, at Dow, how did the
Industrial Hygiene Department interrelate with
other departments that were concerned with health
and safety?

A. Well, we worked closely with the Medical
Department and the Safety Department, and we were
set up to offer assistance or help to line
management, who had the direct responsibility for
maintaining healthful and safe working

environments within the company.

Q. Okay. When you say "line management,"
what are you talking about?

A. Well, as opposed to staff functions.
These were people who had direct control of the
department, somehow or other.

Q. All right.

A. And in my function, I was both line, as
far as industrial hygiene is concerned, and
staff, as far as the rest of the company was
concerned.

Q. Okay. And so when you're talking about
line management, you may be talking about
supervisors or --

A. I'm talking about anything from the
foremen right on to the general manager.

Q. All right. How did you communicate
among the different departments at Dow?

A. Well, it was done in a number of

different ways.

We developed a datasheet, which was a checklist type of thing which allowed us to give information concerning the toxic properties of a -- of a material, and also to relate the necessary personal protection to four different

categories of operation.

Q. All right. Well, I'm going well -- we'll just go on to what I had the court reporter previously mark Exhibit 1 to the Hoyle deposition.

I believe that this contains a datasheet, so if -- let me hand you what's been marked Exhibit 1 and see if you can -- if you recognize this document, and if you do, if you can identify it?

A. This is a report of what was called a range finding, or class one toxicological test, and it covers a material identified as Asbestos 7m.

Q. Okay. Can you look in that report and see if it contains a datasheet?

A. It does, and maybe I should say that, routinely, whenever any material was investigated in the toxicology laboratory, a datasheet was prepared, and it became a part of that report.

Q. Can you tell the jury what -- what was the purpose of doing a datasheet on 7M cement? what -- what was it being used for?

A. Well, this material was -- it was used as a part of a formulation for floor tile, and

the investigator in the laboratory had some skin problems, and he picked out asbestos as the Material that he sent over to have tested on the skin, because of his own skin problems.

Q. Do you know whether this formulation for floor -- floor tiles was ever manufactured by

7 Dow?

8 A. No. The floor tile formulations, and
there was more than one of them, were being
10 investigated in a laboratory within the technical
11 service and development area in Dow. And the
12 purpose was to develop formulations using Dow
13 plastics that would be useful to the floor tile
14 industry, and this is a matter of developing uses
15 for new materials.

16 Q. All right. So what you were doing, or
17 what they were doing here, to the best of your
18 knowledge, was not manufacturing floor tiles with
19 asbestos in them, but they were using this in a
20 laboratory testing sort of function?

21 A. Yes. Dow never made floor tile.

22 Q. Okay.

23 A. I'm sure of that.

24 Q. Well, I didn't want that to be

25 confusing, because that was a little bit

3 1

1 confusing to me.

2 So this test was done on asbestos

3 because asbestos was used in this laboratory

4 setting to see if the floor tile formulation was

going to work?

6 A. No. May I -- may I add --

7 Q. Well, let me ask you another question:
8 Why was it used?

9 A. Well, why was it done?

10 Q. Yeah.

11 A. Well, the test on the asbestos itself

12 was done simply because the investigator, the man
13 in charge of the laboratory, had a skin problem.

14 Q. All right.

15 A. He didn't know what the skin problem
16 what caused it, and one of the things that was
17 done was to test this particular asbestos form
18 form on -- on rabbits.

19 Q. All right. And someone in the
20 Toxicology Department did that?

21 A. They did that, and as a matter of
22 routine, they made this datasheet.

23 Q. Okay. Now, would you explain to the
24 jury what the findings on the datasheet showed?

25 A. There's only one finding from the tox

3 2

1 investigation, and that is that it had no effect

on the skin.

3 Q. Okay. And that --
4 A. And there are some other categories that
5 were checked here, based on what was known about
6 asbestos.
7 Q. All right. And that's what I wanted to
8 ask you to explain. The -- the categories that
9 were checked, other than the test on the skin,
10 came from what source?
11 A. Came from general knowledge concerning
12 asbestos, which was available in the literature
13 and just generally known.
14 Q. All right. And if you look at that
15 datasheet, what were the -- what areas were
16 checked?
17 A. Well, they checked eyes, and it was --
18 there was no unusual effect on the eye.
19 Q. All right.
20 A. The mesa ch-c--(-kmark here for--diist
21 t
22 and mist, and it says tha-t-"Dustv or misty
23 atmospheres may cause serious systemic injury."
24 Q. All right.
25 A. And that's -- that's -- that's a
3 3 sta tement that appears frequently in reports, and
1 was put in here as a checklist. And the reason
2 that it's checked where it's checked is because
3 it's known that asbestos could cause asbestosis.
4 All right. Now, was this datasheet
5 devised for checking asbestos only?
6 A. Oh, no. No. In fact, there's a
7 sizeable number, thousands of these datasheets,
8 covering various materials that have been tested
9 or are in use in the work environments within
10 Dow.
11 Q. So the checklist was a generic sort of
12 checklist --
13 A. That's right.
14 Q. -- that was -- that could be --
15 A. It could -- could be used to -- to give
16 information concerning toxic properties and
17 precautions to line supervisors.
18 Q. All right. And then what other markings
19 did you have on that?
20 A. Well, there's a back side to the sheet,
21 which is marked -- what I've talked about so far
22 is the toxicology side of the sheet.
23 Q. Okay.
24 A. And it simply describes the -- the toxic

25 properties of the material as they were known to

3 4

1 us at the time. But on the other side of the
 . sheet, we arbitrarily decided that operations
 3 within Dow would fall within one of four
 4 categories, which range all the way from no
 . contact at all, which would be characterized by
 6 remote operations.

7 Probably the classic example is what's
 8 done in most nuclear plants. And we would go all
 . the way from that, with two categories in
 10 between, to a situation where there was no effort
 11 made to control exposure. It's what I have
 12 characterized, in a slang way, I suppose, as

13 "scoop, shovel and bucket chemistry.,'

14 Q. So those are the range

15 A. Was --

16 Q. Those are the ranges?

17 A. That's the range, and there are two

18 categories in between, one for continuing -- for
 19 continuous operations, and one for batch
 20 operations.

21 Q. All right. And did you make any
 22 markings related to this asbestos that was being
 23 put on this datasheet in response to those
 24 categories?

25 A. We did.

3 5

1 Q. All right. And what were those?

2 A. Well, for "no contact," our numbers were

3 all A's, and the AIs indicated no precautions
 4 required. That was for no contact, under "eyes,
 . skin and inhalation and ingestion."

6 For "minor contact," which would be
 7 batch operations, we suggested the use of safety
 8 glasses for under "eyes" and "no unusual
 . precautions" for the others.

10 And under occasional daily -- well, I --
 11 I want to back up. May I?

12 Q. Yes.

13 A. That was minor contact that I just told
 14 you.

15 Now I want to tell you about occasional

16 daily contacts, which is the batch operations.

17 And, in my discussion, I turned those two

18 around. I'm sorry for that.

19 Q. All right.

20 A. But under the batch operation, we
21 suggested safety glasses and dust respirators,
22 under "inhalation."

23 Under "gross contact," where you might
24 have great clouds of dust --

25 I've never seen this with asbestos but

3 6

1 it's possible.

2 -- we had safety glasses with side
3 shields and air-supplied or self-contained
4 breathing apparatus.

5 Q. Was there any key to what occasional
6 contact is, or what those -- what those letters
7 stand for?

8 A. Well, the letters that I that I
meant -- that I have here are keyed down below.

10 Q. All right.

11 A. And if it says "All under "Respiratory,"
12 that means no respiratory protection required.
13 And --

14 Q. I see.

15 A. -- for instance, if it says "El' under
16 "Respiratory," then it says right here --

17 Q. Okay.

18 A. -- that it is self-contained breathing
19 apparatus or air supplied.

20 Q. When you were filling out this
21 datasheet, and I think you had a comment down at
22 the-bottom, what does it say, "dust" --

23 A. It says "dust respirators."

24 Q. "Dust respirators"?

25 A. in other words, it says, here, "suitable

-- -----

3 7

1 gas mask canister.,, Well, that got in there
because most of what we make datasheets for we're
3 talking about vapor or gases. And so we added
4 the dust respirator because here we're talking
about a dusty material, rather than -- than a
6 vapor or a gas.

7 Q. What was the basis of your information
8 about the types of contact and whether a dust
· respirator ought to be used at certain times or
10 not, as far -- you said that you hadn't done
11 testing specifically at Dow on --

12 A. Well, our knowledge concerning asbestos
13 took --

14 Q. -- on dust, so where did your knowledge.
15 come from?

16 A. -- came directly from the literature.

17 Q. All right.

18 A. The generally available information.

19 Q. Okay. And in the generally available

20 information, were there reports of certain levels
21 of exposure?

22 A. Well, there was -- early on, there was a
23 list that was put together of numbers that
24 people -- that were thought, if you didn't go
25 above those concentrati(,ns, you would have no

3 8
1 difficulty.

2 Q. All right. What was --

3 A. As you went above those numbers, you
4 increased the likelihood of trouble. It wasn't
· ever meant that if you went above that level, you
6 would immediately have trouble.

7 Q. All right. Were there numbers for
8 asbestos already in the literature at the time
· you made this datasheet?

10 A. Yes. The number --

11 Q. And where --

12 A. The number was five million particles

13 per cubic foot, as we have it on our datasheet.
14 And that came right from -- at the time this
15 datasheet was written, it was the threshold limit
16 value.

17 Q. All right. Can you explain to the jury
18 what a threshold limit value is, just in general?

19 A. It's -- it's a number that expresses the
20 amount of the material that's to be found -- that
21 you can measure in the air. And the threshold
22 limit value was meant to be a guide with people
23 who had taken samples. It had numbers that
24 described the environment.

25 Then you went to the threshold limit

3 9

1 value, and if your numbers were below that

· number, you shouldn't have to worry about a

3 health hazard.

4 Q. All right.
5 A. That was -- I think that's --
6 Q. Okay. How did you -- as far as a dust

7 concern, how did you measure whether you were
8 within the threshold limit values or not?

9 A. Well, with dust, the technique was a
10 very arbitrary technique. And in order to get
11 numbers that could be compared with the five
12 million particles, it was necessary that you take
13 the sample with a properly designed piece of
14 equipment that would -- and then that the sample
15 be treated specifically, as far as transferring
16 it to a dust counting cell, and then that you use
17 a microscope that had exactly the right optics.

18 This whole thing had to be right because
19 it was an arbitrary measurement.

20 Q. All right. The -- the equipment that
21 was used, was this something you were familiar
22 with?

23 A. Oh, yes. We used impingers, generally
24 what was called "small impingers." The important
25 thing here -- well, we bought the impingers. We

4 0

I didn't make them, but they were -- they were

manufactured to proper specs. And then you ran
3 them at the right rate of air flow through the
4 impinger in order to -- in order to satisfy the
requirements of the method.

6 Q. Did you know how to conduct an air
7 sample study yourself?

8 A. Yes. I learned from one of the fellows
that did the developmental work in the first
10 place. The first use of this technique was
11 developed in connection with silica sampling in
12 Vermont. And Warren Cook, who was, I think, a
13 student at the time while that work was being
14 done up in Vermont, had been one of the people
15 that developed the technique for sampling.

16 And it just happened, that when I needed
17 to know how to sample dust, that he was the
18 industrial hygienist for the Zurich Insurance
19 Company, and Zurich had the Dow insurance
20 business, and so I a-sked him if he'd help me
21 learn how to count dust in the foundry that we
22 had,, He came and spent about a week with me, and
23 that's how I became an expert dust counter.

24 Q. In this -- Warren Cook, you said -25 A. M-hlm.

4 1

1 Q. was he the person who came up with
the list of the MAC'S, as you described the,-n?

3 A. He's the man, that up until Warren wrote
4 down the list of materials with numbers after
them, that were called MAC'S, what was --

6 happened was that people talked to each other,
7 And the conversation would go like this, "If you
8 measured this material, how much did you find,
· and what was the result of that, in terms of your
10 people?-"

11 Q. All right. So Mister --

12 A. And so he did a service to industrial
13 hygienists, because he gathered together all that
14 kind of information he could find, and he called
15 it an MAC.

16 Q. All right. And the -- the MAC's were --
17 were used before the threshold limit values --

18 A. They predated threshold limit values.

19 Q. All right.

20 A. Threshold limit values were -- that was

21 a terminology used after the American Conference
22 of Governmental Industrial Hygienists took over
23 this MAC --

24 Q. All right.

25 A. -- list.

4 2

1 Q. I'm going to take this exhibit from you
· for just a minute.

3 A. All right.

4 Q. The exhibit that I had handed you, which
· is referred to as Exhibit No. 1, is a report that
6 includes the datasheet, and then it had some
7 other pages back here. Would this just be the
8 raw data that the

9 A. That's --

10 Q. -- that this came from?

11 A. That indicates what they observed when

12 they put the material on the rabbit's stomach.

13 Q. All right. And did you review this
14 report when it was prepared, or about at the time
15 it was prepared?

16 A. No -- no. I only reviewed the
17 datasheet.

18 Q. All right.

19 A. The report was the business of the
20 toxicology laboratory, and you'll see two
21 toxicologists, names on there.

22 Q. So the only part of this report that you
23 were familiar with -- or not familiar withr but
24 the only part that you checked or reviewed --

25 A. I read the rei,@-,r7tf probably,, but the

4 3

1 part that I had responsibility for was the
· datasheet.

3 Q. All right. And that would be your name

4 by "checked," H. R. Hoyle?

5 A. Yes, ma'am. Correct.

6 Q. I wanted to look at the second page of
7 this report. When you indicated that you had --
8 under "Occasional Daily Contacts" on this
particular --

10 A. M-hlm.

11 Q. -- setting, what was your -- what was
12 your understanding of what this meant, as far as
13 dust exposure or the threshold limits?

14 A. Well, the threshold limit values were
15 numbers that were supposed to represent a safe
16 and healthful work environment for eight hours a
17 day. And the occasional daily contacts, they --
18 they might -- the kind of operation that we think
19 of here that would -- would be what we called
20 batch operations, where materials are introduced
21 into equipment, and equipment is properly closed
22 up, and then while you're putting the stuff in
23 the equipment, you might have some exposure.

24 Then later on, you may open up the
25 equipment to remove whatever is in there that

4 4
1 you're trying to make, and that would represent
another possible exposure.

3 Now, I can relate this to asbestos, in
4 my own experience, only by saying that if a
person were using asbestos as an insulating
material, the occasional contact would come when
he did something like cutting it.

8 Q. All right. And what about -- in your
experience, what about other types of uses, other
than the actual cutting of insulation material?

11 A. Within Dow, the only other use of
12 asbestos was in the chloralkali business.

13 Q. All right. Were the uses that you
14 observed, in your opinion, under the threshold
15 limit values as they were established at the time
-- at this time, of the five million particles?

17 A. I wouldn't -- my experience would have
18 told me to expect, that on the basis of
19 eight-hour exposures, they were indeed lower.

20 Our choice of dust respirators for
21 occasional contact indicates that -- that we saw

22 the possibility of short periods of time when it
23 might have gone above that number and, therefore,
24 the dust respirator.

25 That's a pretty conservative approach to

4 5

1 suggesting the respirator, but that's what we
· chose to do.

3 Q. All right. I'm going to go on to a
4 different exhibit in just a moment, Mr. Hoyle --

5 A. m-h,m.

6 Q. -- but one of the -- when you were
7 saying -- we were talking about communication of
8 information, the datasheet would be made on all
· the chemicals or all the materials that you felt
10 that individuals would come in contact with when
11 they're working at --

12 A. Well, there were two --

13 Q. -- Dow?

14 A. There were two ways that we made the
15 datasheets. one I've already described, where it
16 was a part -- it was done everytime that there
17 was any material tested in the toxicology
18 laboratory.

19 And the other way related to the
20 industrial hygiene activity, in that the very
21 first thing we did when we went into a department
22 was to inventory the materials and forms of
23 energy in that department. And then each of
24 those materials and forms of energy had to have a
25 datasheet. Actually, the datasheet in this form

4 6

1 was only for materials.

2 Q. All right. And this datasheet was --
3 was kept in the records at Dow in --

4 A. Well, what happened to the datasheet,
· after they were made, was that the -- throughout
6 the company -- and this gets beyond the geography
7 at Dow, but includes the -- the Dow operation
8 I mean, the Midland operation, the Safety

Department and the Medical Department would have received copies of all of them, and then we would have sent -- sent copies to the various departments that we knew about who might have an interest. And then there was another copy that went to a place called Central Research Index, which was a repository for all Dow knowledge.

Q. All right. So that was -- information was sent to various parts of the company, as you've described?

A. It did go on to the people that could use it.

Q. Okay. So there was a threshold limit value already established for asbestos, or an MAC for asbestos at the time that -- that this datasheet was prepared; is that correct?

A. That's correct.

Q. Was -- did -- Dow manufactured a number of different products. Did Dow manufacture a product with asbestos in it?

MS. ABRAMS: objection. Lack of foundation. It calls for speculation.

THE COURT REPORTER: Ma'am, you're going to have to keep your voice up. I didn't hear the objection.

MS. ABRAMS: Lack of foundation, and it calls for speculation.

Q. (By Ms. Clark) All right. Go ahead and answer the question.

A. May I answer the question?

Q. Go ahead and answer the question.

A. I don't speculate when I say that there

was no Dow product that had asbestos in it --

Q. All right.

A. -- at the time I was working there, anyhow.

Q. All right. And the time you were working there was from 1941 through 1946 --

A. Well --

Q. up to 1946 -- 1976?

A. my knowledge concerning the asbestos,

I think I should limit it to 148 to 176.

Q. Okay. And the datasheet was prepared on asbestos in this particular case because asbestos was in the floor tile formulation that was being tested?

A. That's the reason this particular

6 datasheet was formed -- was --
7 Q. And that's the one I'm talking about.
8 A. And that's the one you're talking about.
9 Q. Right.
10 When did you first -- when did you first

11 learn that asbestos could present a health
12 hazard, approximately?

13 A. That was common knowledge at the time I
14 became an industrial hygienist, I believe.

15 Q. All right. And what was -- what was the
16 nature of the hazard that you were aware of?

17 A. There was -- there was a disease called
18 asbestosis, which resulted in fibrotic change in
19 the lungs, and it was--- quite similar to something
20 called silicosis, -which-I--alluded to a-few
21 minutes ago.

22 Q. All right. Well, how did you believe
23 that such a potential hazard as asbestosis could
24 be controlled? What what did the literature
2 5 say?

4 9

1 A. Well, if you -- if we maintained the
environment so that it -- you didn't go above
3 five million particles per cubic foot, it should
4 be safe, according to the common --

5 Q. All right. So that you felt that the
6 five million particles TLV was the level below

7 which you should --

8 A. That's the guide that we used --

9 Q. keep the exposure?

10 A. that we used to make any decisions we

11 had to make concerning asbestos.

12 Q. All right. And you -- you indicated
13 from your study that there was no -- there was no
14 Dow product that was manufactured there that
15 contained asbestos?

16 A. That's correct.

17 Q. Okay. And someone had asked the
18 question, I think from the audience here, that in
19 your Exhibit No. 1, what is the date that you had
20 signed this datasheet, so that everyone here can
21 hear that?

22 A. The date I signed it was the 7th of
23 April, 1958, according to the numbers on the
24 datasheet.

25 MS. CLARK: I might offer that in a

5 0

1 minute.

2 Q. (By Ms. Clark) All right. Were there
3 any -- and this might be a little bit redundant,
4 but as I understand it, there were no dust

studies done by your department at the time that

this particular datasheet was prepared in

connection with that datasheet; is that correct?

A. If when you -- if when you say, "my department," you mean the Toxicology Laboratory, that's true.

Q. Yes, sir. Yes, sir.

A. And -- but that -- I -- I wasn't responsible for the Toxicology Laboratory.

Q. All right.

A. That's why my answer is the way it is.

Q. Okay. So the dust study -- the

Toxicology Department did not do a dust study on that particular occasion?

A. That's right.

(Whereupon, there was a discussion held off

the-record, after which the video deposition continued as follows:)

Q. (By Ms. Clark) Well, I just -- I

thought I thought I understood you to say that on the occasion in question that this particular exhibit was -- Exhibit No. 1 was prepared, this datasheet, that the Toxicology Department did not do a dust --

A. The only thing that was done was a -- study.

A. was a skin test.

Q. Okay. Well,, I may have misheard you, so

thank you. I think that's -- that's correct.

I'm going to show you what's been marked as Hoyle Exhibit No. 2, and this is another report we won't need to go through all of it in detail, but just to -- it's, I think, companion to the other one.

This one was dated April 21st, 1958.

And it -- would you identify that exhibit for us, please?

A. This one reports the results of range finding toxicological tests on a floor tile formulation which contained an epoxy resin.

Q. All right. And this is the floor tile sample that we were talking about earlier that the other datasheet came from?

A. The other datasheet was -- described the

asbestos, which we find here.

Q. All right.

A. And, as you recall, the asbestos was sent in as a separate sample, because of a skin problem that the investigator was having.

6 Q. Okay.

7 A. That was not the only thing that was
8 tested. The other -- other materials within this
9 formulation were tested. We aren't looking at
10 the -- the reports, because the asbestos is the
11 only one is in that report that you showed me.

12 Q. All right. There would have been a
13 report on the other things --

14 A. I'm sure there was, yes.

15 Q. Okay. So what does this report deal
16 with?

17 A. This -- this report deals with a whole

18 formulation. You take the whole mixture and put
19 it on the animals, on or in them.

20 Q. All right. This was done by the
21 Toxicology Department?

22 A. Yes.

23 Q. And there were findings that were listed
24 on this particular report, and they had to do
25 with the whole formulation?

5 3

1 A Yes

2 Q All right.

3 A. And they're -- they're a little

4 different.

5 Q. Okay. And why would they be different?

6 A. Well, because there are other things
7 than asbestos in the formulation. One would
8 expect they might be different.

9 Q. All right. And this would be about the
10 same time, prepared about the same time as the
11 other one?

12 A. It -- yeah, the same time. It turns
13 through -- it turns out they came across my desk
14 on the same day, apparently.

15 Q. All right. I notice that you have a
16 note at the bottom, where you have an asterisk.
17 It says, "Estimated on the basis of asbestos and
18 silica content."

19 A. M-hlm, yes.

20 Q. And can you explain what that has
21 reference to?

22 A. Well, in the formulation that was sent
23 in, it showed that sand, which is silicon
24 dioxide, or silica, represented 12.5 parts, and
25 Asbestos 7M, which is what we were talking about

5 4

1 a minute ago, represented 19 parts out of the
2 total. There are no -- no testing was done that
3 would have -- no dust testing done; therefore,
4 the information that's passed along concerning
5 dust is a judgmental thing based on the fact that
6 it had sand and asbestos in it. And the rest of

7 the formulation wouldn't have required any
8 unusual personal protective measures.
9 Q. Okay. So that was based on what you
10 knew from the literature at that time, that
11 they --
12 A. No. That was --
13 Q. that would be okay?
14 A. that was the common knowledge
15 concerning asbestos and silica.
16 Q. All right.
17 A. It represents what the toxicologists
18 knew about it. I probably knew the same thing.
19 Q. Okay. And that when -- you also checked
20 that datasheet and -- and --
21 A. I did.
22 Q. -- acknowledged that datasheet.
23 A. I did, on the 7th of April, '58.
24 Q. Okay.
25 A. I think that's what -- it was April

5 5
1 of '58 on the other one. Anyhow, I think it was
the same day, by coincidence.
3 Q. Give me just a second. And was it your
4 understanding, that although they were testing
floor tile formulation, that Dow did not
6 manufacture and sell this floor tile product?
7 A. Dow did not manufacture and sell the
8 floor tile. The floor tile formulations were
studied in a -- in one laboratory, one room
10 Q. All right.
11 A. -- at Dow. It never -- and it never go
12 beyond that point and wasn't expected to, within
13 Dow. If it went beyond that point, it would h
14 been in some customer's plant, the customer
15 buying the epoxy resin, or I guess in that case,
16 it was chlorinated polyethylene, but, anyhow, a
17 resin from Dow.
18 Q. All right. What you were doing was
19 trying to formulate a resin that could be used in
20 a floor tile formulation for somebody else to
21 use, if it would work out?
22 A. Sure. If they would want to use a Dow
23 product, that's right.
24 Q. All right. Well, at this point, I want
25 to take just about a five-minute break.

5 6
1 A Okay.

2 Q. Thank you.
3 THE VIDEOGRAPHER: The time is

4 10:29 a.m.
5 Off the record.
6

7 (Whereupon, there was a brief recess,
8 during which the proceedings took place as
9 follows:)

10
11 MR. STUART: Let's have this
12 marked.
13

14 (Whereupon, the instrument referred to

15 by counsel was marked for identification as Hoyle
16 Exhibit No. 4.)

17
18 (Whereupon, the brief recess was
19 concluded, and the video deposition continued
20 as follows:)

21
22 - THE VIDEOGRAPHER: The time is
23 10:42 a.m.
24 On the record.
25 Q. (By Ms. Clark) Mr. Hoyle, we're -- we

5 7
1 were talking about threshold limit values a
· little bit before.

3 You had testified that the threshold
4 limit value for asbestos was about -- was five
· million particles per cubic foot of air. What --
6 how long was that the threshold limit value, the
7 established one?

8 A. Well, it wasn't changed until around
· 1970, I think, something like that.

10 Q. All right. So through the time you were
11 an industrial hygienist in the late 140's, 150's
12 and 160's, the threshold limit value remained the
13 same, is that correct, for asbestos exposure?

14 A. Yes.

15 Q. All right. Did you conduct any dust
16 studies related to asbestos exposure yourself,
17 have someone conduct them?

18 A. We made measurements of the amount of
19 dust during the various operations where asbestos

20 was present.

21 Q. All right. And how did you do that --
22 what -- what parameters did you set up?

23 A. We used -- we used the techniques that I
24 described to you before, where we used the
25 impinger to take the sample, and then either

5 8

1 counted the dust ourselves, or had it counted.

. By that time, Dow had a microscopy laboratory.

3 Q. A microscopy --

4 A. Laboratory, m-h'm.

5 Q. Laboratory?

6 That -- what is that?

7 A. Well, this is a group of people who use

8 microscopes to look at things. They're experts
in microscopy.

10 Q. All right. Well, you've talked about
11 five million particles and about counting dust,
12 and I think the jury may be wondering how you
13 count five million particles of something.

14 Do you sit there -- I have a vision of
15 sitting there and taking a long time and counting
16 them one by one.

17 A. No.

18 Q. How is that done?

19 A. No. You do it by taking a part of the

20 total sample. And then another part of the
21 technique is to have the field that you're
22 looking at divided by little squares that you
23 know the size of, and you can -- you can count in
24 relatively small numbers, and then by applying
25 the right kind of arithmetic, you can come back

5 9

1 to a cubic foot of air.

2 Q - All right.

3 A. See, the amount of air that's sampled in
4 the sample you actually look at is pretty small.
I mean, that's only a small part of the total
6 sample that you look at.

7 Q. So you count a small percentage of that,
8 and then you extrapolate that up to the

9 A. That's true.

10 Q. -- to the five million, or something?

11 A. And you count more than one field so

12 that you have something to average.

13 Q. Okay. And so you have indicated that
14 you -- you tested the air sample on several
15 different jobs -- or several different tasks, I
16 guess would be a better way to describe it.

17 Can you just tell us, briefly, how you
18 did that, how you set up the test?

19 A. Well, there were -- part of the data
20 that I was referring to is reported in a report
21 that we looked at the other day which was a
22 matter of actually doing an in-depth industrial

23 hygiene survey in work environments, where
24 asbestos was present. Those were the work of Roy
25 DeGesero I'm talking about.

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6 0

1 And the other sampling was done in the
.
3 chlorine cells, or the chloralkali plant, as it's
4 called in some parts of Dow,, where the jobs were
5 evaluated, which involves the use of asbestos.
6 Q. All right. What -- what jobs did you
7 think involved the use of asbestos, what jobs
8 were you looking at?
9 A. Well, insulators were -- do use some
10 insulation that contains asbestos. This doesn't
11 represent a -- their full job, or anything of
12 that kind, because pipe covering or as -- or
13 insulation that's like on the vessels, is put on
14 for a number of reasons. It -- it's always,
15 somehow or another, to control temperature. But
16 a whole lot of the insulating that was done was
17 to avoid the effect of low temperature; in other
18 words., freezing up outdoors in Michigan --
19 Q. All right.
20 A. -- as opposed to the asbestos-containing
21 insulation which you used in high temperature
22 applications and represented less in terms of the
23 total use of pipe covering or insulating
24 material.
25 Q. All right.
A. It -- it -- it wasn't a high

6 1

1 percentage. I don't know exactly what percentage
.
3 of the total it would have been.
4 Q. All right. I think we need to kind of
5 put this in terms of time and when certain --
.
7 when certain tests were done.
8 The tests that you're talking about that
9 Roy DeGesero did, that I think will be an exhibit
10 later on in your deposition --
11 A. Yes, it will come along a little later.
12 Q. -- what -- approximately when were those
13 tests done?
14 A. They are done in the late 160's.
15 Q. All right. In the late 160's, those
16 were done. And did you -- had you conducted a
test earlier than that, yourself, on a pipe
coverer?

17 A. Probably in the late 150's, but in
18 the 150's sometime or another. What I did was
19 get a pipe coverer to do the different things
20 that pipe coverers have to do. It wasn't done
21 under actual pipe covering conditions in the
22 plant, because my purpose was to see how much
23 dust he would create cutting pipe covering and
24 putting it on pipe, and this kind of thing, so
25 that we could make some judgments concerning the

6 2

1 recommendations for respiratory protection.

2 Q. All right. And this was -- was done,
3 you said not under actual working conditions, but
4 you checked --

5 A. It was done in an indoor environment,
6 because most of our Michigan environment, work
7 environments are indoors.

8 Q. All right. That's what you were saying,"
· then, in Michigan, a lot of the pipes are indoors
10 because of the freeze -- because of the cold, and

11 all that?

12 A. That's right, m-hlm.

13 Q. So that was -- your first sampling that
14 you did in the late 150's was of that work --

15 A. Yes. It was not a --

16 Q. -- situation?

17 A. It was not an extensive investigation.

18 Q. All right.

19 A. It was done -- it was done simply to get

20 an indication of the levels that you might run
21 into while doing different things that they told
22 me they did.

23 Q. All right. Did -- did you reach any
24 conclusions about what -- what should be done
25 related to certain tasks and jobs that someone

6 3

1 working directly with insulation did?

2 A. There -- there were a couple of things
3 that he did where the -- where there was some
4 obviously dusty conditions. And I did the
· sampling in a different way than the way I've
6 described to you.

7 There was on the market and in our
8 hands, at that time, something called a Bausch &
9 Lomb dust counter, and it didn't fit the cookbook
10 for counting dust, but it did give you an
11 indication of dirtiness, and it was a
12 conservative approach because you could see a lot
13 more dust in a dark field microscope, which is
14 what B & L dust counter was.

15 I used that because it was more
16 convenient and it gave me -- I knew that whatever
17 numbers I got would be high.

18 Q. All right.

19 A. And, therefore, if I made a judgment
20 based on those numbers, I would be conservatively
21 s a f e .

22 -Q. Okay. Now, did you come to any
23 conclusion about any of the tasks that you were
24 monitoring for at that time?

25 A. Yes. Those that were obviously dusty,

6 4

1 there were a couple. One was sawing, cutting,
2 and the other was removal of old pipe covering.

3 Q. All right. And this was on an indoor,

4 enclosed --

5 A. It was in the shops --

6 A. place?

7 A. on a shop bench.

8 Q. Okay. And what recommendation would you

9 have made on that --

10 A. Simply that they wear --

11 Q. -- response?

12 A. Simply that they wear a dust respirator

13 while they were doing those jobs.

14 Q. All right. Otherwise, you felt that
15 that they were well within the TLV'S?

16 A. That's right.

17 Q. All right. Now, what we need to do
18 can tell we're -- we've already been admonished
19 once by the court reporter, and that's I'm
20 talking when you're talking, and you're talking
21 when I'm talking, so you need to let me finish
22 the question, and I need to let you finish your
23 answer, if that's all right.

24 A. Okay.

25 Q. So you felt that a dust respirator might

6 5

1 be used if conditions exceeded the threshold
2 limit values of five million particles; is that
3 correct?
4 A. That's generally the way we approached
5 it.
6 Q. All right. You had referenced a little
7 bit earlier some studies that were done in 1968
8 or 169.
9 A. M-hlm.
10 Q. And we want to look at those in just a
11 minute.
12 MS. CLARK: I'm not sure, do we
13 have those exhibits over there, the DeGesero
14 exhibits?
15 Q. (By Ms. Clark) One of the questions that
16 I have, when you said that you're counting dust
17 samples, and so forth, were you counting -- did
18 you consider the threshold limit value, when you
19 referenced it, to be total dust or to be -- how
20 did you --
21 A. The first --
22 Q. How did you look at that?
23 A. The first thing we did, which I Just

24 finished describing to you, was not an in-depth
25 study, and we just simply used all the dust that

6 6

1 we saw.
2 Q. All right. So when you -- when came to
3 your conclusion about various dust levels, you
4 were talking about total dust levels?
5 A. Yes. We knew there was asbestos
6 present, but we didn't -- we didn't try to
7 characterize the sample, in terms of percent of
8 asbestos.
9 Q. All right. The court reporter is
10 marking a couple of exhibits for us.

11

12 (Whereupon, the instruments referred to
13 by counsel wee marked for identification as Hoyle
14 Exhibit No. 5 and 6.)
15

16 Q. (By Ms. Clark) Mr. Hoyle, I'm going to
17 hand you what's been marked as Hoyle Exhibit
18 No. 5, and I would like for you to identify that,
19 if you can.

20 MR. COVERT: Excuse me, Sandra.
21 Could you let us know what you're introducing?
22 MS. CLARK: That would be nice,
23 wouldn't it? I'm sorry. I kind of -- that was a
24 report that -- let me look at it -- called "A
25 Survey and Evaluation of Pipe Coverers"

6 7

1 Exposure," and it is by R. A. DeGesero, and it's
dated March 21, 1959.

3 MR. JONES: Sandra --

4 MS. CLARK: M-hlm.

MR. JONES: I know lie's
6 distributing some now, but we haven't seen "4,11
7 and I was just wondering if you are intentionally
8 skipping over four

9 MS. CLARK: Yeah, I'm -- I'm
10 intentionally skipping that number and coming
11 back to it, so --

12 MR. JONES: Okay.

13 MR. BEZET: 11411 is the October
14 26th, 1964 letter to R. C. Middleton --

15 MS. CLARK: Yes.

16 MR. JONES: 169.

17 MS. CLARK: Mr. Hoyle referred to
18 this one earlier, and so I want to go ahead and
19 talk about this one.

2 0

21 (Whereupon, there was a discussion held off
22 the-record, after which the proceedings continued
23 as follows:)

2 4

25 MS. CLARK: We have some extra

6 8

I copies of it around. If you have one -- does

everybody have access to one?

3 MR. GEORGE: How about one more
4 over here?

5 MS. JENKINS: Do you have any extra
6 ones?

7 MS. CLARK: I don't know that we

8 have an extra one.

9

10 (Whereupon, there was a discussion held off
11 the record, after which the proceedings continued
12 as follows:)

13

14 Q. (By Ms. Clark) All right. Do you have
15 that exhibit?

16 A. I do.

17 MS. CLARK: Where is my copy?

18 Thank you.

19 Q. (By Ms. Clark) All right. Would you
20 identify for the jury what this report is,
21 please?

22 A. This is a report of a study -- a survey
23 of pipe coverers, exposure to dust from
24 insulation containing asbestos.

25 Q. All right. And and who prepared this

16
6 9
1 study?

2 A. The work was done by Roy A. DeGesero,
3 who was an employee who reported to me, at that
4 time, an industrial hygienist.

5 Q. All right. Now, Roy DeGesero was an
6 industrial hygienist at Dow?

7 A. Yes, ma'am.

8 Q. And he reported to you?

9 A. Yes, ma'am.

10 Q. Did you have anything to do with the

11 plan or setup of this particular study?

12 A. I was involved in the planning. There's
13 another name that maybe should be mentioned.

14 Q. Surely.

15 A. Because Ralph Langner had, at this time,
16 become Manager of Industrial Hygiene for the
17 Michigan Division, and he didn't yet have a crew
18 of industrial hygienists. During this period of
19 time, people working for me were assigned to
20 projects that he might identify in the Michigan
21 Division. So he was involved in the planning,
22 and-so was I.

23 Q. All right.

24 A. But Roy DeGesero was rather a new man,
25 and I was responsible for the quality of his

7 0
1 performance. It's a little complicated, but
· Ralph was responsible for the planning of the
3 project, but I was also involved in it.

4 Q. Okay. I wanted to ask you a little bit
· about this, as an aside. You said that there was
6 the Michigan Division, and so you, at this time,
7 were a little bit -- you were not directly in
8 charge of a division, but you were a little apart
· from that; is that correct?

10 A. Well, what happened was that when I
11 became an industrial hygienist, there wasn't any
12 identified difference between the corporation and
13 the Dow Chemical Company in Michigan.

14 As time went along, then the various
15 divisions of the company were organized and . they
16 got their own industrial hygiene functions.

17 Q. Okay.

18 A. And then mine became a corporate
19 function, with some responsibility and contact
20 with these various industrial hygiene functions.

21 Q. So there was a division in Texas, as I
22 understand it --

23 A. That's right.

24 Q. And there was a division in Louisiana?

25 A. Yes.

7 1

1 Q. And then there's a Midland Division?

2 A. And there's a Western Division.

3 Q. And a Western Division.

4 A. And a Eastern Division.

5 Q. And each of those, at some point in

6 time, had its own Safety and Industrial Hygiene
7 Departments?

8 A. As soon as they grew to the size that
9 justified it, then they had their own, that's
10 true.

11 Q. All right. And so what was your
12 responsibility, then, to the industrial
13 hygienists that were in the -- in the divisions?

14 A. Well, it was a dotted line
15 responsibility. I had a responsibility to see --
16 to see that information got to them, to see that
17 information was actually exchanged back and
18 forth.

19 The -- the group that I had
20 responsibility for had broad -- broad
21 responsibility within the company beyond
22 industrial hygiene within the production plants.
23 It finally developed into something called
24 "product stewardship," which is the part of the
25 effort that had to deal with our relationship to

7 2

1 our customers and the general population.

2 Q. All right. So what you -- you said a
3 "dotted line responsibility." You gave -- you
4 were a resource person for information and

exchanged information with them; ; -s that correct?

A. And I -- and I had some responsibility for knowing what they were doing and having some input into the plans that were made.

Q. All right. But they -- they implemented certain programs within the division?

A. On a day-to-day basis, I tried.

Q. Okay. So Roy DeGesero -- we'll get back to this exhibit again, and that's Exhibit No. 5; is that right?

Roy DeGesero actually undertook to do this particular --

A. He did all of the sampling.

Q. Sampling?

A. M-h'm.

Q. All right. You -- you are the person

signed here who checked this report, and your signature is dated March 24, 1969?

A. Yes.

Q. Is that correct?

A. Yes, ma'am.

7 3

Q. What were you -- okay. What was the purpose of this particular study?

A. Well, it had the same purpose as all industrial hygiene studies at Dow, to evaluate the exposure of people to be certain that they were within acceptable limits.

It had a further reason for being, because this is at a time when the five million particles per cubic foot threshold limit value was under question, and it was obvious to us that, barring some added information, it was going to become two million particles per cubic foot.

And so there's a need to know, in considerable detail, where we are with respect to exposure, to see what effect on our operations the new standard was going to have.

Q. All right. And so what operations were actually monitored?

A. Well, in this case, it was all the things that pipe coverers were doing.

Q. And what was -- what was the result that were reported here in these dust studies?

A. Well, in broad terms, the -- I mean, in the conclusions, the time-weighted exposures that

7 4

were done were acceptable with five million

particles as the number, were not acceptable with

two million particles as the number.

Q. So the studies that were done would have

been acceptable under the threshold limit values

that had been in place from nineteen --

A. Yeah. This study --

Q. forty --

A. showed that what we have been

doing -- I'm sorry.

Q. Now, wait a minute. You're interrupting

me.

A. I'm sorry.

Q. These particular studies reflected that

the work done that were monitored would have been

acceptable under the threshold limit values of

five million particles?

MS. ABRAMS: Objection. Leading.

Q. (By Ms. Clark) Is that correct?

A. That's true.

Q. All right. And then you said that they

were -- that there was -- that this was to check

to see which functions would have met the limits

of two million, when they were going to be

decreased to two million; is that correct?

MS. ABRAMS: objection. Leading.

A. The -- the results of this investigation indicated that there would be a need for changes in the way we were doing pipe covering if two million particles were to become the standard.

In other words, we were above the two million particles, but below the five million particles.

Q. All right. And what -- what changes, then, were recommended to be made?

A. That there -- there are no -- there are recommendations here that -- well

Q. Well, actually --

A. Let me -- let me back up.

Q. Okay.

A. The pipe coverers needed to be informed

of the difference between the interpretations of their exposure under five and two million particles.

Also, there were a number of ways of handling the -- the exposures, so that they would be reduced below the two million particles. And part of -- part -- one of the ways is personal protection, use of personal protective devices.

Another way would be soaking down insulation that was old and friable and as a way

of controlling dust to some extent. And what

really happened was that, in parallel with this study, at about the same time, other people were looking to see what other materials might work in place of asbestos-containing insulation.

And they found that, indeed, for almost all the cases that we had, there were acceptable substitutes. So the solution to the problem was not to go forward with -- with a plan to handle asbestos materials but, rather, to substitute materials, I mean, in pipe covering, which had no asbestos in it, which left us, then, with a need only to take special precautions for removal of already in-place materials.

Q. Okay. In looking back, if you will, look back at this the study that was prepared here. Mr. Hoyle, you reviewed the study at or about the time it was done; is that correct?

A. Well, during the time it was being done, I had contacts with Roy, day to day.

Q. All right. You reviewed this --
Then I reviewed the file and signed it on 1969, March 24.

Q. Was the report that was done and signed by you on March 24th, 1969, made at or about the

time that the study was conducted?,

A. Well, the study had been ongoing probably for a few months.

Q. But this --

A. -- because these things don't get done all in one day is what I'm trying to say.

But I don't have a recollection of exactly the length of time that the study was on going.

Q. All right. But what I'm asking you was the report was -- was prepared as soon as the information had been gathered and was available to be reported on?

A. Yes, ma'am.

Q. All right. And you had personal knowledge of the information as it was designed and as -- as it was being collected?

18 A. Yes.
19 Q. And you have -- you had knowledge of the
20 conclusions that were reached in this report?
21 A. Yes.
22 Q. And you agreed with these conclusions as
23 set out?
24 A. That's what my signature is meant to
25 mean.

7 8
1 Q. Okay. And this report was kept in the
records, in the appropriate places, in the Dow
3 Chemical Company?
4 A. Yes, ma'am.
5 Q. All right.
6 MS. CLARK: I'd like to offer this

7 Exhibit No. 6 into evidence at this time -- I
8 mean, Exhibit No. 5, that is.
9 MR. COVERT: For clarification,
10 please, in the Louisiana cases, Gary and those
11 involved, we reserve objections to the times that
12 they are introduced, this deposition will be
13 introduced? Is that our understanding?
14 MS. CLARK: Well, I believe that if
15 there's any objection that needed to be made as
16 to predicate,, that those should be made now,
17 since the witness is here, if any other questions
18 needed to be asked to -- if you feel that there's
19 any lack of predicate.
20 MR. COVERT: I may consider doing
21 that so --
22 MS. CLARK: Okay.
23 MS'. ABRAMS: On behalf of the
24 interests in California, I would object to the
25 introduction of this document as evidence, and I

7 9
1 would reserve all of those objections for
purposes of the trial at the time that this
3 deposition is introduced into evidence.
4 THE COURT REPORTER: Ms. Abrams --
MS. ABRAMS: I'm sorry.
THE COURT REPORTER: Go ahead,
7 start all over.
8 MS. ABRAMS: I would object to the
introduction of this document as evidence and
reserve our right to object to -- for purposes
10 of introduction of this document at trial at the
11 time -- until the time that this document is
12 introduced in a California court and the
13 objections can be duly made in front of the trial
14 5 judge.
15 I note for the record that this document
16 was handed to me about two minutes ago. I've not
17
18 had an opportunity to review the document at all,

and at a minimum, I would want the opportunity to review the document and make my objections at the time that I have been able to review it and question the witness on it.

MR. COVERT: And I would join in the objection in the Louisiana cases, making my objection, in general, as to these documents.

8 0

MR. HAINKEL: John Hainkel for Owens-Corning in the one Louisiana case that I'm here for, the same objection. As far as I'm concerned, we're operating under the Louisiana Code of Civil Procedure in that particular case.

MS. CLARK: All right.

MR. HOBSON: Let me interject, as well, please, since everybody gets a chance to talk. The copies that I see, for instance, on Page it looks like ST006812, there appears to be handwritten notes that have been written in the margins that are partially or almost totally obliterated. Plus, there have been entries that look to be obliterated at the top that may have been handwritten. And until we can get a copy of this document without the handwritten portions obliterated, I'm not satisfied that I've got a copy of the document as it originally existed.

MR. STUART: What page are you referring to?

MS. CLARK: I'm not sure what page you're referring to, Mr. Hobson. The -- the exhibit

MR. HOBSON: The table. Here you go.

MS. CLARK: Okay. The exhibit is numbered as ST006806.

MR. HOBSON: Look at Page 1-2, the last two digits being 1-2, the table.

MS. CLARK: Page 1-2.

MR. HOBSON: Can you see, right under "Range," and "Time-Weighted Factor," and "Asbestos," the very tops of some handwritten notes that have been obliterated, and I want to know what those are.

The top of that same page looks like it's had writing on it. The top of the next page looks like it's had writing on it.

MS. CLARK: I don't know. The copy I have is the same -- it doesn't look like it's had any writing on it, but we can talk about that, if we want to --

18 MR. HOBSON: well, I object --
19 MS. CLARK: -- later. But I'll --
20 I'll check, but that doesn't -- mine does not
21 look like anything has been obliterated on it.
22 The objections -- we do not agree that
23 objections can be reserved regarding the
24 foundation or predicate -- I mean, the State
25 Rules that apply, will apply, obviously, but we

8 2

1 are not, by not responding to your objections,
· agreeing that these can be reserved.

3 I believe under, at least the Texas
4 Rules, that whatever lack of foundation or
· predicate objections have to be made at the time
6 of the presentation of the -- the predicate.

7 So if we have any of those objections,
8 or authenticity-type objections, then I think,
· because the witness is here, they ought to be
10 made at this time. You know, if you want to
11 reurge your objection, that's fine, but we
12 don't -- you know, we're not acquiescing in that
13 objection and we will apply -- comply with
14 whatever Rules of Procedure would apply to the
15 deposition at the time.

16 MR. HOBSON: Well, my objection is
17 to the authenticity of the document, and I object
18 to a copy being produced, as opposed to the
19 original, or at least we ought to be able to see
20 the original and match -- match it to these
21 copies before they're introduced.

22 MS. CLARK: All right. That --
23 that objection is noted.

24 MS. ABRAMS: Can I voir dire the
25 witness on this document? If not, I will reserve

8 3

1 my voir dire, and I will, therefore, reserve my
· objections.

3 Q. (By Ms. Clark) Mr. Hoyle, I'm going to
4 show you what's been marked as Exhibit No. 6.
· And could you identify that exhibit?

6 MS. CLARK: This exhibit,
7 Mr. Covert, to try to clue you in to what this
8 exhibit is, it's a similar exhibit. It's another
· Roy A. DeGesero report.

10 Q. (By Ms. Clark) And what is the date of
11 that one?

12 A. This was -- I signed it 10/24/69.

13 Q. Let me see yours a second.

14 A. And his -- I guess I signed it the same
15 day he signed it.
16 Q. okay.

17 MS. CLARK: And it's numbered
18 beginning with an ST000647, and it's signed on
1 9 1 0 / 2 4 / 6 9 .

20 Q. (By Ms. Clark) There you go. Would you
21 identify this exhibit, please?

22 A. This reports industrial hygiene
23 investigations made at the Ludington plant in the
24 Michigan Division.

25 Q. All right. Could you identify, for the

8 4
1 record, who Roy A. DeGesero is, just briefly
· please?

3 A. Yes. He was industrial hygienist at Dow
4 who reported to me.

5 Q. All right. And did you have any input
6 into the design of this study?

7 A. I would have assigned the job to Roy and
8 would have talked to him about what he was to do
· when he got to Ludington. So, in that sense, I
10 had to do with the design.

11 Q. And what was the purpose of this study?

12 A. Well, it was to accomplish the same
13 thing at the Ludington plant that I described as

14 the reason for having done the study in the
15 Midland plant.
16 Q. All right. Now, would you tell me what
17 the reason of doing the Ludington plant was, if
18 you had done the Midland plant?
19 A. Well, because it's a different -- a
20 different plant and different circumstances.
21 Q. What were the different circumstances?
22 A. Well, this gets me into a rather
23 lengthy -- lengthy description of the difference
24 between what happened in Midland and what
25 happened in Ludington. In other words, what they

8 5

1 did over there in the way of manufacturing
.
materials --
3 Q. Well --
4 A. -- was not the same as what was done in
.
Midland.
6 Q. Okay. Let me stop you a second, because
7 it sounds like an air-conditioner vent just went
a on, and I -- you may need to put your voice up a
.
little bit.
10 A. Okay.
11 Q. I don't know that you need to go into a
12 lengthy description, but can you just summarize
13 the types of differences between the two
14 operations?
15 I mean, if you can't, you can't. I
16 mean --
17 A. Well, it's -- it's pretty -- it's not --
18 as far as the pipe coverers doing pipe covering,
19 it's pipe covering is pipe covering.
20 However, as far as the part that's
21 indoors, versus the part that's outdoors versus
22 the size of the -- of the pipe being covered,
23 it's difficult for me because -- for instance,
24 there was a -- a lime kiln there which didn't
25 even exist in Midland, but which I know involved

8 6

1 quite a little bit of insulating
2 Q. All right.
3 A. -- which would have been a different
4 operation than those that would have been covered
.
by the Midland investigation.
6 Q. So -- so you were -- you were testing a
7 different location and with different types of --
8 A. We were measuring --
9 Q. -- facilities.
10 A. We were measuring the health hazards

11 within environments that were different and
12 avail -- they were more available in Midland.
13 Q. I'm sorry?
14 A. I said we were measuring the degree of
15 exposure in environments that were different.

16 Q. All right. Well, that's what I mean.
17 A. Yeah.
18 Q. That's really the --
19 A. That's -- that was the reason --
20 Q. the point that I --
21 A. for going there. It was our

22 intention, purpose, and usually we managed it, to
23 have data concerning the different work
24 environments.
25 Q. What were the conclusions reached, as

8 7

1 far as exposure in the Ludington plant?

2 A. Well,, they were -- it turned out they
3 weren't too far different than what we found
4 in -- in Midland, in that the average was a
little below 5 -- 4.4 it says -- where asbestos

6 was being used.

7 And then we had something here, I don't
8 remember fiberglass showing in that Midland
study. Here did they did find 1.3 million
10 particles per cubic foot where it was fiberglass
11 rather than asbestos.

12 And for asbestos, it pointed out that
13 five million particles was acceptable.

14 And again we find that, with two million
15 particles, we're above over there, also.

16 And let's see what we said about -- oh,
17 on fiberglass, at that time, there wasn't
18 specific information available on fiberglass, and
19 so it was considered a nuisance dust, and the
20 number implying the nuisance dust was usually
21 fifteen million particles.

22 Q. Fifteen million?

23 A. Fifteen.

24 Q. Okay.

25 A. So they -- so we -- the data that we

8 8

1 acquired there would have said that the

fiberglass was acceptable.

Q. All right. On Page 3 of this report, there is a reference at the bottom of the page to F. A. Patty, P-a-t-t-y, "Industrial Hygiene and Toxicology.

A. Yes.

Q. Who was Patty, and why was he referenced in this particular paper, if you know?

A. Well, Frank Patty was one of the early industrial hygienists, and he had rather a -- a broad experience, including Public Health Service, I believe. At the time of his retirement, he was in charge of industrial hygiene for the General Motors Corporation.

He -- in this context, he was the editor -- "author" is hardly the right word -- of "Industrial Hygiene and Toxicology." It finally became a three-volume compendium of "Industrial Hygiene and Toxicology." And various chapters in those books were prepared by various people in the-field of industrial hygiene who he felt had the necessary skills and knowledge to adequately prepare such a chapter.

And then his function was putting the

thing together and editing it.

Q. Was this a -- a volume that was used generally by industrial hygienists?

A. It was pretty much the Bible.

Q. All right. And what do you mean by that?

A. Well, it was the authority, if you wanted a single authority.

Q. But his, as it turned out., three-volume

10 set was --

11 A.

12 Q. -- was the one single authority, if you
13 had to pick one?

14 A. If you were going to just one, I think
15 most industrial hygienists would have chosen
16 that.

17 Q. And why was it particularly referenced
18 here on this page? What -- what was the
19 reference?

20 Q. Oh, let's see.

21 Well, the formula that you see there
22 for -- for calculating millions of particles per
23 cubic -- what is to be found in Patty's Volume
24 No. 1.

25 Q. So that was a -- was that a formula --

9 0

1 A Page 198.

2 Q. Okay. Was that a formula that was the

3 accepted formula to calculate the --

4 A. Yes. That's the one that I attempted to
5 describe to you a few minutes ago. It's the
6 formula that would describe what was done.

7 Q. All right. Sometimes you have to take
8 more than one chance to describe a formula to
9 me.

10 A. Yeah.

11 Q. In the Exhibit No. 6, the DeGesero

12 study, what group, again, was tested in that
13 study or studies?

14 A. Well, the environments being
15 investigated were pipe coverers.

16 Q. Okay. And, again, let me ask you a few
17 questions about your knowledge of this particular
18 document.

19 Did you review this document at or about
20 the time that the study was concluded?

21 A. I reviewed it before I signed it. I
22 also probably reviewed it before it was in final
23 print.

24 Q. Okay. Did you have any input into the
25 design or the carrying out of the study?

9 1

1 A. Oh, yes. As his supervisor, I did.

2 Q. Okay. Would this have -- this study,
3 once it was reviewed and signed by you, would
4 this have been maintained in the records at the
5 Dow Chemical Company?

6 A. Yes. It would have been kept in the
7 various places that I mentioned in previous
8 testimony. The Central Research Index would have
9 had a copy, and so would the various industrial
10 hygiene and safety departments around Dow.

11 MS. CLARK: We would offer, at this
12 time, Exhibit No. 6 into evidence.

13 MR. HAINKEL: I will again have the
14 same objections as to Exhibit No. 5, and that is,
15 that all rights are reserved until the time of
16 trial in the cases in Louisiana.

17 MS. CLARK: I can't hear him.
18 MS. ABRAMS: The Plaintiff also has
19 the same objections as previously stated and
20 reserves objections until the time of trial, and
21 adds the problems of authenticity.
22 MS. CLARK: We make the same
23 response, that we would insist that objections to
24 predicate be raised now, while the witness is
25 here, who could supply information regarding

9 2

1 these documents.
2 Q. (By Ms. Clark) When you say "pipe
3 coverer," you're talking about a pipe coverer,
4 are they -- would they be the same as insulators,
· another term for these individual workers?

6 A. As a matter of fact, pipe coverers did
7 more than cover pipe, but that was the usual name
8 within Dow for people who put covering on pipe or
· put insulation on vessels.

10 Q. So another name for these individuals
11 might be "insulators"?

12 A. I'm sure it could be. It was
13 generally, that was not the way we described them
14 in Dow, as far as I know.

15 Q. Okay. Would you look at Exhibit No. 6,
16 Mr. Hoyle. And you might need -- you may need to
17 take a minute and -- and just thumb through every
18 page of the exhibit.

19 Do you see any changes made that you
20 would recognize from the original report that you
21 signed, from that to the copy that's before you?

22 MS. ABRAMS: objection. Lack of
23 foundation.

24 Just for the record, the original
25 apparently is not in the presence of the witness

9 3

1 at this time.

2 A. Table -- Table I, the word "Average" has

3 been circled and the word "Range" written in.

4 And it truly is the range. That could be my

· writing. I'm just not sure. It looks a little

6 like it.

7 Q. All right.

8 A. I should have initialed it, if it is my
· writing.

10 Q. So you don't know specifically --

11 A. I can't be sure, but I --

12 Q. whose writing that is?

13 A. in looking at it, I -- I can see that

14 that correction needed to be made.

15 MR. JONES: Sandra, while he's

16 looking at that, can we get a clarification as to
17 whether Exhibit 5 is the Midland study?

18 MS. CLARK: Exhibit 5 is the

19 Midland study.

20 Exhibit 6 is the Ludington study.

21 MR. JONES: Okay.

22 MS. CLARK: And I'm going to have
23 him go back through No. 5, as well,, to see if
24 there are any markings on it that he could
25 identify.

9 4

2 (Whereupon, there was a discussion held off

3 the record, after which the proceedings continued

4 as follows:)

5

6 A. There is one other place on the very

7 last page, Page 13, where an addition has been

8 made, and that addition is written in. it

· says -- into the distribution list. And it says

10 "C. G. Kramer, Corporate Medical, 2030 Building,

11 6/25/70.11

12 That says, to me, that he asked for a

13 copy and got one.

14 Q. Do you know whose handwriting that is?

15 A. No. I don't recognize that handwriting.

16 Q. But what that indicates to you is just

17 an additional person got a copy of the report?

18 A. Yes. And that was common practice to
19 write on the distribution list if somebody, in
20 addition, had asked for a copy.

21 Q. All right. where is the actually marked
22 No., 5? Here it is.

23 I'm going to hand you, also, No. 5 --
24 but before you look at No. 5, in Exhibit No. 6,
25 the only markings that you noted were on the

9 5

1 table, which had "Average" circled and the word
"Range" written above it. You can't identify
3 specifically whose handwriting that is; is that
4 correct?

5 A. I'm not a handwriting expert. I think
6 I've made marks that look like that.

7 Q. Okay. And then you noted on the
8 distribution list there was an addition?

9 A. Yes.

10 Q. All right. Would you look, now, at
11 Exhibit No. 5 and see if you recognize any
12 changes, additions, deletions. And this was the
13 Midland study.

14 MS. ABRAMS: Objection. Lack of
15 foundation. Calls for speculation.

16 A. On Page 7, there is, up in the
17 right-hand corner, an indication that something
18 has been -- been there and had been whited out,
19 perhaps. I believe that that probably was an
20 internal file number.

21 There's a little spot on page -- on Page
22 8, also, which is in that same location. And in
23 my opinion, that's probably the same thing.

24 Q. Were either of those notes located in
25 any part of the actual body of the report itself,

9 6

as far as

2 A. No

3 Q. -- any substance of the report?

4 A. No, not if they are what I think they

were, and have reason to think they were.

6 MR. HOBSON: May I see a copy of
7 the marked exhibit, as opposed to the one I'm
8 working off of?

9 MS. CLARK: I'm sorry? The marked
10 exhibit?

11 THE WITNESS: The one I'm looking
12 at?

13 MS. CLARK: Yes.
14 I believe, at this time, we're going to

15 move on from these exhibits, and I'll be happy to
16 give you this, but I think the way we had
17 scheduled things that this was our -- our
18 breaking point for our lunch, and we'll break
19 now. And I'll give this to Plaintiff's counsel
20 over the lunch break.

21 MR. HOBSON: Thank you.

22 THE VIDEOGRAPHER: The time is
23 11:32 am.
24 This ends Tape Unit No. 1. Off the
25 record.

9 7

2 (Whereupon, there was a luncheon recess,
3 after which the proceedings continued on the
4 stenographic record as follows:)

5

6 MS. CLARK: Would you mark these
7 while we're waiting.

8

9 (Whereupon, the instruments referred to
10 by counsel were marked for identification as
11 Hoyle Exhibit Nos. 7, 8 and 9.)

1 2

13 THE VIDEOGRAPHER: The time is
14 1:10 P.M.

15 This begins Tape Unit No. 2 on the
16 record.

17

18 DIRECT EXAMINATION (Continued)
19 QUESTIONS BY MS. CLARK:

20

21 Q. Mr. Hoyle, we're continuing your

22 deposition now, after we've had a lunch break.

23 As an industrial hygienist, you were
24 concerned with many different kinds of chemicals
25 and substances; is that correct?

9 8

1 A. Yes, ma'am.

2 Q. Did you compile datasheets on all of
3 these, or most of these?

4 MS. ABRAMS: objection. Vague.

5 A. We would have had datasheets on
6 materials as soon as we identified them as being
7 a part of the Dow environment or materials
8 identified as a Dow product.

9 Q. All right. So you had datasheets on
10 things that could have been in the environment in
11 addition to things that were used in Dow
12 products; is that correct?

13 A. Oh, yes.

14 Q. Okay. Do you have an estimate of how
15 many datasheets were compiled while you were an

16 industrial hygienist there?
17 A. Well, I never counted them. I guess the
18 best way to answer your question is to say that I
19 kept a full set in my office in the notebooks,
20 and that they were kept on shelves. My office, I
21 think, was 14 feet across, and I was on the third
22 shelf when I retired, so I had something over 28
23 feet of shelf space covered with datasheets.
24 Q. All right. Were these datasheets
25 updated as time went on?

9 9
1 A. Whenever new information came along that
· required it, we issued a new datasheet, and the
3 policy was to ask people to remove the old
4 datasheet and destroy it. That was so that we
· wouldn't mistakenly take precautions based on old
6 information.
7 So it was an ongoing thing, and as fast
8 as a new one came along, it was -- the old one
· was destroyed.
10 Q. Did you try to keep the current
11 information in the current file?
12 A. Yes.
13 Q. All right. Did much of your testing as
14 an industrial hygienist relate to products that
15 were manufactured by Dow?
16 A. Well, we were as interested -- we were
17 more interested in the products because, at this
18 point, we were interested in the general public
19 and our customers, but we had great interest in a
20 lot of other things that were either raw
21 materials or by-products or end process
22 materials, which were of interest to us in
23 maintaining a healthful environment for the Dow
24 employees.
25 Q. Okay. And asbestos that we've been

1 0 0
1 talking about for a while this morning was one of
· those products that was in -- not one of your
3 products that were manufactured by Dow, but one
4 of these other types of products that you might
· have been interested in?
6 A. Our whole interest in asbestos was
7 related to its appearing in some of the
8 insulating materials used, and also that was used
· in the chloralkali plants, not in the products in
10 the plant, but in the equipment that was used to
11 make --
12 Q. In the --

13 A. -- chloralkai.
14 Q. In the process that was used?
15 A. Yes. The equipment that was used for

16 process equipment did involve asbestos as a part
17 of the equipment.

18 Q. All right. on these other things, and
19 right now I'm not talking about asbestos, but on
20 some of the other chemicals and substances that
21 you might have been interested in, were there
22 also TLV's established for these products?

23 A. Many of them had TLV's and many of them
24 did not. The TLV's were promulgated after
25 some -- after a material became of wide enough

1 0 1

1 interest so that the American Conference of
· Governmental Industrial Hygienists would include
3 it on their list. Of course, they had to have
4 information upon which to base a number so it
· also had to wait for the information to become
6 available.

7 Q. All right. And previously you've talked
8 about the American Congress of Governmental
· Industrial Hygienists. Is that my -- am I saying
10 that wrong?

11 A. No. You're saying "Congress," and it's
12 "Conference."

13 Q. I don't know why I keep saying that
14 wrong, but that's -- you've corrected me once,
15 but correct me again.

16 A. All right.
17 The American Conference of Governmental
18 Industrial Hygienists, we've referred to them a
19 couple of times in the past in the deposition.
20 Could you tell the jury who made up that
21 conference?

22 A. This was made up of industrial
23 hygienists and with people interested in the
24 field of industrial hygiene. What I'm saying is
25 that an industrial physician could have been a

1 0 2

1 member if -- if he were getting paid tax money.

2 Q. All right.

3 A. In other words, it had to be
4 Governmental. And there was one exception, as I
· said this morning, that some of the academics

6 were allowed to have membership who were not from
7 Government -- directly Government institutions,
8 state-employed.

9 And these were the people, the
10 industrial hygienists who developed and kept
11 maintained the list, I guess it could be called,
12 of threshold limit values?

13 MS. ABRAMS: objection. Leading.

14 A. The threshold limit value, the
15 terminology itself belonged to the American
16 Conference of Governmental Industrial
17 Hygienists. It was a project ongoing which they
18 carried out as a service to their own members and
19 to anyone doing industrial hygiene.

20 Q. (By Ms. Clark) All right. And you
21 monitored, in your various facilities at Dow, for
22 other substances that had threshold limit values,
23 in addition to asbestos. We talked about this
24 morning, but you did other monitoring

25 A. Yes, and we monitored --
-- -----

1 0 3

1 Q. and other things?

2 A. We monitored for materials that didn't

3 yet have a published number.

4 Q. All right.

5 A. These -- these, when they were Dow
6 employees -- I mean, Dow materials, our basis for
7 judgment was usually animal testing; that is, use
8 of an animal model to test the material for its
9 toxic properties in the Dow toxicology lab.

10 Q. So if something didn't have a threshold
11 limit value, you might do some testing to try to
12 establish your own threshold limit value?

13 A. We did have -- we did have a list of
14 what we called "guides" --

15 Q. All right.

16 A. -- which were used in the same way as
17 the TLV'S.

18 Q. All right. Oh, was it important to stay
19 under the TLV's in the areas that you were
20 discussing and monitoring in?

21 A. We used the TLV's as a guideline in
22 making professional judgments concerning the
23 various work environments.

24 Q. You've talked about industrial hygiene
25 this morning, and I wanted to ask you about some

1 0 4

1 of the standards that were used in the field of
2 industrial hygiene. And what I mean is what sort
3 of controls were used by industrial hygienists to
4 try to maintain certain exposure levels?

5 A. Well, there are a number of ways that
6 you can modify a man's exposure, or a woman's

7 exposure on the job. The use of protect --
8 personal protective devices is one way of doing
9 it.

10 And another way is to use control at the
11 point of release, and ventilation falls in this
12 category. And the ideal is to contrive to handle
13 the materials so that they do not escape the
14 equipment so you don't have any exposure.

15 Q. All right.

16 A. Those are the three ways in which it can
17 be done.

18 Q. And you can adapt various, I guess,
19 techniques to whatever the product was?

20 A. Well, back to our -- our datasheets, the
21 data -- the datasheets related to these different
22 ways that I've just mentioned to you. And the
23 way that the datasheets were used was that the
24 line supervisor decided which category of
25 exposure the thing that he was doing or proposed

I 0 5

1 to do would fall. As soon as he knew that, he
· could look and see what protective personal
3 program would be required.

4 If it were something that -- in the way
· of personal protection that -- that was
6 unacceptable -- suppose it came out that you
7 needed to put them in a -- in a suit, like a
8 diver. Chances are he wouldn't want to do that.
· Well, then he could move into another category --
10 engineering is planned accordingly -- and arrive
11 at a set of personal protective -- or a personal
12 protective program that was acceptable to him.
13 So he had -- that's the way they could make up
14 their mind on what they would do based on our
15 recommendations.

16 Q. All right. You testified earlier, I
17 believe, that the monitoring of the pipe coverers
18 that was done in 1969 in the DeGesero studies,

19 indicated that their work was below the threshold
20 limit values for asbestos.

21 A. On a time-weighted basis., the exposures
22 were below five million particles.

23 Q. All right. I wanted to show you another
24 exhibit, and this is one that we've marked as
25 Exhibit No. 3, and this was the -- well, to -- so

1 0 6

1 that the other attorneys here know what I'm
· talking about, this one is entitled, "Evaluation
3 of Chemical Exposures Received by R. R. Spencer
4 of Coatings Technical Service, in the 433
· Building."

6 And I'll hand this to you. Can you
7 identify that exhibit?

8 A. Yes. This does report the findings of a
· very special industrial hygiene investigation
10 which was done because R. R. Spencer was having
11 health problems. And it's not infrequently that
12 the Medical Department would ask for a careful
13 evaluation of a work environment as an aid to
14 proper diagnosis. That's the general one in
15 which this were used.

16 Q. All right. Can you tell us what
17 chemicals or other substances were monitored in
18 this particular study?

19 A. Well, there were -- the dust that he
20 encountered was measured with eleven different
21 samples. This was dust-counting techniques that
22 we've talked about before.

23 And in addition to that, dust

24 concentrations on a weight basis were determined

25 in three other samples. And the materials that

1 0 7

1 were considered were asbestos, quartz or silica,
· cadmium, calcium and a resin which is simply
3 designated 2716, which is a research number
4 within Dow which describes the resin.

5 Q. Can you tell us where -- where this
6 monitoring was done and what procedure was bei-iig
7 undertaken, "procedure" meaning what was the
8 the particular job that this individual was

· doing?

10 A. Well, he was --

11 Q. What --

12 A. He was using what's known a Banbury

13 mixer, which is a mill, or a stirring-up device,
14 if you will, to make various formulations and
15 compound them.

16 Q. Okay. What I'm really asking you about
17 is, is this -- we've talked a little bit earlier
18 about an exhibit that was discussing the floor
19 tile formulation. Is this an individual who was
20 working in this -- with this floor tile
21 formulation that you had mentioned earlier?

22 -A. I think it is in the same laboratory.

23 Q. All right.

24 A. But it isn't clear in the description

25 here -- it doesn't actually say it in the

I 0 8

I description of what he was doing, except in one

· place, where, indeed, it says he was calendaring
3 vinyl asbestos tile formulations.

4 So that tells me that, indeed, the
· answer to your question is "yes.,'

6 Q. All right. And these were the very --
7 the various substances and chemicals you've read
8 over that were monitored for. What was the
· conclusion of that report?

10 A. Well, the conclusion was that if his
11 "If Mr. Spencer's difficulty is the result of
12 chemical exposure, the causative agent is
13 unknown ... In other words, it was not
14 identified by this study.

15 He further says that when they're
16 working with chlorinated polyethylenes, we should
17 do some more testing.

18 In other words, that's the one thing

19 that wasn't done at the time these measurements
20 were made. If polyethylene -- if chlorinated
21 polyethylene was not being used as a resin, some
22 other resins were being used.
23 Q. All right.
24 A. And --
25 Q. So when it says that some other testing

I 0 9

1 should be done, it was to test for that
.
particular --
3 A. The resin that --
4 Q. resin?
5 A. he hadn't seen yet, that's right.
6 Q. Was there a -- was there a number
7 actually determined on what the exposure to
8 asbestos was in that
9 A. No.
10 Q. -- report?
11 A. The highest number that I see -- I
12 mentioned there were eleven samples that were
13 taken for counting, and the numbers ranged
14 from .02 parts per -- million parts, that is, per
15 cubic foot, to 3.2. And the average size was two
16 to three microns. And that about covers it.
17 Q. All right. Would that --
18 MR. HOBSON: Excuse me. I don't
19 think that's right. While we're here, you might
20 want to get that number right again.
21 THE WITNESS: I couldn't hear you.
22 MR. HOBSON: I think the gentleman
23 has said .02 was the lowest, and I think
24 it's .2, 0.2.
25 THE WITNESS: No. I said 0.2. if

I 1 0

1 I didn't, I'm sorry.
2 MR. HOBSON: I beg your pardon.
3 THE WITNESS: I should have said
4 0.2, if I didn't, because that's what it says, to
.
3.2.
.
Q. (By Ms. Clark) All right. So, just to
7 make sure there's -- there's no misunderstanding
8 about that, the lower number would be 0.2
9 A. 0.2, and that describes the air in the
10 office, not in the lab.
11 Q. All right. Then the higher number was
12 3.2?
13 A. That's the highest number. And that was
14 during the mixing with the Banbury mixer.
15 Q. All right. And is this -- can you
16 relate this or correlate this to what the
17 threshold limit value was at the time --
18 A. It was --
19 Q. -- for asbestos?
20 A. It would have been five million

21 particles per cubic foot.
22 . Q. So would -- would this be below the
23 threshold limit value?
24 A. Yes, ma'am.
25 Q. All right. You mentioned the size of

1 the -- of the dust, or you said two to three

. microns?
3 A. That's what he says here.
4 Q. Can you tell the jury what that means?
. What does -- is that a measurement or what?
6 A. Yeah. That's a fraction of a
7 centimeter, or a fraction of a millimeter. These
8 are lengths, like feet and inches in the -- this
. is in the metric system; whereas, you would call
10 them feet and inches in the English system, the
11 one we're more used to.
12 Q. Okay.
13 A. But it's a distance measurement from
14 there to there.
15 Q. Okay. And was there -- was there
16 something significant about the -- the
17 measurement of the size of the fibers or the size
18 of the dust?
19 A. Well, these are not fiber readings.
20 These are particle size measurements, as I read
21 this report. And the significance is that it
22 would have put that dust in the respirable range.
23 Q. All right. Is there a -- a limit, I
24 guess, that's used in -- in the literature that
25 is a respirable range on the size of particles

1 1 2
1 or
2 A. Yes
3 MS. ABRAMS: objection. Vague as
4 to size.
5 A. There -- there is such a range, and I
6 can't remember just exactly what it was.
7 Q. Okay. So this -- in this, particular
8 sampling, then the table that you talked about
. discusses the various samples of asbestos usage,
10 or the dust created with asbestos usage?
11 A. These are dust measurements made in that
12 laboratory where the formulation would have
13 contained some asbestos.
14 Q. All right. And was this measuring total
15 dust measurements, or can you tell by looking at
16 t h i s ?
17 A. These measurements were total dust.
18 Q. All right.
19 A. There's nothing here to indict

20 otherwise.
21 Q. I would --
22 MS. CLARK: Do you have another
23 copy of that?
24 Q. (By Ms. Clark) Because I'm looking over
25 your

1 1 3

1 A Oh.
2 Q. -- your shoulder.
3 That's okay. I want you to look at that

4 one. I'm going to get another copy because I
5 can't see from here to there.

6 A. Oh.

7 Q. That's one of those problems with
8 advancing age, I'm afraid.

9 All right. I wanted to ask you a
10 question about --

11 MS. CLARK: Did you hand me the
12 right one? Okay.

13 Q. -- about a statement in this report
14 because you -- this is a report that's dated
15 1/30/58; is that correct?

16 A. M-h'm.

17 Q. In Paragraph 2, under "Conclusions," and
18 it states in there that he worked -- Mr. Spencer
19 worked with vinyl asbestos tile formulations, and
20 in the course of that work, was occasionally
21 exposed to somewhat excessive concentrations of
22 airborne asbestos." And then it goes on and
23 gives specifics.

24 I was -- do you have a comment about
25 what is meant by Conclusion No. 2?

I 1 4

1 A. The sampling that was being reported
2 here was in 1958. The dates mentioned here
3 are 153 to 154. That's four years before.

4 This indicates to me that in
5 conversation with Bob Spencer, that Peterson had
6 had described to him the circumstances that had
7 existed sometime before.

8 And so this is subjective observations,
9 and there's nothing in this report that would
10 justify such a statement as the one we're reading
11 here, because the numbers reported were all below
12 five million particles.

13 So you see here a subjective comment
14 concerning his previous history.

15 Q. I want to ask you another -- another
16 couple of questions about this particular
17 report. This is signed by Mr. Peterson; is that
18 correct?

19 A. That's right.

20 Q. And who is Mr. Peterson?

21 A. Oh,, he is a -- a chemical engineer who

22 joined my group in industrial hygiene. And it
23 was during the period of time that he was in our
24 group that he did this work.

25 Now, the only other characterization or

1 1 5

1 identification of Peterson that I can make is
· that he left us, returned to school at the
3 University of Michigan, obtained a Ph.D. in
4 industrial hygiene, and is presently a consultant
· living in Wisconsin.

6 Q. Okay. And you reviewed this report, and
7 you reviewed the data that is connected with it?

8 A. I read -- I read the report, and after
· I'd read it, I signed it.

10 Q. All right. And you -- this report is
11 your recollection that this report was made at or
12 about the time that this study was done, or
13 this -- I guess it's more of a report was done
14 regarding Mr. Spencer?

15 A. Yes. My recollection and judgment is
16 that samples were taken shortly before the report
17 was written -- written.

18 Q. All right. And the report was written
19 shortly after this work was done?

20 A. Yeah, almost July, as soon as the work
21 was done.

22 Q. All right.

23 A. And you see -- I said before that this
24 was done at the request of the Medical Department
25 as, -- to assist them in making a diagnosis of

I 1 6

1 Spencer's problem.

2 Q. All right.

3 A. So I'm sure it would have been done as
4 soon as possible in order to take care of that
· requirement.

6 Q. All right. And -- and you reviewed this
7 material and were aware of the sampling that was
8 being done. You have personal knowledge, I
· guess --

10 A. Right. Sure.

11 Q. -- of this report?

12 A. Sure. Sure.

13 Q. All right. There is another bit of

14 sampling that was done, I believe in -- I will
15 show you what's been marked as Exhibit 4. And

16 this is a letter that's to R. C. Middleton, of
17 the Safety Department, Ludington Division. It's
18 October 26, 1964.

19 MS. CLARK: Do you all have a copy
20 of that?

21 MR. HOBSON: 'Which number?

22 MS. CLARK: It's No. 4.

23 MR. HOBSON: Right.

24 MS. CLARK: And it's ST No. 6762.

25 MR. HOBSON: You passed that out

1 1 7

1 earlier.

2 MS. CLARK: Yeah. Right.

3 Q. (By Ms. Clark) I want to hand you what
4 has been marked as Hoyle Exhibit No. 4 and ask
5 you if you recognize that exhibit?

6 A. Yes. This is a letter which I wrote to
7 Bob Middleton to report to him the results of
8 some industrial hygiene activity at the Ludington
9 plant.

10 Q. And what were the -- just generally,
11 what were some of the things that were looked at
12 at the Ludington plant?

13 A. Well, one of the things we looked at was
14 the plant air. Now, that's not the ambient air.
15 That's in the plant, there was air from a
16 compressor which was piped to various locations
17 for use for whatever purpose in the process. And
18 we were looking to see whether -- what the
19 quality of that plant air might be.

20 And what it says is that we found that
21 it was not contaminated with significant amounts
22 of either carbon monoxide or mercury. And we
23 further made an agree -- an arrangement with a
24 man at the Ludington plant to sample that air for
25 particles and told him how to do it.

1 1 8

1 Q. All right. And --

2 A. And then we went on and told him how to
3 interpret his results, how many -- what weight it
4 was cut out by and what wouldn't be acceptable.

5 And we talked with a couple of people
6 over there about radiation and radiation
7 manuals. I don't know if it's very apparent
8 here, but they had some instrumentation which
9 depended on sealed sources of radiation.

10 Q. All right. And I guess to get on a
11 little bit farther in the letter, there is a
12 mention, on Page 2, of an inquiry about
13 asbestos. And what was -- what was the study
14 done, and what was your opinion?

15 A. A question was raised about asbestosis
16 having to do with sawing Transite. Transite is a
17 building material which is used on a good many
18 ways, commonly as an outside wall for buildings.
19 And it comes in corrugated sheets, and it's made

20 of mostly cement with enough asbestos in it to
21 hold it together, I think is a good way to
22 describe it.
23 And so what we said was, that although
24 the dust from such an operation will probably
25 contain respirable particles of asbestos, it's

I 1 9

1 ly unlikely that enough exposure would exist
· in the use of Transite to represent a real
3 hazard. That was a professional judgment based
4 on no data.

5 Q. Okay. But this was what your -- your
6 judgment was at the time, in 1964?

7 A. Yeah. I was influenced partly by the
8 fact that any asbestos that was airborne wouldn't
· be asbestos fibers, but would be of little chunks
10 of concrete with little particles of asbestos in
11 the little chunk of concrete, the little piece of
12 dust. And probably what you would have the most
13 of would be the exposed end of the fiber, as
14 opposed to the fiber itself. -

15 Q. And so, in Your opinion, at that time,
16 because of those factors --

17 A. We Just didn't feel that there was any
18 need to Pursue the matter further.

19 Q. Okay.

20 MS. ABRAMS: I'm sorry. I didn't

21 hear the witness at the end.

22

THE WITNESS: I said that I

23

MS. CLARK: Wait a minute. Wait a

24 minute.

25 THE WITNESS: Oh, excuse me.

1 2 0
1 MS. CLARK: Why don't you read it
2 back?
3
4 (Whereupon, the requested testimony was
read back by the court reporter.)

6 MS. ABRAMS: Thank you.
7
8 Q. (By Ms. Clark) Now, going back to
DeGesero in these exhibits that we talked about
earlier

11 A. Yes.
12 Q. -- you had -- I'm sorry. That's Exhibit
13 No. 5 and 6, that I think you you've looked --

14 looked at, and these are not
15 A. These are not it.
16 Q. -- not it. Okay.
17 Did you expect that the pipe coverers

18 that were tested in these particular studies
19 would have had more exposure than other workers?

20 MR. HOBSON: Objection. No
21 foundation.

22 A. The -- our -- our --
23 MS. ABRAMS: i,11 Join in that
24 objections

25 1 A. our expectation professional judgment

1 2 1

1 would have been that -- Lfie people actually handling
the insulation would have had the higher
3 exposures.

4 Q. All right. Let me ask you some -- a
little bit of background questions to that.

6 Throughout your career, had you had the
7 occasion to observe workers in the field?

8 A. Many times. That was my job.

9 Q. All right. And how would you observe
10 them? I mean, what was your job related to
11 actual work going on in the plant?

12 A. Well, we -- we studied the workers and
13 their activities, so that we would be able to
14 assign lengths of time to the various sampling
15 that we did.

16 In other words, if we sampled while they
17 were taking a sample, then we'd find out how many
18 samples they took per day and how long each
19 sample took because, ultimately, we were going to
20 come up with a time-weighted average exposure to
21 Chemical A, B or C, or whatever, for that man on
22 that job.

23 In other words, our judgments weren't
24 based on the -- on what was the material. Our
25 judgments were based on what was the material,

1 2 2

1 what was the level of exposure, how frequently
· did it happen and for how long.

3 Q. Okay. And to make these judgments,
4 you -- how did you set up this observation, I
· guess, to make this --

6 A. Well,, I just -- first, we had a safety
7 meeting and we explained to the people in that
8 plant, first, who we were and why we were there
· and what we were going to do. And the next thing
10 we did was to find out what materials were
11 present. This was what we used to call the
12 "inventory of materials."

13 And then, for each job, we -- we took
14 from that inventory of materials, the materials
15 that would be involved in that job, whatever it
16 might be. And then we simply went out, walked
17 around the plant with the man as he did his job,
18 and kept track of what he did, how long it took
19 him to do it and how often he did it.

20 We depended on what we observed, we
21 depended upon what he told us, and we depended
22 upon what the supervisor told us about each job,
23 and then we reconciled any differences.

24 As soon as we had that done, why then we
25 developed our sampling procedure so that we would

1 2 3

1 get numbers that we could use to arrive at a
· time-weighted average.

3 Q. And did you have an occasion, over the
4 years, to observe pipe coverers?

5 A. I, personally, not in great detail, but
6 I saw pipe coverers at work many times, because
7 they -- it's not uncommon to see a pipe
8 coverering crew in a -- in a chemical production
· plant. It's an ongoing job, in other words.

10 Q. All right. And did Roy DeGesero conduct
11 his studies using that technique when he did his
12 pipe coverers study?

13 A. He did it --

14 MR. HOBSON: Objection

15 A. He did it

16 MR. HOBSON: Excuse me, sir.

17 THE WITNESS: Yes, sir.

18 MR. HOBSON: I need to object.

19 This man is not in a position to address that.
20 Lack of foundation.

21 MS. ABRAMS: We join.

22 -Q. (By Ms. Clark) Go ahead.

23 A. Well, philosophically and, actually, as

24 far as studying the jobs are concerned, he did it
25 in just the way I have described to you, taking

1 2 4

1 into account the different kinds of pipe covering
· that were being used, because for pipe coverers,
3 the -- their exposure was related to their
4 craft.

5 In other words, they came on the job,
6 bought some covering with them, whatever kind
7 they needed, and put it on wherever it was
8 needed.

9 Q. All right. And did -- were you in a
10 position to observe the methodology that Roy
11 DeGesero used in his study?

12 A. I can't remember that I actually went on
13 site and observed him at this particular sampling
14 in this particular project, but that I did a
15 number of times with him, and others of our more
16 experienced people also had done the same thing.

17 Our procedure for breaking in a new man
18 was to have him work with a person who was
19 already there on a project like this. But he had
20 progressed by this time, in his experience with
21 us so that we didn't have a second industrial
22 hygienist with him.

23 Q. All right. You had certain procedures
24 in your department that you would follow to
25 determine the type of work the man did so -- for

1 2 5

1 your study purposes?
2 A. Yes, we had forms that he had to fill
3 out.
4 Q. All right. So -- and you were in a

5 position to know what that procedure was?

6 A. M-hlm.

7 Q. In fact, did you establish that
8 procedure yourself?

9 A. Yes.

10 Q. And so you knew that that was -- that
11 was the procedure and that forms had to be filled
12 out to --

13 A. M-hlm.

14 Q. -- to show that that procedure had been
15 followed?

16 A. M-hlm.

17 Q. Is that correct? You'll need to say
18 "yes" or "no," for the record, please.

19 A. Yes.

20 Q. Okay. Did you -- what was your opinion
21 about whether -- about the type of -- I guess the
22 extent of exposure that a pipe coverer would
23 have, as opposed to other workers who were not
24 pipe coverers?

25 MS. ABRAMS: Object to the form of

1 2 6

1 the question as opinion.

2 A. To asbestos, you mean?

3 Q. (By Ms. Clark) Yes.

4 A. The exposures of the pipe coverers would

· have been greater than to others, in my
6 professional opinion. Now, this is based on I
7 don't know how many samples taken in people's
a breathing zones and at distances from their
· breathing zone.

10 You have a pretty good feeling for how
11 much difference there is between right in a man's
12 breathing zone and -- and a few feet away. And
13 based on that kind of experience, we didn't feel
14 any need to sample others in the area.

15 Q. Because of your experience in -- in
16 doing the testing at various distances from the
17 breathing zone --

18 A. That's right.

19 Q. -- of a pipe coverer?

20 A. In the past.

21 MS. ABRAMS: Excuse me.

22 Objection. Leading.

23 And, Mr. Hoyle, if you would be so kind
24 as to wait until the questioner finishes the
25 question, in case some of us would like to

1 2 7

1 interpose objections, it would be very helpful.

2 THE WITNESS: I'll try.

3 MS. ABRAMS: Thank you.

4 THE WITNESS: I've been trying.

5 MS. ABRAMS: It's hard.

6 THE WITNESS: I'm used to

7 conversation rather than depositions. I'm sorry

8 about that.

9 Q. (By Ms. Clark) About -- oh, I'm going to
10 show you what has been marked now as Exhibit No.
11 7 by the court reporter. And this is what is
12 titled "Exposure to Fine Dust Encountered by
13 Workers Cutting Various Types of Pipe Covering
14 Material," and it's dated July 21st, 1965. And
15 that's Exhibit No. 7, and it's the ST number,
16 four zeros and 568.

17 I'm going to hand that to you. And do
18 you -- can you identify that exhibit, please?

19 A. This is a report of work done at the Dow
20 Corning Corporation, at their request. And it
21 reports the results of measurements made while
22 workers were handling pipe covering materials in
23 different ways.

24 Q. All right. Can you -- excuse me. Can
25 you tell us the reason for conducting this

1 2 8

1 particular study?

2 A. The reason, as I recall, was that the --

3 some of the members of the Dow Corning pipe

4 covering group, crew, what have you, had read in

their -- either in the newspapers, or somewhere
else,, about asbestos,, that they'd read something
that had caused them to be concerned.

And so it was regular procedure in Dow,
and it turns out in Dow Corning, that we would do
what we could to answer people's questions. And
these -- this work was done to answer questions
asked by the people in the covering crew, if I
remember right. I'm not sure I do remember
right.

Q. Okay. And I'll have to ask you, as we
go on, when that -- there's this little air
conditioner or compressor or motor or something
that comes on, and we'll have to ask you to keep
your voice up a little bit when that happens so
we can hear you.

A. I'll try.
-Q. This was signed by a gentleman named E.
J. Schneider or "Sha-ny-der." Can you identify
Mr. Schenider?

A. Yes. I was the Dow Chemical Company's

1 2 9

first full-time industrial hygienist, and Ed
Schneider was the second full-time industrial
hygienist. He joined me about six months after I
started in the Department.

Q. All right. And I noticed that there
are, on Page 2 and on Page 3, at the bottom of
the page, there are some footnotes.

A. M-hlm.

Q. And the footnotes are to -- the first
book is "Industrial Toxicology" by L. T.
Fairhall; is that correct?

A. That's right.

Q. What sort of a reference book is that?

A. Well, it was one of the early and pretty

good reference books available to us, and it was

16 written by Dr. Fairhall.
17 Q. All right. And then I noticed that, the
18 second page, there's a reference again to Frank
19 A. Patty.
20 A. That's the same book we talked about
21 this morning.
22 Q. And can you characterize what sort of
23 references these are, as far as quality or -- or
24 usefulness?
25 1 A. Well, they're good. They're --

1 3 0
1 they're as far as they're being authoritarian
· is concerned, they're as good as was available at
3 the time --
4 Q. All right.
5 A. -- in my opinion.
6 Q. This -- can you tell us what the

7 conclusions were in this study conducted by
8 Mr. Schenider and, I believe, checked by you?
9 A. Well, he found that if you were using a
10 table saw -- this is the first time we've
11 mentioned table saws', but this is a power saw --
12 that you could stir up dust in excess of
13 acceptable levels.
14 That's one -- the first of his
15 conclusions. And the total dust count, or the
16 number of particles per million cubic feet of air
17 would, therefore, exceed acceptable levels under
18 these circumstances.
19 Q. Let me stop you there and ask you a
20 question.
21 A. Yeah.
22 Q. We've talked about limits, dust limits,
23 and so forth. And when you say "total dust,"
24 what -- what do you mean by "total dust"?
25 A. Well, I mean, if you take a dust sample

1 3 1

1 and simply look at it under a microscope, it's
· difficult, if not impossible, to tell the
3 difference between different kinds of dust.

4 In other words,, they're just little
· spots of light that are like a light that you can
6 see. And so you call it "total dust."

7 Now, what you can do is to take samples
8 in such a way as to get larger amounts which can
· be analyzed chemically, spectrographically, or
10 what have you, and then you can start to consider
11 the kinds of dust, kinds of materials that are
12 represented by that dust that you're looking at.

13 Q. Was there -- was this particular concept
14 about total dust, as opposed to asbestos, was
15 this taken into account here in this report?
16 A. Let me see. I think it was.
17 Yeah, they did characterize the dust,
18 because this report is written after there
19 started to be some understanding of the fact that
20 asbestos was fibrous and that different length
21 fibers with different diameters would be handled
22 differently within the lung or respiratory
23 system.
24 And the third conclusion here was that
25 the amount of asbestos fibers of significant

1 3 2

1 length found within the dust exceeds 25 percent
of the fiber content. And what that means to me
3 is that 25 percent of the fibers that they could
4 find were within the area of concern, as far as
fibers themselves goes.

6 Q. All right.

7 A. The rest of the fibers, really, are too
8 long or too short to be of concern.

9 Q. All right.

10 A. Then he goes on to say that "The
11 possibility that Dow Corning workers are being
12 exposed to excessive amounts of asbestos fibers
13 within the important fiber lengths" -- if I'd
14 have read -- I should have read a little
15 further. And then he says, 1120 to 50 microns,"
16 which is the length of concern -- "is unlikely,
17 however, it is advisable and prudent to have
18 workers wear respiratory protection while cutting
19 pipe covering material. This is especially true
20 when using a table saw.,,

21 Because it -- it puts just much more
22 material in a short period of time with a table
3 saw.

24 Q. Now, in the back of this exhibit
25 someplace, I'm going to show you there's an "ST"

1 3 3

1 number on it, and it's a "ST" with four zeros and
a 578, and then there's a 579 and 580.

3 A. All right.

4 Q. Do you see that? Could you just --

5 A. These would be the pictures, here.

6 Q. All right. Can you just identify what

7 that is?

8 A. I can tell you what it is, yes. That's
a photomicrograph taken of one of the samples.

10 Q. And what can you just say -- what is
11 it?
12 A. The long the long narrow ones are

13 fibrous in appearance and are -- might be
14 asbestos, based on the fact that there was
15 asbestos in the sample.
16 Now, there isn't enough -- there
17 is -- there is no information here that let's --
18 there's no scale information, so I can't tell you
19 how long those were that you're looking at, but
20 that's what you're looking at. And all these
21 other little pieces would have been counted as
22 dust, but are not fibrous.
23 Q. Do you know where these particular
24 studies were done? Where, like in what location
25 in the -- in the facility?

1 3 4

1 A. Well, this -- this whole report, I
.
2 think, reports work that was -- was not done
3 during the normal covering of materials in the
4 Dow Corning plant. This reports measurements
.
5 made while people did specific operations.
6 Q. This was in -- in the first -- I notice
7 in the first paragraph, on the first page, it
8 says that this was a question raised by shop
.
9 personnel.
10 A. Right.
11 Q. Do you know whether this was done in the
12 shop or outdoors, or can you tell?
13 A. It would have been done in the shop.
14 Q. So this particular study would have been
15 indoors?
16 A. It would have been in the shop.
17 MS. ABRAMS: objection. Leading.
18 And it calls for speculation. It lacks
19 foundation. --
20 Q. (By Ms. Clark) Do you have any
21 independent
22 'A. it
23 Q. Let me -- let me ask you a different
24 question.
25 A. Okay.

1 3 5

1 Q. Would you have any independent memory of
.
2 the location, other than what's reported in the
3 report itself?
4 A. Yeast, I have memory of the request
.
5 coming in and my calling Ed Schneider in and
6 asking him if he would go and take care of it.
7 Q. No. I'm
8 A. And I have memory of saying to him that
.
9 they were thinking -- what their plan was, was to
10 set up specific operations with pipe covering,
11 rather than to try to make -- the reason I
12 remember this is, is that this would have been of
13 relatively short duration, because they set up
14 all the different operations.
15 The alternative would have been to go

out and do a comprehensive industrial hygiene survey of Dow Corning's pipe covering crew, which we did not do.

Q. All right. It was about in -- in about 1970, I think that you have testified earlier that the threshold limit values for asbestos was lowered.

MS. ABRAMS: Objection. Leading.

A. Well, it went --

Q. (By Ms. Clark) I think you testified to

1 3 6

that, but correct me if I'm wrong.

A. It went from five to two sometime close to 1970, possibly 169. And my memory isn't quite good enough to say what year, but it was in a -- within a three-year -- three-year period. I

think I'm right. Like 169, 170 or 171.

Q. All right. Do you know why --

A. Now, that would be available, if anyone really wanted to know, because -- because the threshold limit values committee, their records would show that.

Q. All right. Do you know why the threshold limit value was lowered?

MS. ABRAMS: Objection. Lacks foundation.

A. Should I -- should I answer?

Q. (By Ms. Clark) Go ahead.

A. There had been, over a period of time in

the 160's, new information showing up and being discussed in the -- in the toxicology area and in the medical area concerning effects other than asbestosis which might come from working with asbestos. And the decision to lower the level from five to two was related to that scientific ferment that was going on.

1 3 7

As the information was presented and

further discussed and so on, there was a felt need to lower -- to lower the levels of exposure, as I understood it, not because of any concern for asbestosis, but for these other concerns.

Q. All right. I want to ask you a question before we take a little -- we'll take our little afternoon break in just a minute, but I wanted to ask you a question about scientific theories, I guess, in general. Now I'm going back to when you were a scientist and a teacher, and all of that.

When you have a scientific hypothesis, is that hypothesis generally accepted whenever it's hypothesized?

16 MS. ABRAMS: Objection.
 17 Q. (By Ms. Clark) Or can you explain --
 18 maybe a better way: Can you explain how, I
 19 guess, a theory or a hypothesis gets into
 20 practical --
 21 A. Well --
 22 Q. -- literature?
 23 MS. ABRAMS: Excuse me.
 24 A. Well, generally --
 25 MS. ABRAMS: Excuse me.

1 3 8

1 MS. CLARK: Wait a second.
 2 MS. ABRAMS: Objection. It lacks
 3 foundation. It calls for speculation and it
 4 calls for an expert opinion.
 5 Q. (By Ms. Clark) Go ahead. You can
 6 answer.
 7 A. Well, what usually happens is that
 8 experiences -- and these can be from all the way
 9 from case studies to carefully done animal
 10 experiments -- are reported by the investigator,
 11 whoever he may be. And they're usually reported
 12 in form of papers at scientific meetings and --
 13 and/or publications in scientific journals. And
 14 before they get -- get great credence, someone
 15 usually will reproduce the findings.
 16 Once the findings have been reproduced,
 17 this tends to give them more weight, so to speak,
 18 as far as we're going to jump now to setting
 19 threshold limit values.
 20 In other words, the better the data, the
 21 more likely they are to end up changing the --
 22 the-guidelines.
 23 MS. CLARK: All right. I think
 24 this is a good point to take about a ten-minute
 25 break, and we'll resume at 2:15.

1 3 9

1 THE VIDEOGRAPHER: The time is
 2 2:03 p.m.
 3 Off the record.
 4
 5 (Whereupon, after a brief recess, the
 6 video deposition continued as follows:)
 7
 8 THE VIDEOGRAPHER: The time is 2:18
 9 p.m.
 10 On the record.
 11 Q. (By Ms. Clark) Mr. Hoyle, before the
 12 break, we were talking about, I guess, the fact
 13 that the threshold limit values had been lowered,
 14 or were going to be lowered, and that we had
 15 talked about scientific theories and evolution
 16 and so forth.
 17 Did you become aware, at some point,
 18 that asbestos exposure could be associated with
 19 other diseases, other than asbestosis?
 20 A. Yes.
 21 Q. And what -- about when did you become

22 aware of that,, and what other conditions were you
23 aware?

24 A. Well, the other -- there were two things
25 that -- that we started to hear about. First was

1 4 0

1 mesothelioma, which is a -- a rather -- a rather
· unusual tumor, as I understand it, that has been
3 associated with asbestos and was reported.

4 The other thing was -- that I heard
· about was lung cancer as being a matter of
6 concern. Now I couldn't put a -- there's no
7 specific date that I can associate with the
8 appearance of these concerns. What I remember is
· the developing concern among the health
10 professionals over a period of time which
11 ultimately ended in a decision to change the
12 threshold limit values.

13 Q. What -- where were the first case
14 reports of mesothelioma from that you read about
15 or heard about?

16 A. Oh, I think it came from -- it seems to
17 me they were reported from South Africa, but I'm
18 not -- I'm not really sure whether it was South
19 Africa or England, at this moment. But it was
20 outside the U. S., as I recall.

21 Q. Did -- when did you become aware that
22 lung cancer could be associated with cigarette
23 smoking?

24 A. Not until about the time I retired was
25 it more or less totally accepted, as I remember.

1 4 1

1 Sometime in the early 170's, in other words.

2 Q. Was it -- do you have an approximate --

3 A. I

4 Q. Go ahead.

5 A. Let me back up a minute.
6 As far as lung cancer associated with

7 cigarettes, period, of course, that came with the
8 Surgeon Generall's requirement, the date of which
9 I don't remember, when they started to put labels
10 on cigarettes, and all that kind of stuff.

11 What I do remember is the -- the report
12 was published prior to that which resulted in his
13 coming out with the requirement.

14 Q. And --

15 A. And I answered you in terms of cigarette
16 smoking as it relates to asbestos exposure, which
17 isn't what you asked, I think.

18 Q. No, it wasn't, but I will -- I will ask
19 that.

20 So you -- as I recall what you said,

21 then, you -- about the time of the Surgeon
22 Gen'eral's Report, or prior to that, you learned
23 about lung cancer and cigarette smoking. And
24 then did you learn about some connection between
25 asbestos and smoking and lung cancer?

14 2 1 A. Yeah. There came a time, in the '60's,
when this had been reported. There had been --
3 there was -- there was some other investigation,
4 after its first being reported, which confirmed
it.

Q. All right. Did you have an estimated
7 time when you learned of the mesothelioma?

8 A. It's fuzzy in my mind, but it was

9 A. Fuzziness becomes less and less fuzzy as
10 you get into the early 1960's and when you go
11 toward the middle 1960's. But if -- if I were to
12 ask myself, was it in the 1950's, late 1950's, or
13 was it in the 1960's, my memory is not good enough
14 to tell me, right now.

15 Q. Okay. It was after --

16 A. I might have an opinion, but I wouldn't
17 have a memory of it.

18 Q. Okay. You had said it was after you had
19 heard a report either from -- reported cases from
20 South Africa or from England. Is that --

21 MS. ABRAMS: Objection.

22 Q. (By Ms. Clark) -- your memory?

23 MS. ABRAMS: Objection. Leading.

24 A. Those were -- that's what I recalled for
25

1 4 3

1 Q. I was going to show you what's been

marked as Exhibit No. 8, and this appears to

3 be -- I'll let you identify what it is, if you

4 can.

5 MS. CLARK: And this, ladies and

6 gentlemen in the background, this is, I believe,
7 three letters that are attached together that are
8 dated October 7th, 1968.

9 A. And the last one is October 31st.

10 Q. Okay.

11 MS. ABRAMS: Can you give us a

12 minute to examine this document?

13 MS. CLARK: All right. Why don't
14 we just go off the record just a second. We
15 could take a -- we'll not take a break,
16 literally, but just break from the video.

17 THE VIDEOGRAPHER: The time is

18 2:24 p.m.

19 Off the record.

20

21 (Whereupon, after a brief recess, the
22 video deposition continued as follows:)

23 MS. CLARK: Are we back on?

24 THE VIDEOGRAPHER: The time is

25 2 :26 p.m.

1 4 4

1 On the record.

2 Q. (By Ms. Clark) Before we -- we move on
3 to this exhibit that I just handed you, Exhibit
4 No. 8, I had asked you the question about
· mesothelioma, and you had indicated that you had
6 heard of some cases, and that you were not -- not
7 real sure about when that was, but do you know
8 what type of exposures or type of workers were
· reported in those cases?

10 MS. ABRAMS: Objection. Compound.

11 A. The -- in those cases, now that I --
12 there was a study, but I think it was not the
13 mesothelioma cases that were reported in that
14 study, although they were reported there, too,
15 perhaps, which involved shipyard use of asbestos
16 lighting in the engine rooms of ships. And
17 that's the one that I remember something about,
18 as far as what kind of exposures did they have.
19 I'm a little blank on the rest of it.

20 Q. All right. And it was your
21 understanding -- can you compare the type of
22 exposure that you understood to be in that report
23 to the type of exposures that you were monitoring
24 at Dow?

25 A. As -- as described, the exposures that

1 4 5

1 happened in the engine rooms of ships during
· World War II were gross compared with those which
3 we encountered by pipefitters in Dow Chemical
4 Company plant -- plants that I know about.

5 Q. All right. Thank you. Let's move on to
6 this Exhibit No. 8.

7 Can you identify this correspondence,
8 Mr. Hoyle?
9 A. Yes. There are three letters here, one
10 sent to me by Bob Middleton,, Safety Director at
11 Ludington, Michigan; one written by me to a man
12 in the Safety Department at Midland, asking him
13 to answer part of the questions; and another one
14 written by me to Bob to answer the questions that
15 I had referred to the Safety Department.

16 Q. All right. What was the question asked,
17 and what was the -- basically, what was the
18 response given?

19 A. Well, he asked what are -- what are they
20 doing in the Midland -- what are the pipe
21 coverers in Midland doing. And that's the part
22 that I -- that I referred to the Midland Safety
23 Department. And then I replied to him concerning
24 hazards due to the handling of materials
25 containing asbestos.

1 4 6

1 And what I told him, to paraphrase it,
2 was that there's a discrete disease associated
3 with asbestos which is called "asbestosis." I
4 told him that it was quite similar to silicosis,
5 which is caused by crystalline quartz, and --
6 Q. Go ahead and read that, if you want to.
7 A. "In more or less recent past the subject
8 of average or good asbestos has been further
9 complicated by reports in the literature of
10 malignant growths which were associated with the
11 presence of asbestos bodies. The whole subject
12 is presently under study by the U. S. Public
13 Health Service."
14 Then I told him that I feel at this
15 point "...our best bet is to control the asbestos
16 dust exposures according to the Threshold Limit
17 Values suggested by the American Conference of
18 Governmental Industrial Hygienists. This
19 Threshold Limit Value is five million particles
20 per cubic foot of air. We have done some dust
21 sampling during a variety of operations carried
22 out-by pipe coverers. I'll include a summary of
23 this work for your information. You will see
24 that there are some jobs where the numbers of
25 particles in the air are above five million

1 4 7

1 particles per cubic foot mentioned here. Jobs
· such as this would be done using industrial
3 respirator which is approved by -@he U. S. Bureau
4 of Mines for protection against toxic dusts,
· including silica.

6 "Another approach to the dust hazard is
7 to contrive better control of the dust so that
8 the measurements will show less than five million
· particles and there will, therefore, be no need
10 for respiratory protection. Generally, this is
11 the best -- is best accomplished by the use of
12 exhaust ventilation at the point where the dust
13 is being generated., ,

14 Q. And does this -- Mr. Hoyle, would that
15 represent, fairly, your opinion as of October
16 31st, 1968?

17 A. I would -- it's -- it's signed by me.

18 My answer to you is a --

19 MS. ABRAMS: Objection.

20 A. -- yes.

21 MS. ABRAMS: It calls for opinion

22 testimony.

23 Q. (By Ms. Clark) All right.

24 A. Because I composed the letter and signed

25 it.

1 4 8

1 Q. All right. Mr. Hoyle, were you aware at
· any time that there was any monitoring or
3 following done of pipe coverers by the medical
4 Department at Dow?

5 A. There was a regular program of chest
6 X-rays that was carried on, and also a -- a vital
7 capacity testing with a spirometer in the Medical
8 Department. And the pipe coverers were included
· in that program for a period of time. And the
10 findings were all negative, and the decision was
11 made by the Medical Department to discontinue
12 them on the program after a period of time.

13 Q. Why did they decide to discontinue them
14 on a program?

15 A. Just because they were finding entirely

16 normal findings, and even though X-rays of the
17 chest aren't going to give rise to -- to serious
18 overexposure to radiation, a good practice is
19 that you don't expose people to radiation
20 unnecessarily.

21 Q. During your years at Dow, were you ever
22 aware of any case of an asbestos-related disease
23 reported in any Dow employee?

24 A. No.

25 Q. I wanted to just point out one thing.

1 4 9

1 In -- in Hoyi-e Exhibit No. 5, there is a comment
· on the first page that sayst "The present
3 Threshold Limit Value (TLV) for asbestos of 5
4 million particles will remain in force until
· 1971."

6 It -- you -- do you have any information
7 any different about when that threshold limit
8 value might have been changed, as far as the
· actual date?

10 A. I don't really know when it happened,
11 but there was a warning given out by the TLV
12 Committee that they expected to change it in
13 1971, and that's the basis for that statement.

14 Q. Okay.

15 A. Whether they -- whether they did it at a
16 different date, for some reason, I don't know.

17 Q. All right. So you don't have any
18 independent --

19 A. No. That's the --

20 Q. knowledge --

21 A. best information I have.

22 -Q. Okay. And when -- whenever the

23 committee changed it is when they changed it?

24 A. That's when they changed it, that's
2 5 right.

1 5 0

1 Q - Okay.

2 A. It was -- it was the policy of that
3 committee --

4 Q, Mr. Hoyle --

5 A. If I may?

6 Q. All right. Go ahead.
7 A. It was policy of that committee to give

8 advanced warning of change so that people could
9 make their comments, if they wanted to.

10 Q. Okay. Do you have an opinion,
11 Mr. Hoyle, based on your experience, your
12 training and your knowledge as an industrial
13 hygienist, whether a pipe coverer who worked in a
14 plant setting, applying insulation, some of which
15 contained asbestos, had exposure levels within
16 the five million particles TLV level?

17 MS. ABRAMS: Objection. It calls
18 for opinion testimony.

19 Are you done? Were you finished with
20 your question?

21 MS. CLARK: Yes.
22 MS. ABRAMS: It calls for opinion
23 testimony. It lacks foundation and calls for
24 speculation, and it's vague and ambiguous.

25 Q. (By Ms. Clark) Do you have --

1 5 1

1 A. Based on our own data, as reported in
2 the DeGesero reports, the answer is that we did
3 not have exposures on a time-weighted basis above
4 five million particles per cubic foot.

5 Q. Okay. And could you briefly tell the
6 jury what a time-weighted average means when you
7 refer to that term?

8 A. Yes. The exposures in the work
9 environment are not uniform. They tend to go up
10 and down, depending on particular tasks that are
11 being done by the people at work. And the
12 time-weighted average concept says that for the
13 time where you might have a peak above the
14 number, you can take credit for the time when you
15 have a peak or a depression below the number.

16 In other words, you're allowed to
17 average it out. That's what time-weighted means.

18 Q. All right. And -- and that was -- that
19 was a process that was used in -- was used in
20 reasonable and responsible industrial hygiene
21 practice?

22 MS. ABRAMS: Objection. It calls

23 for an expert opinion.
24 A. That was the way that industrial hygiene
25 was the way these numbers were used by

1 5 2

1 industrial hygienists.

2 Q. Okay.

3 A. These numbers being threshold limit
4 values.

5 Q. And do you have an opinion, Mr. Hoyle,
6 based on your knowledge and experience and
7 training as an industrial hygienist, whether a
8 pipefitter -- and I'm talking about a pipefitter
as opposed to a pipe coverer, now -- a pipefitter
10 or similar craftsman working in a plant setting,
11 had exposures to asbestos under the threshold
12 limit values of five million particles?

13 MS. ABRAMS: Objection. It's vague
14 and ambiguous. It lacks foundation. It calls
15 for speculation, and it calls for an expert
16 opinion beyond the expertise of this witness.

17 Q. (By Ms. Clark) Do you have such an
18 opinion?

19 A. My -- my -- my expert opinion as a
20 certified industrial hygienist is that the
21 exposures of people, other than the insulators
22 themselves, would not have exceeded the
23 guidelines in effect.

24 Q. And what do you base -- on what do you
25 base that opinion?

1 5 3

1 MS. ABRAMS: The same objection.

2 A. I base this on a publication of an
3 epidemiology study done at the Dow Chemical
4 Company which compared the state of the health of
Dow pipe coverers to Dow pipefitters to control
6 groups.

7 Pipefitters were the same as the
8 controls. The pipe coverers showed an increased
incidence of lung cancer for those who were
10 smokers, as well as pipe coverers. It showed
11 that the pipe coverers who didn't smoke were the
12 same as other smokers. And there was a factor of
13 eight or ten, or something like that, greater
14 likelihood of lung cancer for people who were
15 smokers and pipe coverers than there would have
16 been if they had just been smokers.

17 Q. All right. Approximately when was this
18 study done?

19 A. From the early 170's.

20 Q. All right. And at this time, it's --
21 well, it's almost twenty until 3:00, or so.
22 Mr. Hoyle, I appreciate your -- your attention
23 this afternoon.

24 MS. CLARK: And I pass the
25 witness.

1 5 4

1 Why don't we go off the record for just

. a second and talk about the scheduling just a
3 little bit?

4 THE VIDEOGRAPHER: The time is

. 2:39 p.m.

6 Off the record.

7

8 (Whereupon, there was a discussion held off
. the record, after which the proceedings continued
10 on the stenographic record as follows:)

11

12 MS. CLARK: Gerry, if we might,
13 everybody here, or at least we are in agreement
14 that questions that are dealing with cancer
15 testimony would be used only in cases where that
16 issue can be -- that is, tried with the rest of
17 the issues in the case.

18 There are some jurisdictions,
19 apparently, where both cases are segmented out.
20 Their asbestosis cases are tried separately from
21 cancer cases, and that there wouldn't be any
22 disagreement with using testimony only relevant
23 to certain cases in those jurisdictions where
24 that is appropriate.

25 MS. ABRAMS: What are you -- are

1 5 5

1 you requesting that -- I'm not sure what your
. statement is.

3 MR. HOOD: Well, we don't want to

4 have to have to object everytime the word

. "cancer" is mentioned if it's irrelevant in a

6 given case.

7 MR. BEZET: Well, aren't you

8 operating under a stipulation that all objections

. are reserved except as to the form of the

10 question and responsiveness of the answer?

11 Relevancy is preserved.

12 That covers it, doesn't it?

13

14 (Whereupon, there was a discussion held off

15 the record, after which the proceedings continued
16 as follows:)

1 7

18 MR. HOOD: My name is Bobby Hood,
19 and it's my understanding that Plaintiff counsel

20 and the defense counsel understand that the
21 questioning of this witness, whether a reference
22 is made to cancer or malignancy or tumors is only
23 to be used when this deposition is shown to a
24 jury in a case where such references are relevant
25 and admissible in that particular case.

1 5 6

1 Does anyone disagree with that?

MR. BEZET: I am.

MS. ABRAMS: Yes, I do, too.

MR. COVERT: I do, too.

MR. HOOD: Now, if you do disagree,
6 does that mean that you want us, everytime you
7 mention the word "cancer," to interrupt you and
8 object because

9 MR. COVERT: No. Just make a
10 general objection in the Louisiana cases. That's
11 all I'm concerned with.

12 MS. HOOD: Will this objection,
13 then, be sufficient to run throughout any
14 questions by any Plaintiff counsel, so it doesn't
15 have to be repeated each time the word "cancer"
16 is mentioned?

17 MR. COVERT: Speaking for myself,
18 yes.

19 MR. HOOD: How about any other

20 Plaintiffs, counsel?

21 MS. ABRAMS: That's fine with me.

22 MR. HAINKEL: I'm going to join in
23 the objection for the Louisiana cases, too, with
24 reference to cancer.

25 THE VIDEOGRAPHER: The time is

1 5 7

2:43 p.m. On the record.

2

3

EXAMINATION

4 QUESTIONS BY MR. COVERT:

5
6 Q. Mr. Hoyle, my name is Gerry Covert, and
7 I'm here primarily inquiring about the Dow
8 Plaquemine facility, and I think you mentioned
that once, in passing.

10 Were you, sir, in industrial hygiene
11 when the Dow Plaquemine plant was built?

12 A. Yes.

13 Q. And do you recall the time stage on
14 that, Mr. Hoyle?

15 A. Not exactly, because I answered you
16 quite positively because I was in industrial
17 hygiene and had some contact with the Texas
18 division during the planning of the Louisiana

19 Division, but I just can't remember what year the
20 Louisiana Division took off.

21 Q. Well, as I told someone, I did
22 abstracting in law school when they were building
23 that, so it was in the 1950's. Does that sound
24 about right?

25 A. All right, I'll agree.

1 5 8

1 Q. All right. I was interested -- you said
you had something to do with the planning of the
3 Plaquemine facility. What did you mean by that,
4 Mr. Hoyle?

5 A. Well, I had -- there was an opportunity
6 for industrial hygiene input through the
7 engineering stages of various Dow plants. And it
8 was in that context that I made the comment. And
my function would have been to furnish
10 information to the engineers, so that they could
11 plan a facility that would make it possible to
12 operate the plant in a work environment that was
13 healthful.

14 Q. I see. Did you actually consult with
15 the engineers relative to your knowledge of
16 asbestosis?

17 A. No.

18 Q. You did not?

19 A. I did not.

20 Q. All right. Is there any reason? Were

21 you not called upon to --

22 -A. Asbestos was -- I was not called upon,
23 and I think the reason was that asbestos related
24 to specific trades, and the -- I would have been
25 most likely to have been consulted or asked for

1 5 9

1 information concerning the control of chemicals
from process and within process, because the
3 tradesmen -- we -- would have been handled as
4 special cases by Maintenance Engineering involved
in any Dow use of asbestos at Plaquemine.

6 THE VIDEOGRAPHER: Excuse me,

7 Mr. Hoyle. Your microphone is slipping off.

8 THE WITNESS: Oh, dear.

9 THE VIDEOGRAPHER: The time is

10 2 :47 p.m.

11 Off the record.

12 THE VIDEOGRAPHER: The time is

13 2:47 p.m.

14 On the record.

15 Q. (By Mr. Covert) Mr. Hoyle, let me back
16 up just a little bit.

17 When you went to work for Dow in 1941 or
18 1942, were you aware that asbestos insulation was

19 used in the Dow facility?

20 A. I became aware of it very soon after,
21 but not in the context of industrial hygiene --

22 Q. Okay.

23 A. -- because my job, at that time, had
24 absolutely nothing to do with industrial hygiene.

25 Q. Fine. About when did you become aware

1 6 0

1 of the usage of asbestos-containing insulation at
Dow?

A. In 1941, because I was a pipe shop
4 estimator at that time, and I estimated pipe
covering work.

6 Q. All right. And at that time, the pipe
7 covering did contain asbestos for the hot

8 insulation?

9 A. The hottest insulation used asbestos.

10 Q. Was there any difference in the type hot
11 insulation used at Midland, as opposed to
12 Plaquemine, if you know?

13 A. I don't think so --

14 Q. So to --

15 A. -- but I don't know for sure.

16 Q. To your knowledge, when the Dow plant

17 was built, the hot insulation did contain
18 asbestos, as far as you know?

19 A. Yes, as far as I know, on hot
20 applications, asbestos was used at Dow
21 installations until the late '60's or
22 early '70's.

23 Q. And do I understand you from the
24 previous question that I asked, that although you
25 had had knowledge since 1948, approximately --

1 6 1

1 A M-hlm.

2 Q. -- that asbestos could cause asbestosis,

3 you were not called upon or were not asked about
4 the usage of asbestos in the construction of the
Plaquemine plant?

6 A. I furnished information to the Safety
7 Department, who did have an interest in the
8 insulators, the pipe coverers, from the safety
point of view. And we resourced people to them
10 in -- in determining safe operation for pipe
11 coverers.

12 Q. I'm speaking not only of pipe coverers
13 in the plant, but during the initial construction
14 of the Plaquemine plant, too, Mr. Hoyle.

15 MS. CLARK: Let me object. It's
16 not really an objection, but I believe that there
17 are a number of different parts of the plant.
18 It's a -- you know, the facility has several
19 different buildings, and they were built at

20 different times. So that might be unclear as far
21 as when these were all applied.
22 Q. (By Mr. Covert) If -- if my question
23 confuses you, Mr. Hoyle, be sure to stop me, but
24 I'm concerning myself --
25 A. Tell me -- would you repeat it, please.

1 6 2

1 I'm sorry. I lost my train of thought.
2 Q. Me, too. Concerning ourself --
3 MR. COVERT: Well, you'd better
4 read the question back to me.
5
6 (Whereupon, the requested testimony was
7 read back by the court reporter.)

9 Q. (By Mr. Covert) Were you, likewise,
10 concerned with their safety, as an industrial
11 hygienist?

12 A. The -- early on, and I think that's
13 early on, maybe the late end of early on, the
14 relationship with contractors in Dow facilities
15 was that they were independent operators. They
16 had their own safety programs, and the people who
17 applied different trades were expected to know
18 how to take care of themselves, as far as their
19 own trade is concerned.

20 And on that basis, early on, I can't be
21 sure that any information that I had, as an
22 industrial hygienist, whether it got to them or
23 not, I'm not sure. If it did, it got through the
24 Safety Department, who at some point in time, in
25 Midland, I can't speak for Plaquemine, but at

1 6 3

1 some time point in time in Midland, in

the 160's, the company started to be more
3 aggressive concerning the safety behavior of
4 contractors on site.

5 But their contracting was mostly done by
6 Austin Company, and this is a big company. And
7 I'm not sure that we would have been welcome if
8 we had tried to tell them to fit pipe and put on
covering.

10 Q. Okay.

11 A. And I think they actually went out and
12 bought the covering and brought it on site,
13 probably, because I do know that Austin Company
14 had their own Purchasing Department.

15 Q. But the -- the insulation that they
16 would supply to Plaquemine would have been
17 according to Dow specifications?

18 A. Been according to Dow specs, that's
19 right.

20 Q. Now, there are two things that I'm not
21 sure of and I wish you would help me clarify.

22 You answered many questions about plant
23 environment, as to the pipe coverers in the plant
24 environment at Dow.

25 A. M-hlm.

1 6 4

1 Q. What did you mean by that, Mr. Hoyle?

2 A. Well, the plant environment is the -- is

3 when a pipe coverer would be applying his trade
4 in an operating plant, as opposed to applying his
5 trade in a -- under new construction.

6 Under new construction, then, by my
7 definition, that's not a plant environment.

8 Q. What -- what would "new construction,"
9 imply to you, as an industrial hygienist?

10 A. Oh, a brand-new plant.

11 Q. Would in your opinion, the exposures to
12 asbestos dust be greater under the circumstances
13 of new construction?

14 A. I don't --

15 MS. ABRAMS: objection. It calls
16 for an expert opinion.

17 A. -- know why it would be, but it would be
18 related to the -- to applying the trade of pipe
19 coverer. And whether you put pipe covering on a
20 pipe in a plant where there's no chemical
21 operation, or whether you're putting pipe
22 cove-ring on a piece of pipe in a plant that's
23 operating, I don't see why it would make any
24 difference, as far as the -- the pipe coverer is
25 concerned, as far as his exposure to the contents

1 6 5

1 of the covering that he's using.

2 Q. Would any time -- would time make any

3 difference in the utilization or exposure to that

4 asbestos insulation

5 A. I don't quite understand your question.

6 Q. Well, you said in the plant environment
7 someone would be using it part-time, and you
8 didn't see any difference in new construction, in
9 which I assume there would be a great deal of
10 applying insulation with the hot pipes --

11 A. To the extent that they might have made
12 an assembly-line operation on a new construction,
13 there could have been a difference. I'm not
14 aware that they did that, but I can -- if you
15 were to organize yourself so that one man did
16 nothing but cut pieces of pipe covering, that
17 would not be what I was talking about.

18 Q. I see.

19 A. Do I -- do I make myself plain?

20 Q. I think you do. I think you do.

21 A. Okay.

22 Q. The other thing, I'm having a hard time

23 quantifying five million particles per cubic
24 foot. Can you see the material -- the dust in
25 this amount of vapor or mist?

1 6 6

1 A. You can -- you cannot see the respirable

dust, because it's too small. The techniques that are used for sampling actually are developed in such a way that you -- that what you get in your sample is respirable dust.

Q. So someone working with insulation which contained asbestos could conceivably be breathing these sort of particles without knowing it; is that correct?

A. It's highly unlikely, because usually the respirable dust would be associated with the bigger particles, which you can see.

Q. Okay. How about someone -- well, strike that question.

Did there ever come a time, Mr. Hoyle, where Dow started looking for alternative products to take the place of asbestos in the plants?

A. Yes, sir.

Q. And about when did that come about?

A. That was in the late 160's and it was

associated with the time that I was -- that I testified to when the threshold limit value was at five, and it was proposed to reduce it to two.

Q. And --

A. And at that point, we first had to find out whether the new number -- what effect that would have on our operations. And that was the basis for the DeGesero study that we talked about at length this --

Q. What do you mean, what effect it would have on your operation?

A. Well, if we were -- if we needed to know what the exposures were, and with fair accuracy, and up until that point, we had been satisfied that we were below five million particles, but we hadn't done an in-depth study to know exactly where we were. We knew we were below, but we didn't know just where below.

So the question then is, if we -- if we have a new number to work with, will that affect our safe practices. And so that's why we did the in-depth study, which told us where we were, and we found we were, indeed, above two million particles, and that prompted us to go ahead and look for alternative materials, which you just ask'd about.

Q. Well, what alternative materials did you look at, Mr. Hoyle?

A. I wasn't involved in the looking at

alternative materials. That was done by the Maintenance Engineering Group. And so they searched the marketplace and finally found materials that could be used for high temperature, most high temperature installations

6 that had no asbestos.

7 But I wasn't involved in that enough to
8 even know what the -- I just knew there was no
9 asbestos and had little interest in it beyond
10 that point, because it was no longer an
11 industrial hygiene problem.

12 Q. I see. Were you with Dow when what's
13 known as "Asbestos Abatement Programs" began,

14 Mr. Hoyle?

15 A. That's about the time I left.

16 Q. I see.

17 A. And the kind of thing -- may I ask you a

18 question now?

19 Q. Sure.

20 MS. CLARK: Mr. Hoyle, you really
21 need to answer his questions, because he's not
22 under oath, and if he answers --

23 THE WITNESS: Yeah, okay. I'm
24 curious as to what his terminology meant. Maybe
25 I should say, "Would you restate your question?"

1 6 9

1 MS. CLARK: That's right.

2 MR. COVERT: He's trying to help

3 me.

4 Okay. Could you read it back to him?

5 THE WITNESS: Okay.

6
7 (Whereupon, the requested testimony was

8 read back by the court reporter.)

9
10 Q. (By Mr. Covert) And I think you answered
11 that that's about when you were leaving.

12 A. I think so.

13 Q. Okay. And -- and what, if you know,
14 Mr. Hoyle, was the purpose of replacing this
15 asbestos?

16 A. I beg your pardon?

17 Q. What was the purpose of this asbestos
18 abatement program, if you know?

19 MS. CLARK: Again, answer if you
20 know.

21 MR. HOBSON: Well, "if you know,"

22 means if you know.

23 THE COURT REPORTER: Who said that?

24 MR. HOBSON: He said that.

25 THE COURT REPORTER: Okay.

1 7 0

1 MR. HOBSON: Okay.
2 A. I wasn't involved in detail in
3 describing the so-called abatement program.
4 Q. (By Mr. Covert) Well, let me ask -vou
5 this, Mr. Hoyle: Did a time ever come, in your
6 employment with Dow as an industrial hygienist,
7 when you felt that the use of asbestos was too
8 dangerous to the individuals involved or exposed?
9 A. No.
10 Q. It never did?
11 A. No. The -- when you say "too dangerous"

12 to me, I have to answer you that way, because any
13 material can be handled without its being too
14 dangerous, with the proper precautions.
15 If you'd have -- if your question had
16 gone beyond that point, I might have answered it
17 differently.
18 Q. Well, let's go back not that far.
19 If you could, when -- whether two
20 parts -- two million parts per cubic foot became
21 too dangerous for the utilization of the new
22 employees --
23 A. No,, that didn't make it too dangerous.
24 That simply required that you take different
25 precautions.

1 7 1

1 Q. And those precautions were "stay below
2 that." What else?
3 A. Not necessarily to stay below that, as
4 far as measurements are concerned, but you would
5 have been required more in the way of personal
6 protection as a -- as a program, with that
7 number, than you would have with five.
8 Q. Would you, as an industrial hygienist at
9 the present time, or at the time you left Dow,
10 Mr. Hoyle, recommended the use of insulation
11 containing asbestos?
12 A. If there were -- I -- I could have
13 recommended its use if it were the -- the
14 material of choice, and then I could have
15 recommended precautions that would make it safe.
16 Q. And, again, if you could tell me those

17 precautions.

18 A. They would have been use of personal
19 protective devices, either that or the use of
20 local ventilation during particular operations,
21 or soaking the material. I think I'm describing
22 abatement to you.

23 Q. All right. And one more thing. You've
24 got to put up with me. we spoke a great deal
25 about the the floor tile at Dow, and I

1 7 2

1 understand
2 A. I didn't get your word.
3 Q. The floor tile, the test --
4 A. Oh, the floor tile, yeah. Okay.
5 Q. And I think you -- did I -- did I

6 understand you correctly, sir, that Dow sold the
7 materials which went into making up this floor
8 tile?

9 A. I'm not sure whether our Coatings
10 Technical Service group were successful or not.
11 I can tell you that I know that they were
12 experimenting with various formulations, which
13 hopefully would have developed a market for Dow
14 resins in the floor tile business.

15 Q. Mr. Hoyle, where would I go to try to
16 find out if Dow did ever sell the resins which
17 contained asbestos to other parties?

18 A. Dow never sold asbestos -- any resins
19 containing asbestos. If the asbestos ever got
20 into a floor tile formulation with a Dow resin,
21 it was done by the floor tile company. We --
22 there was no attempt made to develop a product
23 containing asbestos.

24 See, they were trying to break into a
25 into a business that used a different resin, and

17 3 so the formulation would need to be different to accommodate the new resin.
And the only reason

3 the asbestos was there is that that was the way
4 floor tile was made.

5 Q. okay.

6 A. Do you see what I'm saying?

7 Q. Yes, sir. I think I understand.

8 A. okay.

9 Q. Mr. Hoyle, some of my clients have

10 spoken of turnaround operations at Dow. Are you
11 familiar with the term?

12 A. Oh, I know what a turnaround is. This
13 is when you shut down for maintenance.

14 Q. Okay. And would you say, sir, that

15 that's different than the factory environment
16 that we previously discussed?

17 MR. HAINKEL: I object to the form
18 of the question.

19 A. It's different in that the whole plant
20 is shut down. Nothing happens there except
21 maintenance during the turnaround.

22 It's not too different than maintenance
23 done in an operating plant, so far as the
24 tradesmen are concerned, as I can see, as far as
25 any exposures related to their trade. But it

1 7 4

1 would be different in terms of the opportunity
· they might have for exposure to a chemical in
3 process.

4 Our -- generally, maintenance work,
· before the maintenance people are asked to do it,
6 the equipment is freed of any chemicals. If you
7 have a turnaround, that becomes simpler, because
8 you just simply remove all the chemicals from the
9 site.

10 Q. Let's -- let's confine it, if we could,
11 to the insulation --

12 A. Okay.

13 Q. -- relating to turnarounds. Would that
14 make any difference, in your opinion?

15 A. Well, I don't -- I don't think, unless
16 we were to get back to some kind of mass
17 production techniques, that would be associated
18 with it, and then I'm unaware that it was done,
19 because I --

20 Q. Assuming --

21 A. -- I'm simply unaware.

22 -Q. Right. Assuming, Mr. Hoyle, that my

23 clients would say, that during turnaround
24 operations at Dow, the removal of hot insulation
25 resulted in work conditions where it was kind of

1 7 5

1 like snow falling on them, and this assume --
· presumably contained

3 A. over how long a period of time would
4 this have happened?

5 Q. Well, say for several weeks.

6 A. I would - I would be suspicious of
7 their observations.

8 Q. All right. Well, for several days,
· let's put it into that time frame.

10 A. Well, if you had said
11 MR. HAINKEL: I object to the form.
12 Was that a question, Gerry, or ,
13 MR. COVERT: I confined it
14 converted it to several days from several weeks,
15 to see where we're going.
16 MR. HAINKEL: I object to the form
17 of the question.
18 Q. (By Mr. Covert) If you can, answer that,
19 if you would, please.
20 MR. BEZET: Well, what was the
21 question?
22 -A. I can answer it this way, and this is
23 based on my casual observations over the years.
24 It might be possible, that for a very
25 short period of time, there might be a case where

1 7 6

1 a fairly large piece of insulation would just
· come apart, you know. And that, I wouldn't be
3 surprised at. I don't think it would last for
4 very long. It would settle to the ground and
· they'd sweep it up and take it away. Now, that's
6 what I'm envisioning.

7 Now, the idea that it was snowing
8 asbestos, I haven't been -- I've been around
· turnarounds, and I've never seen it snowing
10 asbestos.

11 Q. (By Mr. Covert) Okay. Would that, to
12 you, as an industrial hygienist, mean exposure
13 greater than the five parts per million per cubic
1 4 f o o t ?

15 A. There would be -- it would be difficult
16 for me to say "yes" or "no," because what you're
17 seeing are big pieces falling down, and the
18 amount of respirable dust would relate to how
19 friable that material was at the time.
20 Q. And the respirable dust, Mr. Hoyle, does
21 it disintegrate, or does it remain on site after
22 it's cut?
23 A. The respirable dust?
24 Q. Yes, sir.
25 A. It -- respirable dust is pretty small,

1 7 7

1 and it floats for a long time in the air. And

the wind comes along and blows it away and -- and disperses it. So it wouldn't be around the site for any length of time, I don't think.

Q. So it could, in this -- is it your opinion that this wind, et cetera, could stir up a respirable dust causing further exposure to people who work --

MR. HAINKEL: I object to the form of the question. I don't think that's his testimony.

A. The -- I think your inference was that they would be exposed to high concentrations. And the sampling that I've done in my life would tell me that that the answer would be known or probably known, because when the wind blows in an outdoor operation, the dilution factor is tremendous.

Q. In your studies, Mr. Hoyle, what is the exposure -- is the exposure required to contract mesothelioma?

A. I haven't the -- I haven't the least idea. I don't think any one of us knows.

Q. So you don't know the exposure to cause mesothelioma?

1 7 8

A. The -- now, let me qualify by saying that I've been spending my time doing other things involving the literature for the past 14 years, but as I know it, at the time that I stopped having regular contact with the literature, there was no quantitative relationship between levels of exposure and mesothelioma. There was even a question as to whether mesothelioma had anything to do with asbestos most of the time that I was an industrial hygienist.

Q. That was the time that you left Dow,

13 that was the consensus; is that your testimony?

14 A. At that time the consensus may have been
15 changing a little bit, but there was question as
16 to -- early on, there was question as to whether
17 or not those reported cases were caused by
18 asbestos. I am unaware of any studies that
19 related mesothelioma to levels of exposure.
20 That's just not to say that there were none, but
21 to say that I'm unaware of any.

22 Q. I'm reviewing my notes, and I just want
23 to clarify one more point.

24 Did I understand you correctly that you
25 stated, in the 160's., that new information from

1 7 9

1 toxicology revealed diseases from working with
· asbestos -- asbestos, including mesothelioma,
3 came to light?

4 MR. HAINKEL: Object to the form of
· the question.

6 A. I think that I recognized the fact that
7 in the literature and in the health sciences
8 area, this question was being raised.

9 Q. Did you accept it, sir, as the rules
10 that you wish to promulgate at Dow?

11 A. We -- because asbestos was a very small
12 part of our industrial hygiene concern, very
13 small, we couldn't justify doing any
14 toxicological investigation of a material which
15 was made by someone else and sold to us for use
16 in a specific trade.

17 And so I did not ever become involved in
18 trying to judge what the number should be.
19 Rather, I accepted the number as it was and went
20 ahead with industrial hygiene accordingly.

21 That's the way I have to answer your
22 question.

23 Q. Sure. And I guess it goes back to your
24 relying on the literature at that time; is that

25 correct?

1 8 0

1 A. Well, we relied on -- on what was common
knowledge. Another way to say it is literature.
3 It goes beyond that. It's spoken word, too,
4 but --, - spoken literature.

5 Q. Okay. Mr. Hoyle, let me ask you one
6 more question for some of the other Louisiana
7 lawyers that are here: Are you familiar with the
8 products, the manufacturers of the insulation,
asbestos-containing insulation products at Dow in
10 Plaquemine, the brands?

11 A. The brands?

12 Q. Yes, sir.

13 A. No.

14 MR. COVERT: Excuse me just a

15 second.

16 That's all I have.

17 THE WITNESS: Okay.

18 MS. CLARK: Thank you, Mr. Covert.

19 And I believe, at this time, we'll stop
20 for today, and we'll start again in the morning.

21 Is 9:30 a satisfactory time with
22 everybody, for scheduling? Herschel, are you
23 going to go next?

24 MR. HOBSON: I don't know.

25 MS. CLARK: Is that satisfactory

1 8 1

1 with you all?

2 Okay. Thank you very much.

3 THE VIDEOGRAPHER: The time is
4 3:12 p.m., and we're off the record.

5
6 (Whereupon, the video deposition of
7 Mr. Harold Robert Hoyle was recessed for the day,
8 to be reconvened on the 19th day of February,
1991, at 9:30 a.m.)

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Re: Cause No. A-134,614
Russell H. Allen et al vs. Anwar Petrofina, Inc. Deposition of. Harold Hoyle
(B91-8), (B91-9), (B91-11)

Dear Ms. Clark:

Enclosed herewith please find a copy of the original deposition of the witness named above. Please have the witness review and sign the jurat page before any Notary Public prior to returning to our office.

Should the witness find it necessary to make any changes or additions to the deposition, please use the amendment sheets enclosed.

Should you have any questions regarding this matter, please feel free to contact our office.

Sincerely,

M. A. Rangel
Scheduling Department

mar
Enclosure
cc: -Mr. Hershel L. Hobson Ms. Kathy Kubach Mr. George R. Covert Ms. Demse
Abrams Mr. Peter Boyd Wells, III Mr. Thomas W. Duesler Mr. Duncan S. Stuart Mr.
James H. Powers Mr. Robert H. Hood Mr. Gary A. Bezet

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