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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
GALVESTON DIVISION

BOBBY R. SANFORD

VS.

JOHNS-MANVILLE SALES
CORPORATION, ET AL

X
X
X
X
X
X

Civil Action
No. G-82-325

DEPOSITION OF:

JOHN L. MYERS

DEPOSITION

FILE COPY

94-86

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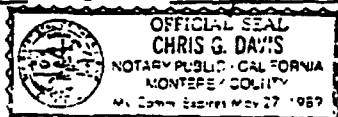
AMENDMENT SHEET

CASE Bobby R. Sanford DEPOSITION OF: John L. Myers

I wish to amend the foregoing deposition in the following respects:

Page 29 Line 20 Now Reads: "depository"Should Read: "deposit"Reason for Change: editorialPage 38 Line 3 Now Reads: "session of that started"Should Read: "session started"Reason for Change: editorialPage 40 Line 18 Now Reads: "also I had the"Should Read: "also the"Reason for Change: editorialPage 51 Line 17 Now Reads: "the work of the applications,"Should Read: "the work on"Reason for Change: editorialPage 62 Line 23 Now Reads: "Cirvello", also p 63 lines 1, 2, 4, 25Should Read: "Sicrella"Reason for Change: EditorialPage 69 Line 11 Now Reads: "applied"Should Read: "supplied"Reason for Change: editorialPage 73 Line 2 Now Reads: "for"Should Read: "or"Reason for Change: editorial

Signature

John L. MyersSUBSCRIBED AND SWORN TO before me, the undersigned authority, on
this 30th day of September, 1986.
Ch G Davis
 Notary Public in and
 for the State of ~~Texas~~ California

UCAREF00012461

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Page 91 Line 18 Now Reads: "Dihedro"

Should Read: "Dimitri"

Reason for Change: Editorial

Page 100 Line 21 Now Reads: "as a customer of ours,"

Should Read: delete

Reason for Change: Editorial

Page 110 Line 1 Now Reads: "As-Rock"

Should Read: "AZ rock"

Reason for Change: Editorial

Page 10 Line 2 Now Reads: "Niagra"

Should Read: "Niagara" } also several other locations

Reason for Change: Editorial

Page Line Now Reads:

Should Read:

Reason for Change:

Page Line Now Reads:

Should Read:

Reason for Change:

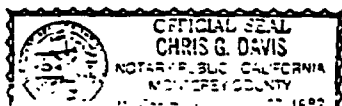
Page Line Now Reads:

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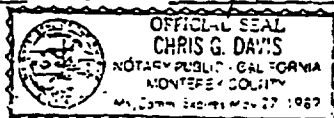
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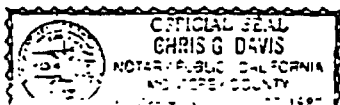
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 Notary Public in and
 for the State of Texas California

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DEPOSITION AND ANSWERS OF JOHN L.
MYERS, called as a witness by the Plaintiff, taken
before Thomas A. Goldstein, Certified Shorthand
Reporter in and for the State of Texas, at the
office of Baker & Dotto, 3300 One Shell Plaza,
Houston, Texas, on the 4th day of September, 1986,
beginning at 2:10 p.m., pursuant to Notice and the
following stipulations and waiver of counsel:

A P P E A R A N C E S

Mr. Lawrence Madeksho, Attorney at Law,
8320 Gulf Freeway, Suite 218, Houston, Texas,
77087, and Mr. Robert E. Ballard, of the law firm
of Abraham, Watkins, Nichols, Ballard, Onstad &
Friend, 800 Commerce Street, Houston, Texas,
77002, appearing for the Plaintiff.

1
2
3
4 Mr. Arthur Stamm, of the law firm of
5 Messrs. Baker & Botts, One Shell Plaza, Houston,
6 Texas, 77002, appearing for The Asbestos Claims
7 Facility.

8
9
10 Mr. R. Paul Yetter, of the law firm of
11 Messrs. Baker & Botts, One Shell Plaza, Houston,
12 Texas, 77002, appearing for Ruberoid Company.

13 -
14 -
15 Mr. Jeff McClure, of the law firm of
16 Messrs. Butler & Binion, 1600 Allied Bank Plaza,
17 Houston, Texas, 77002, appearing for Raymark
18 Industries.

1 IT IS STIPULATED AND AGREED by and
2 between counsel for the respective parties hereto:

3 That this deposition is being taken
4 pursuant to the Federal Rules of Civil Procedure.

5 That the original of this deposition
6 shall be presented to the attorney for The
7 Asbestos Claims Facility who shall in turn submit
8 it to the witness for his examination and signing
9 before any notary public, and thereafter said
10 attorney for The Asbestos Claims Facility shall
11 return same to the officer taking this
12 deposition.

1 JOHN L. MYERS,
2 having been first duly sworn, testified upon his
3 oath as follows:

4
5 EXAMINATION

6
7 QUESTIONS BY MR. MADEKSHO:

8 Q. Would you state your full name for the
9 record, please, sir.

10 A. John L. Myers.

11 Q. And how old a gentleman are you?

12 A. Fifty-eight.

13 Q. And who are you employed by?

14 A. KCAC Incorporated.

15 Q. You'll have to explain that for us.

16 A. That's the name of the company. It's
17 just letters.

18 Q. Is this a subsidiary or does it have
19 some affiliation with Union Carbide?

20 A. No, it doesn't.

21 MR. STAMM: The witness --

22 MR. MADEKSHO: Let's go off the
23 record a minute.

24
25 (Discussion off the record.)

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Q. (By Mr. Madekshe) Mr. Myers, you are familiar with Union Carbide. And, as I understand it from talking with your lawyer Mr. Stamm, you have been under some type of contract with them for some period of time; is that correct?

A. Not a contract, no. I've been employed by them.

Q. You have been employed by them. When were you employed by them, sir?

A. In 1951.

Q. And in what capacity did you first go with the corporation?

A. An hourly employee.

Q. With what division?

A. The Nuclear Division.

Q. Let's back up, if we could for a minute, and try to get an understanding as to the organization of Union Carbide at the time that you were employed with them in 1951. Could you give us some explanation in regard to the organization concerning its divisions and functions?

A. No, I couldn't -- you mean of the whole corporation?

Q. Yes, sir, if you could.

1 A. No, I couldn't at that time. I was
2 employed by the Nuclear Division and had little --
3 had no contact with other parts of the
4 corporation.

5 Q. Were you familiar with the fact as to
6 whether or not Union Carbide actually had other
7 divisions?

8 A. Yes, I probably was.

9 Q. At that time in 1951 or at this time?

10 A. At this time I am for sure.

11 Q. Okay. What we're trying to do, Mr.
12 Myers, obviously is just find out information
13 about Union Carbide in regard to some specific
14 items. And I'm sure you've had the opportunity to
15 discuss these items with Mr. Stamm, have you not?

16 A. Yes.

17 Q. And you've had an opportunity to see
18 this list of these approximately nine items?

19 A. I've had the list read to me. I have
20 not seen it.

21 Q. Okay.

22 MR. BALLARD: Excuse me. I'd
23 like to get a copy of this Notice made and
24 attached to the deposition.

25

1 (Exhibit No. 1 marked for
2 identification.)

3
4 Q. (By Mr. Madeksho) Mr. Myers, when did
5 you first leave Union Carbide?

6 A. As an employee?

7 Q. Yes, sir.

8 A. On June 30th of 1985.

9 Q. When you were first employed in 1951
10 with Union Carbide with the Nuclear Division, what
11 were your duties at that time, sir?

12 A. The first employment was primarily a
13 waiting period to become acclimated to some of the
14 operations that were going on. I was actually in
15 a bull pen, as they call us. All new hires
16 were -- I guess just an educational period for
17 some months until I took over, was actually given
18 some duty.

19 Q. What was your educational background
20 prior to being hired by Union Carbide?

21 A. I have a B.S.Ch.E. from Purdue
22 University.

23 Q. Did you have any studies in
24 furtherance of any graduate degrees after hiring
25 on with Union Carbide?

1 A. No.

2 Q. The Nuclear Division of Union Carbide,
3 basically what function did they serve for the
4 corporation?

5 A. They operated facilities for the
6 Atomic Energy Commission.

7 Q. And so engaged in that particular type
8 of activity, what types of materials did they
9 handle or process?

10 A. I can only speak to the locations
11 where I was. It was primarily uranium.

12 Q. And what location was that, sir?

13 A. This was Oak Ridge, Tennessee.

14 Q. During your tenure with the Nuclear
15 Division, and, by the way, were you with the
16 Nuclear Division up until the time that you left
17 Union Carbide in June of 1965?

18 A. No.

19 Q. What other divisions were you with
20 other than the Nuclear Division? And if you could
21 give me some type of time reference, I'd
22 appreciate that.

23 A. I was with the Nuclear Division in
24 Paducah -- in Oak Ridge, Tennessee and then
25 Paducah, Kentucky from '51 until 1966, at which

1 I transferred to the Metals Division in
2 Niagara Falls, New York.

3 In 1967, I went into the Chemicals and
4 Plastics Division and transferred to the asbestos
5 mining and milling operation in King City,
6 California.

7 In 1970, I transferred back to Niagara
8 Falls in the Metals Division as Marketing Manager
9 for Asbestos.

10 In 1981, I transferred back to King
11 City, California as Product and Production Manager
12 for the Asbestos Operations.

13 Q. Mr. Myers, when did you first become
14 familiar with the fact that Union Carbide was
15 either buying, processing or selling materials
16 containing asbestos?

17 A. Probably when I was approached in 1966
18 about transferring from the Nuclear Division to
19 the asbestos operation.

20 Q. And this was in King City, California,
21 was it not?

22 A. No, first Niagara Falls.

23 Q. Niagara Falls, I'm sorry.

24 At what point in time were you
25 transferred to the King City asbestos mine in

1 California?

2 A. In 1967.

3 Q. 1967. What phase of the operation was
4 that particular mine in? Was it first beginning
5 or had the mine been in operation for a number of
6 years?

7 A. The mine and mill were started in
8 1963.

9 Q. Okay.

10 A. I'm sorry. The production was started
11 in 1963.

12 Q. While you were also with the Nuclear
13 Division, weren't you also involved with
14 processing of asbestos fibers and asbestos ore as
15 well?

16 A. In the Nuclear Division?

17 Q. Yes, sir.

18 A. No.

19 Q. Who was the president of the Nuclear
20 Division at that time with Union Carbide?

21 A. I don't remember.

22 Q. Was it Mr. Lyman Bliss? Does that
23 name sound familiar?

24 A. I know the name, I don't know that he
25 was president.

1 Q. At the time that you went to work in
2 1967 with, I believe it was, the Metals and Mining
3 Division?

4 A. Mining and Metals.

5 Q. That was the proper title?

6 A. Yes. I'm sorry, it was changed later
7 to the Metals Division sometime. That was '66.

8 Q. Are you familiar with a gentleman by
9 the name of B. R. Buck, Burton Buck?

10 A. I think I remember that name, yes.

11 Q. And who was he?

12 A. He might have been, I think, personnel
13 perhaps.

14 Q. Was he not the president of that
15 division? Does that help refresh your
16 recollection?

17 A. Not that I know of.

18 Q. What is your understanding as to how
19 long the asbestos mine at King City had been in
20 operation?

21 A. It was started in 1963.

22 Q. From whom was Union Carbide purchasing
23 their asbestos fibers prior to 1963?

24 A. I have no idea.

25 Q. Who were they purchasing the asbestos

1 fibers from in 1963 during the time that you were
2 involved with the Metals and Mining Division or
3 the Mining and Metals Division?

4 A. Which location? I don't --

5 Q. At any location, sir.

6 A. I'm not familiar with that. That's
7 not in my -- I'm not familiar with that.

8 Q. Are you familiar with the fact that
9 Union Carbide purchased asbestos fibers from other
10 companies?

11 A. I became familiar through the years.
12 I don't know when I gained that knowledge.

13 Q. With whom did you become familiar with
14 as to the source of supply of asbestos fibers to
15 Union Carbide?

16 A. I was not involved with supplying
17 asbestos fibers.

18 Q. No, sir, I'm --

19 A. -You mean from other sources?

20 Q. Yes, sir. In regard to from whom
21 Union Carbide was purchasing their asbestos.

22 A. No, I'm not familiar with that.

23 Q. You were aware of the fact that Union
24 Carbide did purchase large quantities of asbestos
25 fibers from other suppliers, other manufacturers?

1 Q. At what time frame?

2 Q. At any time frame.

3 A. Yes.

4 Q. And what time frame are we talking
5 about, let's take it that way?

6 A. And again, it depends on what your
7 definition of large quantity is.

8 Q. Well, let's use --

9 A. Probably in 1970 when I became
10 Marketing Manager.

11 Q. Let's say a million pounds a year.

12 A. A million pounds. What is that, 500
13 tons?

14 Q. Yes, sir.

15 A. Yes, I --

16 Q. Would that sound --

17 A. I assume so. I'm not sure of
18 quantities.

19 Q. -Or would that be a little bit low?

20 A. I have no idea really. I was not
21 involved with purchasing asbestos.

22 Q. Are you familiar with any other sites,
23 other than the King City Mine, as to where
24 asbestos ore was processed by Union Carbide?

25 A. It was not processed anyplace else.

1 Q. Other than King City?

2 A. That's the only facility, yes, the
3 only operation.

4 Q. Did Union Carbide have any other
5 asbestos mines other than the King City Mine? I'm
6 not limiting that to the United States. I'm
7 talking about Canada and South Africa as well.

8 A. I have heard or been not directly
9 involved in an asbestos operation in Zimbabwe. I
10 don't think it has operated or been operated for
11 sometime.

12 Q. Is that Ucar Minerals, mineral fibers?

13 A. I don't know.

14 Q. When did you first become aware that
15 they had an asbestos mine in Zimbabwe as well?

16 A. I can't remember that.

17 Q. Approximately, sir, what decade?

18 A. What decade?

19 Q. Yes, sir.

20 A. The seventies.

21 Q. Early, mid, late seventies, if you
22 can?

23 A. I couldn't tell you.

24 Q. Did Union Carbide also sell asbestos
25 fibers to other consumers?

1 A. Other than themselves?

2 Q. Yes, sir.

3 A. Yes.

4 Q. And to whom did they also sell the
5 asbestos fibers?

6 A. You mean a list of customers?

7 Q. Yes, sir.

8 A. I couldn't remember all of our
9 customer names.

10 Q. Well, let's go back and try to
11 remember the ones that you can.

12 A. Oh, well, Kentile Floors, GAF
13 Corporation, Uvalde, Armstrong.

14 MR. BALLARD: Armstrong Cork
15 Company?

16 THE WITNESS: I don't know
17 whether it was called cork. Armstrong Building
18 Products I think it was.

19 MR. BALLARD: Thank you. I just
20 wanted to clarify that.

21 A. Celotex.

22 Q. (By Mr. Madeksho) Fibreboard?

23 A. Not that I recall.

24 Q. You were familiar with the fact that
25 Fibreboard had a large number of plants in the

1 State of California, were you not?

2 A. No, I'm not familiar that they had a
3 large number of plants.

4 Q. Well, you're familiar with the fact
5 that they had a number of plants in the State of
6 California, are you not, sir?

7 A. I'm familiar with one.

8 Q. Which one is that? Emeryville?

9 A. Somewhere in the Bay Area.

10 Q. Emeryville is in the Bay Area, is it
11 not?

12 A. Yes.

13 Q. And how did you become familiar with
14 the fact that Fibreboard had a plant at
15 Emeryville?

16 A. I can't remember that.

17 Q. Do you recall the extent of any sales
18 that were made to Fibreboard during the period of
19 time that you were with the Mining and Metals
20 Division?

21 A. To my knowledge, there were none.

22 Q. In regard to the general knowledge
23 that you had at the time that the asbestos fibers
24 were being mined and sold by Union Carbide, what
25 was your understanding as to the use of the fibers

1 by the purchasers?

2 A. What do you mean what was my
3 understanding?

4 Q. Your understanding as to what the
5 asbestos filters were to be used for.

6 A. Well, in a wide range of industrial
7 products, vinyl asbestos floor tile.

8 Q. Is that like the floor tile that we
9 have in our homes?

10 A. If you have vinyl asbestos floor tile,
11 yes. There are --

12 Q. I'm sorry, I don't mean to cut you
13 off, but the vinyl asbestos is a type of product
14 that's commonly used in homes and offices and
15 hospitals and schools and things of that nature?

16 A. Yes, yes.

17 Asphalt roofing compounds.

18 Q. Let me just ask you something about
19 the asphalt roofing compounds. Would the asphalt
20 compounds that had the asbestos also be used for
21 roads and parking lots and things of that nature?

22 A. No.

23 Q. Go ahead. I'm sorry.

24 A. The pulp and paper industry. Various
25 resin applications, tape joint compounds.

1 Accur'lect ceiling tile. Let's see. Some plastic
2 reinforcement.

3 I can't recall -- I'm sure there are
4 others, but I can't recall any--

5 Q. Let's back up now, if we could, in
6 regard to the vinyl asbestos floors that the
7 asbestos fibers were being used for and being sold
8 to other manufacturers of these products. To whom
9 do you recall the asbestos being sold to that
10 would use that in the manufacturing and production
11 and sale of vinyl asbestos floor products?

12 A. That would be Kentile, GAF,
13 Armstrong. Another customer I didn't mention,
14 American Biltrite. Uvalde. That should be about
15 all of the --

16 Q. What about Celotex?

17 A. They didn't manufacture floor tile, to
18 my knowledge. If they did, we didn't sell to
19 them.

20 Q. At the same time was Union Carbide
21 also using asbestos fibers to manufacture and
22 produce and sell vinyl asbestos floor tiles
23 themselves?

24 A. No.

25 Q. Let's go to the next area that you had

1 mentioned to us in regard to the asphalt roofing.
2 The same question with regard to the manufacturers
3 that you recall that Union Carbide sold their
4 asbestos fibers to for the manufacture and
5 production and sale of various asphalt roofing
6 products.

7 A. Monsey Products. Those are mainly
8 small -- let's see -- I think there's one called
9 World Asphalt.

10 Q. Now, when I'm asking this, sir, I
11 don't mean for you to limit your enunciation of
12 these various manufacturers to the ones that we've
13 discussed previously. I want you to go ahead and
14 include those in each one of these areas of
15 products that you mentioned to us earlier.

16 A. I'm trying. I think Celotex used our
17 product in a roofing material, but I don't think
18 it was asphalt. I can't remember.

19 Q. What about GAF in regard to the
20 roofing materials?

21 A. No, not to my recall. I can't recall
22 any of the other roofing manufacturers.

23 Q. In regard to the names that you had
24 mentioned earlier as to the manufacturers of these
25 asbestos-containing products to whom Union Carbide

1 was selling their materials, we had discussed a
2 number of them here and I just want to ask you
3 about some of the others. You had indicated that
4 you didn't recall as to whether or not Union
5 Carbide sold their asbestos fibers to Fibreboard.
6 What about Owens-Corning, sir?

7 A. We have sold asbestos to
8 Owens-Corning, yes.

9 Q. And this was during what period of
10 time, to the best of your recollection?

11 A. Oh, in the -- probably in the mid to
12 late seventies, perhaps early eighties. I'm not
13 sure when they stopped purchasing.

14 Q. And as to your recollection and your
15 knowledge, for what was Owens-Corning using the
16 asbestos fibers that you all were selling them
17 during that period of time?

18 A. It was used in polyester resin.

19 Q. And the polyester resins are used in a
20 large variety of products, are they not?

21 A. Yes, I assume they are.

22 Q. Could you tell us some of the more
23 common products that we know of that consist of
24 the polyester resins?

25 A. Boat hulls is one and shower

1 enclosures, automobile bodies. That's all I can
2 think of.

3 Q. Okay, we'll come back and I'll discuss
4 some other of these plastics and products with you
5 a little bit later, but I want to move on to
6 another area.

7 You had indicated that youall were
8 also selling it to the manufacturers in the paper
9 and pulp industry. Which ones, to which of the
10 manufacturers in the paper and pulp industry do
11 you recall that Union Carbide was selling their
12 asbestos fibers?

13 A. - Boise Cascade. That was really -- the
14 market was essentially out when I became Marketing
15 Manager and as -- I'm trying to remember.

16 Q. Did youall also sell some to Champion?

17 A. I think I remember that name. Most of
18 the major companies ran trials. Unfortunately,
19 little sales developed and no continuing sales.
20 That's the reason I have a hard time remembering
21 the names.

22 Q. Do you recall also selling the
23 asbestos fibers to Owens-Illinois in regard to
24 their wood and paper pulp operations?

25 A. No.

1 Q. Do you remember in what connection
2 Union Carbide was selling asbestos fibers to
3 Owens-Illinois during your tenure with them?

4 A. To my knowledge, we did not sell to
5 Owens-Illinois.

6 Q. Have you since learned from whom
7 Owens-Illinois was purchasing their asbestos
8 fibers?

9 A. Do I know?

10 Q. Yes, sir.

11 A. No, I don't.

12 Q. By the way, Mr. Myers, in regard to
13 your King-City Mine, what type of asbestos fibers
14 did that mine consist of?

15 A. It would be short fiber chrysotile
16 asbestos.

17 Q. Just the chrysotile, the short fiber
18 chrysotile?

19 A. Short fiber.

20 Q. How many different grades did you have
21 out there, sir?

22 A. One.

23 Q. And what grade was that?

24 A. We don't classify it by -- if you're
25 talking about Canadian grades, it would all be

1 similar to a Grade 7, Grade 7 RF, which is the
2 shortest Canadian grade.

3 Q. And, also, in regard to your Zimbabwe
4 mine, what type of asbestos fibers did that mine
5 produce, sir?

6 A. Well, you say produce. I'm not sure
7 that it ever produced.

8 Q. Right. I understand. Some of it
9 might be a little fuzzy to you, but I'm simply
10 just trying to get your best understanding.

11 A. You said produce. I have no knowledge
12 that it did produce anything --

13 Q. - They just simply were mining the
14 asbestos ore?

15 A. I'm not sure it's ever been a
16 producing mine. The grades were, as I understand
17 it, 4, 5 and 6.

18 Q. Okay, from the Zimbabwe?

19 A. Yes. Rhodesia at that time. That was
20 primarily from U. S. Bureau of Mines reports that
21 I read.

22 Q. When did you read these U. S. Bureau
23 of Mines reports?

24 A. I told you earlier I cannot remember.

25 Q. I didn't recall us discussing --

1 A. You asked me when I found out about
2 the Rhodesia or about the mines there.

3 Q. But I didn't ask about reading any U.
4 S. Bureau of Mines reports.

5 A. I can't remember.

6 Q. Where did you read these U. S. Bureau
7 of Mines reports?

8 A. Probably in Niagara Falls, New York.

9 Q. Didn't Union Carbide also have a
10 research and development laboratory somewhere
11 there in New York, Tuxedo, New York or somewhere
12 close to there, sir?

13 A. Yes, they have several research
14 laboratories. There is one in Tuxedo, yes.

15 Q. And is this the largest one for Union
16 Carbide?

17 A. I don't know.

18 Q. Where is the other one located there
19 in New York?

20 A. I think there's one in Sterling
21 Forest. Metals research was in Niagara Falls. I
22 think there was some in Tarrytown, New York, and
23 probably other locations with which I'm not
24 familiar.

25 Q. Sir, in regard to some of the

1 responsibilities and duties of the laboratory and
2 research department there at Tuxedo and Sterling
3 Forest, isn't it true that they were also involved
4 with the use of or trying to find new uses for
5 asbestos fiber?

6 A. Not to my knowledge. Although, that
7 was before my involvement.

8 Q. Before your involvement at what period
9 of time? I know it gets a little confusing in
10 regard to these years, but we need to try to keep
11 the record just as straight as we can.

12 A. I became involved in 1966.

13 Q. - If we could, I need to go back and
14 touch on some of these other materials that you
15 had mentioned earlier about the tape joint
16 compounds and as to whom Union Carbide was selling
17 their asbestos fibers during the period of time
18 that you're most familiar with. And who would
19 some of those other manufacturers be?

20 A. The tape joint customers?

21 Q. Yes, sir.

22 A. U. S. Gypsum, National Gypsum, several
23 small companies in Texas. I can't -- those are
24 the major names that I can remember.

25 Q. Let's move on to the acoustical

1 ceiling tiles, if we could, in regard to the names
2 of manufacturers who were purchasing and using and
3 producing products containing the asbestos that
4 you can recall, sir.

5 A. Conwed Corporation. Perhaps Celotex.
6 I'm not sure if we ever sold to Celotex.

7 Q. Let me just ask you something for a
8 second in regard to Celotex. Were you generally
9 familiar with the business that Celotex was in
10 during this period of time, in the late sixties?

11 A. I know they manufactured a lot of --
12 oh, in the late sixties I was not familiar with
13 it. I became familiar when I became Marketing
14 Manager. I know they made a wide range of
15 building products. I'm not any more familiar than
16 that with them.

17 Q. In regard to the acoustical ceiling
18 tiles, Armstrong was also a manufacturer of those
19 products. Do you recall Union Carbide selling
20 asbestos fibers to Armstrong during this period of
21 time as well?

22 A. Not to my knowledge.

23 Q. I recall that Owens-Corning was
24 also -- well, you've already told us about
25 Owens-Corning. I'm sorry.

1 Have there been any other
2 manufacturers that we have not discussed that have
3 come to mind, sir?

4 A. Of ceiling tile?

5 Q. Yes, sir.

6 A. I can't remember another name. I know
7 there was at least one other. Wood Conversion, I
8 don't know whether that was -- I'm sorry, I can't
9 remember any others.

10 Q. Do you know whether or not Union
11 Carbide was selling asbestos fibers to any paint
12 manufacturers?

13 A. Yes.

14 Q. And who would those be, sir?

15 A. Standard Brands, Kelly-Moore. Fuller
16 O'Brien was a paint manufacturer, but I don't
17 think they were using the product in paint. I
18 can't recall any others.

19 Q. Were you familiar with any of the
20 other mines in California at this time period of,
21 say, from '66 up into the seventies?

22 MR. STAMM: You mean asbestos
23 mines?

24 MR. MADEKSHO: Right, the
25 asbestos mines. I'm sorry.

1 A. Yes.

2 C. (By Mr. Madekho) And which mines
3 would those be?

4 A. The Atlas Asbestos Company and
5 Johns-Manville.

6 Q. And was the Johns-Manville mine the
7 one at Coalinga?

8 A. Yes.

9 Q. And they were the majority owners of
10 that mine?

11 A. I don't know.

12 Q. Do you know the type of asbestos that
13 they mined at that location, sir?

14 A. The same type as our mine.

15 Q. The reason I need to ask you about
16 that is because I have read some of the
17 Johns-Manville mining reports indicating that they
18 were mining crocidolite at the Coalinga Mine.

19 A. -That's complete news to me. I'm not
20 aware of any depository in the State of California
21 other than the chrysotile.

22 Q. What was the monthly production of the
23 asbestos from the King City Mine?

24 A. At what period?

25 Q. At the period of time that you're most

1 familiar with, starting in the '66-'67 year.

2 A. Probably would range from 25 to 30
3 thousand tons per year.

4 Q. And of that particular production,
5 what percentage of that would be used by Union
6 Carbide?

7 A. Essentially zero.

8 Q. You're familiar with the various
9 operations in which Union Carbide did use the
10 asbestos fibers, though, are you not?

11 A. Not very familiar, but with some I am,
12 yes.

13 Q. Which divisions are you most familiar
14 with in regard to the purchase and use of asbestos
15 fibers in either the manufacturing, the processing
16 or the production of materials or products?

17 MR. STAMM: To the extent you
18 know.

19 A. Which divisions?

20 Q. (By Mr. Madeksho) Yes, sir.

21 A. The Chemicals and Plastics Division.

22 Q. And let's talk about the chemical end
23 first. What would the asbestos fibers be used for
24 in regard to the Chemical Division?

25 A. That's all one division, Chemicals and

1 Plastics.

2 Q. Right. I understand that. I know
3 that. I understand that. But I want to talk
4 about first in regard to the chemicals end. Maybe
5 it's a situation that I have trouble understanding
6 a distinction between chemicals and plastics, but
7 I'm just talking about it in the generic sense.

8 A. Asbestos was used for a short period
9 of time in a -- well, that wasn't in the Chemicals
10 Division, but in the chemical called Prestone.

11 Q. This is the antifreeze?

12 A. Yes. Well, I'm not sure if it was
13 antifreeze or a stop-leak formulation.

14 Q. And what other chemicals was Union
15 Carbide using the asbestos for that they were
16 selling?

17 A. None to my knowledge.

18 Q. Other than the Prestone?

19 A. Yes.

20 Q. What period of time were they using
21 the asbestos fibers?

22 A. I can't recall.

23 Q. Are they still using the asbestos
24 fibers in the Prestone at this time, to your
25 knowledge?

1 A. Not to my knowledge.

2 Q. Let's talk now about the plastics, if
3 we could. You had mentioned earlier polyester
4 resins and I'll admit to you that I am familiar
5 with the fact that Union Carbide was involved
6 extensively with that, but I don't know all of the
7 particular products that they were making using
8 this particular compound and that's what I need to
9 ask you about. So, if you could simply tell me
10 which products you're most familiar with in regard
11 to the compounds containing asbestos that Union
12 Carbide was using and manufacturing?

13 A. I'm not aware that they ever used or
14 they ever produced polyester resin.

15 Q. You're not familiar with that?

16 A. I don't believe Union Carbide has ever
17 produced polyester resin.

18 Q. How did they use the asbestos fibers
19 in the production of their plastics materials?

20 A. How did they use it? It was blended
21 in with the resin.

22 Q. What type of resin?

23 A. The one I'm most familiar with is
24 phenolic resin.

25 Q. And what would the phenolic resin be

1 used for, sir?

2 A. Various industrial applications.

3 Q. Let's go ahead and talk about them.

4 A. Well, I can't -- I'm not -- you need
5 somebody from that division.

6 Q. Well, sir, we don't have anybody else
7 from the other divisions here today and that's the
8 reason we've got to ask you.

9 A. Coffeepot handles. I think some
10 electrical parts like switch boxes. Products
11 where electrical insulation was is the way I
12 understand it.

13 Q. Well, they used that in regard to
14 electrical cable insulation, did they not?

15 A. I don't know. Not to my knowledge.

16 Q. Did Union Carbide ever produce any
17 high temperature refractory products?

18 A. I don't know.

19 Q. Who with Union Carbide would know
20 that, sir?

21 A. I don't know. I suppose somebody from
22 the graphite. Is that what you're referring to is
23 that type of refractory, carbon products?

24 Q. Well, a combination from the carbon
25 division, also.

1 A. I would think that would be who you'd
2 want to talk to, if they even have a carbon
3 division anymore. I don't know.

4 Q. There has been a change in regard to
5 the organization of the corporation over the years
6 in regard to the reduction in the number of the
7 divisions or the groupings that the corporation
8 presently exists under?

9 A. Yes.

10 Q. Okay. If you could, go ahead and tell
11 us about the various groupings that you understand
12 Union Carbide is organized under at this time.

13 A. I really couldn't tell you with any
14 intelligence.

15 Q. How long did you work with them?

16 A. Thirty-four years.

17 Q. And you don't know anything about
18 that?

19 A. You said at this time and I --

20 Q. Well, let's go back to the time that
21 you were with them at the end of June last year,
22 in '85.

23 A. There was a Umelco Minerals which
24 encompassed part of the old Metals Division.
25 There was -- well, really beyond that I am not

1 familiar with corporate structure. I'm sure there
2 was a Battery Division and a Consumer Products
3 Division. I don't remember if carbon was included
4 with the Unelco. Carbon I think was separate, but
5 I don't know whether it was a division. There was
6 a -- they call it I think a Technology Division
7 where they were promoting and selling their
8 technology.

9 Q. Mr. Myers, let me ask you something
10 right quick while it's on --

11 A. Ag Products Division.

12 Q. In regard to the Metals Division, did
13 that also include the processing of magnesia?

14 A. Not to my knowledge. Magnesia?

15 Q. Yes, sir.

16 A. Not to my knowledge.

17 Q. When you left Union Carbide in '65,
18 what was the use of asbestos, as far as your
19 knowledge, as to any process for the corporation?

20 A. I am not really familiar or I'm not
21 aware that they were using it in any products
22 other than perhaps acetylene cylinders, which is
23 one I failed to mention earlier.

24 Q. I forgot about it myself.

25 A. I'm not sure if they're still using it

1 there.

2 Q. There was another item too in regard
3 to the sale of the filters. Do you recall Union
4 Carbide selling any of their filters to any of the
5 tobacco companies?

6 A. No.

7 Q. Are you familiar with the fact that
8 the tobacco industry was using asbestos in their
9 cigarettes?

10 A. No.

11 MR. STAMM: In their cigarettes
12 or their filters?

13 MR. MADEKSHO: Both.

14 Q. (By Mr. Madeksho) Union Carbide also
15 had a Canadian Division or at least what was
16 called Union Carbide Canada Limited?

17 A. Yes.

18 Q. And what is the extent of your
19 knowledge concerning the mining operations in
20 Canada, sir?

21 A. Essentially nil.

22 Q. How would you become familiar with
23 what the other parts of Union Carbide was doing?
24 When I say parts, I'm talking about the other
25 divisions as far as the operations.

1 A. By reading newsletters, I suppose,
2 stockholders reports, annual reports.

3 Q. Did Union Carbide have any particular
4 newsletters that would be circulated between their
5 particular divisions on a regular basis?

6 A. Not that I recall.

7 Q. What type of information did you --

8 A. Let me modify that a little bit. We
9 received newsletters like from the Benefit Plans
10 Group telling us about benefit plans.

11 Q. Okay, I'm not interested in that,
12 sir.

13 - Did the Mining and Metals Division
14 from time to time have any type of educational
15 gatherings as far as discussing the operations of
16 that particular division either on a yearly basis
17 or on a semi-yearly or once a month, anything of
18 that nature?

19 A. Yes.

20 Q. And how often would those meetings be
21 held?

22 A. As I recall, they were every once a
23 quarter, something like that.

24 Q. And what would be the topics of
25 conversation during these meetings?

1 A. Well, I was not at very many, but
2 usually it would involve production -- well,
3 usually every session of that started off with a
4 safety topic, safety program, reviewing the
5 accident experience, the injury experience. And
6 then descriptions of each group, each operation
7 within the division would discuss their
8 production. There would be a sales report, a
9 report from the research or the technology
10 department. That's about it.

11 Q. In regard to the safety discussions,
12 did the subject of dust controls or dust hazards
13 ever come-up?

14 A. I'm sure it did, yes.

15 Q. Do you recall as to whether or not the
16 subject of dust controls or dust hazards was ever
17 a subject of conversation concerning the King City
18 Mine?

19 A. I'm sure that it had been discussed at
20 some time, yes.

21 Q. Was that an open pit mine that you had
22 there in King City, sir?

23 A. It is an open pit mine, yes.

24 Q. And how do you go about mining an open
25 pit mine in regard to the asbestos ore?

1 A. Using rippers and bulldozers and
2 what's called scraper wagons. It's scooped up,
3 that's about it, and loaded into trucks.

4 Q. And at the time that you were with the
5 King City Mine, did Union Carbide ever require the
6 use of respirators as far as the open mine
7 operations, the open pit mines?

8 A. No, they're not required.

9 Q. I would assume from that that Union
10 Carbide did not view that as a dangerous or
11 hazardous procedure as far as the open pit mining?

12 A. It could have been, except for the
13 dust control measures which were evident in air
14 monitoring reports that the dust levels were so
15 low that a respirator was not required.
16 Respirators were made available and many employees
17 wear them, but it's not a respirator-required
18 area.

19 Q. How did the company go about
20 monitoring the dust levels there at the King City
21 Mine?

22 A. I think in the beginning they used the
23 impinger method and then converted to the membrane
24 filter.

25 Q. Do you know why they converted from

1 the impinger to the membrane?

2 A. I think because everybody else did.

3 It was a recommended change.

4 Q. What was your understanding in regard
5 to the impinger method of measuring dust samples?

6 A. I can't -- I'm not qualified to
7 comment on it. I don't know anything about it.

8 Q. And what was your position there at
9 the King City Asbestos Mine?

10 A. In what period?

11 Q. 1966-1967.

12 A. 1967?

13 Q. Yes, sir.

14 A. I was Technical Superintendent.

15 Q. And as a Technical Superintendent,
16 what were your duties?

17 A. To -- primarily to start up a new part
18 of the plant and also I had the quality control
19 laboratory was under my supervision.

20 Q. There were some pretty good expansion
21 programs going on around '67-'68 with the King
22 City Mine, were there not?

23 A. No. We added this new facility, this
24 new system, but it was not a very major addition.

25 Q. What was the increase in the sale of

1 the asbestos fibers during the period of time that
2 you were involved with the King City Asbestos
3 mine?

4 A. It really varied between 25 and 30
5 thousand tons. I didn't include the last four
6 years where we're down now to about 15 thousand
7 tons per year, at the time when I left.

8 Q. And that was in 1985?

9 A. Yes.

10 Q. Have you heard as to whether or not
11 Union Carbide's asbestos mine at King City has
12 changed in their production since 1985? Has it
13 increased or decreased?

14 A. Maybe I should clarify that. KCAC now
15 operates that mine and mill.

16 Q. I see.

17 A. I'm sorry.

18 Q. I see. When did KCAC take over that
19 mine --

20 A. July 1st of 1985. I'm sorry. I
21 thought you gathered that.

22 Q. I'm a little bit slow, Mr. Myers, and
23 you're going to have to take that into
24 consideration.

25 A. I thought that came from the original

1 explanation.

2 If you're asking about the current
3 production, it is about 10 thousand tons.

4 Q. At this time?

5 A. Uh-huh.

6 Q. Why did Union Carbide sell its
7 asbestos mine in 1985?

8 A. I think mainly due to corporate
9 restructuring of the type of products they were
10 involved with. The entire Metals Division line of
11 products was up for sale. There was someone who
12 purchased the asbestos part of that.

13 Q. - This KC -- you're going to have to
14 give me those letters again.

15 A. KCAC. That's not a radio station.

16 Q. KCAC. And what does the KCAC stand
17 for?

18 A. That's just the way it's
19 incorporated.

20 Q. How long has this KCAC Corporation
21 been in existence?

22 A. Since 1985.

23 Q. And how did it come into existence?

24 A. To operate the asbestos business
25 purchased from Union Carbide.

1 Q. And who was instrumental in forming
2 KCAC? Was it Union Carbide, I assume?

3 A. No, it was the investors who purchased
4 the business.

5 Q. And who were these investors?

6 MR. STAMM: I don't think that's
7 relevant to any inquiry in this lawsuit and --

8 MR. BALLARD: Put it this way, do
9 they have any relationship to Union Carbide?

10 THE WITNESS: No.

11 Q. (By Mr. Madeksho) Do they have any
12 relationship to the GAF Corporation?

13 A. No.

14 Q. When did you become familiar with
15 GAF's interest in acquiring Union Carbide?

16 MR. STAMM: Do you understand
17 that question?

18 THE WITNESS: No, I don't.

19 Q. (By Mr. Madeksho) As far as the
20 buy-out and purchase of Union Carbide's
21 facilities, et cetera.

22 A. Were they the ones that just recently
23 tried to --

24 MR. STAMM: Just answer to the
25 best of your knowledge, if you have any knowledge.

1 A. I couldn't tell you when. Whenever it
2 was in the newspapers, I guess.

3 Q. (By Mr. Madeksho) Who was the
4 individual in charge of the King City Mine for
5 Union Carbide back in June of 1985?

6 A. I was the Product and Production
7 Manager in June of 1985.

8 Q. I see. Did Union Carbide make any
9 products on site of the King City Mine?

10 A. Other than asbestos fibers?

11 Q. Yes, sir.

12 A. No.

13 Q. They didn't have a manufacturing
14 facility there other than the mine or the mill?

15 A. No, no.

16 Q. Does KCAC own interest in any other
17 asbestos mines at this time?

18 A. No.

19 Q. Mr. Myers, there was another item of
20 inquiry that was listed concerning this deposition
21 and that was the membership in the AIA/NA. And we
22 would like to ask you when Union Carbide became a
23 member of AIA/NA?

24 A. In 1972.

25 Q. Do you know why Union Carbide joined

1 AIA?

2 A. No.

3 Q. Do you know whether or not Union
4 Carbide was still a member of AIA when you left
5 Union Carbide in June of 1985?

6 A. Yes. Oh, when I left?

7 Q. Yes, sir.

8 A. They were members until June 30th.

9 Q. Of 1985?

10 A. Yes.

11 Q. What is your understanding as to the
12 purpose of the AIA?

13 A. - Primarily to disseminate information
14 concerning the health aspects of asbestos and the
15 work practices which would accomplish the safe use
16 of asbestos.

17 Q. Who were the other members of AIA
18 during this period of time, from 1972 to 1985?

19 A. I couldn't answer. I'm sure there
20 have been 50 to 100 members.

21 Q. Well, let me just ask you about
22 particular ones. Are you familiar with the fact
23 that GAF was a member of AIA during the period
24 of --

25 A. No, I don't think I am familiar with

1 That. Are they a member now? I don't know.

2 Q. Were you familiar with the fact that
3 Raybestos-Manhattan, now called Raymark, was a
4 member of AIA?

5 A. Yes, yes.

6 Q. Were you familiar with the fact that
7 Celotex was a member of AIA?

8 A. No.

9 Q. Well, it might be easier if you'll
10 just tell me the ones that you are familiar with
11 that were members of AIA.

12 A. Oh, Carey Canadian, Johns-Manville,
13 Certain-Teed, Lake Asbestos. SNA, which is the
14 Quebec government asbestos companies. I can't
15 remember what that stands for. Monsey Products,
16 Supradur.

17 Q. What about Nicolet?

18 A. Nicolet. I think Kentile was at one
19 time. American Biltrite.

20 That's not very good, but that's all I
21 can remember.

22 Q. If that's exhausted your recollection,
23 that's fine.

24 Mr. Myers, would you give us the
25 definition of AIA/NA for the record, please, sir?

1 A. Asbestos Information Association of
2 North America.

3 Q. Do you know whether or not AIA/NA was
4 affiliated with any other similar organizations in
5 Europe?

6 A. What do you mean affiliated with?

7 Q. Was there like a sister organization
8 for manufacturers and companies in Europe?

9 A. No. There is an international
10 association --

11 Q. That's it.

12 A. -- which is made up of associations.
13 It's an association of associations.

14 Q. And could you please give us the
15 proper title for that international organization?

16 A. Asbestos International Association.

17 Q. And was Union Carbide also a member of
18 that organization?

19 A. That is a group of associations.
20 There are no individual members.

21 Q. So, if you're a member of a smaller
22 organization, that is part of the whole?

23 A. The association is part of the
24 association, yes.

25 Q. Did you ever have the opportunity to

1 attend any of the AIA meetings?

2 A. Yes.

3 Q. And which meetings did you attend
4 during what years, sir?

5 A. In May of 1986. That's all.

6 Q. Who was the representative from Union
7 Carbide or did Union Carbide have a representative
8 designated to attend the AIA meetings?

9 A. Now, as I said before, that's an
10 association of associations. There are no company
11 members.

12 Q. Okay, I'm talking now not about the
13 international. I'm talking about the Asbestos
14 Information Association of North America. I'm
15 sorry.

16 A. Then I need to have the question
17 again.

18 Q. Who was, or, if you know, the
19 representative from Union Carbide that attended
20 the AIA/NA meetings?

21 A. I have attended several. Mr. Thurber,
22 who was my boss. Dr. Rhodes. That's about all I
23 can recall.

24 Q. Were you all designated by Union
25 Carbide to be representatives for the corporation

1 at these meetings?

2 A. I don't think the corporation
3 designated people. It was primarily who was in
4 charge of the asbestos business or who had some
5 management position in the asbestos business.

6 Q. How would you all find out as to when
7 the meetings were going to be held?

8 A. By letter.

9 Q. From whom?

10 A. From the AIA/NA.

11 Q. Were you on their mailing list?

12 A. Yes. Well, I am on their mailing
13 list. I have been on their mailing list.

14 Q. And Dr. Rhodes, tell us who Dr. Rhodes
15 is.

16 A. He is a former Union Carbide
17 employee.

18 Q. He was with Union Carbide at the time
19 that you went to work for them, was he not?

20 A. I don't know. I don't think so. I
21 don't know when he was hired. He was hired after
22 I was, I think.

23 Q. What was his position with Union
24 Carbide? What did he do for Union Carbide?

25 A. I can only speak for the period from

1 probably 1970 or early 1970's, he became a part of
2 the asbestos marketing group.

3 Q. Now, in regard to the marketing group
4 that was involved with marketing Union Carbide's
5 asbestos products, where was that particular
6 division headquartered?

7 A. It was not a division, but the
8 marketing group was located in Niagara Falls.

9 Q. And what would be the function of this
10 particular group?

11 A. To market asbestos products and do
12 product and applications research, in quotation
13 marks.

14 Q. And the research would be done where?

15 A. In Niagara Falls.

16 Q. At one of the two -- at Niagara Falls
17 itself?

18 A. Yes.

19 Q. What type of research did this
20 particular group do at Niagara Falls?

21 A. The looking at new products, new
22 applications, quality control, air monitoring.
23 That's about it.

24 Q. How long had they been doing this
25 particular type of work at Niagara Falls?

1 A. It began in 1970.

2 I'm sorry. You mean the marketing
3 group or the research?

4 Q. The research, sir. I'm sorry.

5 A. I was involved only -- starting in
6 1966 is when I'm familiar with that there was
7 product application work being done at Niagra
8 Falls.

9 Q. And then you became the manager of the
10 marketing group in 1971?

11 A. '70, 1970.

12 Q. 1970? And as the manager of the
13 marketing group, what were your activities on a
14 day to day and week to week, month to month basis?

15 A. Primarily, as I said, trying to
16 increase sales, develop literature and supervise
17 the work of the applications, new products and new
18 applications.

19 Q. As the manager of the marketing group,
20 were you familiar with the various plant locations
21 where Union Carbide was using asbestos fiber in
22 their products?

23 A. Nothing more than I've already
24 answered earlier.

25 Q. Well, what were the locations of the

1 plastics that Union Carbide was manufacturing that
2 they were using the asbestos with during the time
3 that you were with them?

4 A. Bound Brook, New Jersey.

5 Q. Any others?

6 A. Perhaps Marietta, Ohio.

7 Q. Go ahead.

8 A. That's the only ones I'm familiar
9 with.

10 Q. You're not familiar with the fact that
11 they were making these same substances in Texas
12 City, the plant here?

13 A. - I didn't know they were. I don't --
14 to my knowledge, there is no asbestos -- no
15 plastics production in Texas City that involves
16 asbestos.

17 Q. I'm not talking necessarily about at
18 this time or the last time that you left. At any
19 time during this period from 1970 forward till you
20 left Union Carbide, not necessarily at the exact
21 time that you left Union Carbide.

22 A. No. As I say, I am not aware that
23 they make any asbestos-containing products in
24 Texas City. I have never been aware of that, if
25 that's a better way to cover the time frame.

1 C. What about at Seadrift?

2 A. Not to my knowledge.

3 Q. Who would you report to as the manager
4 of the marketing group?

5 A. During the ten years, it was various
6 people. J. W. Rawlings, F. J. Shortsleeve.

7 MR. STAMM: Shortsleeve?

8 THE WITNESS: Yes.

9 MR. McCLORE: What did the F. J.
10 stand for?

11 THE WITNESS: Frances something.
12 Irish to the core.

13 A. J. F. Collins, G. R. Adams, W. C.
14 Thurber.

15 Q. (By Mr. Madeksho) Mr. Thurber is the
16 same Mr. Thurber that we mentioned earlier that
17 was also a representative for Union Carbide at the
18 AIA/NA meetings?

19 A. Yes.

20 I think that is all.

21 Q. What was Mr. Thurber's position with
22 Union Carbide?

23 A. At what time? When I reported to him?

24 Q. Well, during the period of time that
25 you were the manager of the marketing group.

1 A. He was called Product General
2 Manager/Asbestos and Tungsten, I think.

3 MR. MADEKSHO: Let's go off the
4 record for just a minute, if we could.

5
6 (Discussion off the record.)

7
8 Q. (By Mr. Madeksho) Mr. Myers, also, if
9 you need to take a break, get coffee or stretch
10 your legs or whatever, say the word and you've got
11 it. You're in control here.

12 A. All right.

13 Q. Mr. Myers, did you ever become
14 familiar with a gentleman by the name of John
15 Marsh from Raybestos-Manhattan?

16 A. Yes, I know John.

17 Q. When did you first meet Mr. Marsh? *

18 A. I can't recall.

19 Q. Approximately --

20 A. Probably late seventies.

21 Q. And who was Mr. Marsh, to your
22 knowledge?

23 A. He was an employee of
24 Raybestos-Manhattan probably in something involved
25 with environment, environmental concerns. I'm not

1 sure.

2 Q. What was the extent of your meetings
3 with Mr. Marsh?

4 A. I've never -- you mean on a one-to-one
5 basis?

6 Q. Well, either a one-to-one or small
7 group meetings between Union Carbide and
8 Raybestos-Manhattan or general meetings with the
9 AIA/NA?

10 A. It would only be general meetings with
11 the AIA/NA.

12 Q. On how many different occasions did
13 you have the opportunity to meet Mr. Marsh?

14 A. At these meetings, probably fifteen or
15 twenty.

16 Q. On fifteen or twenty different
17 occasions at the meetings?

18 A. At meetings, yes.

19 Q. What would be the total number of
20 meetings that you personally attended with the
21 AIA/NA?

22 A. Oh, probably thirty.

23 Q. And I think you indicated that you had
24 even had the opportunity to attend maybe one or
25 two of the international organization's meetings?

1 A. One meeting.

2 Q. And which one was this?

3 A. In May of '86.

4 Q. Dr. Rhodes, was that Dr. Harrison B.

5 Rhodes?

6 A. Yes.

7 Q. And was he a Ph.D. type doctor or was
8 he a medical doctor?

9 A. Ph.D.

10 Q. And do you know in what particular
11 field that he had received his doctorate?

12 A. I think chemical engineering.

13 Q. Mr. Myers, when did you first become
14 familiar with discussions of the formation of The
15 Wellington Group or the Asbestos Claims Facility?

16 A. I've never become very familiar.
17 Probably two years ago.

18 Q. And how did you become familiar with
19 this?

20 A. Only by hearing about it from Union
21 Carbide attorneys.

22 Q. So, this would have been somewhere
23 September in 1984, somewhere in that area?

24 A. I couldn't pin it down to that, but I
25 would say sometime in '84 about.

1 Q. How did you come to hear about it from
2 the Union Carbide attorneys?

3 MR. STAMM: I'm going to object
4 to that. Privileged.

5 Q. - (By Mr. Madekaho) What were the
6 circumstances that this word got to you?

7 A. Just conversation.

8 Q. I don't want to know what was
9 discussed, but just the general nature of the
10 conversation, what topics?

11 MR. STAMM: Same objection. It's
12 privileged.

13 I'm also going to interpose and object
14 at this time to any questions concerning the
15 formation of the Asbestos Claims Facility. I'm
16 going to instruct the witness not to answer in
17 that it's not relevant to the litigation that this
18 Notice is given under, nor can it be reasonably
19 calculated to lead to discovery of admissible
20 evidence.

21 MR. BALLARD: Well, let's ask the
22 questions and we'll get them certified and hassle
23 it out with Judge Gibson and meet back down here
24 again.

25 MR. STAMM: Or San Francisco.

1 Q. (By Mr. Madeksho) Have you since
2 learned as to when Union Carbide was approached by
3 the Asbestos Claims Facility or The Wellington
4 group?

5 A. No.

6 MR. STAMM: Same instruction.

7 Q. (By Mr. Madeksho) Mr. Myers, are you
8 refusing to answer the question on the advice of
9 your attorney Mr. Art Stamm?

10 MR. STAMM: He is.

11 A. Yes.

12 MR. MADEKSHO: Certify that
13 question, please.

14 Q. (By Mr. Madeksho) Mr. Myers, I assume
15 that you are going to refuse to answer any and all
16 questions dealing with Union Carbide's involvement
17 as to time and circumstances in regard to their
18 involvement with The Wellington Group and the
19 Asbestos Claims Facility?

20 A. Yes.

21 Q. And you're doing that on the
22 instruction of your attorney Mr. Art Stamm, is
23 that correct --

24 A. Yes.

25 Q. -- who is present here and

1 representing the Asbestos Claims Facility?

2 A. Yes.

3 MR. MADEKSHO: Why don't we take
4 a short break, if we could?

5 MR. STAMM: Fine with me.

6

7 (Brief recess taken.)

8

9 Q. (By Mr. Madeksho) Mr. Myers, are you
10 familiar with a gentleman by the name of J. C.
11 Stephensen?

12 A. Yes.

13 Q. - And who is Mr. Stephensen?

14 A. - Who is he?

15 Q. Yes, sir. Or was he?

16 A. He was President of the Metals
17 Division.

18 Q. Okay, the Mining and Metals Division?

19 A. Yes.

20 Q. And this was during the period of time
21 that you were the Marketing Manager?

22 A. Yes. Not during the whole time, I
23 don't think, but --

24 Q. And the Mining and Metals Division,
25 it's my understanding that it was worldwide

1 exploration and mining; is that correct?

2 A. Yes.

3 Q. And they were concerned with high
4 purity asbestos?

5 A. Who?

6 Q. The Mining and Metals Division of
7 Union Carbide during this period of time.

8 A. They were concerned with the asbestos
9 operation in King City, yes.

10 Q. Didn't Union Carbide also use and sell
11 asbestos fibers for rubber products as well?

12 A. Well, use or sell?

13 Q. Use and sell.

14 A. No, Union Carbide doesn't manufacture
15 any rubber products.

16 Q. Who did they sell the asbestos fibers
17 to for the the production, manufacturing and sale
18 of rubber products?

19 A. To my knowledge, there was only one
20 company and it's in Ohio.

21 Q. Would it be somebody we're familiar
22 with their name?

23 A. I think U. S. Rubber was the name.

24 Q. Are they the only rubber company that
25 you can recall?

1 A. Yes.

2 Q. Are you familiar with Union Carbide's
3 membership with the Industrial Hygiene Foundation?

4 A. Not firsthand. From seeing
5 interrogatory answers only, I know that they were
6 a member.

7 Q. You mentioned seeing interrogatory
8 answers. Have you been involved with some of
9 Union Carbide's litigation over the years?

10 A. Yes.

11 Q. And this would be, I assume, in regard
12 to their asbestos litigation?

13 A. Yes.

14 Q. When did you first become involved
15 with Union Carbide's asbestos litigation?

16 A. I can't remember an exact date, but I
17 would assume in the mid to late 1970's.

18 Q. What was the nature of the litigation
19 at that time, Mr. Myers?

20 A. What do you mean by nature?

21 Q. Of the litigation that you were
22 involved with concerning the asbestos. What type
23 of claims were being made against Union Carbide
24 concerning asbestos?

25 A. I don't know. Whatever claims would

1 be associated with a company who is a supplier of
2 asbestos.

3 Q. Let's see if we can get it pared down
4 a little bit. Do you recall any personal injury
5 claims being made against Union Carbide concerning
6 their asbestos materials?

7 A. Would this be you mean someone that
8 developed a disease?

9 Q. Yes, sir.

10 A. Yes.

11 Q. And do you remember the style of the
12 case or cases that you were involved with?

13 A. - Again, I don't know the term perhaps
14 style.

15 Q. Okay. In other words, it would be a
16 situation of John Jones versus Union Carbide.

17 A. Yes, along with --

18 Q. The name of the case.

19 A. Along with many other defendants,
20 yes.

21 Q. And do you remember the styles or the
22 names of some of those cases?

23 A. Well, Lundy, Cirvello.

24 Q. What was that? I'm not familiar with
25 that second one.

1 A. Cirvello.

2 Q. How do you spell that? C E R V E L-
3 L O?

4 A. I'm not sure if it's S or C I R V E-
5 L L O, I think.

6 Q. I see. I am familiar with that one.

7 A. DeWard, Rice. I can't recall the
8 specific names.

9 Q. And when were these lawsuits filed
10 against Union Carbide, sir?

11 A. I don't know.

12 Q. Approximately?

13 A. I could only say in the -- to the best
14 of my knowledge, in the mid to late seventies and
15 early eighties.

16 Q. Do you know where these lawsuits were
17 filed?

18 A. In various parts of the country.

19 Q. You know I'm going to ask you where.

20 A. I can probably only answer for
21 those -- you mean for those names that I can
22 remember?

23 Q. These specific ones, yes, sir.

24 A. Rice was in South Carolina. Lundy was
25 in Oregon. Cirvello was in Houston. What was

1 another name I --

2 Q. DeWard.

3 A. DeWard, Los Angeles. There's a
4 Bradley in Los Angeles. That's all the names I
5 think I -- did I fill in the locations for the
6 names that I gave you?

7 Q. Yes, sir, you did. Thank you.

8 What was the extent of your
9 involvement with these lawsuits on behalf of Union
10 Carbide?

11 A. Let me go back first, there is one
12 that was in Arkansas. I can't remember the name
13 of the case, but it was Arkansas. And why I'm
14 adding that one, I remember I did testify in that
15 case.

16 Q. I was going to ask you that in just a
17 minute.

18 A. The others have been responding to
19 interrogatory answers or helping to respond,
20 signing affidavits concerning delivery of
21 products.

22 Q. Have you completed your answer, sir?

23 A. Yes. And depositions.

24 Q. How many depositions have you given on
25 behalf of Union Carbide, Mr. Myers?

1 A. Two.

2 Q. And when were those depositions given?

3 A. Oh, I think the first one was 1981 and
4 the second one was 1984.

5 Q. Where were those depositions given?

6 A. The first one was South Carolina.

7 Q. In the Rice case?

8 A. Yes.

9 Q. And what was your testimony concerning
10 in the Rice case?

11 A. What was my testimony?

12 Q. What did it concern? In other words,
13 what was your testimony about in that deposition
14 in the Rice case?

15 A. Very much the same type of questions
16 that you're asking, my background and supply to
17 customers.

18 Q. Where was that deposition taken in the
19 Rice case?

20 A. In Columbia, South Carolina.

21 Q. Do you recall the plaintiff's lawyer
22 in that case, sir?

23 A. No.

24 Q. Have you had an opportunity to review
25 that deposition prior to today?

1 A. Yes.

2 Q. And when did you review that
3 deposition?

4 A. Yesterday.

5 Q. Did somebody ask you to review that?

6 A. No.

7 Q. Do you have a copy of that deposition?

8 A. Yes, I do have or my lawyer does, I
9 should say.

10 Q. Did he provide it to you and ask you
11 to review it?

12 A. No.

13 Q. Did you ask him for a copy of it?

14 A. No.

15 Q. The other deposition that you had
16 given in 1984, in what case was that associated
17 with?

18 A. DeWard.

19 Q. Do you recall the plaintiff's counsel
20 in that case, sir?

21 A. No, I don't.

22 Q. Did you also have an opportunity to
23 review that deposition before today?

24 A. Yes, I did.

25 Q. And could you get that information

1 before we leave here today and provide that to us?

2 MR. STAMM: We'll take it under
3 advisement.

4 MR. BALLARD: He has a copy he
5 indicated. Why don't we just leave a couple
6 blanks for the name and style of the case and when
7 he signs it, he can fill that in.

8 MR. STAMM: If his counsel
9 agrees, we'll do it.

10 Q. (By Mr. Madeksho) I'm also making a
11 request, Mr. Myers, that you provide us with the
12 names and address of the plaintiff's counsel
13 involved in the Rice and DeWard cases.

14 MR. STAMM: Same response.

15 Q. (By Mr. Madeksho) And counsel has
16 responded on your behalf.

17 A. Yes.

18 Q. You indicated that you had provided
19 live testimony in court on behalf of Union Carbide
20 before; is that correct?

21 A. Yes.

22 Q. On how many occasions was that?

23 A. One.

24 Q. What case was that in?

25 A. I can't remember the name of the

1 plaintiff.

2 Q. What year was that, sir?

3 A. Either 1985 or 1984.

4 Q. Where was that?

5 A. -- In Little Rock, Arkansas.

6 Q. How long have you been involved in
7 regard to answering interrogatories and signing
8 affidavits for Union Carbide concerning asbestos
9 litigation where personal injuries are concerned?

10 A. The same answer as before, from the
11 mid to late seventies and early eighties.

12 Q. Do you know as to whether or not Union
13 Carbide had ever made any purchases of asbestos
14 fiber from Cassiar, a Canadian mine?

15 A. I'm not aware of any. But again, I'm
16 not familiar with asbestos purchases.

17 Q. Who in Union Carbide would be most
18 familiar with the purchases made on behalf of
19 Union Carbide for their own processing and
20 manufacture of products?

21 A. I don't know.

22 Q. Is there anybody in the corporation
23 that would know that information?

24 A. I don't know.

25 Q. Would the legal department know that?

1 A. Perhaps. I don't know.

2 Q. Based on your knowledge and
3 understanding, what are asbestos fibers used for
4 in paper products?

5 A. It depends on which paper you're
6 talking about.

7 Q. Well, let's talk about all of them.

8 A. Okay. There are insulation papers
9 wherein the asbestos is used for, I think,
10 primarily for insulation, electrical and/or heat
11 insulation. And the application which we applied
12 asbestos for a short period of time was to remove
13 pitch and other impurities from the paper pulp
14 during its production. Those are the only ones
15 that I'm familiar with.

16 Q. Union Carbide also had what is known
17 as the African Middle East Division?

18 A. I'm familiar with a Union Carbide
19 South Africa Limited. I'm not familiar with the
20 other one.

21 Q. You're not sure as to whether or not
22 that particular company, the South Africa Limited,
23 would fall under the African Middle East Division,
24 though?

25 A. No, I'm not.

industry has long recognized the risk of this disease and has implemented safeguards to protect workers' health.

As far as can be determined, asbestosis never has been found in the general public, even among people living in close proximity to asbestos mines and processing plants.

Bronchogenic (Lung) Cancer

A number of medical studies have linked heavy asbestos exposure with an increased risk of lung cancer. While lung cancer occurs far less frequently among asbestos industry workers than asbestosis does, under some circumstances, it occurs more frequently than in the general population.

As with asbestosis, the amount of fiber to which an employee is exposed is an important factor in lung cancer development. A continuing study of workers in a British asbestos textile plant has shown that dust control measures, which had substantially reduced the incidence of asbestosis, also reduced the incidence of lung cancer among the workers to that existing in the general public. In addition, it is the considered opinion of many scientists that lung cancer will not develop in an employee if he did not first have asbestosis.

Unquestionably, factors other than heavy asbestos exposure are important in the causation of lung cancer among asbestos industry workmen. The most documented example is cigarette smoking. Studies conducted of as many as 17,500 asbestos insulation workers show that those who smoke have a much greater risk of contracting lung cancer than non-smokers in the general public, but that those asbestos industry workmen who do not now smoke cigarettes and who have never smoked regularly, have no greater risk of lung cancer than the average man-in-the-street who does not smoke.

Mesothelioma

This disease is an extremely rare cancer of the lining of the chest (pleura) or the abdominal cavity (peritoneum). It is found more frequently among those with occupational asbestos exposure than among the general population. It also has been found among people who, in the past, lived in close proximity to uncontrolled crocidolite asbestos plants or mines, and even, on rare occasions, in the households of employees who worked in crocidolite asbestos factories or mines and who presumably brought substantial quantities of this particular type of asbestos fiber into their homes on their work clothes. This has not been found to be the case with individuals exposed only to chrysotile asbestos, which accounts for 97% of the asbestos fiber used in the U.S. today.

Since the latent period for mesothelioma ranges from 30 to 45 years, it is impossible at this late date to determine precisely the exposure levels experienced by these "neighborhood" and "household" cases. However, they were probably quite high by today's standards. In any case, as technology was developed for the control of asbestos dust levels, both in the plant and out, these potentially hazardous conditions were eliminated.

A relatively small number of cases have also been reported among employees in shipyards and on construction projects who, while not working directly with asbestos, were exposed to heavy concentrations of airborne fiber by working in close proximity to those who did. Exposures of this type have been reduced by strictly enforced industrial safety devices and procedures.

The search for answers to the mesothelioma problem is complicated by a number of factors. In the first place, the number of cases being found, even today, is still relatively small. In all of Canada, for example, only 165 cases were reported in the ten-year period ending in 1968. Secondly, it appears highly likely that certain varieties of asbestos (crocidolite and amosite) are more likely to cause mesothelioma than others. Thirdly, its diagnosis and recognition are still considered problems among medical experts. It is also certain that

1 talking about square miles on the surface going
2 down a couple miles? Is that how you're
3 describing cubic miles?

4 A. Yes.

5 Q. What is the estimated tonnage of the
6 reserves of the asbestos mine at this time?

7 A. We have never evaluated that. I would
8 say in excess of one hundred million tons.

9 Q. And how many years is that mine
10 anticipated to be in place?

11 A. As far as the reserves or --

12 Q. Yes, sir.

13 A. -- other reasons?

14 Q. The reserves.

15 A. Indefinitely.

16 Q. Calidria Asbestos, what was their
17 association with Union Carbide? Where did they
18 fit into the scheme of things?

19 A. Calidria --

20 Q. Calidria, I'm sorry.

21 A. -- Asbestos is a trade name for the
22 Union Carbide and now KCAC asbestos products.

23 Q. And during the seventies, how many
24 different asbestos products was Union Carbide
25 making under the trade name Calidria?

1 A. Well, you would have to define a
2 product. We sell basically four different
3 versions of the short fiber asbestos. Again, you
4 cannot relate a grade to the Canadian system.

5 Q. Calidria, did they also have any
6 systematic examination of employees to determine
7 as to whether or not they might have any health
8 effects from exposure to asbestos?

9 A. Yes.

10 Q. And what is your knowledge as to the
11 extent of those examinations? As to when --

12 A. The type of -- okay, what specific --

13 Q. - As to when they began and also the
14 extensiveness of each examination.

15 A. They began in 1963. And as far as
16 extensiveness, you mean the type of tests that are
17 performed?

18 Q. Yes, sir. Like just x-rays or some
19 breathing tests or if they did any invasive
20 procedures from time to time on some of the
21 employees.

22 A. Okay, what --

23 Q. When I say invasive procedures, I'm
24 talking about biopsies and things of that nature.

25 A. No invasive procedures. X-rays, chest

1 x-rays, pulmonary function, sputum cytology,
2 occult blood. And then conventional for other
3 tests to determine a person's physical condition,
4 such as blood work, urine tests.

5 Q. When is the first time that Union
6 Carbide had worker's compensation claims filed
7 against the company alleging either respiratory or
8 health problems from exposure to asbestos?

9 A. In what location?

10 Q. Any location, sir.

11 A. I don't know.

12 Q. Let's talk about the King City Mine
13 then, that's --

14 A. Never.

15 Q. Well, what other locations then?

16 A. I don't know other locations. I know
17 that we've never had any in King City.

18 Q. And that mine began in operation when?

19 A. 1963.

20 Q. Do you have an understanding --

21 A. Let me make sure I understood the last
22 question. You did say asbestos-related?

23 Q. Respiratory or asbestos-related
24 worker's compensation claims. I'm not talking
25 about a broken arm or a broken leg or a pulled

1 back.

2 A. We've never had any asbestos-related
3 or respiratory compensation claims.

4 Q. Were there any claims that you're
5 familiar with that at least made an allegation of
6 an asbestos-related injury or problem?

7 A. At King City?

8 Q. Or any other location against Union
9 Carbide?

10 A. I'm not familiar with any.

11 Q. Was Dr. Rhodes the head of the
12 Calidria Asbestos Division or was that a division
13 or was that just a trade name?

14 A. Calidria was not involved -- it was
15 just an asbestos group was the way it was termed.

16 Q. What did this asbestos group consist
17 of?

18 A. Are you talking about the marketing
19 group?

20 Q. Was Calidria Asbestos the marketing
21 group?

22 A. Calidria was the trade name. Under
23 Mr. Thurber there would be marketing and
24 production.

25 Q. Now, Calidria was the trade name for

1 the asbestos products from Union Carbide?

2 A. The asbestos fiber products, yes, from
3 King City.

4 Q. When did Union Carbide or did Union
5 Carbide ever start placing a warning on any of the
6 shipments of asbestos fibers?

7 A. In 1968.

8 Q. What type of containers were the
9 asbestos fibers shipped in?

10 A. Multi-ply paper bags.

11 Q. What would these bags have on them,
12 everything that you can recall?

13 A. The name of the product.

14 Q. What would that ordinarily be?

15 A. Calidria Asbestos. It could read
16 SG-100 or high purity asbestos, any of our various
17 number terminologies. The corporate name and at
18 one time it was the corporate headquarters
19 location and it later became the plant location
20 name. And the warning, the warning statement.

21 Q. What were the sizes of these
22 containers, Mr. Myers, the bags?

23 A. In dimension or weight?

24 Q. Yes, sir, let's talk about weight.

25 A. It would range from ten pounds to one

1 hundred pounds.

2 Q. And was it always in paper bags or
3 sometimes in some cloth bags?

4 A. Are we referring to '68 or --

5 Q. Or before, as far as your knowledge,
6 even going back to 1963.

7 A. You mean after '68 or --

8 Q. Well, I assume in 1968 and forward it
9 was in paper bags. Am I wrong in that assumption?

10 A. We also have used plastic bags.

11 Q. Well, paper bags --

12 A. And hopper -- if you're talking about
13 packages, if you want to consider that, a hopper
14 car was used as a shipping package.

15 Q. Now, a hopper car, are we talking
16 about a railroad car?

17 A. Yes.

18 Q. Approximately how many tons could you
19 get in a railroad car?

20 A. About 90 tons.

21 Q. And who would you ship the railroad
22 cars to? Who would those customers be?

23 A. To Kentile Floors and Uvalde.

24 Q. Anybody else?

25 A. I think that's all we had. Perhaps

1 one or two to American Biltrite.

2 In response to one part of your
3 earlier question, we have never used cloth bags.

4 Q. When did you start using the plastic
5 bags?

6 A. I can't remember for sure. I would
7 say in the early to mid seventies.

8 Q. You had mentioned that there was some
9 type of warning that you all began placing on these
10 bags. Where did you all place the warning on the
11 bags?

12 A. On the face of the bag.

13 Q. At the top or the bottom or in the
14 middle?

15 A. Toward the lower part.

16 Q. What were the dimensions of the
17 warning?

18 A. Approximately the width of the front
19 panel. Probably ten to twelve inches wide and six
20 to eight inches high.

21 Q. And what did this warning say?

22 A. I can't recall verbatim. Something
23 like "Caution: Contains asbestos fibers. Do not
24 breathe dust." Something similar to that.

25 Q. What else? Is that all?

1 A. That's all I can recall.

2 Q. So, it was a caution, not a warning?

3 A. Yes.

4 Q. There's a difference in regard to the
5 labels in regard to a caution, warning or danger;
6 is that correct?

7 A. Yes.

8 Q. The degree of significance?

9 A. Uh-huh.

10 Q. And you're familiar with this in view
11 of the chemical manufacturers' labeling books?

12 A. I'm not familiar with it other than
13 seeing references to it. I think there are ANSI
14 standards which define those terms.

15 Q. In regard to this caution label, do
16 not breathe dust or what?

17 A. I don't -- I didn't catch that
18 question.

19 Q. What type of message was this supposed
20 to send to somebody, that Union Carbide was
21 supposed to be trying to send to someone?

22 A. One similar to what you see in a
23 service station where it says "do not smoke" or in
24 a hotel where it says "do not use the elevator in
25 case of fire." A very succinct warning.

1 Q. Well, I have a little problem with the
2 association of those two or three examples as
3 being identical. How much dust was it that you
4 weren't supposed to breathe?

5 A. I don't know.

6 Q. Well, you were familiar with the dust
7 monitoring procedures at the mine, were you not,
8 sir?

9 A. Yes.

10 Q. How much dust does it take before an
11 individual can even see it in regard to million
12 particles per cubic foot?

13 A. I don't know. I don't know what the
14 visible -- it would depend on the lighting, I
15 suppose.

16 Q. But you're familiar with the fact that
17 five million particles per cubic foot is not
18 visible to the naked eye?

19 MR. STAMM: Of what dust? What
20 color dust? What size dust?

21 MR. MADEKSHO: Asbestos dust,
22 short fiber asbestos dust.

23 MR. STAMM: In what conditions?

24 MR. MADEKSHO: We'll talk about
25 every one of them, if we need to.

1 MR. STAMM: Well, then, ask the
2 question in those terms.

3 Q. (By Mr. Madeksho) Let's talk about in
4 the dead of night. Five million particles per
5 cubic foot of asbestos dust in the nighttime,
6 could you see that?

7 MR. STAMM: If you know.

8 A. I doubt it.

9 Q. (By Mr. Madeksho) Let's talk about
10 five million particles per cubic short fibered
11 asbestos dust at sunrise.

12 A. I don't know. You're asking a
13 question for which I have no technical knowledge
14 of how much dust you can see of any -- whether
15 it's asbestos or silica or what.

16 Q. I'm talking about asbestos dust now.

17 A. I know you are, but I couldn't answer
18 for any product what the visible concentrations
19 are.

20 Q. Was it common knowledge to people
21 working on the railroads that would be handling
22 these bags that breathing asbestos dust could
23 cause cancer back in 1968?

24 A. I have no knowledge as to that.

25 Q. Did you all ever do a survey to find

1 out about it?

2 A. I don't know of any railway workers
3 who were handling asbestos bags.

4 Q. What was the name of the railway that
5 was shipping out the hoppers of the asbestos
6 fibers?

7 A. Southern Pacific.

8 Q. Did you all ever use any other railway
9 besides Southern Pacific?

10 A. As a pick-up railway?

11 Q. Well, or just for the shipping of the
12 asbestos fibers from the hoppers.

13 A. I'm sure to get from one part of the
14 country to the other there were different lines.
15 The Southern Pacific doesn't run across country.

16 Q. But Southern Pacific was the one
17 you're most familiar with on the West Coast?

18 A. We're on their lines.

19 Q. How were the smaller bags of the
20 asbestos fibers transported?

21 A. By truck, container, boxcar.

22 Q. And would these trucks or containers,
23 would they belong to Union Carbide or would an
24 outside trucking firm be used to haul these?

25 A. Yes.

1 Q. Yes what? It was Union Carbide or an
2 outside trucking firm?

3 A. It was an outside trucking firm.

4 Q. What were some of the trucking firms
5 that were involved with the hauling of the
6 asbestos fibers, the bags?

7 A. Oh, I can't recall. Probably several
8 of the commercial carriers in California. There's
9 one called Lou-Jack. I can't recall truck names.

10 Q. Are you familiar with the research and
11 development facilities of Union Carbide, as to how
12 long that Union Carbide has had such facilities?

13 A. - No.

14 Q. Are you familiar as to whether or not
15 Union Carbide was a member of the National Safety
16 Council?

17 A. Not personally familiar. I can only
18 assume that they were.

19 Q. Have you ever answered interrogatories
20 in regard to enumerating the various health and
21 safety and research organizations to which Union
22 Carbide had been a member in various years?

23 A. I haven't answered those questions on
24 interrogatories.

25 Q. Have you seen them answered on behalf

1 of Union Carbide, sir?

2 A. I can't recall that particular
3 question.

4 Q. We were discussing the Industrial
5 Hygiene Foundation a while ago. Did you ever have
6 an opportunity yourself to attend any of the
7 meetings of the Industrial Hygiene Foundation?

8 A. No.

9 Q. Did Dr. Rhodes attend those on behalf
10 of Union Carbide?

11 A. Not to my knowledge.

12 Q. Did Mr. Thurber attend those on behalf
13 of Union Carbide?

14 A. Not to my knowledge.

15 Q. Did the Industrial Hygiene Foundation
16 ever perform any tests or services or research on
17 behalf of Union Carbide?

18 A. Not to my knowledge, but I am not
19 familiar with the Industrial Health Foundation or
20 membership.

21 Q. Do you know the extent of any research
22 and scientific studies that were done by the
23 Saranac Laboratories on behalf of Union Carbide
24 concerning any of their products?

25 A. No.

1 Q. Have you seen some of that
2 documentation in the past where it was done?

3 A. No. I have never heard of Saranac --
4 what was it?

5 Q. Saranac Laboratories. It's in New
6 York up there.

7 A. Never heard of it.

8 Q. Right there not far from Niagra
9 Falls. The Trudeau Institute?

10 A. No.

11 Q. Does the name the Joe 5 Mine sound
12 familiar to you, sir?

13 A. - Yes.

14 Q. Tell us about the Joe 5 Mine, if you
15 would.

16 A. That's our asbestos mine name under --
17 it's the name of the claim or at least one of the
18 claims under which we are mining.

19 Q. That Union Carbide was mining?

20 A. Yes.

21 Q. That was one of the claims? How many
22 other claims were they mining under?

23 A. I don't know the total number.

24 Q. What would be your closest
25 approximation?

- 1 A. Probably between ten and thirty.
- 2 Q. And where all would these be located?
- 3 A. In California.
- 4 Q. Northern California?
- 5 A. No, Central California.
- 6 Q. Were there some in Northern
- 7 California, too?
- 8 A. No. Again, you define Northern
- 9 California north --
- 10 Q. It's a matter of geography.
- 11 A. Where would you call north?
- 12 Q. Well, I call anything north of
- 13 Frisco ---
- 14 A. No.
- 15 Q. Mr. Myers, when did you first become
- 16 familiar with the term mesothelioma?
- 17 A. I can't recall.
- 18 Q. Was it in the early to mid sixties?
- 19 A. No.
- 20 Q. Late sixties?
- 21 A. No.
- 22 Q. Early seventies?
- 23 A. Probably in the seventies. I can't
- 24 recall a year.
- 25 Q. Mid seventies?

1 Were you also familiar with the fact
2 that the insulators had the highest incidence of
3 mesothelioma?

4 A. When?

5 Q. In the mid seventies when you found
6 out about mesothelioma.

7 A. I didn't say I found out about it in
8 the mid seventies. It was in the seventies. I
9 don't know what part of the seventies.

10 Q. Okay. Dr. Rhodes, when he would
11 attend these various international conferences,
12 from time to time he would come back and circulate
13 memorandums to --

14 A. Which conferences?

15 Q. Well, the International Congress on
16 Occupational Health, that type of conference.

17 A. I'm not familiar with him attending a
18 conference by that name.

19 Q. Would Dr. Rhodes from time to time
20 circulate memorandums to other employees under his
21 supervision?

22 A. Yes.

23 Q. And he would circulate such
24 memorandums to you?

25 A. Yes.

1 Q. And he would also discuss the health
2 aspects of asbestos exposure in some of those
3 memorandums?

4 A. Yes.

5 Q. Was Union Carbide familiar with the
6 fact in the mid 1970's that people who live in
7 cities or around shipyards where asbestos fibers
8 are handled are subject to developing
9 mesothelioma?

10 A. I don't know.

11 MR. STAMM: Just a minute. Are
12 you asking this witness whether he's familiar with
13 it or are you asking him to speak for Union
14 Carbide's corporation knowledge, whatever that is?

15 MR. MADEKSHO: Well, I'm going to
16 ask Mr. Myers first as to his own personal
17 knowledge.

18 A. Would you repeat it, please?

19 Q. (By Mr. Madeksho) When did you first
20 become aware of the fact that people who were
21 living in cities and around shipyards where
22 asbestos fibers were being handled and were
23 released into the environment were developing
24 mesothelioma?

25 A. I've never become familiar with that.

1 Q. Did you ever become familiar with the
2 fact that people who worked around large asbestos
3 plants or mines who did not actually work in the
4 plants or the mines were developing mesothelioma?

5 A. In this country?

6 Q. Yes, sir.

7 A. No.

8 Q. Would there on occasions be
9 confidential memorandums circulated by Dr. Rhodes
10 to employees of Union Carbide such as yourself?

11 A. Not that I recall. There could be if
12 it was related to an employee or a salary
13 discussion or performance discussion.

14 Q. Or perhaps a discussion of exposure to
15 some of the products of Union Carbide?

16 A. Not to my knowledge. Not that I
17 recall.

18 Q. Are you familiar with any doctors from
19 Canada by the name of McDonald?

20 A. By reading his reports, by his
21 reputation, yes.

22 Q. Are you talking about Corbitt
23 McDonald?

24 A. J. Corbitt, yes.

25 Q. What about Allison?

1 A. I think she co-authored some of his
2 papers.

3 Q. When did you become familiar with the
4 works of the two Drs. McDonald?

5 A. Probably in the early to mid
6 seventies.

7 Q. Did you ever attend any conferences
8 where they were giving any lectures or talks on
9 the hazards and dangers of asbestos exposure?

10 A. Not that I recall.

11 Q. How did you become familiar with their
12 works then, sir?

13 A. - As I said, by reading their papers.

14 Q. Were these papers that you went to the
15 library to check out or were they some memoranda,
16 some information that was provided to you by Union
17 Carbide?

18 A. I don't know who it was provided -- I
19 don't remember who it was provided by. I would be
20 sent copies of such reports.

21 Q. Are you familiar with a Dr. Steve
22 Holmes?

23 A. No.

24 Q. Are you familiar with a Dr. Richard
25 Doll?

1 A. Yes.

2 Q. And how did you --

3 A. Again, the name by hearing of him.

4 Q. Are you familiar with a Dr. Lewinsohn?

5 A. Yes.

6 Q. And who is Dr. Lewinsohn?

7 A. He, as far as I know, is in the
8 Corporate Medical Department of Union Carbide.

9 Q. When did he come into the Corporate
10 Medical Department of Union Carbide?

11 A. I don't know.

12 Q. Was it sometime in the seventies or --

13 A. I really don't know.

14 Q. Well, just pin it down to a decade.
15 Was it the seventies or the eighties?

16 A. It was seventies or eighties, yes.

17 Q. Are you familiar with some of the
18 studies and the works done by Dr. Lewinsohn?

19 A. Not very familiar, no.

20 Q. Did you become somewhat familiar with
21 some of his work while you were with Union
22 Carbide, though?

23 A. Very limited.

24 Q. Did you read any of his memorandums to
25 Union Carbide or their employees?

1 A. I think so, yes.

2 Q. Do you recall as to how frequently Dr.
3 Lewinsohn would provide memorandums to the
4 employees of Union Carbide?

5 A. No.

6 Q. Would they provide, during the regular
7 course of business, more memorandums to the
8 Calidria group than other portions of the
9 corporation?

10 A. I wouldn't think so.

11 Q. Were you familiar with any personnel
12 from the Johns-Manville Company?

13 A. - Yes.

14 Q. - And who were you familiar with from
15 the Johns-Manville Company?

16 A. Jim Reis.

17 Q. And who else?

18 A. Dihedro Putiatine.

19 MR. BALLARD: You have to spell
20 that.

21 A. The first one is R E I S.

22 Q. (By Mr. Madeksho) Do you know if --
23 go ahead. I'm sorry.

24 A. Do you want me to spell it or try to?

25 MR. STAMM: I think she would.

1 A. P U T T A T I N E, to the best of my
2 knowledge.

3 Q. (by Mr. Macchabe) Are you familiar
4 with any investments that Union Carbide had in
5 asbestos mines owned by somebody other than Union
6 Carbide?

7 A. No.

8 Q. Are you familiar with any studies that
9 Union Carbide had done concerning the use of
10 asbestos-containing materials?

11 A. No.

12 Q. Are you familiar with --

13 A. - Wait a minute. Excuse me there. I'm
14 not very familiar, but I know there was one --
15 there were some studies done in South Carolina.

16 Q. In what location was that in South
17 Carolina, Mr. Myers?

18 A. I don't know the name of it.

19 Q. Was that at one of the plants there?

20 A. Yes. It could have been West
21 Virginia. It's one of West Virginia or South
22 Carolina, but I don't know which.

23 Q. What was the nature of these studies
24 that were being conducted?

25 A. I have little knowledge other than

1 evaluating, as you say, some asbestos-containing
2 materials.

3 Q. And what type of asbestos-containing
4 materials were evaluated?

5 A. To the best of my knowledge, it was
6 insulation products.

7 Q. Was it asbestos-containing cement
8 insulation materials or pipe covering or blocks of
9 materials?

10 A. I don't know.

11 Q. Did Union Carbide ever become involved
12 with any studies as to the use of
13 asbestos-containing cloth materials?

14 A. Not to my knowledge.

15 Q. When did Calidria Asbestos first begin
16 putting any type of caution label on bags of
17 asbestos fibers that were sent to the Eastern
18 European countries?

19 A. To my knowledge, there were no
20 shipments to the Eastern European countries. We
21 did not ship direct. And if some were shipped
22 there from another location, I am not aware of
23 it. They would receive the same warnings that --
24 we used the same bags for any customer or any
25 location.

1 Q. The Calidria Asbestos Division of
2 Union Carbide, they did ship to other countries,
3 though?

4 A. It's not a division, but, yes, we did
5 ship to other countries.

6 Q. Which countries did Union Carbide ship
7 to, to the best of your recollection, Mr. Myers?

8 A. Japan, Taiwan, Korea, Canada, Mexico,
9 Belgium, England, France, Italy, Brazil,
10 Argentina, Columbia --

11 Q. Worldwide, basically?

12 A. Yes.

13 Q. Did Union Carbide ever draw
14 distinction as to the governmental regulations
15 affecting labeling of asbestos products as to
16 making a decision about labeling of those
17 products?

18 A. You have to clarify that or repeat
19 it. I don't follow.

20 Q. Did Union Carbide ever make a
21 distinction as to the labeling of asbestos
22 products based upon government regulations?

23 A. No.

24 Let me try to clarify it. Do you mean
25 did we put a different label on it depending which

1 country it was going to?

2 Q. That is correct.

3 A. No.

4 Q. Or no label at all?

5 A. We did not label until 1968.

6 Following 1968, the labeling would go on all
7 packages.

8 Q. When you would send out these boxcars
9 of the asbestos fiber, how did you all label those
10 boxcars of asbestos fiber as to any caution?

11 A. On the exterior.

12 Q. Interior or exterior?

13 A. The bags were all labeled.

14 Q. No, sir, I'm talking about just in
15 these hoppers. You were talking about that you all
16 sent it out by the boxcar or hopper cars.

17 A. Well, they had a Department of
18 Transportation mark on them that said ORMC
19 Asbestos.

20 Q. What does that mean?

21 A. That's a distinction developed by the
22 Department of Transportation. It means otherwise
23 regulated material, Class C, asbestos.

24 Could I have thirty seconds?

25

(Discussion off the record.)

Q. (By Mr. Madeksho) Was there anything that prevented Union Carbide from putting a warning about cancer-causing agent on their bags or on these railroad car hoppers that the asbestos was being shipped in?

A. No.

Q. Are you familiar with the name Turner-Newall?

A. Yes.

Q. What does Turner-Newall mean to you?

A. I don't know. They're a major -- have been a major factor in the asbestos world. I don't know whether they mine or manufacture.

Q. Did you ever have an opportunity to visit England on business for Union Carbide?

A. Yes.

Q. And what business was that that you attended for Union Carbide in England?

A. Sales.

Q. When was this, Mr. Myers?

A. I can't recall. While I was Marketing Manager, between 1970 and 1981.

Q. When you became Marketing Manager in

1 1970?

2 A. Yes.

3 Q. Did Union Carbide ever provide any
4 education, training or schooling about the hazards
5 of asbestos to you?

6 A. Well, Union Carbide didn't, per se.
7 What do you mean by Union Carbide?

8 Q. Well, you were working for Union
9 Carbide at the time.

10 A. Yes.

11 Q. Did they ever have any training
12 program for you as the Marketing Manager to advise
13 you about the dangers or hazards of asbestos, as
14 far as the marketing of it?

15 A. That was primarily a function of the
16 marketing group to develop that training,
17 education literature for customers, yes.

18 Q. As I recall, you found out about
19 mesothelioma in what year, now, sir?

20 A. I didn't say. It was in the
21 seventies.

22 Q. Well, would that have been by 1970
23 since you were the manager of the marketing group?

24 A. No. I don't recall that I knew about
25 it before 1970.

1 Q. Nobody brought that to your attention?

2 MR. STAMM: He didn't say that.

3 He said he didn't recall.

4 A. I don't recall that they did, no.

5 Q. (By Mr. Madeksho) In regard to Union
6 Carbide's purchase of asbestos fiber to use in its
7 own business concerning the processing of
8 materials and the manufacturing of various
9 products, what are all of the plants and locations
10 that asbestos fibers were used?

11 A. I don't know.

12 Q. You don't know any?

13 A. -- You said all of them.

14 Q. As many as you know of.

15 A. Bound Brook, New Jersey. Mainly the
16 ones that we've talked about earlier.

17 MR. STAMM: I think this is
18 repetitious.

19 A. Indianapolis, Indiana. I don't know
20 where -- Prestone was either -- or the stop-leak
21 probably was made in West Virginia or -- probably
22 in West Virginia.

23 Q. Wasn't Prestone also made in Texas
24 City?

25 A. I don't know whether the stop-leak or

1 the asbestos-containing --

2 Q. The Prestone antifreeze?

3 A. -- material. I don't know.

4 Q. You wouldn't quarrel if other
5 documents reflected that it was made there, would
6 you?

7 A. Not if they're -- no, I wouldn't
8 quarrel with them because I have no knowledge of
9 it.

10 Q. Would you quarrel with any other
11 documents showing that the Texas City Plant of
12 Union Carbide was using asbestos fiber in the
13 processing of some of their resins in the
14 plastics?

15 MR. STAMM: I object to the form
16 of the question.

17 Q. (By Mr. Madeksho) You can go ahead
18 and answer.

19 A. I have no knowledge of any such use;
20 therefore, I could not quarrel with such
21 documents.

22 Q. Are you familiar with Robert Peele?

23 A. Yes.

24 Q. And who is Robert Peele?

25 A. I'm familiar with -- I think he was or

1 is, I don't know, an industrial hygienist or
2 environmental type employee of Union Carbide.

3 Q. And are you familiar with how long Mr.
4 Peelo has been employed by Union Carbide?

5 A. No.

6 Q. Are you familiar with Dr. R. J.
7 Sexton?

8 A. No.

9 Q. What about a Mr. S. C. Giambruno?

10 A. No.

11 Q. Are you familiar with meetings that
12 Union Carbide used to attend with other
13 manufacturers of asbestos-containing materials?
14 I'll give you an example. In regard to meetings
15 with Owens-Corning that Union Carbide --

16 A. No.

17 Q. Were there any joint meetings between
18 other manufacturers of asbestos-containing
19 materials and you as an employee of Union Carbide,
20 other than AIA/NA?

21 A. Well, as a customer of ours, I would
22 call on customers, if you mean that kind of a
23 meeting.

24 Q. Yes, sir, that's part of what I'm
25 getting at. In regard to you --

1 A. You know, you said asbestos-using
2 companies?

3 Q. Right. The purchasers of the asbestos
4 from Union Carbide. In other words, Union
5 Carbide's customers.

6 A. Obviously, being Marketing Manager, I
7 would call on customers, yes.

8 Q. And these would be the same people
9 that you had mentioned earlier, Armstrong and
10 Owens-Corning, Celotex and GAF and Kentile and
11 those people; is that what you're referring to?

12 A. I can't recall that I called on or
13 have seen all of those companies, but, in general,
14 yes.

15 Q. Well, let's talk about specifically,
16 then. Did you call on GAF?

17 A. Yes.

18 Q. Did GAF also call on you all?

19 A. For what purpose?

20 Q. In regard to selling you their
21 asbestos fibers?

22 A. No.

23 Q. Are you familiar that GAF had an
24 asbestos mine at Hyde Park, Vermont?

25 A. Yes.

1 Q. Was youall's mine bigger than their
2 mine?

3 A. The mine -- the deposit is bigger, I
4 don't know about the mine.

5 Q. Youall's deposit is bigger than GAF's
6 deposit?

7 A. The deposit, yes.

8 Q. Did you call on people from Armstrong?

9 A. Yes.

10 Q. Did they also have people call on
11 youall?

12 A. No.

13 Q. -- Did you also call on people from
14 Celotex?

15 A. Yes.

16 Q. Did you call on Owens-Corning?

17 A. I can't recall calling on them, no.

18 Q. Did Owens-Corning have people call on
19 youall?

20 A. Not on -- the asbestos group?

21 Q. Yes, sir.

22 A. Not that I can remember.

23 Q. Did Raybestos-Manhattan have people
24 call on you as the manager of the marketing group?

25 A. No.

1 Q. Did you call on them?

2 A. No.

3 Q. What was that big shipping facility
4 you all had down on the East Coast where you all
5 used to bring the ore into? Is it Newport?

6 A. I don't know. What ore are you
7 talking about?

8 Q. Somewhere in Virginia.

9 A. I don't know.

10 Q. I'm talking about asbestos ore.

11 A. We have, to my knowledge, never
12 imported any asbestos ore.

13 Q. - Would that be in another division?

14 A. - To my knowledge, Union Carbide has
15 never imported any asbestos ore.

16 Q. You, as the --

17 A. So, it might be in another division, I
18 don't --

19 Q. Mr. Myers, you, as being the Marketing
20 Manager for Union Carbide --

21 A. No, for Union Carbide's asbestos
22 products.

23 Q. Right. Would you have known of any
24 and all purchases of asbestos fibers from other
25 manufacturers?

1 A. No, we've already been through that,
2 that I don't know anything about the purchases at
3 other locations.

4 Q. So, somebody else with Union Carbide
5 would have that information?

6 A. I assume they would, yes.

7 Q. While you were with the King City
8 Minc, did you ever have anybody from the U. S.
9 Bureau of Mines call on you in any capacity?

10 A. I don't recall that there were any
11 visitors -- no, I don't recall any visitors from
12 the U. S. Bureau of Mines.

13 Q. Did you have anybody or did you ever
14 call on the U. S. Bureau of Mines for any
15 assistance that you're aware of, as far as
16 information, et cetera?

17 A. By telephone or by calling on or
18 visiting?

19 Q. Either way, phone or correspondence or
20 in person.

21 A. I have called, yes.

22 Q. And do you recall the --

23 A. And I've had conversations with them.

24 Q. Do you remember the nature of those
25 conversations and the reason for the inquiry?

1 A. Oh, I've talked to Mr. Clifton about
2 the -- that's where I asked for information about
3 the deposit in Zimbabwe, what it consisted of.

4 Q. Is this the same Mr. Clifton that went
5 to work with Johns-Manville?

6 A. If he did, I'm not aware of it. He
7 just retired last year, I think.

8 Q. What about anybody from OSHA, did they
9 ever call on you as far as any inspections?

10 A. Not that I recall. You mean federal
11 OSHA?

12 Q. That's correct, yes.

13 A. Not that I recall.

14 Q. Did you ever have any other
15 representative dealing with health aspects of
16 environmental exposures call on you or the mine at
17 King City during the period of time that you were
18 located there?

19 A. Yes.

20 Q. And who would that have been?

21 A. Cal-OSHA, MSHA, Air Resources Board,
22 the Monterey Bay Unified Air Pollution Control
23 District, the Monterey County Health Department,
24 the Coastal Regional Water Quality Control Board,
25 to name a few. I think that would cover them

1 pretty generally.

2 Q. When you were calling on some of the
3 customers of Union Carbide, did you have a pretty
4 good relationship with them?

5 A. In what way or define relationship?

6 Q. Well, just a working business
7 relationship with them.

8 A. In my opinion, we did. The customer
9 may not have thought the same.

10 Q. Who were the representatives that you
11 recall from Armstrong that you visited with?

12 A. I don't remember any names. I can
13 give you a first name in South Gate, California.
14 Earl, I think. I can't remember a last name.

15 Q. At the South Gate Plant?

16 A. Yes.

17 Q. And what was his position with
18 Armstrong at the South Gate Plant?

19 A. I think he was Technical Director.

20 Q. At the South Gate Plant of Armstrong,
21 that's where they were manufacturing the asbestos
22 vinyl floor tiles?

23 A. Yes.

24 Q. And did they also expand that facility
25 to include the acoustical tiles there?

1 A. Not to my knowledge.

2 Q. They had several locations in
3 California, did they not, in regard to the
4 asbestos vinyl floor tiles?

5 A. Not to my knowledge.

6 Q. This was the only plant that you were
7 familiar with where Armstrong was manufacturing
8 the asbestos or the vinyl asbestos floor tiles
9 during the 1970's?

10 A. Yes.

11 Q. Did they also continue to manufacture
12 them up into the 1980's?

13 A. I don't know.

14 Q. Did you continue to call on them in
15 the 1980's?

16 A. No.

17 Q. Did you call on their acoustical tile
18 plants as well, Mr. Myers?

19 A. Not that I recall.

20 Q. Which of the asphalt roofing plants
21 for Celotex did you call on?

22 A. As I said before, I don't recall that
23 Celotex had asphalt roofing. It was some kind of
24 a roofing compound. And, no, I have not called on
25 any of their plants that I can remember.

1 Q. Which of the GAF facilities did you
2 call on?

3 A. Long Beach.

4 Q. That's where they were making also the
5 vinyl asbestos floor tiles, in the Long Beach --

6 A. Yes.

7 Q. Did they also make the asbestos siding
8 there, too?

9 A. I don't know that they make asbestos
10 siding.

11 Q. GAF also made asbestos-containing
12 roofing materials, did they not?

13 A. - I don't know.

14 Q. Were you still calling on GAF in the
15 1980's?

16 A. No, I don't think so.

17 Q. Late seventies?

18 A. I don't know when was the last time I
19 visited GAF.

20 Q. Your best estimate.

21 A. I can't pin it down to anymore than
22 the seventies.

23 Q. Late seventies, early seventies?

24 A. Late.

25 Q. Was that their facility right outside

1 of L.A., Orange County?

2 A. Long Beach.

3 Q. Yes, Long Beach, that's right.

4 MR. MADEKSHO: Off the record for
5 a minute.

6

7 (Discussion off the record.)

8

9 MR. MADEKSHO: Let us take a
10 little short break here.

11

12 (Brief recess taken.)

13

14 Q. (By Mr. Ballard) Mr. Myers, let me
15 clear up some things that are questions in my
16 mind. It may be clear in the record, but I need
17 to get this straight in my my mind.

18 You mentioned Uvalde as one of the
19 customers of Union Carbide's asbestos and that
20 struck a bell with me because we've got a Uvalde
21 here in Texas. Is there some connection?

22 A. Yes.

23 Q. So, Union Carbide shipped asbestos to
24 Uvalde what? Uvalde Rock Company or Uvalde --

25 A. I think it was Uvalde Rock Asphalt.

1 Company, the As-Rock Division.

2 Q. And, as I understand from your
3 testimony, at some point in time a managerial
4 decision was made to put cautions on your bags of
5 asbestos that were shipped from your mine?

6 A. Yes.

7 Q. And that once that decision was made,
8 the cautions of some sort were put on all bags
9 thereafter?

10 A. Yes. To the best of my knowledge,
11 yes.

12 Q. And that would be true whether the
13 bags were shipped nationally in the U. S. or
14 internationally to foreign countries?

15 A. Yes.

16 Q. And from the time that managerial
17 decision was made, did Union Carbide ever stop
18 placing those cautions on the bags for any period
19 of time?

20 A. Not to my knowledge.

21 Let me clarify whether it was the same
22 on all bags because we did, and this is without my
23 necessarily personal direct knowledge, we did
24 package in bags for shipment to Europe that were
25 to the distributor's design and not to our

1 design. So, I cannot positively say that we had
2 the English warning on those bags.

3 Q. Well, I may have assumed that if you
4 shipped to France, you would put it in French.

5 A. No.

6 Q. That's incorrect?

7 A. Yes.

8 Q. But the point I wanted to be sure in
9 my mind about is once the decision was made to put
10 cautions on the bags, every bag that you know
11 about that went out of your facility had a caution
12 on it after that point in time?

13 A. With that one exception of the
14 distributor to whom we shipped in Europe in bags
15 designed to his specifications.

16 Q. Did his bags have any cautions on
17 them?

18 A. I can't recall.

19 Q. So, as we stand now on your
20 recollection, the bags to that one special
21 customer may or may not have had a caution on
22 them?

23 A. Yes.

24 Q. And who was that customer?

25 A. Degussa.

1 Q. Degussa?

2 A. Yes.

3 Q. Do you have any financial connection
4 with Union Carbide at this time?

5 A. No.

6 Q. Either through a retirement plan, a
7 stock-funded plan or anything of that nature? And
8 I don't care about the amount, but I need to know
9 if you have any connection financially with them?

10 A. I have a vested pension with Union
11 Carbide.

12 Q. And would any of that pension be
13 funded by Union Carbide stock? I know some
14 companies fund their retirement plans by the
15 company's stock.

16 A. I don't think so.

17 Q. But you are vested?

18 A. Yes.

19 Q. Your background, as I recall, is a
20 Bachelor of Science in Chemical Engineering?

21 A. Yes.

22 Q. I've got to ask you this question.

23 KCAC, Inc., would that be from King City Asbestos
24 Company?

25 A. By golly. It sounds like it, but it

1 is incorporated as only the initials.

2 Q. You needed a name, so you picked --

3 A. It could be King City Athletic Club.

4 Q. Or various other combinations of those
5 letters.

6 MR. STAMM: You used that line
7 before, I bet.

8 Q. (By Mr. Ballard) And again, so as to
9 straighten up in my mind, Union Carbide is now and
10 has been for some period of time a member of the
11 Wellington Asbestos Claims Facility?

12 MR. STAMM: We'll stipulate that
13 Union Carbide has been a member since June 19th,
14 1985.

15 MR. BALLARD: Would you stipulate
16 before that?

17 MR. STAMM: No, because that's
18 when the agreement was signed.

19 Q. (By Mr. Ballard) Is that your
20 recollection that's when the agreement was signed?

21 A. I would have no idea other than --

22 Q. That would be the Wellington
23 Agreement?

24 MR. STAMM: Yes.

25 A. I assume that my counsel is accurate.

1 MR. STAMM: Let me check. That's
2 right, June 19, 1985.

3 Q. (By Mr. Ballard) Do you know if Union
4 Carbide was a disclosed or undisclosed member of
5 Wellington?

6 MR. STAMM: If you know.

7 A. I'm not sure of that term. I have
8 heard that they were a -- it was called a
9 confidential member or --

10 Q. (By Mr. Ballard) Same difference.

11 A. I forget the terms.

12 MR. MADEKSHO: Confidential
13 signatory? -

14 THE WITNESS: I don't know.

15 Q. (By Mr. Ballard) Did you play any
16 part in negotiating the entry of Union Carbide
17 into The Facility?

18 A. No.

19 Q. Do you know who did?

20 A. No. Other than the Union Carbide Law
21 Department I'm sure had some hand in it.

22 Q. One other name, Mr. W. H. Winans,
23 W I N A N S, was he still with Union Carbide when
24 you came with the company?

25 A. I don't know the name.

1 Q. Being a chemical engineer, you're
2 familiar with the volume put out by Sax on
3 dangerous properties of materials?

4 A. Put out by who?

5 Q. Sax, S A X. You're not familiar with
6 that?

7 A. No.

8

9 (Discussion off the record.)

10

11 Q. (By Mr. Ballard) You've indicated
12 that you're not familiar with dust counting or
13 dust counting techniques. Do you know if Robert
14 Peele is --

15 A. Oh, are you making an assumption that
16 I'm not familiar with dust counting?

17 Q. Yes.

18 A. Yes, I am.

19 Q. You are familiar with dust counting?

20 A. I'm not unfamiliar with it.

21 Q. Well, what is your familiarity with
22 dust counting?

23 A. The air monitoring for our customers
24 was done by people under my supervision.

25 Q. Would those be industrial hygienists

1 that monitored --

2 A. No, prior to my time, the air
3 monitoring was done at the King City Mine and Mill
4 by an industrial hygienist of the corporation, but
5 we do not hire one now.

6 Q. And did Union Carbide have any
7 industrial hygienists who belonged to the ACGIH?

8 A. I would assume so, but I don't know
9 that as a fact.

10 Q. And did Union Carbide subscribe to the
11 recommendations of the ACGIH insofar as the dust
12 counting techniques were concerned?

13 A. I don't know whether they published
14 any techniques on dust counting.

15 Q. I may be getting on dangerous ground
16 making assumptions, but may I make the assumption
17 that you don't know anything about the ACGIH and
18 their publications about dust counting techniques?

19 A. That's a correct assumption.

20 Q. The next series of questions, Mr.
21 Myers. When did Union Carbide first begin
22 negotiating with The Wellington Facility?

23 MR. STAMM: The same objection as
24 I had before and the same instructions to the
25 witness.

1 MR. BALLARD: Could you state the
2 basis of the objection?

3 MR. STAMM: Irrelevant.

4 Q. (By Mr. Ballard) Would Union Carbide
5 have been negotiating with The Wellington Facility
6 as of September 1984?

7 MR. STAMM: Same instruction.

8 MR. BALLARD: Certify those two
9 questions, please.

10 Q. (By Mr. Ballard) First, let me ask,
11 do you know when Union Carbide began negotiating
12 with The Wellington Facility?

13 A. - No.

14 Q. Do you know who would know?

15 A. No.

16 MR. BALLARD: We've wasted a lot
17 of time with that.

18 MR. MADEKSHO: Your only
19 recollection is that the attorneys had talked to
20 you about two years ago in regard to The
21 Wellington Group or the Asbestos Claims Facility?

22 THE WITNESS: Yes. I wouldn't
23 term it talked to me. I mean, this wasn't a --

24 MR. MADEKSHO: It came to your
25 knowledge at that time?

1 THE WITNESS: That there was
2 something going on, yes.

3 MR. BALLARD: That's all I've
4 got.

5 MR. STAMM: Anyone else?

6 MR. McCLURE: I don't have any
7 questions at this time.

8
9 (Deposition recessed at 4:55 p.m.)

10
11
12
13
14 JOHN L. MYERS

15 THE STATE OF TEXAS :

16 COUNTY OF _____:

17 SUBSCRIBED AND SWORN TO BEFORE ME,
18 the undersigned authority, by the witness, JOHN L.
19 MYERS, on this the _____ day of
20 _____, 1986.

21
22
23 _____
24 Notary Public in and for
25 _____ County, T e x a s
My Commission Expires:

1 THE STATE OF TEXAS

2 I, Susan R. Goldstein, a Certified
3 Shorthand Reporter in and for the State of Texas,
4 do hereby certify that at the time and place
5 stated herein, the witness, JOHN L. MYERS,
6 personally appeared before me and after being by
7 me first duly sworn to tell the truth, was
8 examined by counsel for the respective parties
9 hereto; that the testimony of said witness was
10 taken in shorthand by me, later reduced to
11 typewriting under my direction, and the foregoing
12 118 pages is a true and correct transcript of said
13 testimony.

14 GIVEN UNDER MY HAND AND SEAL OF OFFICE
15 on this _____ day of September, 1986.

16
17
18
19
20 Susan R. Goldstein
21 Certified Shorthand Reporter
22 in and for the State of Texas
23 Texas CSR No. 704
24 Expiration Date: 12/31/86
25

1 STATE OF TEXAS

2
3 I, Susan R. Goldstein, the Certified
4 Shorthand Reporter before whom the above and
5 foregoing deposition was taken, do hereby certify
6 that at the time of the taking of said deposition,
7 certain oral questions were propounded and certain
8 answers given, as shown in the transcript of the
9 deposition of JOHN L. MYERS, filed in the above
10 captioned cause, and certain questions were
11 propounded and were not answered, as shown in the
12 transcript of said deposition, as follows:

13 - Beginning at page 58, line 1.

14 Beginning at page 116, line 20.

15
16
17 GIVEN UNDER MY HAND AND SEAL OF OFFICE,
18 on this the _____ day of September, 1986.

19
20
21 Susan R. Goldstein
22 Certified Shorthand Reporter
CSR No. 704, State of Texas
23
24
25

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
GALVESTON DIVISION

BOBBY R. SANFORD

VS.

JOHNS-MANVILLE SALES
CORPORATION, ET. AL.

)
)
)
)
)
)
)

CA: G-82-325

NOTICE OF INTENTION TO TAKE ORAL DEPOSITION

TO: Mr. John Sullivan, BAKER & BOTTS, One Shell Plaza, Houston,
Texas, attorney of record for the Asbestos Claims Facility;

Mr. Witcher McCullough, III, BAKER & BOTTS, One Shell
Plaza, Houston, Texas, attorney of record for G.A.F.;

Ms. Elizabeth Thompson, BUTLER & BINION, 1600 Allied Bank
Plaza, Houston, Texas, attorney of record for Raymark,
Industries;

Mr. Lawrence Madeksho, attorney at law, 8320 Gulf Freeway,
Suite 218 Houston, Texas, attorney of record for Plaintiff.

Please take notice that pursuant to the Federal Rules of
Civil Procedure, the deposition of UNION CARBIDE CORPORATION, by
and through its corporate representative, will be taken on the
4th day of September 1986 commencing at 1:30 p.m. and continuing
from day to day thereafter until completed. The deposition will
be conducted at the Law Offices of Robert Ballard, ABRAHAM,
WATKINS, NICHOLS, BALLARD, ONSTAD & FRIEND, 800 Commerce Street,
Houston, Texas, before a court reporter from Worldwide Court
Reporters, Inc., P.O. Box 58170, Houston, Texas 77258.

EX +1
56-9-4-PL
M 7 er 3 Depo.

UCAREF00012584

The corporate defendant shall designate one or more of its officers, directors, managing agents or other persons who consent to testify on its behalf. The persons designated by the corporate defendant shall testify on behalf of said corporate defendant with respect to the following matters:

1. Asbestos mines;
2. Membership in the AIA (Asbestos Information Association);
3. Insurance Department negotiations with Asbestos Claims Facility;
4. Beginning period of negotiations between Asbestos Claims Facility and date of signing with Wellington Facility;
5. Produce all correspondence between Raybestos Manhattan, (Raymark Industries) including all correspondence with the AIA;
6. Manufacturers of any products containing asbestos;
7. Sources of supply of asbestos;
8. Years of using or processing asbestos or asbestos products;
9. Any and all asbestos claims litigation involved prior to this time.

Respectfully submitted,

ABRAHAM, WATKINS, NICHOLS
BALLARD, ONSTAD & FRIEND

By: Robert E. Ballard /dlr
Robert E. Ballard
Texas Bar #1651000
800 Commerce Street
Houston, Texas 77002
(713) 222-7211

ATTORNEY FOR PLAINTIFF

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Notice has been forwarded to all interested counsel of record by hand delivery on this the 2nd day of August 1986.

Robert E. Ballard /dlr
Robert E. Ballard

**WORLDWIDE
COURT REPORTERS,
INC.**

1560 W. Bay Area Boulevard, Suite 280 • Houston, Texas 77546 • (713) 280-0015

August 22, 1986

Mr. Hugh Bartlett
District Clerk's Office
United States Federal Courthouse
601 Rosenberg
Galveston, Texas

In Re: C.A. No. G-82-325; Notice of Intention to
Take Oral Deposition of Union Carbide Corp.

Dear Mr. Bartlett:

Enclosed please find the original Notice of Intention to Take Oral Deposition of Union Carbide Corporation in the above-referenced cause. I would appreciate your filing this Notice among the official records in this case.

By copy of this letter we are informing all interested counsel of the filing of this Notice.

Thanking you for your assistance in this matter, I remain

Sincerely yours,

Dorothy J. Riehl
Dorothy J. Riehl

Enclosure

cc:

Mr. Robert E. Ballard
Mr. Lawrence Madeksho
Mr. John Sullivan
Mr. Witcher McCullough, III
Ms. Elizabeth Thompson

UCAREF00012587

G-31,121

"CALIDRIA" ASBESTOS PELLETS

HEALTH AND OSHA INFORMATION

November 1, 1977

1102110
UCAREF00012588

"CALIDRIA" ASBESTOS PELLETS

HEALTH AND OSHA INFORMATION

November 1, 1977

Union Carbide Corporation
Metals Division
"Calidria" Asbestos
Marketing and Technology Department
Niagara Falls, New York

UCAREF00012589

INTRODUCTION

The Williams-Steiger Occupational Safety and Health Act was passed in 1970 with the stated objective of assuring every American worker a safe and healthy workplace. The first health standard promulgated under this act covered exposures to airborne asbestos and went into effect on June 7, 1972. OSHA proposed extensive revisions of the regulations on October 9, 1975. The proposal has been going through a variety of administrative procedures including feasibility and inflationary impact studies. The revised version is expected sometime in the first half of 1978.

Asbestos has received a great deal of attention and publicity in the last several years. Unfortunately, much of the media treatment of the subject has been emotionally oriented and distorted and, in some cases, bordering on the sensational and untrue. Many users of asbestos and products containing asbestos have been misled regarding the safety of asbestos and what is needed to comply with the OSHA requirements.

The information presented in this folder has been collected as a service to "Calidria" asbestos users. It is intended to help put both the health and OSHA compliance questions in a reasonable perspective. Included are:

1. A summary of the main provisions of the OSHA Asbestos Standard and a copy of the regulations.
2. Airborne asbestos fiber count data obtained by Union Carbide at a variety of industrial locations during the addition of "Calidria" asbestos pellets to various processes.
3. Two pamphlets, "What You Should Know About Asbestos and Health" and "Asbestos and Health" published by the Asbestos Information Association/North America. The first is an employee oriented discussion of both health and OSHA while the second addresses the health question. Additional copies are available on request.
4. A Material Safety Data sheet and analytical data on "Calidria" asbestos.

OSHA REGULATIONS

Introduction

After extensive public hearings, a Federal standard for Exposure to Asbestos Dust was published in the Federal Register, Volume 37, No. 110 on Wednesday, June 7, 1972. A copy of this standard (1910.1001) is included with the literature at the back of this booklet⁽¹⁾.

-
- (1) Some states have established their own regulations and enforcement programs and have been certified by OSHA. Generally, these regulations are identical to 1910.1001 but occasionally there are important differences. This discussion applies only to the Federal standard. Information on any particular state is available upon request.

Basically, the standard can be divided into the following five major categories:

1. Standards:

Defines the allowable airborne asbestos fiber content in the workplace.

2. Monitoring:

Defines the method of collecting samples and measuring the airborne fiber concentration.

3. Methods of Compliance:

Defines acceptable procedures to meet the allowable limits.

4. Medical:

Specifies frequency and type of medical examinations required.

5. Warning Signs and Labeling:

Specifies when warnings are necessary and the wording of such warnings.

The essential features of these categories are discussed in the remainder of this section. Before looking at these, however, it should be made clear that in the most basic sense the regulations require that every place of employment where asbestos is used must be monitored to determine the exposure level of airborne asbestos fibers. If the levels are well within the allowable limits, the only additional requirements are those relating to medical examinations. If the levels are not clearly within compliance, all provisions of the regulations apply. There has been a great deal of confusion on this distinction, occasionally even with OSHA field inspectors.

Standards

The present OSHA standards set a maximum exposure to airborne asbestos fiber of length longer than 5µ of:

1. An 8-hour, time-weighted average (TWA) of 2 fibers/cc.
2. A ceiling concentration of 10 fibers/cc.

Note particularly the use of the time-weighted average over the 8-hour shift. An operator performing one or two short additions of RG-244 per shift, as is typical of polyester producers, would have his exposure during the dumping time averaged with zero (or a very low background level) for the rest of the shift. This, obviously, tends to greatly reduce the 8-hour TWA.

Monitoring

The regulations require an initial monitoring to determine whether the workplace meets the required levels. Thus:

"Within six months of publication of the regulations (June 7, 1972), every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine where every employee's exposure to asbestos fibers is below the prescribed limits."

Monitoring usually is done by the membrane filter/personal air sampler, which can be obtained from a number of manufacturers.

The personal air sampler draws workplace air onto a filter which collects the particulates and fibrous dust in the air. This filter is then placed under a microscope and the number of fibers counted. After the count is complete, the actual fiber concentrations, expressed as fibers per cubic centimeter of air, are calculated by formula.

After the initial monitoring, the regulations state:

"...samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 6 months for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by paragraph (b) of this section."

The section that has been underlined shows that if the initial monitoring give levels that are well below the allowable limits and no change is made in the method of operation which would increase dust levels, no further monitoring is required. It is a good and recommended practice, however, to monitor at regular intervals to make sure that the limits are being met.

It should also be understood that you cannot be cited legally for exceeding the allowable limits on the basis of your own monitoring. OSHA must base any citations issued on their own tests.

Methods of Compliance

If monitoring shows a plant or operation to be in excess of the limits, a number of ways are prescribed to bring it into compliance. These include, but are not limited to, engineering controls such as isolation, enclosure, exhaust ventilation, and dust collection. Certain work and housekeeping practices and waste disposal procedures are specified. Respirators, special clothing, and change rooms are also required under certain conditions.

It is most important to understand that these compliance procedures are required only if the allowable airborne asbestos fiber limits are being exceeded or can be expected to be exceeded under reasonably foreseeable circumstances. They are not automatic requirements that apply wherever asbestos is present.

Medical Examinations

Preplacement, annual, and termination medical examinations must be provided or offered by the employer for any employee "... engaged in occupations exposed to airborne concentrations of asbestos fibers." These medical records must be kept for 20 years and are available to the employee's physician.

This section has proved to be one of the most confusing in the regulations since it does not define any cutoff level below which examinations are not required. Finally, after five years of urging, OSHA issued a clarification. "Exposure to asbestos" is specified as any exposure which exceeds 0.1 fiber/cc >5 μ in an 8-hour time-weighted average or a peak level greater than 0.5 fiber/cc >5 μ based on a 15-minute sample period.

Caution Signs and Labeling

The regulations require that:

"Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section."

Wording for the signs is also specified.

There have been some cases where the OSHA inspectors have taken this to mean signs are required at any location where asbestos is present, regardless of whether or not the exposure limits are exceeded. Although this is clearly incorrect, there has been a tendency to post the signs and not contest the citation.

The regulations also require that:

"Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section will be released."

Wording for these labels is also specified.

AIRBORNE ASBESTOS FIBER COUNTS

Table I shows the airborne asbestos fiber concentrations obtained for two types of manufacturing procedures. The upper portion of the table covers cyclic operations where a moderate amount of asbestos is added to a mixer, such as a Banbury, along with a variety of other dry ingredients. The operator is in the area steadily during a substantial portion of the shift. Air samples were collected across complete cycles and thus approximate time-weighted average concentrations.

The results of the 12 samples collected at three different manufacturing locations ranged from 0.1 to 1.3 fibers/cc. The current allowable level is 2 fibers/cc.

The lower portion of the table shows operations where a substantial quantity of asbestos is handled over a relatively short time only once or a few times during a shift. Samples were collected only during the time while asbestos and the emptied bags were handled and thus represent ceiling concentrations.

The results for eleven samples from nine locations ranged from 0.4 to 7.4 fibers/cc. The highest value was for a three-minute sample. Short sample times tend to give very erratic results. Without this single high value, the range is from 0.4 to 2.4 fibers/cc. The allowable ceiling concentration is 10 fibers/cc.

TABLE I

AIRBORNE ASBESTOS FIBER COUNTS
DUMPING OF CALIDRIA ASBESTOS PELLETS

End Use	Asbestos Type	Pounds Dumped	Dump Time (Min.)	Sample Time (Min.)	Airborne Asbestos Fiber Concentration (Fibers/cc >5 μ)	Notes
<u>Average Concentrations (1)</u>						
Rubber Compounding	HPP	30	~2	33	0.4	Operator A
" "	"	30	~2	14	0.9	" "
" "	"	30	~2	42	0.9	" "
" "	"	30	~2	32	0.2	Operator B
" "	"	30	~2	10	0.5	" "
" "	"	30	~2	49	0.3	" "
Rubber Compounding	HPP	37	~2	38	1.0	
" "	"	37	~2	60	1.2	
" "	"	37	~2	33	1.3	
" "	"	37	~2	23	1.1	
Paper Manufacture	HPP	25	~1	70	0.1	
" "	"	25	~1	87	0.1	
<u>Ceiling Concentrations (2)</u>						
Roof Coating Manufacture	HPP	200	7	7	1.5	
Paint Manufacture	SG-200X	114	3	3	7.4	
Paper Manufacture	HPP	100	16	16	0.3	
" "	"	50	9	9	0.6	
Ceiling Tile Manufacture	HPP	100	3	3	1.0	
Dumping Test	HPP	500	5	10	2.4	
Oil Well Drilling Mud	SG-200X	500	59	59	0.5	
Oil Well Drilling Mud	SG-200X	1000	26	26	0.4	
Oil Well Drilling Mud	SG-200X	1500	29	29	1.0	
" " " "	"	1500	29	30	1.0	
Oil Well Drilling Mud	SG-200X	1050	15	15	1.4	

(1) Air sample collected during the addition of several ingredients. Asbestos handled for only short period but operator is in the immediate area. The results approximate time-weighted average concentrations during continuing operating cycles.

(2) Air samples collected only during the direct handling of asbestos and emptied bags. For these uses asbestos is handled at separated intervals. These results are ceiling

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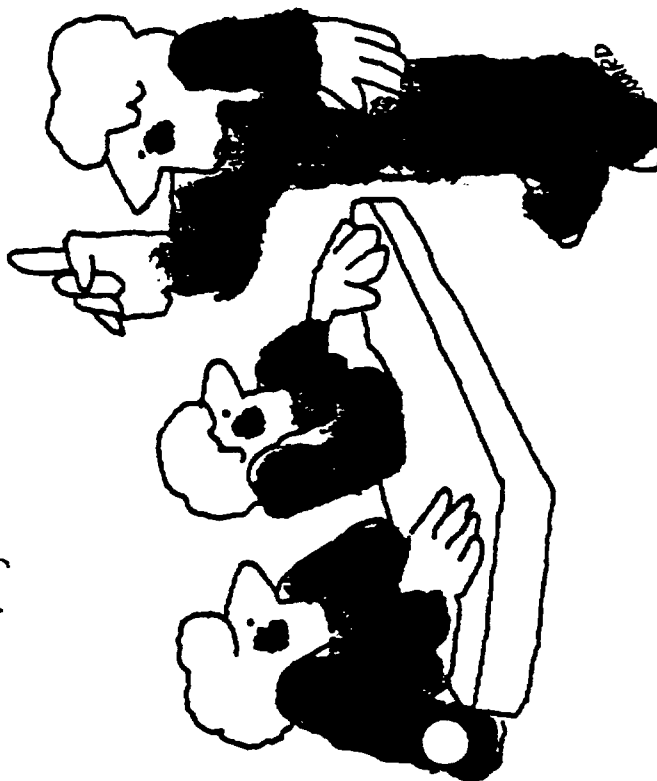
LITERATURE AND REGULATIONS

UCAREF00012596

What You Should Know About Asbestos And Health



ASBESTOS INFORMATION ASSOCIATION
1660 L Street N W Washington, D C 20036



Litho in U.S.A.

UCAREF00012597

Frankly Speaking

You certainly are important to your family and loved ones, and you are important to the company. It makes good sense for the company to do everything possible to protect you in your working environment, and for you to take every precaution to avoid possible hazards to your health.

If your work involves the use of asbestos or asbestos-containing products, you should be aware of

- What the health hazards can be.
- What obligations your employer has to protect you.
- What you can do as an individual to protect your own health and that of your fellow employees.



2

These are the Facts

Exposure to asbestos fiber can increase the risk of developing certain diseases over a period of years. The four diseases associated with inhalation of asbestos fiber are asbestosis — a non-malignant scarring lung condition; cancer of the lung, and to a lesser degree, cancer of the digestive tract; and mesothelioma — a rare cancer of the lining of the chest or abdominal cavities.

Reduction of asbestos dust exposure is at present the only known method of preventing disease among asbestos industry workers. Experience has shown that when dust levels are low, the risk to the worker and the incidence of asbestos-related disease is low.

Now . . . About Smoking

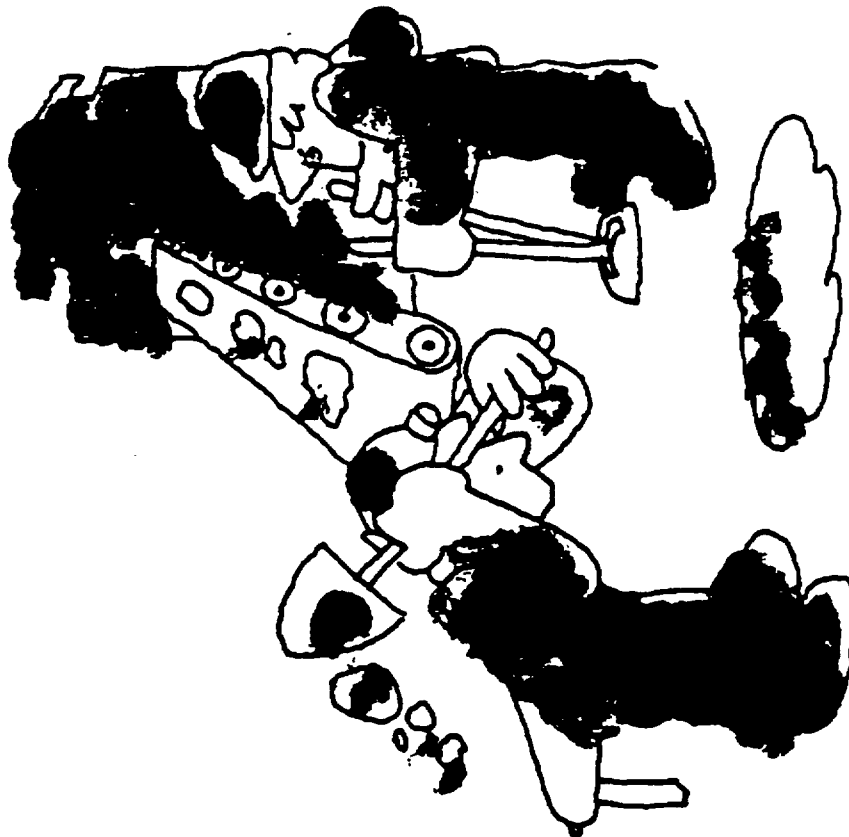
It has been established that cigarette smoking greatly increases the risk of developing lung cancer in persons exposed to asbestos. On the other hand, asbestos industry workers who do not smoke cigarettes — and who never have smoked regularly — have shown no greater frequency of lung cancer than the average person who does not smoke.



3

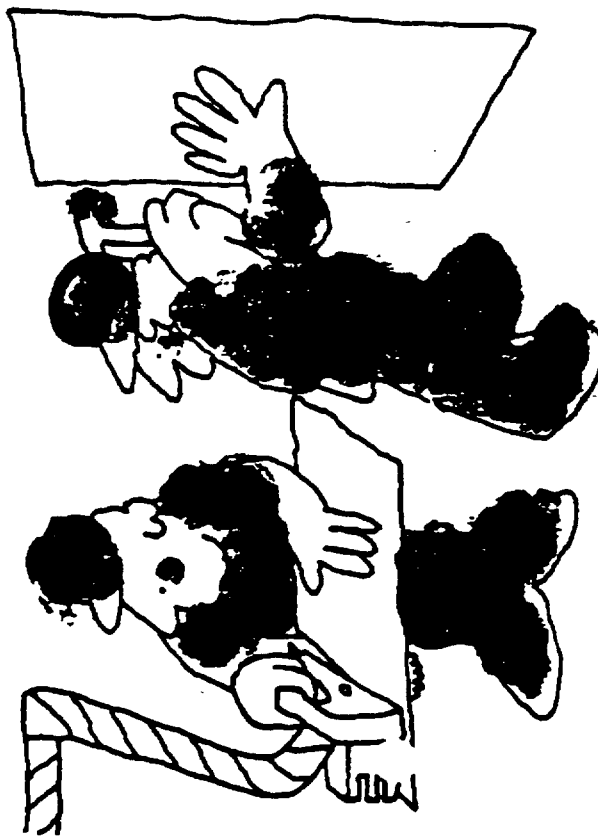
If You Work in a Plant or Mine

Employees in asbestos mines, mills, or product manufacturing plants will be exposed to airborne asbestos fiber. But, when dust levels in mines, mills and factories are properly controlled, the asbestos content of the air will be low and within safe levels, and will not be a hazard to workers.



If You Work in Field Operations

Most finished asbestos-containing products, when correctly used, will not produce dust levels high enough to be a hazard to workers. In more than 90% of the asbestos-containing products made in the United States, the asbestos fibers are "locked in" the product by means of cement, plastic or other binders. Consequently, the fibers are not easily released into the air, except during sawing or certain other machining operations. The tear-out, removal or demolition of old asbestos-containing insulations also can release fibers. Such operations must be carried out with approved methods of dust suppression and control.



Regulations to Protect You

To insure the safety of all, occupational standards for exposure to asbestos dust have been established by the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor. These standards are designed to protect you from exposure to potentially hazardous amounts of asbestos dust and are being carefully observed by the company.

Here is what these standards provide:

1 A SAFE WORKPLACE

Your employer is required to make sure that no employee is exposed to more asbestos dust than permitted by the government standard. Your company will exert every effort to keep levels not only below permissible limits, but as low as possible.

2 IN CASE OF RISK

If exposure limits are exceeded, the employee will be notified by his employer, and will be informed of the corrective measures being undertaken to reduce his exposure to permitted levels.

3 CORRECTIVE ACTION

Engineering controls and safe work practices will be the approved methods of correction.



6

4 IN THE MEANTIME

While corrective measures are being taken, the employee will be protected by other means, which may include the wearing of an approved respirator provided by his employer, or by shift rotation.

5 TEMPORARY MEASURES

The use of respirators or shift rotation to achieve proper dust control will be permitted only (a) during the time necessary to install engineering controls or to institute safe work practices, (b) in situations where such controls or practices are not technically feasible, or (c) in emergencies.

6 AND ONLY IF YOU PASS THE MEDICAL

No employee will be assigned to a task requiring the use of a respirator if his most recent yearly medical examination indicates that he would not be able to function properly while wearing one, or if the wearing of the respirator would create a hazard to the employee's health or safety.

7 SPECIAL PROTECTION WHEN NEEDED

Protective clothing, change rooms, and separate clothes lockers will be provided for employees in situations where exposure standards are exceeded.



7

8 CHECKING THE AIR

Monitoring of workplace air will be conducted by the employer to assure that government standards are being met. Employees may review results of the monitoring in their particular job areas.

9 SIGNS TO GUIDE YOU

Caution signs will be posted in work areas where airborne levels of asbestos may be in excess of the exposure limits, and where respiratory protection and special handling precautions are required. Employees should obey these signs at all times.

10 CAUTIONS ON PRODUCTS, TOO

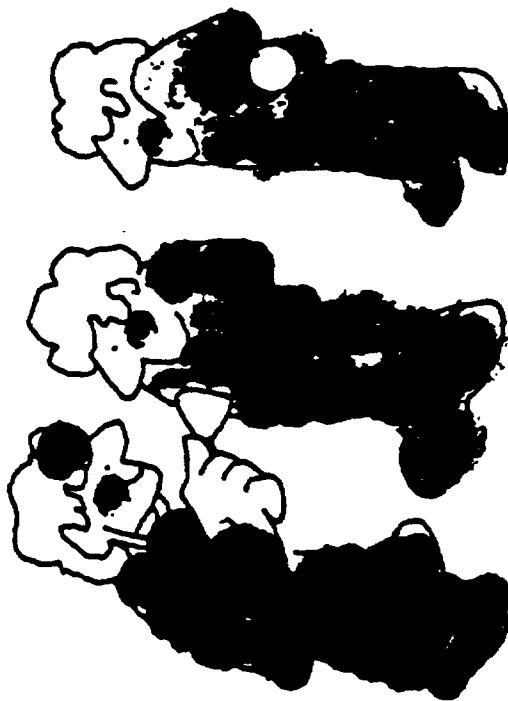
Caution labels will be placed on asbestos-containing products which, during any reasonably foreseeable use, handling, application, machining or disposal may release asbestos fiber into the air in concentrations that exceed the exposure limits.

11 ANNUAL CHECK-UPS

The employer, at no cost to the employee, will provide yearly medical examinations for employees exposed to asbestos dust. Pre-employment and termination medical exams also are provided.

12 COUNSELING AND RESULTS AVAILABLE

Results of each employee's medical examination will be reviewed with him by a physician, and, at the worker's request, his own medical exam records will be made available to his family physician.



And, Most Important . . .

Another word about smoking. First, an assurance. If you don't smoke cigarettes now and never have smoked them regularly, statistical studies show you have no greater chance of getting lung cancer than a nonsmoker who has never worked with asbestos.

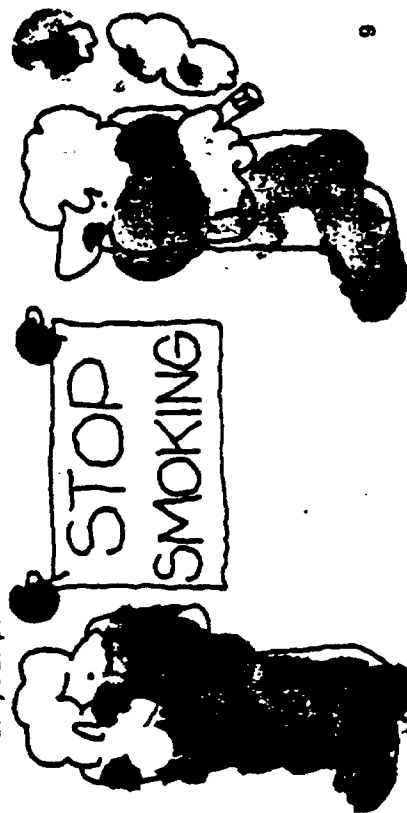
But, on the advice of medical specialists. If you work with asbestos and you do smoke cigarettes, **quit smoking! If you work with asbestos and do not smoke, don't start!** Your family and the company need you and your special abilities. Guard your health in every way, but particularly where cigarette smoking is concerned.

After You Leave Work

You also should take precautions to prevent taking asbestos home on any work clothes or other materials in order to protect members of your family from possible exposure to asbestos dust.

To reduce the possibility of carrying asbestos fibers home on your person and clothing, facilities for showering and changing from work to regular clothes may be provided by your employer. Work clothing taken home for laundering should be carried in a closed bag or container and then washed separately from other family clothing.

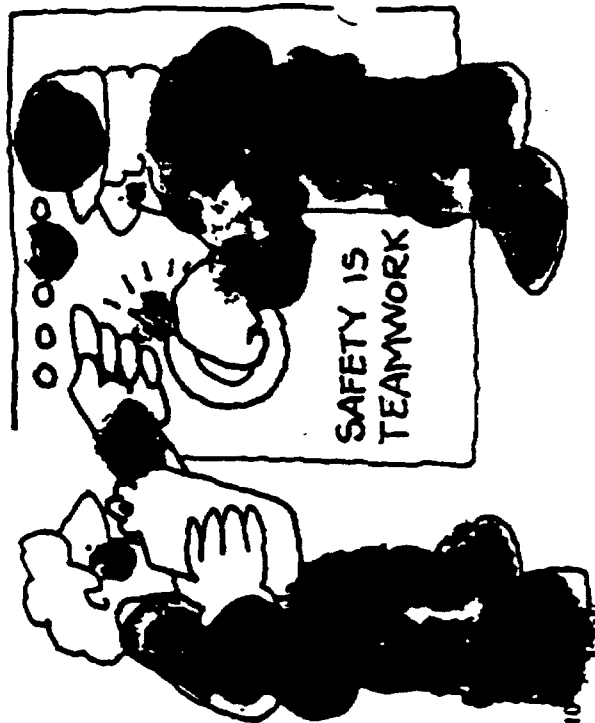
Never take loose fiber home. Your family should not be needlessly exposed to asbestos dust through any carelessness on your part.



What Else Can You Do?

Industrial safety and health can never be the responsibility of only one person. Both you and your employer must work together to provide a safe and healthy environment.

- For safety in specialized areas, detailed work practices must be instituted to make sure we are complying with government regulations. As an employee, it is your duty to follow these work practices at all times. Never take shortcuts that may endanger your health and that of others.
- If you see a possible hazard that your employer may have overlooked, bring it to his attention.
- If you can suggest more efficient and safer work practices, do so. If you are not sure how to handle a material or perform an operation without creating dust, talk with your supervisor first.



10

REMEMBER

- Asbestos fiber may be hazardous to your health, and exposure to it, over a period of time, may increase your risk of developing asbestosis, cancer of the lung or digestive tract, or mesothelioma.
- Every precaution should be taken by you and your employer to keep dust levels low and to avoid unnecessary exposure.
- The asbestos industry is working hard to control dust exposure and to alert every worker to proper safety precautions. Government and company regulations designed to protect you and other workers against exposure to asbestos dust should be strictly followed by everyone.
- The vast majority of the thousands of finished asbestos products are not hazardous when properly handled or used, but workers who are engaged in their manufacture, fabrication or installation should be aware of possible dangers. Don't be careless — urge your fellow workers not to be.
- Asbestos is used in some 3,000 products daily throughout the world . . . products that help prevent and control fire in our homes, schools, factories, offices, hospitals and theaters . . . products that help stop our cars and trucks . . . products that save fuel and energy in this important time of conservation. If we are to continue making these much-needed products, it is important that you and your employer cooperate in maintaining the highest standards of safety and health on the job.

11

ASBESTOS AND HEALTH

Asbestos, used since antiquity, has widespread and important applications in our modern technological society. Approximately 3,000 different products containing asbestos are in daily use throughout the world. Its increased use in the 20th century has lent urgency to the need to cope with occupational health problems related to the excessive inhalation of asbestos dust.

Such problems are not unique to the asbestos industry. Many substances and materials in common use today can be detrimental to the health and safety of industrial workers under uncontrolled conditions. A vital and widely used raw material, asbestos is but one of a number of potentially harmful substances used by industry.

Basically, the known facts about asbestos-related disease can be summed up as follows:

First, asbestos-related health risks today are almost exclusively confined to the occupational setting.

Second, the effects of excessive inhalation of asbestos are both time and dose related. This means that asbestos-related diseases may develop, generally, only after the inhalation of substantial amounts of asbestos dust over a substantial period of time. Thus, there are levels of exposure that will not result in any increased risk of disease.

Third, there is presently no evidence of risk to the general public from exposure to the minute amounts of asbestos that have been found in community air.

Fourth, because of the long latent period of asbestos-related disease, the disease being found today among some long-term industry employees is not an indication of present day conditions, but is a result of conditions existing decades ago, at a time when neither the industry, government, or the medical profession knew very much about the health effects of asbestos and even less about the proper means for their control.

These facts are well recognized by the asbestos manufacturing industry, which has made substantial progress over the years in protecting those who work with asbestos and in eliminating emissions of free asbestos fiber into the community air.

Known and Suspected Occupational Risks

There are three primary diseases known to be caused or exacerbated by prolonged and heavy inhalation of asbestos fibers. They are asbestosis, bronchogenic (lung) cancer, and mesothelioma. Prolonged heavy exposure does not necessarily result in disease and death—but there is little question that risks are significantly increased.

Asbestosis

This is an occupational disease characterized by lung scarring, and is one of the lung diseases called pneumoconioses. It is the most common of the three asbestos related illnesses and is found only among those who have worked regularly and continuously with asbestos under inadequately controlled conditions. The average time span from first exposure to the first clinical signs of asbestosis is 17 years, although some cases have been reported in as few as ten years.

Asbestosis is neither malignant nor necessarily fatal. Many asbestos workers with minor cases can and do continue to work and lead normal lives without difficulties. The asbestos

industry has long recognized the risk of this disease and has implemented safeguards to protect workers' health.

As far as can be determined, asbestosis never has been found in the general public, even among people living in close proximity to asbestos mines and processing plants.

Bronchogenic (Lung) Cancer

A number of medical studies have linked heavy asbestos exposure with an increased risk of lung cancer. While lung cancer occurs far less frequently among asbestos industry workers than asbestosis does, under some circumstances, it occurs more frequently than in the general population.

As with asbestosis, the amount of fiber to which an employee is exposed is an important factor in lung cancer development. A continuing study of workers in a British asbestos textile plant has shown that dust control measures, which had substantially reduced the incidence of asbestosis, also reduced the incidence of lung cancer among the workers to that existing in the general public. In addition, it is the considered opinion of many scientists that lung cancer will not develop in an employee if he did not first have asbestosis.

Unquestionably, factors other than heavy asbestos exposure are important in the causation of lung cancer among asbestos industry workmen. The most documented example is cigarette smoking. Studies conducted of as many as 17,500 asbestos insulation workers show that those who smoke have a much greater risk of contracting lung cancer than non-smokers in the general public, but that those asbestos industry workmen who do not now smoke cigarettes and who have never smoked regularly, have no greater risk of lung cancer than the average man-in-the-street who does not smoke.

Mesothelioma

This disease is an extremely rare cancer of the lining of the chest (pleura) or the abdominal cavity (peritoneum). It is found more frequently among those with occupational asbestos exposure than among the general population. It also has been found among people who, in the past, lived in close proximity to uncontrolled crocidolite asbestos plants or mines, and even, on rare occasions, in the households of employees who worked in crocidolite asbestos factories or mines and who presumably brought substantial quantities of this particular type of asbestos fiber into their homes on their work clothes. This has not been found to be the case with individuals exposed only to chrysotile asbestos, which accounts for 97% of the asbestos fiber used in the U.S. today.

Since the latent period for mesothelioma ranges from 30 to 45 years, it is impossible at this late date to determine precisely the exposure levels experienced by these "neighborhood" and "household" cases. However, they were probably quite high by today's standards. In any case, as technology was developed for the control of asbestos dust levels, both in the plant and out, these potentially hazardous conditions were eliminated.

A relatively small number of cases have also been reported among employees in shipyards and on construction projects who, while not working directly with asbestos, were exposed to heavy concentrations of airborne fiber by working in close proximity to those who did. Exposures of this type have been reduced by strictly enforced industrial safety devices and procedures.

The search for answers to the mesothelioma problem is complicated by a number of factors. In the first place, the number of cases being found, even today, is still relatively small. In all of Canada, for example, only 165 cases were reported in the ten-year period ending in 1968. Secondly, it appears highly likely that certain varieties of asbestos (crocidolite and amosite) are more likely to cause mesothelioma than others. Thirdly, its diagnosis and recognition are still considered problems among medical experts. It is also certain that

there are other causes of mesothelioma besides asbestos. Unfortunately, what those other causes might be is still unknown. Until these and other equally important factors are thoroughly investigated, the mesothelioma question will remain unresolved.

Other Tumors

Some researchers have reported higher-than-normal rates of gastrointestinal cancer among some heavily exposed industry groups. Other researchers have reported no increase of this type of cancer. The consensus of medical opinion is that the evidence is too scanty for a definitive conclusion.

Asbestos and the General Public

Medical reports of excess asbestos-related disease among occupationally exposed populations have been frequently cited by some writers, environmentalists, politicians and others as "proof" that the health of the general public is endangered by the minute amounts of asbestos dust being found in community air. "Neighborhood" and "household" cases of mesothelioma are cited extensively in this regard, as are the frequent reports of the findings of free asbestos fibers and so-called ferruginous bodies (which sometimes contain asbestos) in the lungs of some city dwellers at autopsy.

The truth is, however, that there is no evidence—either from experience or from scientific research—that anyone in the general public has ever contracted any asbestos-related disease from exposure to these minute amounts of airborne asbestos, which are many times lower than levels which have been demonstrated to result in no excess of disease in occupationally exposed populations.

This conclusion is supported by both the Asbestos Panel of the National Academy of Sciences' Committee on Biologic Effects of Atmospheric Pollutants, and the 33 member Advisory Committee on Asbestos Cancers of the International Agency for Research on Cancer, a division of the World Health Organization.

In its 1971 booklet, entitled "Asbestos: The Need For And Feasibility of Air Pollution Controls," the NAS Asbestos Panel, which consisted of seven of the nation's top experts on asbestos and health, stated that "there is no evidence that persons in the general population—without occupational, household or neighborhood exposures—have any increased risk of neoplasm, even though there may be ferruginous bodies or fibers in their lungs."

Warning against conclusions of the type frequently reached by the uninformed with regard to asbestos, the report further stated: "One cannot extrapolate from the mortality experience of, on the one hand, those who are directly and indirectly exposed to asbestos in their employment to, on the other hand, the general public, who have had moderate or slight exposures from ambient air."

The report concluded with the statement that "there is no evidence that the small numbers of fibers found in most members of the general population affect health or longevity."

The report of the IARC Advisory Committee represents the consensus of present world medical opinion on all aspects of the asbestos-health problem. Meeting immediately after the October 1972 Lyon Conference on the Biological Effects of Asbestos, the Committee, with representation from ten different countries, drafted the following opinions on asbestos-related disease and the general public:

Asbestosis: "There is at present no evidence of lung damage by asbestos to the general public. The amount of asbestos in the lungs of members of the general public is very small, compared to those occupationally exposed."

Lung Cancer: "The evidence . . . suggests that an excess lung carcinoma risk is not detectable when the occupational exposure has been low. These low occupa-

tional exposures have almost certainly been much greater than that to the public from general air pollution."

Mesothelioma: "There is no evidence of a risk to the general public at present."

Because of some recent controversy in the United States and Canada on this subject, the question was also examined whether there is any "evidence of an increased risk of cancer resulting from asbestos fibers present in water, beverages, food or in the fluids used for the administration of drugs." The answer of the Committee was: "Such evidence as there is does not indicate any risk."

While the conclusions of these two eminent scientific bodies should be reassuring to those concerned with the presence of minute amounts of asbestos in the ambient air, the asbestos manufacturing industry in the United States will continue in its efforts to reduce asbestos emissions so that potentially hazardous levels will never be permitted to develop in the future.

Asbestos and Health Research

Extensive medical and technical research into the health effects of asbestos and the proper means for their control is being conducted in laboratories throughout the world. A significant percentage of this research is being sponsored, co-sponsored or cooperated in by the world asbestos industry. In fact, two of the largest non-governmental sources of funds for asbestos-health research are the Institute of Occupational and Environmental Health (IOEH) in Montreal, which is sponsored by the Quebec Asbestos Mining Association, and the Asbestosis Research Council, sponsored by the British asbestos manufacturing industry. The results of research sponsored by these two agencies and also by individual companies acting independently have contributed significantly to our knowledge of the biological effects of asbestos.

In addition, industry environmental control experts are constantly working to develop new or improved methods of handling asbestos and asbestos-containing products safely.

Much has been learned about asbestos and health in a very short time—especially when you consider that the greater part of all medical information about asbestos-related disease is less than a decade old. According to Dr. Premysl Pelnar of the Institute of Occupational and Environmental Health, approximately 90 per cent of all information and data now available is the result of medical studies undertaken during the past ten years.

Much more is still needed: In late 1972, The International Agency for Research on Cancer made recommendations for further research and indicated priorities for work of immediate and long-term value. Emphasis was placed on epidemiological and pathological studies, and high priorities were urged for certain projects.

These included:

1. Usefulness of early detection in the prevention of progressive fibrosis and asbestos cancers and in the identification of hazardous conditions;
2. Assessment of excess cancer risks following exposure to only one variety of asbestos;
3. Amount and type of asbestos in the lungs of mesothelioma cases;
4. Secular changes in incidence of pleural and peritoneal mesotheliomas nationally and internationally;
5. Possible association between past exposure to asbestos and cancer of sites other than lung, pleura and peritoneum;
6. Relationship between asbestosis and risk of carcinoma.

The asbestos manufacturing industry will continue to support and cooperate in research projects of this nature. The Asbestos Information Association, for example, is presently

sponsoring a study at the Harvard School of Public Health on chest auscultation (breathing sounds) as an early detection device in the diagnosis of asbestos-related disease. While this needed additional information and data is being developed, the industry will take all steps necessary to assure a safe working environment for its employees and for applicators and fabricators of asbestos-containing products.

Asbestos Information Association
North America
1660 L Street, N. W.
Washington, D. C. 20036

RULES AND REGULATIONS

tions for an Occupational Exposure Standard for Asbestos by the National Institute for Occupational Safety and Health (NIOSH). Public notice was given of the receipt of the recommendations and their availability for inspection and copying. On or about February 23, 1972, the Advisory Committee on Asbestos Dust submitted its written recommendations to the Assistant Secretary of Labor for Occupational Safety and Health.

Pursuant to the notice of rule making, a hearing was held on March 14 through 17, 1972, for the purpose of receiving oral data, views, and arguments concerning the proposed standard. On or about March 31, 1972, the presiding hearing examiner certified to the Assistant Secretary of Labor for Occupational Safety and Health the record of the proceeding. The record includes prehearing written comments, a transcript of the oral presentations made at the hearing, and numerous exhibits received during the course of the hearing or within the period allowed after the close of the hearing.

The proposed standard dealt with (1) permissible concentrations of asbestos fibers; (2) methods of compliance; (3) warning signs; (4) monitoring; (5) medical examinations; and (6) recordkeeping. Each of these major proposals elicited comments, arguments, objections, and counterproposals. They all have been examined and considered.

1. *Acceptable concentrations of asbestos dust.* The proposed standard would limit occupational exposure to 8-hour time-weighted average (TWA) airborne concentrations of asbestos dust: not exceeding five fibers longer than five micrometers per milliliter. Concentrations above five fibers but not to exceed 10 fibers (ceiling concentration) would be permitted up to 15 minutes in an hour, but for not more than 5 hours in any one 8-hour day.

NIOSH in effect has recommended that the five-fiber TWA and 10-fiber peak concentrations be permitted only for 2 years; thereafter, TWA concentrations should be not more than 2 fibers per cubic centimeter (cm.³) of air, and peak concentrations should not exceed 10 fibers/cm.³, with no time restriction. Numerous objections and counterproposals have been made, with regard to both the limits of asbestos fiber concentrations and the time periods to comply with them. Some, for example, have recommended return to a 12-fiber standard of an earlier day; i.e., a level adopted under the Walsh-Healey Public Contracts Act in 1969. Others have recommended a two-fiber standard to become effective in 6 months, then a one-fiber standard for 2 years, and finally a zero-fiber standard after 3 years. These recommendations give a fair indication of the wide spread of the counterproposals.

No one has disputed that exposure to asbestos of high enough intensity and long enough duration is causally related to asbestosis and cancers. The dispute is as to the determination of a specific level below which exposure is safe. Various studies attempting to establish quantitative relations between specific levels of

exposure to asbestos fibers and the appearance of adverse biological manifestations, such as asbestosis, lung cancers, and mesothelioma, have given rise to controversy as to the validity of the measuring techniques used and the reliability of the relations attempted to be established. Because of the long lapse of time between onset of exposure and biological manifestations, we have now evidence of the consequences of exposure, but we do not have, in general, accurate measures of the levels of exposure occurring 20 or 30 years ago, which have given rise to these consequences. There are also controversies concerning the relative toxicity of the various kinds of asbestos, and varying hazards in different workplaces.

It is fair to say that the controversy has centered in the area between a two-fiber TWA concentration and five-fiber TWA concentration, with variations on the time needed for compliance. Many employers support a five-fiber TWA. Most medical opinion is divided between a two-fiber standard and a five-fiber standard.

In view of the undisputed grave consequences from exposure to asbestos fibers, it is essential that the exposure be regulated now, on the basis of the best evidence available now, even though it may not be as good as scientifically desirable. An asbestos standard can be re-evaluated in the light of the results of ongoing studies, and future studies, but cannot wait for them. Lives of employees are at stake.

It is concluded that there should be one minimum standard of exposure to asbestos applicable to all workplaces exposed to any kind, or mixture of kinds, of asbestos. Reasons of practical administration preclude a variety of standards for different kinds of asbestos and of workplaces. Also, while the evidence tends to show that crocidolite, for instance, is more harmful than chrysotile, the evidence is not sufficient to establish separate standards for varieties of asbestos.

Because there must be one standard governing exposure to all varieties of asbestos, and in workplaces apparently more hazardous than others; because some present employees with regular exposure to asbestos have probably already accumulated great doses of asbestos fibers, due to higher levels of exposure in the past; because it appears that levels of exposure which may be safe with regard to asbestosis are not safe with regard to mesothelioma, because the statute requires the protection of every employee, even of one who may have regular exposure to asbestos during a working life which may reach, or even exceed, 40 years; and because of several other considerations which have been urged and are reflected in the record of the proceeding, the conflict in the medical evidence is resolved in favor of the health of employees. As of July 1, 1976, TWA concentrations of asbestos fibers longer than 5 micrometers will not be allowed to exceed two fibers/cc. with a ceiling value of 10 fibers/cc. The current TWA concentrations of five fibers, and

Title 29—LABOR

Chapter XVII—Occupational Safety and Health Administration, Department of Labor

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

Standard for Exposure to Asbestos Dust

On December 7, 1971, an emergency temporary standard concerning exposure to asbestos fibers was published in the *Federal Register* (36 F.R. 23207). In accordance with section 6(c)(3) of the Williams-Steiger Occupational Safety and Health Act of 1970, a notice of proposed rulemaking regarding a permanent standard for exposure to asbestos fibers was published in the *Federal Register* on January 12, 1972 (37 F.R. 466). The notice invited interested persons to submit both orally and in writing, data, views, and arguments concerning the proposal.

On or about January 24, 1972, the Advisory Committee on Asbestos Dust was established and requested to make written recommendations with regard to the proposed standard on asbestos. On or about February 1, 1972, the Department of Health, Education, and Welfare transmitted to the Secretary of Labor a criteria document containing Recommendations

ceiling concentrations of 10 fibers/cc. will be permitted until July 1, 1978, during what will be a transitional period deemed necessary to allow employers to make the needed changes for coming into compliance with the more stringent standard.

The record shows that the many work operations subject to the single asbestos standard (textile, manufacturing, industrial, and marine installation, etc.) will meet varying degrees of difficulty in complying with the standard. In some plants, extensive redesign and relocation of equipment may be needed. It appears, however, the delay in the effective date of the two-fiber standard will provide all employers a reasonable time to comply. At the same time, so long as the ceiling limit is complied with, no harm is reasonably expected to result from exposures during the transitional period.

2. *Methods of compliance.* It has been pointed out by many persons, that protection against asbestos fibers is best obtained by controlling the generation of fibers first, and secondly, by controlling the dispersion of released fibers into the ambient air of the workplaces. Therefore, the standard requires feasible technological controls and appropriate work practices as the primary means of compliance. Rotation of employees as a way of meeting the TWA concentration requirement is allowed only in stated exceptional circumstances, because, as a general rule, it would be difficult to implement. Personal protective equipment, such as respirators, cannot be relied upon because, among other reasons, they may be so uncomfortable as to be burdensome, except for short periods of time. Therefore, it is expected that respirators and shift rotation will be used during the period necessary to install engineering controls and to train employees in sound work practices. But, after technological compliance has been achieved, their use must be limited to special work situations and emergencies. Where both are practicable, shift rotation is required.

3. *Labeling.* The proposed standard stopped short of requiring labeling asbestos and asbestos-containing products. The proposed standard would have required only warning signs at locations where asbestos hazards are present. However, labeling rather than warning signs, has proved to be a point of controversy. Both NIOSH and the Advisory Committee on Asbestos Dust recommended labels for asbestos products and containers, and these recommendations became very controversial in the course of the proceeding. Many counterproposals have been made as to the language of the warning as well as to the products to be subject to the labeling requirements. Employers, in general, strongly contend that (1) finished products which effectively entrap asbestos

fibers, so that these would not be released in the normal use of the products, should not be required to be labeled; and (2) words such as "danger" and "cancer" are unwarrantedly alarming.

Both contentions have merit, and the standard has been changed accordingly.

4. *Monitoring.* The proposed standard would have required personal monitoring and environmental monitoring. Many issues have been raised concerning the availability and reliability of measuring instruments, frequency of monitoring, and conditions in which monitoring should be required. The adopted standard takes the objections into consideration. It requires periodic monitoring at intervals no longer than 6 months, thus allowing considerable time and discretion, and prescribes the use of the membrane filter method, which is an acceptable method for determination of asbestos fibers.

It has also been recommended that employees or their representatives should have an opportunity to observe the monitoring. The recommendation has been accepted.

5. *Medical examinations.* The proposed standard would only require an appropriate medical examination on a periodic basis. The generality of the proposal has attracted many objections and also many helpful comments. The recommendations of NIOSH and of the Advisory Committee on Asbestos Dust were much more specific with respect to both frequency and type of medical examinations to be required. The comments vary as to the class of employees to be examined and as to the frequency of the examinations.

The adopted standard requires medical examinations both at the beginning and the termination of employments exposed to concentrations of asbestos fibers, and also requires annual medical examinations of every employee exposed to airborne concentrations of asbestos. It has been pointed out that in certain industries, such as construction, an employee may work for several employers during the same year. Accordingly, the standard does not require either preemployment, or termination, or periodic examination of any employee who has been examined in accordance with the standard within the past year.

One question which has been raised goes to whether the employer or the employee should be allowed to choose the examining physician. The standard gives the option to the employer. Since some employers already have a medical examination program in operation, and, also, have medical departments with some expertise in the diagnosis of asbestos-related diseases, it seems more reasonable to permit them to utilize the present programs and expertise, than to permit an employee to choose a private general practitioner.

6. *Records.* The standard, as proposed and as adopted, requires maintenance of records of monitoring and of medical examinations. Most of the controversy in this area has revolved around the question whether an employer should be allowed to have access to the results of the required medical examinations. The apprehension of those who have argued against employer access is based on the expectation that some employers will use the medical examinations as a means of screening employment applicants, and worse, as grounds for discharging current employees, who show signs of being affected by exposure to asbestos. Since the purpose of the medical examinations is to monitor the health of employees exposed to the hazards of asbestos, employees cannot in reason be granted the privilege of refusing to disclose to their employers results of occupational exposure. It does not make sense to require employers to provide medical examinations if they cannot know and use the results of the examinations. For these reasons the standard provides that employers may have a restricted access to some medical information.

On the other hand, there is no intention to allow employers to abuse medical information obtained pursuant to the Act, to the detriment of employees. Therefore, the administration of the medical records requirement will be closely watched, and, in cases of abuse, appropriate action will be considered.

The issues discussed above are believed to be the major ones. Numerous other issues have been raised in the rulemaking proceedings. Some have been referred to incidentally. Many recommendations, for instance, about work practices, are so obviously meritorious that their adoption needs no exposition here. Other recommendations and many objections have not been adopted for a variety of reasons which should be manifest. Several, for instance, have recommended the use of respirators only pursuant to a variance, or in cases of emergency and occasional short-term exposures. The recommendation with respect to variances undoubtedly has many merits, but is considered administratively impractical.

Accordingly, after consideration of the whole record of the proceeding, and pursuant to sections 6 (b) and (c) and 8(c) of the Williams-Steiger Occupational Safety and Health Act of 1970 (84 Stat. 1582, 1596, 1599; 29 U.S.C. 655, 657), 29 CFR 1910.4, and to Secretary of Labor's Order No. 12-71 (38 F.R. 8754), Part 1910 of Title 29 of the Code of Federal Regulations is amended as set forth below.

(1) Section 1910.93 is amended by revising Table G-3 to read as follows:

§ 1910.93 Air contaminants.

TABLE O-3—MINERAL DUSTS

Substance	Mppd	Mg/M ³
Crystalline Quartz (respirable).....	250 ¹	10mg/M ³ = %SiO ₂ +6
Quartz (total dust)....		%SiO ₂ +2 10mg/M ³
Crocidolite The % of the value calculated from the count or mass formulae for quartz		%SiO ₂ +2
Tremolite The % of the value calculated from the for- mulae for quartz		
Amphibole including natural diatomaceous earth.....	20	10mg/M ³ %SiO ₂
Silicates (less than 1% crys- talline silica)		
Mica.....	20	
Fengtzeite.....	20	
Talc.....	20	
Portland cement.....	15	
Crystalline silica.....		
Total dust in respirable fraction (less than 5% SiO ₂).....		2 mg/M ³ or 10mg/M ³
For more than 5% SiO ₂		%SiO ₂ +2
Inert or Nuisance Dust Respirable fraction.....	15	10mg/M ³
Total dust.....	20	10mg/M ³

Notes: Conversion factors—
mppd/25.3 = million particles per cubic meter
in million per cc

¹Millions of particles per cubic foot of air, based on
impinger samples counted by light field technique.

The percentage of crystalline silica in the formulae
is the amount determined from airborne samples,
except in those instances in which other methods have
been shown to be applicable.

As determined by the membrane filter method at
40% relative humidity.

It is the concentration and percent quartz for the
equivalent of this limit are to be determined from
the fraction passing a size-selector with the following
characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	95
3	75
4	50
5	25
10	5

The measurements under this note refer to the use of
an APC instrument, if the respirable fraction of coal
dust is determined with a MRP, the figure corresponding
to that of 2.4 Mg/M³ in the table for coal dust is 4.8 Mg/M³.

2. A new § 1910.93a is added to Part
1910, reading as follows:

§ 1910.93a Asbestos.

(a) Definitions. For the purpose of
this section, (1) "Asbestos" includes
chrysotile, amosite, crocidolite, tremo-
lite, anthophyllite, and actinolite.

(2) "Asbestos fibers" means asbestos
fibers longer than 5 micrometers.

(b) Permissible exposure to airborne
concentrations of asbestos fibers—(1)
Standard effective July 7, 1972. The
8-hour time-weighted average airborne
concentrations of asbestos fibers to
which any employee may be exposed
shall not exceed five fibers, longer than
5 micrometers, per cubic centimeter of
air, as determined by the method pre-
scribed in paragraph (c) of this section.

(2) Standard effective July 1, 1976.
The 8-hour time-weighted average air-
borne concentrations of asbestos fibers

to which any employee may be exposed
shall not exceed two fibers, longer than
5 micrometers, per cubic centimeter of
air, as determined by the method pre-
scribed in paragraph (c) of this section.

(3) Ceiling concentration. No em-
ployee shall be exposed at any time to
airborne concentrations of asbestos
fibers in excess of 10 fibers, longer than
5 micrometers, per cubic centimeter of
air, as determined by the method pre-
scribed in paragraph (c) of this section.

(c) Methods of compliance—(1) En-
gineering methods. (i) Engineering con-
trols. Engineering controls, such as, but
not limited to, isolation, enclosure, ex-
haust ventilation, and dust collection,
shall be used to meet the exposure limits
prescribed in paragraph (b) of this
section.

(ii) Local exhaust ventilation. (a)
Local exhaust ventilation and dust col-
lection systems shall be designed, con-
structed, installed, and maintained in
accordance with the American National
Standard Fundamentals Governing the
Design and Operation of Local Exhaust
Systems, ANSI Z9.2-1971, which is in-
corporated by reference herein.

(b) See § 1910.6 concerning the avail-
ability of ANSI Z9.2-1971, and the
maintenance of a historic file in connec-
tion therewith. The address of the Amer-
ican National Standards Institute is
given in § 1910.100.

(iii) Particular tools. All hand-op-
erated and power-operated tools which
may produce or release asbestos fibers
in excess of the exposure limits pre-
scribed in paragraph (b) of this section,
such as, but not limited to, saws, scorers,
abrasive wheels, and drills, shall be pro-
vided with local exhaust ventilation sys-
tems in accordance with subdivision (ii)
of this subparagraph.

(2) Work practices—(i) Wet methods.
Insofar as practicable, asbestos shall be
handled, mixed, applied, removed, cut,
scored, or otherwise worked in a wet
state sufficient to prevent the emission
of airborne fibers in excess of the ex-
posure limits prescribed in paragraph
(b) of this section, unless the usefulness
of the product would be diminished
thereby.

(ii) Particular products and opera-
tions. No asbestos cement, mortar, coat-
ing, grout, plaster, or similar material
containing asbestos shall be removed
from bags, cartons, or other containers
in which they are shipped, without being
either wetted, or enclosed, or ventilated
so as to prevent effectively the release of
airborne asbestos fibers in excess of the
limits prescribed in paragraph (b) of
this section.

(iii) Spraying, demolition, or removal.
Employees engaged in the spraying of
asbestos, the removal, or demolition of
pipes, structures, or equipment covered
or insulated with asbestos, and in the
removal or demolition of asbestos in-
sulation or coverings shall be provided
with respiratory equipment in accord-
ance with paragraph (d) (2) (iii) of this
section and with special clothing in ac-
cordance with paragraph (d) (3) of this
section.

(d) Personal protective equipment—

(1) Compliance with the exposure limits
prescribed by paragraph (b) of this sec-
tion may not be achieved by the use of
respirators or shift rotation of em-
ployees, except:

(i) During the time period necessary
to install the engineering controls and
to institute the work practices required
by paragraph (c) of this section;

(ii) In work situations in which the
methods prescribed in paragraph (c) of
this section are either technically not
feasible or feasible to an extent insuffi-
cient to reduce the airborne concentra-
tions of asbestos fibers below the limits
prescribed by paragraph (b) of this
section; or

(iii) In emergencies.

(iv) Where both respirators and per-
sonnel rotation are allowed by subdivi-
sions (i), (ii), or (iii) of this subpara-
graph, and both are practicable, person-
nel rotation shall be preferred and used.

(2) Where a respirator is permitted by
subparagraph (1) of this paragraph, it
shall be selected from among those ap-
proved by the Bureau of Mines, Depart-
ment of the Interior, or the National In-
stitute for Occupational Safety and
Health, Department of Health, Educa-
tion, and Welfare, under the provisions of
30 CFR Part 11 (37 FR 6244, Mar. 25,
1972), and shall be used in accordance
with subdivisions (i), (ii), (iii), and (iv)
of this subparagraph.

(i) Air purifying respirators. A reusa-
ble or single use air purifying respirator,
or a respirator described in subdivision
(ii) or (iii) of this subparagraph, shall
be used to reduce the concentrations of
airborne asbestos fibers in the respirator
below the exposure limits prescribed in
paragraph (b) of this section, when the
ceiling or the 8-hour time-weighted aver-
age airborne concentrations of asbestos
fibers are reasonably expected to exceed
no more than 10 times those limits.

(ii) Powered air purifying respirators.
A full facepiece powered air purifying
respirator, or a powered air purifying
respirator, or a respirator described in
subdivision (iii) of this subparagraph,
shall be used to reduce the concentra-
tions of airborne asbestos fibers in the
respirator below the exposure limits pre-
scribed in paragraph (b) of this section,
when the ceiling or the 8-hour time-
weighted average concentrations of
asbestos fibers are reasonably expected to
exceed 10 times, but not 100 times,
those limits.

(iii) Type "C" supplied-air respirators,
continuous flow or pressure-demand
class. A type "C" continuous flow or pres-
sure-demand, supplied-air respirator
shall be used to reduce the concentra-
tions of airborne asbestos fibers in the
respirator below the exposure limits pre-
scribed in paragraph (b) of this section,
when the ceiling or the 8-hour time-
weighted average airborne concentra-
tions of asbestos fibers are reasonably
expected to exceed 100 times those limits.

(iv) Establishment of a respirator pro-
gram. (a) The employer shall establish
a respirator program in accordance with

the requirements of the American National Standards Practices for Respiratory Protection, ANSI Z88.2-1969, which is incorporated by reference herein.

b See § 1910.6 concerning the availability of ANSI Z88.2-1969 and the maintenance of an historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

(c) No employee shall be assigned to tasks requiring the use of respirators if, based upon his most recent examination, an examining physician determines that the employee will be unable to function normally wearing a respirator, or that the safety or health of the employee or other employees will be impaired by his use of a respirator. Such employee shall be rotated to another job or given the opportunity to transfer to a different position whose duties he is able to perform with the same employer, in the same geographical area and with the same seniority, status, and rate of pay he had just prior to such transfer, if such a different position is available.

(3) Special clothing: The employer shall provide, and require the use of, special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos fibers, which exceed the ceiling level prescribed in paragraph (b) of this section.

(4) Change rooms: (i) At any fixed place of employment exposed to airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section, the employer shall provide change rooms for employees working regularly at the place.

(ii) Clothes lockers: The employer shall provide two separate lockers or containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

(iii) Laundering: (a) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(b) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in (c) of this subdivision to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(c) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with paragraph (g) of this section.

(e) Method of measurement. All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400-450 X magnification (4 millimeter objective) with phase contrast illumination.

(f) Monitoring—(1) Initial determinations. Within 6 months of the publication of this section, every employer shall cause every place of employment

where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in paragraph (b) of this section. If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with paragraph (c) of this section.

(2) Personal monitoring—(i) Samples shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 6 months for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by paragraph (b) of this section.

(3) Environmental monitoring—(i) samples shall be collected from areas of a work environment which are representative of the airborne concentrations of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than 6 months for employees whose exposures to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in paragraph (b) of this section.

(4) Employee observation of monitoring. Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by this paragraph and shall have access to the records thereof.

(g) Caution signs and labels. (1) Caution signs. (i) Posting. Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section. Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing excessive concentrations of airborne asbestos fibers.

(ii) Sign specifications. The warning signs required by subdivision (1) of this

subparagraph shall conform to the requirements of 20" x 14" vertical format signs specified in § 1810.145(d)(4), and to this subdivision. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in this subdivision.

Legend	Notation
Asbestos	1" Sans Serif, Gothic or Block.
Dust Hazard	1" Sans Serif, Gothic or Block.
Avoid Breathing Dust...	1/2" Gothic.
Wear Assigned Protective Equipment.	1/2" Gothic.
Do Not Remain In Area Unless Your Work Requires It.	1/2" Gothic.
Breathing Asbestos Dust May Be Hazardous To Your Health.	14 point Gothic.

Spacing between lines shall be at least equal to the height of the upper of any two lines.

(2) Caution labels—(i) Labeling Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section will be released.

(ii) Label specifications. The caution labels required by subdivision (1) of this subparagraph shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

CAUTION
Contains Asbestos Fibers
Avoid Creating Dust
Breathing Asbestos Dust May Cause
Serious Bodily Harm

(h) Housekeeping—(1) Cleaning. All external surfaces in any place of employment shall be maintained free of accumulations of asbestos fibers if, with their dispersion, there would be an excessive concentration.

(2) Waste disposal. Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing, consigned for disposal, which may produce in any reasonably foreseeable use, handling, storage, processing, disposal, or transportation airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers.

(i) Recordkeeping—(1) Exposure records. Every employer shall maintain records of any personal or environmental monitoring required by this section. Records shall be maintained for a period of at least 3 years and shall be made available upon request to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of the National

Institute for Occupational Safety and Health, and to authorized representatives of either.

(2) *Employee access.* Every employee and former employee shall have reasonable access to any record required to be maintained by subparagraph (1) of this paragraph, which indicates the employee's own exposure to asbestos fibers.

(3) *Employee notification.* Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the limits prescribed in paragraph (b) of this section shall be notified in writing of the exposure as soon as practicable but not later than 5 days of the finding. The employee shall also be timely notified of the corrective action being taken.

(4) *Medical examinations.*—(1) *General.* The employer shall provide or make available at his cost medical examinations relative to exposure to asbestos required by this paragraph.

(2) *Preplacement.* The employer shall provide or make available to each of his employees, within 30 calendar days following his first employment in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination, which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV₁).

(3) *Annual examinations.* On or before January 31, 1973, and at least annually thereafter every employer shall provide, or make available, comprehensive medical examinations to each of his employees engaged in occupations exposed to airborne concentrations of asbestos fibers. Such annual examination shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV₁).

(4) *Termination of employment.* The employer shall provide, or make available, within 30 calendar days before or after the termination of employment of any employee engaged in an occupation exposed to airborne concentrations of asbestos fibers a comprehensive medical examination which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV₁).

(5) *Recent examinations.* No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with this paragraph within the past 1-year period.

(6) *Medical records.*—(1) *Maintenance.* Employers of employees examined pursuant to this paragraph shall cause to be maintained complete and accurate records of all such medical examina-

tions. Records shall be retained by employers for at least 20 years.

(2) *Access.* The contents of the records of the medical examinations required by this paragraph shall be made available, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, to authorized physicians and medical consultants of either of them, and, upon the request of an employee or former employee, to his physician. Any physician who conducts a medical examination required by this paragraph shall furnish to the employer of the examined employee all the information specifically required by this paragraph, and any other medical information related to occupational exposure to asbestos fibers.

3. A new § 1910.19 is added to Subpart B of Part 1910, reading as follows:

§ 1910.19 Asbestos dust.

Section 1910.93a shall apply to the exposure of every employee to asbestos dust in every employment and place of employment covered by § 1910.12, § 1910.13, § 1910.14, § 1910.15, or § 1910.16, in lieu of any different standard on exposure to asbestos dust which would otherwise be applicable by virtue of any of those sections.

Effective date. Paragraph (b)(2) of § 1910.93a shall become effective July 1, 1976. All other provisions of §§ 1910.93a, 1910.93, and 1910.19 shall become effective July 7, 1972. The current emergency temporary standard remains in effect until July 7, 1972.

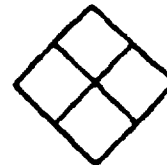
(Secs. 6, 8, 84 Stat. 1593, 1598; 29 U.S.C. 655, 657; 29 CFR 1910.4; Secretary of Labor's Order No. 12-71, 36 F.R. 8784)

Signed at Washington, D.C., this 2d day of June 1972.

G. C. GUENTHER,
Assistant Secretary of Labor.

(FR Doc. 72-6574 Filed 6-6-72; 8:48 am)

Material Safety Data



September 1, 1976

UNION CARBIDE CORPORATION • 4825 ROYAL AVENUE • NIAGARA FALLS, NEW YORK • 14302
TELEPHONE: (716) 276-3376

PRODUCT: Chrysotile Asbestos

CHEMICAL FORMULA: $Mg_3(OH)_2Si_4O_{10}$

TRADE NAMES: "Calidria" Asbestos

I. PHYSICAL DATA

BOILING POINT AND MELTING POINT: Not Pertinent

SPECIFIC GRAVITY ($H_2O = 1$): 2.45

VOLATILE CONTENT: Absorbed Water 1 - 4% By Weight. Structural Water Approximately 13% by Weight.

APPEARANCE: Pellets or Fine White Powder. No odor. Very Slight Solubility in Water.

II. HAZARDOUS INGREDIENTS

Asbestos contains no hazardous ingredients. However, the material itself can be hazardous under certain conditions. (See V below.)

III. FIRE AND EXPLOSION HAZARD DATA

NON-COMBUSTIBLE MATERIAL: No Fire or Explosion Hazard.

IV. REACTIVITY DATA

INERT MATERIAL: No Decomposition or Polymerization Conditions.

V. HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE TO AIRBORNE CONCENTRATION:

The current Occupational Safety and Health Standard (CFR 29, 1910.1001) contains the following exposure limits:

"The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed 2 fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the membrane filter method at 400-450 X magnification (4 millimeter objective) phase contrast illumination. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method just noted."

EFFECTS OF EXPOSURE: CAUTION: Breathing asbestos may cause serious bodily harm.

EMERGENCY AND FIRST AID PROCEDURES: No acute toxicity. Use respirator if airborne asbestos fiber concentration exceeds OSHA limits.

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Avoid inhalation of dust. Remove spilled material by vacuum cleaner or by water wash.

WASTE DISPOSAL:

Bags and waste and scrap materials should be disposed of in a manner which will avoid airborne concentrations of asbestos, such as the use of dust-tight trash bags or containers. Ensure that disposal complies with all applicable federal, state or local regulations.

Union Carbide Corporation assumes no responsibility and makes no warranty, expressed or implied, representation, promise, or statement as to completeness, accuracy, or currency of any data provided.

UCAREF00012613

CALIDRIA ASBESTOS - TYPICAL CHEMICAL ANALYSIS

<u>Component</u>	<u>Weight %</u>
MgO	41.9
SiO ₂	41.8
Al ₂ O ₃	0.5
Fe	1.4
Ca	0.075
Co	0.012
Cr	0.15
Cu	0.005
Ni	0.22
Se	<0.001
Loss on Ignition (CO ₂ & H ₂ O)	13.5

CALIDRIA ASBESTOS - TYPICAL SPECTROGRAPHIC ANALYSIS

<u>Component</u>	<u>Detection Limit, Wt. %</u>	<u>Analysis, Wt. %</u>	<u>Component</u>	<u>Detection Limit, Wt. %</u>	<u>Analysis, Wt. %</u>
Ag	0.001	0.0002-0.002	Ni	0.003	0.08-0.8
Al	0.003	0.08-0.8	Os	0.03	N.D.
As	0.01	N.D. (2)	P	0.08	N.D.
Au	0.002	N.D.	Pb	0.003	N.D.
B	0.006	N.D.	Pd	0.005	N.D.
Ba	0.003	N.D.	Pt	0.005	N.D.
Be	0.001	N.D.	Rb	N.A.	----
Bi	0.005	N.D.	Re	0.03	N.D.
Ca	0.002	0.008-0.08	Rh	0.02	N.D.
Cb	0.006	N.D.	Ra	0.03	N.D.
Cd	0.01	N.D.	Sb	0.01	N.D.
Co	0.01	0.008-0.08	Sc	0.01	N.D.
Cr	0.003	0.02-0.2	Se	----	<0.001 (3)
Cs	N.A. (1)	----	Si	0.001	Major
Cu	0.001	0.004-0.04	Sn	0.002	N.D.
Fe	0.006	0.8-8.0	Sr	0.01	N.D.
Ga	0.01	N.D.	Ta	0.01	N.D.
Ge	0.005	N.D.	Te	0.05	N.D.
Hf	0.03	N.D.	Th	0.03	N.D.
Hg	0.02	N.D.	Ti	0.003	0.004-0.04
In	0.03	N.D.	Tl	0.2	N.D.
Ir	0.03	N.D.	U	0.1	N.D.
K	N.A.	----	V	0.003	N.D.
La	0.01	N.D.	W	0.01	N.D.
Li	0.1	N.D.	Y	0.01	N.D.
Mg	0.001	Major	Yb	0.01	N.D.
Mn	0.003	0.008-0.08	Zn	0.02	N.D.
Mo	0.003	N.D.	Zr	0.006	N.D.
Na	0.03	N.D.			

(1) N.A. - Not analyzed.

N.D. - Not detected.

(3) By chemical analysis.

UCAREF00012614

EXHIBIT C

Since approximately the mid-1970's, unless the customer requested otherwise, each Kraft bag containing CALIDRIA asbestos has been covered with a tight-fitting, plastic film, and each pallet containing such bags is also covered with such tight-fitting, plastic film.

Union Carbide has printed two cautionary statements on its CALIDRIA packaging:

(1) The first cautionary statement used from June, 1968 through May, 1972 read as follows: "Warning: breathing dust may be harmful. Do not breathe dust."

(2) The second cautionary statement was prescribed by OSHA in 1972 and was first printed on CALIDRIA packaging in June of that year. This cautionary statement is currently printed on CALIDRIA packages and reads: "Caution. Contains asbestos fibers. Avoid creating dust. Breathing asbestos dust may cause serious bodily harm." Union Carbide has also furnished its new customers with written information warning them about the hazards associated with exposure to asbestos and the means of minimizing such hazards. This literature is prepared by Union Carbide personnel and by the Asbestos Information Association/North America.

1 STATE OF MINNESOTA

DISTRICT COURT

2 COUNTY OF DAKOTA

FIRST JUDICIAL DISTRICT

3 -----
4 James W. Manisto and Patricia
5 E. Manisto, husband and wife,

6 Plaintiffs,

7 vs.

8 American Brake Block
9 Corporation, et al.,

10 Defendants,

11 and

FILE: C5-88-1008

12 Armstrong World Industries
13 (Delaware), Inc.,
14 Flintkote Company,
15 GAF Corporation,
16 Keene Corporation,
17 National Gypsum Company,
18 Owens-Illinois, Inc.,
19 Southern Textile Corporation,
20 T&N PLC,
21 Union Carbide Corporation and
22 United States Gypsum Company,

23 Defendants and
24 Third-Party Plaintiffs,

25 vs.

Conwed Corporation (a Delaware
Corporation),

Third-Party Defendant.

26 -----
27 Deposition of THOMAS NORRIS, taken pursuant to
28 Notice of Taking Deposition, and taken before Kirby A.
29 Kennedy, a Notary Public in and for the County of Hennepin,
30 State of Minnesota, on the 16th day of January 1989, at The
31 Registry Hotel, 18800 Mac Arthur Boulevard, Irvine,
32 California, commencing at approximately 9:00 o'clock a.m.