

THE SUPERIOR COURT OF CALIFORNIA

COUNTY OF SAN FRANCISCO

ROERT GRAHN, ET AL., *

VS. * NO. 922682

ABEX CORPORATION, ET AL., *

Gerald Grahn vs. Abex Corp., Et Al.	No. 982678
John Purcell vs. Abex Corp., Et Al.	No. 925509
Gertrude Ross vs. Abex Corp., Et Al.	No. 889978
Fern Smothers vs. Abex Corp., Et Al.	No. 863042
Wanda Bright vs. Abex Corp., Et Al.	No. 931047
D. Jennings vs. Abex Corp., Et Al.	No. 910359
Lavon Banks vs. Abex Corp., Et Al.	No. 915341
A. Lecce vs. Abex Corp., Et Al.	No. 920265
Eli Waller vs. Abex Corp., Et Al.	No. 934412

DEPOSITION OF JAMES HAMMOND

VOLUME IV

October 14, 1992

Exxon Company USA

1600 Milam, Suite 123

Houston, Texas

N/A
COPY

1 Reported by:

2 Linda S. Towery

3 Texas CSR No. 2413

4 Nell McCallum & Associates, Inc.

5 2900 Smith, Suite 104

6 Houston, Texas 77006

7 (713) 523-3767

8
9 APPEARANCES:

10 For the Plaintiffs:

11 FRANK A. GROVE, ESQ.

12 Brayton, Gisvold & Harley

13 999 Grant Avenue

14 P.O. Box 2109

15 Novato, California 94948

16
17 For the CSR Defendants:

18 MEL D. BAILEY, ESQ.

19 DeHay & Elliston, L.L.P.

20 1500 Maxus Energy Tower

21 717 North Harwood Street

22 Dallas, Texas 75201-6508

1 For the Defendant Mine Safety Appliances Company
2 (Smothers Case Only):

3 CHARLES S. BISHOP, ESQ.
4 Jedeikin, Green, Sprague & Bishop
5 300 Montgomery Street
6 Suite 450
7 San Francisco, California 94104

8
9 For the Defendant Exxon Company USA:

10 GLENN M. KYLE, ESQ.
11 Exxon Company USA
12 800 Bell Street
13 P.O. Box 2180
14 Houston, Texas 77252-3180

15
16 For the Defendant Plant Insulation Company:

17 BRUCE G. CHUSID, ESQ.
18 Jackson & Wallace
19 33 New Montgomery Street
20 18th Floor
21 San Francisco, California 94105

1 For the Defendant Oscar E. Erikson, Inc., and
2 C.F. Braun:

3 LOU ANN CLOY, ESQ.

4 Benckenstein, Oxford & Johnso, L.L.P.

5 Third Floor First

6 Interstate Bank Building

7 P.O. Drawer 150

8 Beaumont, Texas 77704

9
10 For the Defendants Shell Oil Company, Chevron USA,
11 and Phillips Petroleum:

12 BERRIDGE R. MARSH, ESQ.

13 Sedgwick, Detert, Moran & Arnold

14 One Embarcadero Center, Sixteenth Floor

15 San Francisco, California 94111-3765

16
17 For the Witness:

18 DAVID LEDYARD, ESQ.

19 Strong, Pipkin, Nelson & Bissel

20 595 Orleans Street

21 14th Floor

22 San Jacinto Building

23 Beaumont, Texas 77701-3255

24
25 *****

1 Deposition of JAMES HAMMOND, taken on
2 October 14, 1992, at Exxon Company USA , 1600 Milam,
3 Suite 123, Houston, Texas, commencing at 10:00 a.m.,
4 before Linda S. Towery, CSR No. 2413 in and for the
5 State of Texas, pursuant to Notice

6
7 *****
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

EXAMINATION BY:	PAGE
Mr. Grove	7
Mr. Bailey	86
Mr. Bishop	105
Mr. Chusid	142

E X H I B I T S

NO.	DESCRIPTION	PAGE
16	A one-page letter to C.B. Moore from James W. Hammond, dated January 15, 1974	48
17	A three-page memorandum to J.W. Hammond from F.S. Venable, dated 3-9-72	73

JAMES HAMMOND,

being previously sworn, testified as follows:

EXAMINATION BY MR. GROVE:

Q. Good morning, Professor.

A. Good morning.

Q. You understand you're still under oath today?

A. I do.

Q. Okay.

Yesterday, I didn't go through all of the instructions that normally are gone through in a deposition; but you were given some instructions before your deposition several months ago regarding not speculating, making sure you understand the question before you answer. If you need me to repeat the answer (sic), I'll do so.

Do you recall those types of instructions that you were given before your deposition?

A. I do.

Q. And you also understand that your deposition is going to be prepared into a transcript which will be in a booklet form and you'll be given an opportunity to review that booklet?

A. I do.

Q. Would you agree with me, Professor, that the

1 risk of developing asbestos-related diseases, cancer and
2 mesothelioma, are inherent in working around
3 asbestos-containing products?

4 A. No, I wouldn't.

5 MR. CHUSID: Objection. It's
6 vague --

7 A. It depends on many --

8 MR. LEDYARD: Wait a minute. He's --
9 excuse me. He's making an objection.

10 MR. CHUSID: Let me interpose my
11 objection, and then I'll give you a chance
12 to go for it.

13 Again, that question is vague,
14 ambiguous, and unintelligible as to the
15 word "inherent."

16 MR. BISHOP: In --

17 MR. CHUSID: Go ahead. --

18 MR. BISHOP: In addition, it calls
19 for expert opinion and, to that extent, is
20 an incomplete hypothetical.

21 Q. (By Mr. Grove) You can go ahead and answer,
22 please.

23 A. I don't agree.

24 Q. Would you agree with me that unless special
25 precautions are taking -- are taken that the risk of

1 developing asbestos-related diseases is inherent in
2 working around asbestos-containing products?

3 MR. LEDYARD: Let me --

4 MR. BISHOP: Same objection.

5 MR. LEDYARD: Let me interpose an
6 objection.

7 Counsel, as you know, he has been
8 listed as a fact witness. He is here to
9 give his testimony as to, I thought,
10 the -- his knowledge of the Benicia
11 refinery and the working conditions at
12 that refinery. I thought that yesterday
13 the questioning, for the most part, kept
14 things pretty factual.

15 If it is your intent today to ask
16 expert opinion kinds of questions, then,
17 we're going to be having a lot of.
18 objections and possibly instructions not
19 to answer the questions. I don't know if
20 you've just got one or two of that nature.

21 MR. GROVE: This is a very brief line
22 of questioning. I mean, it's not going to
23 take long. If you'd just allow him to
24 answer the question, we'll be moving right
25 along.

1 MR. LEDYARD: Well, again, any
2 questions that are going to attempt to
3 elicit expert testimony from this witness,
4 I think, are improper, beyond the scope of
5 what we're doing here today.

6 MR. GROVE: Are you going to instruct
7 the witness not to answer the last
8 question?

9 MR. LEDYARD: I don't even remember
10 the last question now.

11 MR. GROVE: Could you read it back
12 for me?

13 (THE FOLLOWING WAS READ BY THE
14 REPORTER:

15 Question: Would you agree with me
16 that unless special precautions are
17 taking -- are taken that the risk-of
18 developing asbestos-related diseases is
19 inherent in working around
20 asbestos-containing products?)

21 MR. LEDYARD: Well, I'll object to
22 the -- to the form of the question as to
23 what is inherent, what are special
24 precautions. Many of the terms that
25 you've asked in your question are not

1 defined or ill-defined.

2 With that, Professor, if you feel
3 comfortable in answering that question,
4 you can do so.

5 Q. (By Mr. Grove) You can go ahead and answer the
6 question.

7 A. No.

8 Q. You do not agree with that statement?

9 A. No.

10 Q. Okay.

11 When you were at Exxon, you felt it necessary
12 to take precautions to reduce the risk of developing
13 asbestos-related disease; is that correct?

14 A. When I was at Exxon, we had a very strong,
15 positive preventive program.

16 Q. And that program related to controlling
17 potential exposures to asbestos; is that correct?

18 A. I don't agree with you.

19 Q. You had no program that related to controlling
20 potential exposures to asbestos?

21 A. My program was comprehensive.

22 Q. Did a component of that program include
23 preventing potential exposures to asbestos?

24 A. As well as all other occupational hazards.

25 Q. And was the reason that a component of your

1 program included precautions to avoid exposure to
2 asbestos because of the risks that were inherent in
3 being exposed to asbestos?

4 MR. CHUSID: Again, let me object to
5 that question on the grounds that it's
6 vague and ambiguous as to risks and
7 inherent.

8 A. I can't answer that question.

9 Q. What didn't you understand about my question?

10 MR. LEDYARD: He didn't say he didn't
11 understand anything about your question.
12 He said he couldn't answer your question.

13 Q. Did you understand my question?

14 A. Yes.

15 Q. Okay.

16 Why is it that you cannot provide an answer to
17 that question?

18 A. Well, it's not definite; and it's not a concise
19 question in which we could answer you.

20 Q. In any event, at Exxon, you did feel it
21 necessary to take precautions to reduce the potential
22 risk of exposure to asbestos; is that correct?

23 A. I did not separate asbestos from all other
24 hazardous materials that we handled.

25 Q. Okay. But subject to that qualification,

1 though, is my statement correct?

2 A. I did not make any special attempt to answer
3 your question in that regard. It's just we had a
4 comprehensive, good program and covered all hazardous
5 materials.

6 Q. Okay.

7 Professor, are you familiar with the use of
8 asbestos-containing gaskets and packing materials?

9 A. In what application of that?

10 Q. Well, it could -- at any -- any application
11 within the refinery.

12 A. I'm familiar with the use of asbestos in every
13 application and the problem that might be associated;
14 yes.

15 Q. Okay.

16 What problems were you aware of that might be
17 associated with the use of asbestos-containing gaskets
18 and packing materials?

19 MR. CHUSID: I'll just object to that
20 question on the grounds that it's
21 overbroad.

22 A. That would require an opinion, and I don't have
23 an opinion today.

24 Q. Well, as the director of the industrial hygiene
25 department at Exxon, it was your job to be aware of

1 potential risks; is that correct?

2 A. I've answered that already.

3 Q. Okay.

4 Well, what I want to know is: At Exxon, what
5 risks were you aware of of potential exposures to
6 asbestos when using asbestos-containing gaskets and
7 packing material?

8 MS. KYLE: I'm going object to lack
9 of foundation. I don't think the
10 Professor has testified there was a risk
11 associated with asbestos gaskets and
12 whatever was in the question.

13 MR. GROVE: If that's his answer, he
14 can certainly answer in that fashion.

15 MS. KYLE: I'm not telling him what
16 his answer is. I'm saying there's a lack
17 of foundation for your question. ...If the
18 Professor feels like he can answer the
19 question and his attorney says he can do
20 so, that's fine.

21 A. At Benicia, we were conscious of every
22 precaution that should be taken in our operations there,
23 as well as any repairs in Benicia, yes.

24 Q. I'm not limiting the scope of my question to
25 Benicia. I'm asking: At Humble and Exxon in general,

1 what risks were you aware of relating to the use of
2 asbestos-containing gaskets and packing materials, if
3 any?

4 MR. CHUSID: Same objection as
5 previously stated, as to lacking
6 foundation, overbroad, and vague.

7 A. I would have to have you to define the
8 particular operation, particular site, and other details
9 that you haven't done to be able to answer you.

10 Q. Okay.

11 If somebody -- at the Benicia refinery, if an
12 employee is removing flanges on a pipeline and there's a
13 gasket material in there, are you of whether -- are you
14 aware of whether or not there's a potential for the
15 release of asbestos fibers relating to the repair of
16 that gasket?

17 MS. KYLE: Vague and ambiguous. We
18 have not talked about what type of gasket,
19 how any asbestos in that gasket would be
20 encased, enclosed, secured. Generally
21 lacking foundation. And there again,
22 that's for the Professor.

23 Q. You can go ahead and answer the question.

24 A. Depends entirely on what material we're dealing
25 with and how we're going to do it and many details that

1 you haven't incorporated in your question. I can't
2 answer it.

3 Q. Well, my question previous to that has assumed
4 asbestos-containing gasket material.

5 Are you familiar with a process whereby an
6 employee needs to scrape off old gasket material in
7 order to replace that?

8 A. No, not in that terms.

9 Q. Have you ever heard of anybody at Exxon or
10 Humble having to use compressed air to blow off or clean
11 the area where old gasket material has been removed?

12 A. I'm not familiar with that.

13 Q. You've never been told that such work has been
14 done at the refineries?

15 A. I'm not in a position to answer your question.

16 Q. I'm just asking if you've ever been told that
17 that type of work was done at the refineries. --

18 A. I don't recall of anyone ever telling me what
19 to do about it.

20 Q. Have you ever been told of any work at the
21 refineries involving the removal of packing material
22 around valves?

23 MR. LEDYARD: Are you asking if he
24 knows that packing material around valves,
25 at any time, has ever been removed?

1 MR. GROVE: Yeah, if he's ever heard
2 of that ever happening at the refineries.

3 A. In the operation of the refinery, I know that
4 they have to make repairs to all of those joints and
5 also the valves. Yes, I know that.

6 Q. Okay.

7 In the course of repairing valves, isn't it
8 true that they have to remove old packing material and
9 replace that packing material?

10 A. That is not as important as knowing how to
11 control the dust exposure that might be associated with
12 that.

13 Q. I'm sorry. Did you say it's not im -- that was
14 not important?

15 A. The nature of the materials is not as important
16 as knowing how to control the -- the operation.

17 Q. The nature of the materials are not important
18 in knowing how to control?

19 MR. LEDYARD: No. I think he said
20 that the nature of the materials, which
21 you have not defined or described, was not
22 as important as trying to -- knowing how
23 to control any dust that might be
24 generated by that process.

25 MR. GROVE: Okay.

1 Q. (By Mr. Grove) Are you aware that some packing
2 materials that were used in valves contained asbestos?

3 A. I'd have to have you define which valves and
4 which material you're talking about.

5 Q. I'm just asking if you're aware that any types
6 of packing materials in any types of valves used on the
7 refineries contained asbestos.

8 A. Yes.

9 Q. Okay.

10 Are you aware that, in order to remove the
11 packing material in the gas -- in the valves, an
12 employee sometimes has to scrape or blow out the old
13 packing material?

14 A. No.

15 Q. You've never been told that that occurs?

16 A. No.

17 Q. Have you ever been told that there's potential
18 release of asbestos fibers when replacing packing
19 materials in valves?

20 A. No.

21 Q. Did Exxon ever have any policies or procedures
22 for controlling potential exposures to dust when
23 replacing packing materials?

24 MR. CHUSID: Objection. Assumes
25 facts not in evidence.

1 MR. GROVE: I'm just saying dust.

2 A. We had a comprehensive program to control all
3 hazardous materials in our refinery operations.

4 Q. Was there any specific policy or procedure
5 relating to performing work, removing and replacing
6 valve packing material?

7 A. If the operation required procedures, we had
8 them.

9 Q. Are you aware of any specific procedures that
10 related to that operation?

11 A. We made no exception to the material, because
12 we didn't think that was comprehensive enough. We did
13 it on all materials that were there, involved.

14 Q. But my question is a little more specific. And
15 that is: Are you aware of any specific procedures that
16 were used in relation to performing valve repair work?

17 A. We took whatever safety measures were required,
18 and we used those all the time.

19 Q. Who determined what safety measures were
20 necessary when doing that type of an operation?

21 A. I did.

22 Q. What safety measures did you determine were
23 necessary when removing and replacing valve packing
24 material?

25 A. I have answered that several times already.

1 Depending on -- depending on the operation and the
2 material, the nature of it, and the size of the
3 operation, all of these would be determined and be taken
4 into consideration to prevent any exposures.

5 Q. And was that taken into determine -- into
6 consideration on a case-by-case basis depending on the
7 specific operation that was being performed?

8 A. Once the program was established and put in
9 effect, it was strictly enforced throughout.

10 Q. Was there ever a specific program enacted
11 relating to replacing -- removing and replacing valve
12 packing materials; or was that simply part of your
13 overall, comprehensive program?

14 A. It was part of the overall, comprehensive
15 program.

16 Q. So, there were no specific rules relating
17 solely to replacing and removing valve packing --
18 materials; is that correct?

19 MS. KYLE: I'm going to object to the
20 question as being vague and ambiguous.
21 You are speaking to specifics, Frank; but
22 you are not saying if we're talking about
23 a written procedure relating specifically
24 to packing material or if you're speaking
25 about the guidelines of the program that

1 Dr. Hammond's described.

2 Q. (By Mr. Grove) You can go ahead and answer the
3 question, sir.

4 A. We made no exception for any operation if there
5 was any potential problem -- health problem involved.

6 Q. I understand that, as part of your prior
7 answer, that -- that this was part of a comprehensive
8 program.

9 My question is simply: Were there any specific
10 rules, whether written or oral, or any specific
11 guidelines regarding precautions to take when replacing
12 and removing valve packing materials?

13 A. That was like all other potential hazards in
14 refineries and chemical plants. It was handled in
15 accordance with prevention of any exposure.

16 Q. Have you ever witnessed the removal of valve
17 packing materials?

18 A. I don't recall that detail.

19 Q. Have you ever had that operation described to
20 you by anybody?

21 A. I don't recall any discussion with anybody.

22 Q. Have you ever discussed with anybody specific
23 procedures to be used during that operation?

24 A. I don't recall if we ever did.

25 Q. Are you aware of the use of asbestos-containing

1 blankets at the Humble refineries during your career?

2 A. No, I don't recall that we were still using
3 asbestos blankets in any operation that you might have
4 in mind, certainly not at Benicia.

5 Q. I want to make sure I understand.

6 Is it your understanding that asbestos blankets
7 were not used after the time the Benicia refinery came
8 into operation?

9 A. To my knowledge, they were not used.

10 Q. Okay.

11 Prior to that time, were asbestos blankets used
12 at any Humble refineries?

13 A. I'm not in a position to answer that. I don't
14 know everything about it.

15 Q. Have you ever heard of asbestos-containing
16 blankets being used at any Humble refinery at any time?

17 A. I don't recall that I ever discussed it with
18 anyone. But again, the precautionary measures were
19 used; and all of that would be covered by our
20 comprehensive program and enforced by the safety
21 inspectors.

22 Q. Have you ever seen any air sampling tests that
23 were performed relating to dust levels from
24 asbestos-containing blankets?

25 A. No, I never did remember any data of that type.

1 Q. How about asbestos-containing gloves, do you
2 ever recall those being used at any Humble refineries?

3 MR. BISHOP: I'll object to the
4 question as overbroad to the extent that
5 it inquires into the presence of
6 asbestos-containing gloves at any location
7 other than the Benicia refinery after it
8 opened.

9 Q. You can go ahead and answer.

10 A. I don't have any information for you on that.

11 Q. Have you ever heard of the use of
12 asbestos-containing gloves at any Benicia refinery?

13 MR. BISHOP: I'm sorry. Do you mean
14 any Exxon refinery or any Benicia
15 refinery?

16 Q. Oh, I'm sorry. Any Humble re -- Humble or
17 Exxon refinery.

18 MR. BISHOP: Same objection.

19 A. The comprehensive program covered gloves and
20 blankets and all other equipment of that type if it
21 would contained hazardous material.

22 Q. So, I take it from that answer that there has
23 been, on occasion, the use of asbestos-containing gloves
24 at Humble/Exxon refineries.

25 A. If they used it is what I said.

1 Q. If they used them, then, it would have been
2 covered under the comprehensive policy that you've
3 described previous?

4 A. It was.

5 Q. Okay.

6 My question is still a little bit more
7 specific. And that is: Have you ever heard that those
8 types of asbestos-containing gloves were, in fact, used
9 at any Humble refinery?

10 MR. BISHOP: Frank, can we just
11 make -- rather than continue this
12 objection --

13 MR. GROVE: Yes, you can have a
14 continuing objection.

15 MR. BISHOP: My objection being
16 continuing as to any location other than
17 Benicia.

18 MR. GROVE: That's fine.

19 A. I don't recall.

20 Q. Have you ever seen any results of air sampling
21 done relative to asbestos-containing gloves?

22 A. No.

23 MR. CHUSID: Objection. Assumes
24 facts not in evidence.

25 MR. BISHOP: It's also vague as to

1 gloves insofar as there are many types.

2 Q. Have you ever been told of any air sampling
3 tests that have been done relative to
4 asbestos-containing gloves?

5 A. No.

6 MR. BISHOP: Same objections.

7 Q. Are you aware that Humble and Exxon used
8 refractory contractors at its refineries over the years?

9 A. No.

10 Q. Do you know what a refractory contractor is?

11 A. No.

12 Q. If I were to represent to you that refractory
13 contractors worked on boilers of -- boilers of, well,
14 any types of plant actually, but including refinery
15 operations, are you familiar with that type of work?

16 A. That's out of my field.

17 Q. Are you aware that any insulation --
18 asbestos-containing insulation materials are used inside
19 of boilers in refineries?

20 A. The products of any nature would be covered by
21 the comprehensive protective program.

22 Q. My question -- my question, Professor, is
23 simply whether or not you're aware that those types of
24 products are used in boilers in refineries.

25 MR. LEDYARD: What kinds of products?

1 MR. GROVE: Asbestos-containing
2 insulation products.

3 MS. KYLE: In any refinery?

4 MR. GROVE: In any refinery at any
5 time.

6 A. I have no specific information on any operation
7 specific -- particular operation of that type.

8 Q. (By Mr. Grove) I'm not asking about any
9 specific operation, Professor. I'm just asking whether
10 or not you have ever been made aware that
11 asbestos-containing insulation materials are used in
12 boilers of refineries.

13 A. No.

14 Q. Professor, what -- as the director of
15 industrial hygiene at Humble and Exxon, it was your job
16 to be aware of all potential operations that could
17 result in exposure to any hazardous materials; is that
18 correct?

19 A. I had to cover all products and all substances
20 that might be hazardous.

21 Q. My question was different than that, Professor.
22 I'm asking whether or not it was your job at Humble and
23 Exxon to be aware of operations that may involve
24 exposures to potentially hazardous substances.

25 A. My program covered all of those potentials.

1 Q. And, so, you were aware of all those potential
2 operation -- all those operations that -- that covered
3 potential exposures to hazardous materials?

4 MR. LEDYARD: Well, I'm going to
5 object to the form of the question. I
6 mean, are you asking whether he knew, day
7 in, day out, every job in every particular
8 refinery in every location that might be
9 going on; or are you asking him generally?

10 MR. GROVE: More general. Generally
11 speaking, the types of operations.

12 MR. LEDYARD: Well, I think he's --
13 he's told you ten times that he was aware
14 of situations that could cause dust and,
15 when there was a dust-created situation,
16 that there was a policy or procedure to
17 take care of it.

18 MR. GROVE: But I don't think I've
19 been getting an answer to my question,
20 which was: Was it his job to be aware of
21 those op -- those operations which could
22 involve exposure to potentially hazardous
23 substances? All he has indicated is that
24 his program covered them. So, I'd like an
25 answer to that question.

1 A. I had a opportunity to develop a comprehensive
2 program that we've been discussing, and that took care
3 of all of those potential problems.

4 Q. (By Mr. Grove) Professor, I believe you -- you
5 testified yesterday that, when Exxon used contractors,
6 they were educated as to potential hazards of exposure
7 to asbestos prior to being allowed to perform work at
8 the Exxon facilities. Is that correct?

9 MR. LEDYARD: I don't believe that
10 was his testimony, especially if those
11 contractors were not going to have
12 anything to do with any kind of insulation
13 or asbestos procedure. Your question
14 implies that every contractor that ever
15 came --

16 MR. GROVE: That's true.

17 MR. LEDYARD: -- into that plant --

18 MR. GROVE: That's true. And I'll
19 limit my question to contractors who would
20 potentially be doing work involving or
21 around asbestos-containing products.

22 A. The foremens or supervisors of the workers were
23 the ones that were educated as to potential hazards
24 associated with any operation they might be doing for
25 us; that is, Exxon.

1 Q. And I believe you also testified that -- well,
2 let me just ask you the question.

3 Isn't it true that potentially hazardous levels
4 of asbestos can be in the air and not be visible to the
5 eye?

6 MR. LEDYARD: That was discussed
7 yesterday, Counsel.

8 MR. GROVE: Well, I didn't want to
9 misstate his testimony from yesterday; so,
10 I want to ask the question prior to moving
11 to my next question.

12 Q. Isn't that true, Professor?

13 A. Now, come again with your question wanting a
14 particular answer.

15 Q. I believe you testified yesterday that
16 potentially hazardous levels of asbestos can be in the
17 air and not be visible to the eye. Is that correct?

18 A. I testified yesterday there is only one way to
19 tell for sure whether you're in a safe environment with
20 dust of any type, is by collecting samples.

21 Q. And that's because there may be levels of dust
22 present in the air that are hazardous but not be able to
23 see them; isn't that correct?

24 A. That wasn't my answer. I was satisfied only
25 with data as to the concentration involved.

1 Q. Isn't it true, though, Professor, that levels
2 of asbestos can be above acceptable limits and yet not
3 be visible to the eye?

4 MR. BISHOP: As to the term
5 "acceptable," vague and ambiguous.

6 A. Well, I consider that to be an opinion
7 question.

8 Q. Well, at Exxon, you had established a policy to
9 not allow exposures to essentially any levels of
10 asbestos dust. Isn't that true?

11 A. That's true.

12 Q. And, so, you felt that exposure to any level of
13 asbestos dust was an unacceptable level. Is that true?

14 A. That's true.

15 Q. Isn't it possible, Professor, that there could
16 be levels of asbestos above what you considered at Exxon
17 to be acceptable and yet not be visible to the eye?

18 MR. CHUSID: Objection. Calls for
19 speculation.

20 MR. LEDYARD: Well, it also calls for
21 an opinion. And what is acceptable, you
22 know, the standards have changed over the
23 years. Your question has not --

24 MR. GROVE: I just asked --

25 MR. LEDYARD: -- put any kind of time

1 frame on it.

2 MR. GROVE: I just asked him what
3 level was acceptable at Exxon, and he
4 testified. And, so, I'm using his own
5 standard of acceptable at Exxon.

6 A. No level. Even the streets out here is covered
7 with asbestos from the car brakes, and that wouldn't be
8 acceptable in our operations.

9 Q. You learned of the potential for asbestos to
10 cause a disease called mesothelioma in the 1960's; is
11 that correct?

12 A. It was during the vicinity of 1966.

13 Q. Is that approximately when you learned about
14 that?

15 A. My knowledge of that was somewhat earlier, from
16 having read foreign literature.

17 Q. Okay.

18 And --

19 A. But that was long before we had a Benicia
20 refinery.

21 Q. So, you were aware of the potential for
22 asbestos to cause -- cause mesothelioma prior to the
23 building of the Benicia refinery, correct?

24 A. I was.

25 Q. Okay.

1 And you were also aware, weren't you, that the
2 quantity of asbestos to which a worker needed to be
3 exposed in order to develop mesothelioma was far less
4 than would -- may be necessary to cause a disease called
5 asbestosis?

6 MR. CHUSID: Objection. Incomplete
7 hypothetical, vague and ambiguous.

8 You may answer, sir.

9 MS. KYLE: I would ask that the
10 question be repeated. Would you please
11 tell us what it was.

12 (THE FOLLOWING WAS READ BY THE
13 REPORTER:

14 Question: Okay.

15 And you were also aware, weren't you,
16 that the quantity of asbestos to which a
17 worker needed to be exposed in order to
18 develop mesothelioma was far less than
19 would -- may be necessary to cause a
20 disease called asbestosis?)

21 MR. LEDYARD: And I'll join in the
22 objection, then. We can agree that it is
23 vague and ambiguous and ill -- and poorly
24 defined.

25 MR. BISHOP: And I will add the

1 objection that that question has been both
2 asked and answered by Plaintiffs' counsel
3 during the May -- or during the earlier
4 sessions of this same deposition.

5 Q. (By Mr. Grove) You can go ahead and answer,
6 Professor.

7 A. That's strictly a professional opinion.

8 Q. Professional opinion in terms of a medical
9 opinion?

10 A. Industrial hygiene, too, both.

11 MR. GROVE: Are you instructing him
12 not to answer the question?

13 MR. LEDYARD: Given the fact that the
14 Professor thinks that question is calling
15 for his expert opinion, yes, I'm
16 instructing him not to answer that
17 question.

18 Q. (By Mr. Grove) Professor, isn't it true, by
19 the late 1960's, Humble was contracting out more and
20 more of the insulation and refractory work at its
21 refineries?

22 A. That was completely out of my field.

23 Q. You were never made aware of that by anyone
24 within Humble and Exxon?

25 A. There are others that are so much better

1 authorities in the facts on that that I would give over
2 to them to let them answer that one.

3 Q. Okay.

4 I'm just asking whether or not anybody has ever
5 discussed that with you.

6 MS. KYLE: I'm going to object that
7 the question is vague and ambiguous as to
8 "more and more." I don't quite understand
9 it.

10 MR. GROVE: Okay. Let me clarify it
11 for counsel.

12 Q. Have you ever been told by anyone that, by the
13 late 1960's, Exxon or Humble was contracting more of its
14 insulation and refractory work than it was prior to the
15 late 1960's?

16 MR. CHUSID: Let me object to that
17 question on the ground that it's vague and
18 ambiguous insofar as there's no
19 distinction between construction of a new
20 refinery, major repairs, or additions to a
21 refinery or simple insulation work or
22 routine insulation work in a refinery.

23 Q. You can go ahead and answer, Professor.

24 A. I'll refer that question to Mr. Naugle, if
25 you'll ask him.

1 Q. I'm not limiting it just to the Benicia
2 refinery, sir. I'm asking if anyone has ever discussed
3 that with you.

4 A. I don't recall any such discussion.

5 Q. When a contractor was on Exxon premises, I
6 believe you indicated that you felt it was your
7 responsibility as the director of industrial hygiene to
8 see that precautions were taken with respect to
9 potential exposures to asbestos by contract employees,
10 as well, correct?

11 A. Not correct. The correct answer is that they
12 were required to meet all of the precautionary measures
13 and comply with them the same as our full-time
14 employees. And that was enforced by the safety
15 engineers that were on the sites at the time.

16 Q. And, so, Exxon enforced those policies the same
17 with respect to contract employees? ---

18 A. We did.

19 Q. Okay.

20 Are you familiar with -- with latency as it
21 relates to asbestos-related disease and cancers?

22 A. Yes, I am. And I also would like for
23 someone -- layperson to understand it. It's the same as
24 smoking cigarettes. You don't generally have any
25 disabling illness or disability or death from cigarettes

1 until after 35 years. So that if you start smoking at
2 15, you can expect that the victim of cigarette smoke
3 would be affected by the time he's 50; and it would
4 increase as he grows older and older.

5 And, so, that's a good example for latency
6 period. And that applies to many substances and many
7 other exposures of that type, such as smoking.

8 Q. Including asbestos; is that correct?

9 A. I -- I think that answers my question relative
10 to any occupational, long-range, chronic exposures.

11 Q. Okay.

12 While you were at Exxon, did you ever hear that
13 asbestos-related cancers do not generally appear until
14 20 to 40 years after initial exposure?

15 MR. CHUSID: Objection. Vague as to
16 the term "asbestos-related cancers."

17 A. That would be a professional opinion on my
18 part.

19 Q. Okay.

20 Sir, I want to show you a -- I don't know what
21 I did with it. I believe you produced at your initial
22 deposition an exhibit which has been marked 4A, which is
23 a letter from a Lucian or Lucian Renes to a Nathan Van
24 Hendricks, dated April 13, 1965.

25 Do you recall seeing that letter, sir?

1 A. Now, what's the question about the letter?

2 Q. First, do you recall seeing that letter?

3 A. I don't right off. But I suppose I might have
4 seen it.

5 Q. Okay.

6 There's a report that's attached to that
7 letter, if you'll just turn the page, that I believe Mr.
8 Renes presented to the API medical committee.

9 A. I was not a part of that committee, no.

10 Q. Professor, I believe that you produced this
11 document at your first session of your deposition.

12 Was this a document that you maintained in your
13 own files?

14 A. I don't remember ever having it in my file. I
15 don't know where you got the document.

16 Q. Well, I believe it was produced by you, sir.

17 MS. KYLE: That's the first batch of
18 documents. He's saying this is the first
19 batch of documents you produced.

20 Q. I would ask you to read the last sentence of
21 the very first paragraph on Page 2 of that document,
22 which begins, "An important finding is..."

23 A. Yes. What's the question?

24 Q. Does that refresh your recollection as to
25 whether or not you ever heard the latency period for

1 asbestos-related cancers is 20 to 40 years?

2 A. I used the example of cigarette smoking as a
3 good example of latent period. And many of these
4 occupational health problems follow the same pattern.

5 Q. Including asbestos; isn't that correct?

6 A. Depends entirely on your operation and
7 exposures.

8 Q. In some instances, would you agree that there's
9 a latency period of 20 to 40 years after initial
10 exposure to asbestos?

11 MR. CHUSID: Objection. Vague and
12 ambiguous, incomplete hypothetical.

13 MR. LEDYARD: Again, I think it also
14 calls for an opinion on his part. If
15 you're asking whether or not he has seen
16 reports of other people who have given
17 that opinion, then, I think his response
18 was he doesn't recall seeing this
19 particular statement. He doesn't recall
20 being on a committee that -- in which that
21 was studied.

22 MR. GROVE: Number one, his knowledge
23 as the director of industrial hygiene at
24 Exxon is clearly relevant; and it's --
25 what he knows or what he knew in 1965 is

1 clearly not an opinion. He produced this
2 document from his own files. I'm -- I
3 mean, I was simply trying to establish a
4 foundation of fact before I moved on.

5 But, I mean, I'm not trying --

6 THE WITNESS: I don't recall it.

7 MR. GROVE: -- to argue with the
8 witness or elicit an opinion on this line
9 of questioning. I'm simply asking if he
10 ever came to learn that information which
11 is contained in documents that he produced
12 from his own files. I don't believe
13 that's an improper question.

14 A. I don't recall the document in my files.

15 Q. Okay. Let's -- let's move on.

16 MR. BISHOP: I -- I'm not sure that
17 your premise is correct, that the document
18 was produced from Professor Hammond's
19 files. I could be mistaken, Frank.

20 MR. GROVE: That was my
21 understanding. I mean...

22 MR. BISHOP: Okay.

23 Q. (By Mr. Grove) In any event, Professor, you've
24 already testified regarding the necessity of a medical
25 surveillance program to ensure that your industrial

1 hygiene program was -- was working effectively; isn't
2 that true?

3 A. I do.

4 Q. You agree with that statement?

5 MR. LEDYARD: That he has testified
6 before about medical surveillance
7 programs?

8 Q. Well, do you agree that a medical surveillance
9 program is necessary?

10 A. That's a professional opinion that I do not
11 want to --

12 Q. At Exxon, did you believe that a medical
13 surveillance program was necessary to ensure that your
14 program was working effectively?

15 MR. LEDYARD: Professor, you can
16 testify as to your programs at Exxon and
17 what you were doing --

18 A. We did have a --

19 MR. LEDYARD: -- and what you thought
20 at the time.

21 A. -- medical surveillance program.

22 Q. And you felt that that program was necessary;
23 isn't that correct?

24 A. The program was developed comprehensively by me
25 with the assistance of physicians; and it included those

1 type of details, yeah.

2 Q. What type of medical surveillance was done
3 regarding asbestos-related diseases at Exxon?

4 A. We never did differ -- differentiate asbestos
5 separately. We treated these workers uniformly with
6 surveillance, medical surveillance.

7 Q. Okay.

8 Did -- what type of surveillance was -- was
9 given to the workers?

10 MR. BISHOP: That -- this has been
11 asked and answered in the previous
12 deposition transcripts in considerable
13 detail. That's an objection.

14 Q. You can go ahead, sir.

15 A. Again, that's a medical profession as to
16 medical and industrial hygiene opinion as to when --
17 when and where these examinations should be done.

18 Q. Did you ever receive any information from the
19 medical department at Exxon relative to the surveillance
20 done on the workers?

21 A. I did.

22 Q. And did you receive any specific information
23 regarding surveillance done relative asbestos --
24 relative to asbestos exposure?

25 A. I don't know that we ever had any particular

1 material separated from the other in name -- by name of
2 the substance in that way.

3 Q. Did you ever come to learn of any asbestos
4 levels at any Humble refineries that were above what you
5 considered to be acceptable levels as director of
6 industrial hygiene?

7 A. Any exposure was unacceptable to me.

8 Q. Did you ever learn of any such unacceptable
9 exposures?

10 A. I did.

11 Q. Where did you -- which refineries did you learn
12 of unacceptable exposures at?

13 A. I did not learn of any of them that existed
14 other than at the time of the tests. And then
15 protective, precautionary measures were taken
16 immediately to correct that.

17 Q. At which refineries?

18 A. At any and all of them that may have found a
19 higher than acceptable level, which was zero.

20 Q. Would that include the Baton Rouge refinery?

21 A. It would have included the Baton Rouge refinery
22 after it came under my immediate super -- supervision.

23 Q. And what year was that?

24 A. 1960.

25 Q. Do you recall Mr. Venable ever reporting to you

1 levels of -- of asbestos at the Baton Rouge refinery
2 that you considered unacceptable?

3 A. I think he made some tests in which he found
4 higher than what would be permissible to us without
5 specifying whatever other precautions might have been
6 taken to protect the employees. But I don't recall any
7 further discussion.

8 Q. Did you ever learn of any information from the
9 medical surveillance of any conditions of your employees
10 that may relate to exposure to asbestos? And by that, I
11 mean medical conditions.

12 MS. KYLE: Would you repeat question.

13 (THE FOLLOWING WAS READ BY THE
14 REPORTER:

15 Question: Did you ever learn of any
16 information from the medical surveillance
17 of any conditions of your employees that
18 may relate to exposure to asbestos? And
19 by that, I mean medical conditions.)

20 A. You're speaking of the Benicia refinery?

21 Q. (By Mr. Grove) No. Of any refineries within
22 Exxon.

23 A. It was really very consoling to me that none of
24 the X-rays of the chest and other types of surveillance
25 tests ever showed any exposures to asbestos material in

1 my 31 years of supervising.

2 Q. So, it's your understanding that none of the
3 X-rays taken at Exxon during your 31 years ever showed
4 any evidence of exposure to asbestos?

5 A. I do.

6 Q. Did you ever hear of any instances of
7 mesothelioma of any refinery workers at Humble/Exxon?

8 MR. BISHOP: Specifically asked and
9 answered.

10 A. Not before my retirement. But since then, I've
11 heard of...

12 Q. And when did you initially hear of that?

13 A. I don't recall the time. And, also, I do -- of
14 course, mesothelioma occurs naturally and from
15 unexpected causes. And I never saw a statistical study,
16 an epidemiological study to show that the mesothelioma
17 that was reported was out of proportion what the
18 human -- the common community population has. I never
19 saw any evidence that it was related to asbestos.

20 MR. GROVE: Okay. I'll just object
21 and move to strike that as nonresponsive.

22 Q. (By Mr. Grove) Since you've retired, have you
23 learned any other information regarding any medical
24 conditions of Exxon employees that may be related to
25 exposure to asbestos?

1 A. No.

2 Q. Just the instances of mesothelioma you just
3 discussed?

4 A. The rare cases that have occurred among the
5 hundreds of employees in the mechanical groups would be
6 naturally normal for asbes -- for mesothelioma to occur.
7 Whether it came from their jobs or not, whether it was
8 related to being any higher incident anywhere has never
9 been shown.

10 Q. And do you recall how many instances of
11 mesothelioma you learned of?

12 A. Two, I'm thinking, out of --

13 Q. And did --

14 A. -- out of -- let me explain.

15 That two out of several thousand of people who
16 served as insulators, laborers, and mechanics in the
17 operation of the refineries over the last 70 years is
18 not out of line with what I'm sure the population would
19 show if you were to analyze it.

20 Q. Professor, are you familiar with any types of
21 sprayed-on asbestos products?

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

23 Q. When you were at Exxon or Humble, did you
24 consider it improper from an industrial hygiene
25 standpoint to spray on asbestos-containing products?

1 A. I considered it improper to be exposed to any
2 materials, whether asbestos or any other material,
3 without proper measures or procedures or protection.

4 Q. Are you aware that any asbestos-containing
5 products were ever sprayed at any Humble/Exxon
6 refineries during your tenure there?

7 A. No.

8 Q. So, it's your understanding that Humble never
9 sprayed on asbestos-containing products?

10 MR. LEDYARD: I don't think that's a
11 fair characterization of what he said.

12 MR. GROVE: Well, he's capable of
13 clarifying if that's incorrect.

14 MR. LEDYARD: Well, he -- the
15 question was was he ever aware of it
16 happening; and he said, "No." And your
17 next question was: So, you're saying that
18 it never happened? And that's not what he
19 said.

20 MR. GROVE: I'm asking if that's his
21 understanding.

22 A. I do not know of any operations that we ever
23 permitted that to be used.

24 Q. Did you give any directions that it not be
25 used?

1 A. No, I didn't have to. There was a part of the
2 control program included that type of operation.

3 Q. So, the control program that was in place when
4 you arrived at Exxon included the prohibition of
5 spraying on asbestos-containing materials?

6 A. I never looked into that. I do not know.

7 MR. LEDYARD: It's been about an
8 hour. This is probably a good time to
9 take a break.

10 (RECESS FROM 10:59 TO 11:13 A.M.)

11 Q. (By Mr. Grove) Okay. Professor, we were
12 talking about asbestos-containing spray products.

13 Isn't it true that Humble's Billings refinery
14 had a Limpet unit?

15 A. I don't recall that. Again, Mr. Naugle would
16 be able to tell you that.

17 Q. Was Mr. Naugle in charge of the Billings
18 refinery?

19 A. Billings?

20 Q. Billings.

21 MR. CHUSID: Is that in Montana?

22 MR. GROVE: I believe so.

23 A. I don't -- I don't know if he ever, but -- he
24 was at many refineries, but I don't know specifically if
25 he was there or not.

1 MR. LEDYARD: I'm not sure he
2 understood your first question about
3 Billings. Why don't you ask that again.

4 Q. Isn't it true that Humble had a Limpet unit at
5 its Billings refinery?

6 A. I don't recall that. But I'm also sure Mr.
7 Naugle, who was the specialist in operations of the
8 refinery, would be able to answer that.

9 Q. Professor, isn't it true that, as late as 1973,
10 there was no safe asbestos policy in effect at the
11 Benicia refinery?

12 A. I'm not aware of any failure on their part of
13 having a -- a program.

14 MR. GROVE: I want this document
15 marked as whatever's next in order. Would
16 it be 16?

17 (HAMMOND EXHIBIT NO. 16 WAS MARKED
18 FOR IDENTIFICATION)

19 (DISCUSSION OFF THE RECORD)

20 Q. (By Mr. Grove) Professor, have you had a
21 chance to read this document that's been marked Exhibit
22 16?

23 A. I have.

24 MR. GROVE: And just for the record,
25 it's a January 15, 1973, letter from

1 Professor Hammond to a C.B. Moore.

2 Q. First of all, who is Mr. Moore?

3 A. He was an operating manager of the Benicia
4 refinery, I assume. However, he may have had a lower --
5 this was in headquarter refining; so, he would have been
6 in the headquarters department of the company here in
7 Houston.

8 Q. Okay.

9 A. And he was probably manager of manufacturing or
10 refining.

11 Q. Okay.

12 The first sentence indicates, "Imply -- in
13 reply to your recent question."

14 Do you recall what question Mr. Moore asked of
15 you that this letter is in reply to?

16 A. I don't recall his particular call to me or
17 asking me; but I do recognize from this that he was
18 interested in a written policy for all of the
19 refineries, that would be satisfactory to meet OSHA's
20 requirement in this field. The paper work then became
21 important, not whether or not we didn't have the program
22 and ongoing; but it was that we had to have the paper
23 work associated with compliance with the OSHA standards,
24 OSHA requirements.

25 Q. Okay.

1 First of all, Professor, did you write this
2 letter?

3 A. I would assume. I don't recall personally that
4 I did; but with all of this bottom down here, I assume I
5 did. It would be a type of letter I would have written
6 in request from Mr. Moore that we get written policies
7 from all of the refineries, that would be satisfactory
8 to me.

9 Q. So, you have no reason to believe that this is
10 not a letter that you actually wrote?

11 A. I assume that we can, I think, with confidence,
12 that this was a letter that I wrote to him.

13 Q. Okay.

14 In the first full paragraph, you indicate that
15 the Billings and Benicia refineries have less formalized
16 programs and seem to depend more on contractors to
17 follow safe practices.

18 Do you see that reference?

19 A. I see that reference to the employees.

20 Q. And was that actually the case in 1973?

21 A. Not to my knowledge. It was just a matter that
22 I wanted to cover -- cover these employees thoroughly,
23 as well as our own employees, in regard to the handling
24 of these materials and to meet the requirements of OSHA
25 that we had included all of those people in our policy.

1 Q. Isn't it true, though, that, in 1973, Humble
2 and Exxon did, in fact, depend on contractors to follow
3 safe practices in the Benicia refinery?

4 A. They were required to do so.

5 Q. Okay.

6 But you indicate in this letter that you
7 depended upon them to do so. Is it not true, then, that
8 they were left to their own --

9 A. No. It's just --

10 Q. -- own decisions in terms of how to do work
11 that involved potential exposures to asbestos?

12 A. The -- what we didn't have in our hands and
13 what I didn't have and I needed was a written policy of
14 how they were carrying out all of these activities. It
15 wasn't a question about them doing it, just that we
16 didn't have a formal policy, written program. That was
17 what I was searching for.

18 Q. Okay.

19 Down in the second to the last paragraph,
20 there's a sentence that reads, "If either Billings or
21 Benicia have established a safe asbestos policy, we have
22 not seen it."

23 A. Well --

24 Q. You have underscored portions of that sentence,
25 including the last phrase, "We have not seen it."

1 A. And that --

2 Q. Is that correct?

3 A. That would be a written policy, and that -- I
4 refer, not to the practices, but to the -- having it in
5 in hand, a written, formal program policy. And we
6 didn't have one in our files. If they did theirs, we
7 had it for the other refineries.

8 Q. You've underscored the phrase "we have not seen
9 it." Is that because you consider that to be important?

10 MS. KYLE: I'm going to object. Lack
11 of foundation. I don't know that the
12 Professor has testified that he
13 underscored the material that you're
14 talking about, Frank.

15 A. Going back to the original -- the purpose of
16 this letter was to get a written document in my hands.
17 And when I talk about policy, I was looking for -- not what
18 they did or wasn't doing. It was what they had actually
19 put down on paper, as required by OSHA, to meet OSHA's
20 requirements.

21 The paper work really bothered us a great deal,
22 from OSHA, because even though we had an excellent
23 program, as all of our medical examinations and other
24 checks on it prove, but we didn't have it all written
25 out as to the degree that the bureaucrats wanted it.

1 So, this requires --

2 MR. LEDYARD: Professor, reference
3 has been made as to whether or not, when
4 you wrote this letter, you underlined
5 those words or if it's possible those
6 words were underlined sometime later by
7 somebody else. Do you recall one way or
8 the other?

9 THE WITNESS: No, I do not.

10 Q. (By Mr. Grove) Do you have any reason to
11 believe that you did not underscore those words when you
12 wrote this letter?

13 A. No, I do not think that I would have gone to
14 that particular emphasis. I don't think it would have
15 been necessary. I think my letter -- words would have
16 been sufficient. And I think someone else has
17 underscored those letters.

18 Q. Who are the initials RA? Do you see those down
19 in the very bottom, where it says, "JWH slash RA."

20 A. Yeah.

21 Q. Was that your secretary?

22 A. That would have been a secretary/stenographer
23 that took my dictation on it.

24 Q. Would the steno -- would your secretary
25 normally emphasize words in letters that you hadn't

1 indicated to be emphasized?

2 A. I don't think that -- I don't think that would
3 be true.

4 Q. Okay.

5 A. But this obviously is just a copy, and it could
6 have been unscored by many other people.

7 Q. Okay.

8 Professor, isn't it true that Exxon or Humble
9 did not do any testing of dust levels of construct -- of
10 contract workers in Benicia until 1975?

11 A. No, that is not true. There's a letter that
12 indicated Mr. Meyer -- I told you that he was out there
13 several times. But one of them was as early as 19 --
14 1970. And...

15 Q. But was that testing done in relation to
16 contractor workers or Exxon employees?

17 A. All -- all potentially exposed employees. We
18 made no distinction.

19 Q. Are you aware of any testing that was ever done
20 regarding dust levels of refractory workers in the
21 Benicia refinery?

22 A. In application to asbestos, yes, there were
23 tests made there.

24 Q. Relative to refractory workers in particular?

25 A. We didn't distinguish between the -- our

1 employees, insulators, and the ones that we brought in
2 by contractor, no. We never did differentiate to leave
3 them out or to permit them to do any operation that we
4 wouldn't feel safe doing ourself.

5 Q. Okay. That wasn't exactly my question.

6 Have you ever seen any test results relating to
7 testing done while refractory workers were working on
8 boilers at the Benicia refinery?

9 A. I don't recall having seen any specific data
10 that would reply to that particular type of worker that
11 you mentioned because we wouldn't have -- differentiate
12 regardless of whether he was on our payroll or someone
13 else's payroll.

14 Q. In any event, you don't recall any specific
15 data relating to refractory work on boilers at the
16 Benicia refinery?

17 A. I don't remember any such designation, no.

18 Q. Okay.

19 The next document that I want you to refer to
20 has been marked previously as Exhibit 12, I believe.
21 And up at the top, it refers to Humble dash ENJAY safety
22 regulations.

23 Have you seen that exhibit before or that
24 document before?

25 A. I don't recall it. I'd have to review it.

1 THE WITNESS: See, now, this is in
2 compliance with the federal regulations
3 that had just come out.

4 MR. LEDYARD: Why don't you just take
5 a minute to look at it, Professor.

6 THE WITNESS: Uh-huh. I'm looking at
7 it to see...

8 MR. LEDYARD: I don't know what that
9 is.

10 Q. (By Mr. Grove) Have you seen that document
11 before, Professor?

12 A. I don't recall the specific document under the
13 ENJAY safety regulation. That was a subdivision of the
14 company that manufactured chemicals specifically.

15 Q. Were you, as the industrial hygienist at
16 Humble, also responsible for industrial hygiene matters
17 at ENJAY facilities?

18 A. We were after 1960.

19 Q. So, the date of that document, I believe, is in
20 June of 1972. Is that correct?

21 A. It is, uh-huh.

22 Q. So, during that time period, you would have
23 been responsible for the ENJAY?

24 A. Yes.

25 Q. Okay.

1 A. And this is putting it down in, as I said, a
2 policy -- written policy that we were following already.

3 Q. These were guidelines that were supposed to be
4 observed when people were working with asbestos in the
5 field?

6 A. It -- they were already being observed, but
7 they just -- we never put them down so that any new
8 employee or new supervisor coming on that had the
9 responsibility would have it as his Bible.

10 Q. So, your testimony is that this is nothing
11 different from what was happening at Humble already?

12 A. No. That's right. I -- this is our policy
13 already. It was in practice.

14 Q. I'd like you to read the last sentence of the
15 kind of introductory paragraph underneath the heading.
16 There's a --

17 A. "The following are areas of good safety
18 practices which are --"

19 MR. LEDYARD: Just the last sentence,
20 I think.

21 A. Oh. "These should not be given -- these should
22 now be given special emphasis in our normal working
23 practices." Yes.

24 Q. Okay.

25 Why -- if these were practices that were

1 already in effect, why, then, Professor, did you use the
2 phrase "these should now be given special emphasis"?

3 A. Because they'd become under the OSHA and under
4 federal regulations and we had to have -- they had to
5 have the paper work necessary to prove that when we had
6 inspectors come in and that would require to be shown
7 these type of -- of guidelines for handling asbestos.

8 Q. Isn't it true, Professor, that the -- these --
9 some of these measures were new policies that were
10 implemented by Exxon as of the date of the OSHA
11 regulations?

12 A. No. I don't see anything new here than what we
13 were already practicing and using, such as we
14 underscored, "Do not drive, sweep, or blow with
15 compressed air." That would answer your previous
16 question about our policy. We were -- and, "Asbestos
17 material should not be applied by spray methods."

18 Q. Did you prepare this document that's already
19 been marked as Exhibit 12?

20 A. I did not prepare it, but I approved it.

21 Q. And I believe you already indicated that these
22 were guidelines that were supposed to be followed in the
23 field when using asbestos-containing products?

24 A. Let me emphasize they were the guidelines that
25 we were already using. But now we had to put it down

1 and have it in a document. We had it as a policy and
2 formalized so that any OSHA inspector would be able to
3 be supplied with a copy of this without him having to go
4 over every question. It was here.

5 Q. Okay.

6 Isn't it true, Professor, that the document and
7 those guidelines say nothing about wetting insulation
8 material -- materials when applying them?

9 A. I haven't read it that carefully.

10 Down at the end, "All cleanup of asbestos dust
11 shall be performed by vacuum cleaners."

12 You asked about the method we got rid of them;
13 and those were approved vacuum cleaners, all wet
14 methods.

15 Q. Can I see the document, please? You got a
16 copy? Thanks.

17 A. Seemed to be a very com -- very good program.
18 I see no particular problems in it, except medical
19 surveillance.

20 Q. Sir, you've just referenced the -- the
21 reference in Section 3E of the guidelines, that
22 indicates all cleanup shall be performed by vacuum
23 cleaners or wet methods? Is that what you were
24 referencing just a moment ago?

25 A. That was No. 4. Well, also, yeah, at the

1 bottom --

2 MR. LEDYARD: Three.

3 Q. Three, right.

4 A. -- the vacuum cleaners or wet method.

5 Q. Doesn't that --

6 A. It doesn't need to be --

7 Q. I'm sorry. I didn't mean to interrupt. Are
8 you finished?

9 A. Yes.

10 Q. Doesn't that simply apply to the removal of
11 asbestos? Isn't that what Section 3 applies to?

12 A. No. Any asbestos, new asbestos or any other
13 asbestos, would be cleaned up by wet methods or vacuum
14 cleaners only.

15 Q. But it says nothing whatsoever about applying
16 asbestos by wet methods, does it?

17 A. In some cases, it was preformed and all ready,
18 that you didn't have to have any dust or any cleanup
19 after that, no.

20 Q. And it also doesn't say anything about using
21 wet methods to remove any jacket paper from insulation,
22 does it?

23 A. The OSHA requirement didn't go into that
24 matter, and we were just trying to get this so we would
25 be in compliance with OSHA.

1 And they were weak compared to our program, in
2 asbestos as well as many other substances. We didn't
3 learn a thing from OSHA but paper work.

4 Q. And the last number on that memorandum or
5 guidelines or whatever the document is called is No. 4.
6 It says, "Asbestos materials should not be applied by
7 spraying methods."

8 A. That was our policy.

9 Q. Isn't it true that, prior to that time, Humble
10 did spray asbestos products?

11 A. Not --

12 MS. KYLE: Objection. Asked and
13 answered earlier this morning.

14 A. I think I've answer that before. No. We
15 already had a policy -- we already had a program against
16 that, and this is just emphasizing.

17 Q. Yesterday I asked you some questions regarding
18 the identities of some people you knew over the years
19 through your affiliations with various organizations.
20 I've come across the names of a few more individuals
21 that I'd like to run by you.

22 Do you know who a Dr. Woody is?

23 A. Yeah. He was a medical director, I believe,
24 from Esso Eastern Company, part of the Standard Oil,
25 ENJAY.

1 Q. Was he -- well, what period of time was he
2 employed by Esso Eastern?

3 A. He was -- I just can speak since '47. Now, he
4 was well established and quite a senior member of the
5 physicians when I came to work in that organization,
6 broad organization. And he didn't work much longer
7 after I came before he retired.

8 Q. Was he a member of the -- the medical --
9 medical and health -- medical advisory committee?

10 A. Committee of the API, yes. That's where I knew
11 him, yes, sir.

12 Q. And you attended meetings of the -- I -- of
13 that committee, as well, did you not?

14 A. Well, it was joint committee meetings; but we
15 separated during the conference into individual -- I
16 mean, into specialized fields, such as industrial
17 hygiene and medical. But we were also, a good part of
18 the time, jointly together --

19 Q. Okay.

20 A. -- as a group.

21 Q. Okay.

22 The next person is Clyde Berry?

23 A. Clyde -- Dr. Clyde Berry was with the public
24 health service, and I enticed him to come out of the
25 public health service to go to work for the Esso Eastern

1 Company. And he was with us four or five years, from
2 about 1947 -- no. Excuse me -- 1949 to '54 or '55.

3 Q. And was he also a member of the medical
4 advisory committee?

5 A. Yes, he was.

6 Q. How about Herschel Hobson?

7 A. Herschel Hobson's a newcomer in the field of
8 industrial hygiene. He came, about 1970, from the
9 University of Oklahoma; and he's -- he did his Doctor's
10 degree there in industrial hygiene at -- under a Dr.
11 Nau. And Dr. Nau called me and told me he was coming to
12 work for Texaco and asked if I'd take him in hand and
13 give him an orientation in the petroleum industry, kind
14 of an internship. So, he worked with me for several
15 days and several weeks maybe. I don't recall.

16 Q. And that was sometime in the early 1970's?

17 A. Yes, about that period.

18 Q. So, then, you attempted to essentially show Mr.
19 Hobson the ropes, so to speak?

20 A. I gave him an internship before he really
21 reported over to Texaco, yes.

22 Q. As part of that internship, was there any
23 discussion relating to the potential health hazards of
24 asbestos, in controlling asbestos in the field?

25 A. I'm sure that it was covered. The nature of

1 our orientation of him was to get him into refineries
2 and see what the programs were.

3 MR. LEDYARD: I think you need to
4 depose Dr. Hobson and find out exactly
5 what he knew and when he knew it.

6 Q. How about a Mr. Henry Burgess?

7 A. I don't believe I know him.

8 Q. Maybe a Dr. Burgess. I don't know off the top
9 of my head.

10 You don't recognize the name?

11 A. I don't recognize the name.

12 Q. Okay.

13 How about George Wilkening?

14 A. George Wilkening worked with the Esso
15 development research group in the area of reviewing
16 refineries worldwide for a while, and then he came to me
17 and my assistant or associate director of industrial
18 hygiene at Humble. And he was with me about five years.
19 And then Bell Telephone people said, "We need a man to
20 head up our program"; and, so, they enticed him to go to
21 Murrayhill, New Jersey, and take over the Bell
22 laboratories. And he retired from that a couple of
23 years ago.

24 Q. How about W.H. Meyer or Meyer?

25 A. Meyer. He was with the organization up at the

1 medical research department and, again, doing work like
2 George Wilkening, worldwide, with refineries and
3 establishing programs. And then, after George left,
4 Bill Meyer came and took his place with me and was
5 assistant --

6 Q. Is that --

7 A. -- industrial hygiene director.

8 Q. I'm sorry. I didn't mean to interrupt.

9 Is that the same Mr. Meyer that we spoke of
10 earlier, who actually made trips out to the Benicia
11 refinery?

12 A. That was him.

13 Q. Wendell Ward?

14 A. Yes, I remember that name. He did not work for
15 me, but I know that name. It's familiar, but I don't
16 recall in what capacity.

17 Q. Jack Spence?

18 A. Jack Spence was the Standard of California,
19 which is now Chevron, industrial hygienist. And, again,
20 he was trained -- after he'd been with that company
21 quite awhile, he was trained at Harvard in industrial
22 hygiene. He came and spent several days with me in our
23 orientation. And he went to San Francisco, and Dr.
24 Curtis was medical director then and took over that
25 program.

1 Q. And Dr. Curtis was a --

2 A. Medical director.

3 Q. Medical director at --

4 A. Chevron.

5 Q. Okay.

6 Was Dr. Curtis a member of the API medical
7 advisory committee?

8 A. He was.

9 Q. From what time forward?

10 A. He was from 1948 or so until he retired. I
11 don't know whether he retired before I did or I retired
12 before he did, but that duration until '78 with me. And
13 he may have been there almost that full time.

14 Q. And Mr. Spence, was he a member of that
15 committee?

16 A. Yes, he was after he came on board.

17 Q. From what time? Do you recall when he---

18 A. I -- I think that his would have been in the
19 late fifties.

20 Q. And what time did -- during what time did he
21 train with you?

22 A. In -- even before he put his program in effect.
23 He trained with me right out of having got his degree in
24 industrial hygiene at Harvard under Drinker. And he
25 came to me and spent -- I don't remember -- days or

1 weeks. But, anyway, it was quite a little while.

2 Q. Was that in the 1950's sometime?

3 A. Oh, yes. That would have been the same time he
4 came to work for Chevron.

5 Q. How about a C.W. Smith?

6 A. I don't remember him.

7 Q. How about an R.W. Black?

8 A. I don't recall Black.

9 Q. Did Humble or Standard Oil of New Jersey attend
10 any of the national cancer conferences to your
11 knowledge?

12 A. We had Dr. Eckardt. And he was director of
13 medical research division; and he was located up at
14 Florham Park in New Jersey, at Linden, New Jersey. And
15 he did go worldwide on -- attendant of the cancer
16 research group, yes.

17 Q. From what -- what time period did he begin
18 attending these conferences?

19 A. I don't know about the attendance of any
20 specific time when he first went, but he started as this
21 position in 1950 or '51.

22 Q. Okay.

23 Okay. We discussed yesterday your affiliation
24 with the API medical advisory committee and the ACGIH
25 and the A -- the Associate -- American Industrial

1 Hygienists Association?

2 A. American Industrial Hygienists.

3 Q. And you attended those conferences --

4 A. I did.

5 Q. -- regularly, correct?

6 A. I did.

7 Q. And at those conferences, isn't it true that
8 health hazards of asbestos were discussed from time to
9 time?

10 A. I never --

11 MR. LEDYARD: Object to the form of
12 the question. Are you talking about
13 discussed as an agenda item or discussed
14 by two people that may have attended these
15 conferences or --

16 MR. GROVE: I'm talking about
17 discussed as a topic at the conference.

18 A. I didn't attend any of them, but I'm sure they
19 were on the program. You usually had a choice of about
20 six different papers being given at the same time, you
21 know.

22 Q. Okay.

23 A. And you would select the one that was of most
24 interest to you at the time.

25 Q. But in any event, it's your understanding that,

1 at least at some of these conferences, that subject was
2 discussed?

3 MR. LEDYARD: Well, Professor, I'd
4 caution you not to assume anything.
5 Either you know that it was discussed or
6 you don't know it was discussed.

7 A. I don't know.

8 Q. Okay.

9 I just want to go back. When you first came to
10 Humble, do you recall what air monitoring activities
11 were being done?

12 A. Yes. The dust, including asbestos, was done on
13 a regular basis by technicians that had been trained
14 under Mr. Bonsib and others. And we were using the
15 midget impinger. It was an official method that was
16 recognized by the industrial hygiene division of the
17 United States Public Health Service. We used that
18 procedure, and we had trained technicians that collected
19 samples and made the counts and so forth.

20 Q. Okay.

21 And was there there a regular time period --
22 was there a periodic schedule that you would do this
23 testing?

24 A. It was a ongoing program that -- it was the
25 combination of industrial -- industrial hygiene and

1 safety or -- orientation that we asked for these. Where
2 we didn't have the data, we'd ask for the data to be
3 collected for certain operations.

4 So, it was ongoing in 1947, when I came. And I
5 looked at it and went over the methods and the
6 procedures that we used and approved it and said, "Carry
7 on."

8 Q. So, in other words, you just basically
9 continued with the same type of monitoring that had been
10 going on prior to your coming to Humble?

11 A. I did.

12 Q. And my prior question was a little more
13 specific than I think your answer was. And I'm asking
14 if you recall if there was any specified time periods
15 that you would conduct tests. I mean, did you do it
16 every six months? Did you do it every year? Did you do
17 it on certain operations more than others? Was there a
18 schedule that was -- that was utilized?

19 A. It was done whenever there was either a new
20 operation or there was an unusual job that we didn't
21 have the previous data on. And they were available at
22 any time to be called out by the safety department or by
23 medical or by myself --

24 Q. Okay.

25 A. -- to go out and make those tests.

1 Q. Did you keep all the data that you obtained
2 through those tests?

3 A. I did not personally in the medical files in
4 headquarters, but they were kept in the refineries where
5 the work was done.

6 Q. Did you share any of the results of your
7 testing with other individuals in the petroleum
8 industry?

9 A. Yes. We had no secrets from any of the other
10 companies that were interested in seeing our data.

11 MR. LEDYARD: Well, I think he's
12 asking you if you did specific sampling
13 that you recall specifically sharing with
14 somebody else as opposed to just generally
15 not having any secrets.

16 A. Well, the data was -- whatever data we had was
17 always available to anyone who inquired to see it.

18 MR. LEDYARD: Well, the question was:
19 Do you recall actually giving it to
20 anybody?

21 A. No. I don't have that, no.

22 Q. You don't recall --

23 A. I can't recall that type of detail now.

24 Q. You don't recall anybody specifically
25 requesting any type of test sampling data?

1 A. I do not recall that.

2 Q. But if somebody were to ask for it, you would
3 have no qualms in giving it to them?

4 A. No, I did not. And I shared it with any
5 public -- both officials that were in Texas or anyplace
6 else that wanted to see it. It was always available.

7 Q. Okay.

8 Now, isn't it true that Humble never posted
9 signs specifically warning of asbestos until after the
10 OSHA regulations came into effect in the early 1970's?

11 A. Again, that was paper work that we were
12 required to do so by OSHA. So, we began to comply with
13 that -- that written requirement.

14 Q. But prior to that time, no such warning signs
15 had been posted in any Humble refineries?

16 A. I don't recall that we found it necessary.

17 Q. Okay.

18 I asked you some questions yesterday about the
19 memorandum from Mr. Venable to Dr. Jones, and I
20 understand that you indicated that you did not recall
21 seeing that memorandum prior to being shown it.

22 My question now is: When you worked at Exxon
23 in 1974, does that -- is that memorandum of the same
24 form that was utilized by Exxon during that period of
25 time?

1 A. I don't recall it, any such form as that.

2 Q. Who was Dr. Jones?

3 A. Dr. Jones was the medical supervisor for the
4 Baton Rouge refinery, that was actually Mr. Venable's
5 director or supervisor.

6 Q. So, Mr. Venable --

7 A. Reported to him.

8 Q. -- would have had responsibility for collecting
9 data and reporting that data to Dr. Jones; is that
10 correct?

11 A. I do not know the -- you know, what the
12 relationship in that regard was; but I'm sure Mr.
13 Venable had the freedom to go to Dr. Jones with
14 information of any type that he thought was -- no
15 restriction on that type of communication.

16 Q. Was it your understanding that Dr. Venable
17 reported -- or Mr. Venable reported to Dr. Jones?

18 A. He could, yes.

19 Q. Okay.

20 The next document that I want to show you is a
21 memorandum from Mr. Venable to yourself, which I believe
22 we had copied yesterday and I'd like to have marked
23 as -- I guess we're on No. 17 now.

24 (HAMMOND EXHIBIT NO. 17 WAS MARKED
25 FOR IDENTIFICATION)

1 MR. GROVE: Can I get you to look on
2 the other one?

3 Q. (By Mr. Grove) Professor, do you recognize the
4 document that's been marked Exhibit 17?

5 MR. LEDYARD: Well, let's take the
6 time to -- I don't know if you've looked
7 at this before this morning or yesterday,
8 but let's take a minute to look at it.

9 MR. GROVE: Actually, it was not my
10 intent to have the letter that's attached
11 to the end of this as part of this. I
12 think it's a completely separate document.
13 I don't have any problem with it being
14 on -- I didn't know that it was copied is
15 my --

16 MR. LEDYARD: Well, why don't you
17 just pull it off of the back; and we'll...

18 MR. GROVE: Okay.

19 MR. LEDYARD: It's about lunchtime.
20 Are you going to ask him questions about
21 that document?

22 MR. GROVE: Yeah. Not very many,
23 though.

24 MS. KYLE: Why don't we take a break,
25 then.

1 MR. LEDYARD: You want to take a
2 break, and he can read it over lunch? And
3 then we'll come back -- how much more do
4 you think --

5 MR. GROVE: I don't have very much
6 more after this, I don't think. So...

7 MS. KYLE: Before we go off the
8 record, I would like to clarify a few
9 issues, one particular issue that was
10 brought up yesterday afternoon. And that
11 concerned the Exxon noticed trial
12 preservation testimony of Professor
13 Hammond that was begun earlier this year
14 and has yet to be concluded.

15 Exxon certainly recognizes and
16 invites other Codefendants, Plaintiffs to
17 examine Professor Hammond concerning that
18 testimony. However, I do want to stress
19 that there is absolutely no agreement,
20 Exxon is not agreeing to allowing general
21 discovery on examination as relates to
22 that Exxon noticed trial preservation
23 testimony.

24 We expect that any examination of
25 Professor Hammond relating to that

1 testimony would be in the scope of the
2 direct, and I would like to make it very
3 clear that any questions exceeding the
4 scope of the direct testimony will be
5 objected to by Exxon.

6 MR. BISHOP: You mean at the
7 conclusion of that deposition or -- you
8 don't mean today?

9 MS. KYLE: No. I'm just -- I'm just
10 referring to that deposition when it --
11 that tran -- that preservation -- excuse
12 me. It is not a discovery deposition. It
13 is a videotaped testimony from Professor
14 Hammond for trial purposes.

15 When it is continued, we expect that
16 any examination will fall within the scope
17 of the direct that Professor Hammond gave
18 several months ago. Any other questions
19 falling outside the scope of that direct
20 testimony will be objected to by Exxon.

21 MR. BAILEY: I'm not that familiar
22 with the deposition. Is it planned to be
23 used in Texas in state court, or do you
24 know?

25 MR. GROVE: It's noticed in

1 California.

2 MS. KYLE: It is noticed in
3 California. It is noticed in re
4 California asbestos litigation.

5 MR. BAILEY: Okay.

6 MS. KYLE: Okay?

7 MR. BAILEY: Thank you.

8 MR. GROVE: I don't have any
9 objection to you putting it on the record
10 of this deposition. I just don't quite
11 understand what it has to do with this
12 deposition.

13 MS. KYLE: If -- it is to clarify the
14 issues for the various counsel here and to
15 also put them on notice, if they have
16 discovery issues they wish to pursue with
17 Professor Hammond, they need to do it in
18 another arena, not in that testimony.

19 MR. GROVE: And with that, are we
20 adjourned for lunch?

21 MS. KYLE: Yes.

22 (RECESS FROM 11:58 TO 1:03 P.M.)

23 (MR. MARSH IS NO LONGER PRESENT)

24 Q. (By Mr. Grove) Professor, while we were off
25 the record at lunch, did you have a chance to look at

1 this memorandum from Mr. Venable to yourself?

2 A. I did.

3 Q. Do you recall seeing that memorandum?

4 A. I am sorry to say 20 years ago. But I don't
5 recall actually receiving it or seeing it or going over
6 it.

7 Q. Do you remember having any discussions with Mr.
8 Venable at or about that time period regarding the
9 recommendations of the Department of Labor's advisory
10 committee?

11 A. No, I do not. This was one that came, I
12 suppose, to me; but I don't have any recollection of
13 ever responding to it or taking any action on it or
14 any -- any other. I'm sorry. But 20 years, you just
15 don't -- it doesn't come to me at all.

16 I had several people working on this type of a
17 written program at the same time; and, so, I know about
18 them and their production.

19 Q. Was Mr. Venable one of the individuals who was
20 working on that program?

21 A. Well, I see from this, if this is his -- to me
22 and -- it covered the same that Mr. Diserens' letter to
23 me and...

24 MR. LEDYARD: Professor, don't assume
25 anything from this document. Just

1 independently of this document, do you
2 recall Fred Venable working on --

3 THE WITNESS: No, I don't.

4 MR. LEDYARD: -- the advisory
5 committee's recommendations?

6 A. That's what I say. I just don't recall any
7 actions --

8 Q. Okay.

9 A. -- of either.

10 Q. Does that memorandum refresh your recollection
11 as to whether or not Mr. Venable may have been working
12 on that project?

13 A. I -- I'm really not in a position to identify
14 this, this being Mr. Venable's letter, because he's not
15 here to tell us. And I just don't -- don't know whether
16 this came to me from him as it's written up here. I
17 just don't know. --

18 Q. Do you have any reason to believe that you did
19 not receive that memorandum from Mr. Venable at or about
20 the time that it was prepared?

21 A. I do not have any proof that I didn't receive
22 it, no.

23 Q. Do you have any reason to -- any reason
24 whatsoever to believe that you would not have received
25 that memorandum?

1 A. I just don't recall it, and I don't know what
2 reaction I might have had to it if I did.

3 Q. Okay.

4 I have one further question on the memorandum
5 that's from Mr. Venable to Dr. Jones. It's undated.
6 And I refer you to the second to the last paragraph of
7 that memorandum. That is Exhibit 15 that's been
8 previously marked. The second to the last memo --
9 paragraph of that -- do you not have a copy of that?

10 A. We had it out here yesterday.

11 MR. LEDYARD: I don't see --

12 MR. GROVE: That's not it underneath
13 the letter that you just -- that's it
14 right there.

15 Q. (By Mr. Grove) Okay. On the second page of
16 that memorandum, the second to the last paragraph
17 begins, "While we initially..."

18 Could you read that paragraph.

19 A. Yes, I read it.

20 Q. Do you recall ever having any discussions with
21 anyone at Exxon or Humble regarding whether or not the
22 initial asbestos control program of Humble was embarked
23 on with some degree of complacency?

24 A. I do not have that impression at all.

25 Q. I'm asking if you had -- ever had any

1 discussions with any individuals within Humble or Exxon
2 regarding that subject.

3 A. Not of any failure on our part to comply with
4 all of the restrictions that were to -- issued out in
5 any -- any public -- ours was more restrictive than
6 this.

7 Q. Now, there -- at the end of that paragraph,
8 there's a reference to two cases of mesothelioma.

9 Do you see that reference at the end of that
10 sentence?

11 A. Yes, at the last sentence. Uh-huh.

12 Q. Are those the instances of mesothelioma that
13 you recalled when you were testifying earlier?

14 MR. LEDYARD: I'm going to object to
15 the form of the question in that the
16 Professor would have no way of knowing
17 which two are being referenced. ..

18 MR. GROVE: You're right. Can I
19 rephrase my question?

20 Q. Do you believe that those two cases of
21 mesothelioma that are referred to in that paragraph are
22 the same cases that you learned of later, after you left
23 Exxon?

24 MR. LEDYARD: Well, Professor, again
25 I would -- counsel, when we started these

1 depositions this morning, told you not to
2 speculate. And I would caution you not to
3 speculate. If you know whether those are
4 the same two, fine. If you don't know,
5 then, I would suggest you not answer the
6 question.

7 A. I do not know whether they were related at all.

8 Q. Okay.

9 If I understood your prior testimony correctly,
10 you -- you had no conversations with anyone within Exxon
11 concerning cases of mesothelioma prior to your leaving
12 the company?

13 A. I never did, no.

14 Q. Okay.

15 One more question regarding that paragraph.
16 The first portion of it indicates, "...while we
17 initially embarked upon the asbestos control program
18 with some reservation concerning its real significance."

19 Do you ever recall any discussions regarding
20 that subject with any individuals within Humble or
21 Exxon?

22 A. No, I do not. And I don't know the purpose of
23 him putting it down, if he did do it.

24 Q. Did you regard Mr. Venable as a good employee
25 of Exxon?

1 A. That's rather broad. In what field? In what
2 area?

3 Q. In the fields in which he practiced.

4 A. He was an excellent -- very jealous of his
5 covering of every employee. He took them on as a
6 individual responsibility of his; and I had no more
7 conscientious employee, in my knowledge, as I've ever
8 worked with.

9 Q. Okay.

10 I previously asked you about what has been
11 marked Exhibit 4A, and I believe you indicated that you
12 didn't recall that. That was the April 13, 1964, cover
13 letter from Mr. Lucian Renes to Nathan Van Hendricks.
14 And I believe you indicated you didn't recall that
15 letter or the report that's attached to it?

16 A. No, I do not.

17 Q. Okay.

18 My question to you now is simply: Who is
19 Lucian Renes?

20 A. He was an industrial hygienist for Dr. Keith
21 Davis of the Phillips Petroleum Company.

22 Q. Did you know Mr. Renes?

23 A. I did.

24 Q. And did he -- was he part of the medical
25 advisory committee?

1 A. He was a member after he came aboard of
2 Phillips.

3 Q. Do you recall during what time period he became
4 a member?

5 A. No, I do not. But I'd estimate it was in the
6 mid-fifties.

7 Q. Okay.

8 Professor, during the depositions that you gave
9 back in May, I believe you indicated that you were being
10 compensated for your time by Exxon. Is that correct?

11 A. I am as a fact witness.

12 Q. And are you still being compensated during
13 these sessions of deposition?

14 A. I hope so.

15 Q. And do you know at what rate you're being
16 compensated?

17 A. \$200 an hour.

18 Q. Do you know if your attorney, Mr. Ledyard, is
19 also being paid by Exxon to appear here today on your
20 behalf?

21 MR. LEDYARD: Counsel, I'm going to
22 object to the question. Not only is it
23 not relevant, but it's none of your
24 business as far as my relationship with my
25 client. And I would instruct the witness

1 not to get involved in such questions and
2 answers.

3 MR. GROVE: I don't want to argue,
4 but -- and I don't even dispute that, if
5 you have a relationship with the
6 Professor, that's protected by the
7 attorney-client privilege. My question
8 had to do with your relationship to Exxon,
9 which I don't believe is covered by any
10 privileges that's in this deposition. And
11 I --

12 MR. LEDYARD: Other than it's
13 completely irrelevant, but...

14 MR. GROVE: Okay.

15 MR. LEDYARD: Do you have any idea
16 one way or the other?

17 THE WITNESS: No. I don't have any
18 concern about your affairs with Exxon.
19 You're my lawyer.

20 Q. Do you have -- do you have any knowledge
21 whatsoever regarding who is paying Mr. Ledyard for being
22 here?

23 A. I sure don't.

24 MR. GROVE: Okay. I believe that's
25 all I have, Professor. And I thank you

1 for your time.

2

3 EXAMINATION BY MR. BAILEY:

4 Q. Professor --

5 MR. LEDYARD: Feel free to jump in.

6 Q. Professor, my name is Mel Bailey; and I've sat
7 through five or six days now of depositions and never
8 had the opportunity to ask you any questions. I have
9 just a few.

10 What I want to focus on is your thought process
11 in the late thirties, the early forties, and into the
12 fifties. Okay?

13 A. All right.

14 MR. LEDYARD: Would you just state
15 for the record, so the Professor will
16 know, who you represent.

17 Q. I'm here on behalf of Union Carbide, among
18 other defendants that --

19 A. Yes, I see.

20 Q. Different defendants in different cases.

21 Tell me a little bit about your relationship,
22 if you would, with Philip Drinker.

23 A. Philip Drinker. Well, I went with the United
24 States Health Service; and I was in Bethesda, Maryland
25 Institute of Health. But I wasn't there very long

1 before, in 1941, they said, "We're going to send you to
2 the Division of Occupational Diseases in the Department
3 of Labor of Massachusetts. And you'll be working there
4 with many trained people, like Dr. Elkin and Hemeon and
5 others. And we think this will be a fine orientation
6 for you to be. And, also, you have privilege to attend
7 the lectures at Harvard under Dr. Drinker."

8 So, that was my beginning with him, in 1941.
9 And I was privileged to attend lectures, because Dr.
10 Hemeon and also Elkin were adjunct professors that
11 lectured over there regularly for the school in
12 industrial hygiene.

13 Q. I had seen prior deposition testimony where you
14 said you attended classes. You weren't physically --

15 A. That's what --

16 Q. -- enrolled at Harvard, but you went to classes
17 there?

18 A. I did -- I would go with Dr. Elkin and Mr.
19 Hemeon and others in the department. Like Dr. Tabershaw
20 was a member of that team of people at Massachusetts
21 Division of Occupational Disease. And I'd go with those
22 and attend the classes. But I didn't actually register
23 for a degree, no.

24 Q. Now, you -- one of the reasons you went to
25 attend classes at Harvard, though, was to study under

1 Philip Drinker?

2 A. That's true. He was a outstanding worldwide
3 industrial hygienist and engineer, and it was certainly
4 a great privilege to be working under him or with him
5 and...

6 Q. And part of his focus was in
7 asbestos-related -- well, strike that.

8 Part of his focus was industrial hygiene and
9 how asbestos related to industrial hygiene; is that
10 true?

11 A. He taught that. And, also, he was quite an
12 authority on the relation with silica and silicosis and
13 producing operations in mining and other operations.

14 Q. Okay.

15 At that time, in the forties, the early
16 forties, were you of the opinion that he was one of the
17 foremost industrial hygienists in the world? --

18 A. He was. And he and Hatch -- Theodore Hatch and
19 he wrote a book on industrial dust, and that was more or
20 less a Bible for this field. And that was written in
21 '34, '36, and published in that period. And then he
22 wrote a revised edition in the early 1950's, second
23 edition.

24 Q. Now, his paper you're referring to in 1936,
25 that he wrote with Professor Hatch, generally discussed

1 dust and pneumoconiosis --

2 A. It did.

3 Q. -- and industrial hygiene, correct?

4 Did you become personal friends with Philip
5 Drinker during the forties and fifties?

6 A. Yes, I did to the extent that I was assigned
7 then to the State Department of Health that established
8 a program for the state of South Carolina. And he came
9 to visit us as a guest of the department, and I asked
10 him about enrolling to finish out my degree and get --
11 actually get a degree from them. I already had three
12 degrees, but none of them under Drinker.

13 So, he says, "Jim," says, "you know all that
14 we're teaching, anyway." Said, "Why in the world you
15 want to waste your time?" So...

16 Q. Is there any doubt in your mind Philip Drinker
17 played a major role in your development as an industrial
18 hygienist in the forties?

19 A. Oh, yes. And we maintained, until he retired,
20 a close relationship, with various meetings and
21 conferences and -- and correspondence.

22 Q. Now, when you were running the symposium, for
23 lack of a better term, at Rice in the forties, late
24 forties, you invited Dr. Drinker to come down and speak
25 to that group?

1 A. He did. He spoke.

2 Q. And I think that was around 1947. Is that your
3 recollection?

4 A. Well, the first one was in '48. I came in '47;
5 and it took me about a year to get it organized and to
6 get speakers such as Jack Bloomfield, who was also an
7 outstanding authority in the public health service
8 field, and Drinker. And I don't remember if Hatch came,
9 whether he actually came during the eleven -- ten years
10 or so we ran the program. But we were in correspondence
11 with him.

12 We also had distinguished people from England
13 to come to our conference here. The equivalent of
14 secretary of labor in terms of standards came over as
15 one of my guests from England, and he stayed with me for
16 a day or two after the conference. We visited the
17 refineries, like Baytown. --

18 Q. Professor, you've referred in several of your
19 depositions to what your thought process was or what
20 information or beliefs you developed with respect to
21 asbestos in the forties and in the fifties and in the
22 sixties.

23 My question to you is this: Have you made any
24 effort, since the time that you retired, to go back and
25 collect medical articles, review what state of the

1 knowledge was with respect to asbestos; or are the
2 opinions you give based solely on your recollections of
3 articles you read at the time?

4 A. I know I have not. I've been invited to do
5 that for the "Journal of the American Industrial Hygiene
6 Association." And I'm guilty of being too -- well, I
7 excuse myself. I'm still busy. But I have been invited
8 to do that very thing that you have -- not only for
9 dust, but also for many of the other common occupational
10 hazards of that type.

11 And I was fortunate to -- in South Carolina, to
12 be associated very closely with a Dr. Lynch. And Dr.
13 Lynch taught me that, in the textile industry, where
14 they used asbestos as they would cotton to weave it into
15 cloth and so forth, that sometime the lint in the air
16 would get so thick until it looked like a fog. And it
17 was from -- Dr. Lynch had a big plant there, and he
18 talked about that caused asbestosis. And he didn't see
19 any reason for me to be upset, unless it was danger of
20 asbestosis, about the cancer -- carcinoma of the lung.

21 Q. Okay.

22 While you're talking about milling and mining
23 and that process, is it true that the articles that you
24 were beginning to read and accumulate in the early
25 forties with respect to asbestos-related disease were

1 stud -- either case studies or epidemiological studies
2 in the milling and mine atmosphere as opposed to with
3 insulators or end users?

4 A. Yes. I talked a lot to Lynch in regard to what
5 degree of protection I should insist upon; and he told
6 me to protect them from asbestosis and, as far as he
7 knew, that would be sufficient to protect them from
8 other things.

9 Q. Really, what I'm focusing on is that this was
10 an evolutionary process, the development of knowledge in
11 relation with asbestos and industrial hygiene. Is that
12 true?

13 A. Yes. I'm very fortunate that I grew up with
14 it.

15 Q. Right.

16 And what you grew up with in the forties was
17 either case studies or epidemiological studies --
18 addressing textile workers in much heavier levels of
19 exposure than in normal end user trades. Is that true?

20 MR. GROVE: I'm going to interpose an
21 objection in that I don't know that that
22 is all the types of articles that he has
23 testified to. I think you limited your
24 question just to textile workers, and I
25 think he's testified in the past to

1 reading more articles than simply textile
2 articles.

3 Q. (By Mr. Bailey) Okay. Go ahead. I'm talking
4 about case studies, reports of incidence -- increased
5 incidence of disease.

6 Is it true that during the early forties that
7 certainly the papers you were referring to and reading
8 were discussing millers, miners, textile industry as
9 opposed to end users?

10 A. I never did get involved with the mining
11 industry and manufacturers of asbestos. I was more in
12 the application of it as a test -- textile operation,
13 you know. And I'm not an authority at all on the mining
14 and handling of it at the age of manufacturing.

15 Q. But you were -- the studies you were referring
16 to then were of employment situations such as you
17 discussed earlier with Dr. Lynch, heavy -- heavy levels
18 of continuous exposure in the textile industry. Is that
19 true? Early studies, in the forties.

20 A. Yes. Emphasis was on prevention of asbestosis.

21 Q. In 1946 or 1947, Professor Drinker wrote his
22 article, the Fleisher-Drinker study.

23 Do you recall that article being published?

24 A. And that dealt with the shipbuilding operation,
25 I remember.

1 Q. Yes, sir.

2 You've testified before that you've seen that
3 article, and I have it here if you want to look at it.

4 A. Yes, I have -- I have seen it. I'm well
5 familiar with it.

6 Q. I guess my first question is: Prior to the
7 publication of the Fleisher-Drinker study, had you ever
8 read any other case study or epidemiologic study
9 following end users, insulators and things of that
10 nature?

11 A. Not that I recall.

12 Q. Did you ever discuss the Fleisher-Drinker study
13 with Philip Drinker?

14 A. Not with Dr. Drinker, but with some of the men
15 that were -- actually did their investigation in the --
16 in the naval yards. But not with him, I don't recall.

17 Q. The Fleisher-Drinker study was commissioned by
18 the United States Navy for the purpose of determining
19 whether there was a difference in the incidence of
20 disease in textile situations and in that of end users,
21 being insulators and pipe fitters; is that right?

22 A. I don't know of that. I'm sorry. I just don't
23 know that much about the --

24 Q. Okay.

25 A. -- original study, the purpose and all.

1 Q. Did you recognize in the forties that the
2 Fleisher-Drinker study was, at the time that you first
3 became familiar with it, the first study of insulators
4 to see whether or not they had an increased incidence of
5 disease?

6 A. I don't recall any other study that I was --
7 before that.

8 Q. Did you, between 1946 or '47 and Dr. Selikoff's
9 study at the end of 1964, ever see any other case study,
10 epidemiological study, case report criticizing the
11 findings in the Fleisher-Drinker study, criticizing
12 their conclusions?

13 A. I don't recall when I first saw that critical
14 (sic).

15 Q. In your opinion, in 1946 and '47, was Philip
16 Drinker qualified, based on his reputation and your
17 relationship, to conduct a study to determine whether or
18 not end users were at an increased risk for developing
19 asbestos-related disease in the forties?

20 MR. GROVE: I want to interpose an
21 objection. That calls for speculation.

22 A. I know of no other person better qualified than
23 he.

24 Q. Did you rely on Professor Drinker's teachings
25 and findings as an industrial hygienist in implementing

1 your plan for Exxon Corporation or Humble?

2 A. It was part of my basic foundation and
3 education.

4 Q. Were you --

5 A. His teachings and his writings.

6 Q. Do you think it would be reasonable for other
7 companies in similar situations to rely upon Professor
8 Drinker and his findings in formulating their beliefs in
9 their industrial hygiene programs?

10 A. In my contacts, most of the industrial
11 hygienists at that time, in practice, were
12 Drinker-trained individuals or the people that were
13 trained by his -- his former graduates.

14 Q. So --

15 MR. LEDYARD: I'm going to also make
16 the objection that asking this witness to
17 assume what other people of the time may
18 have known or may have thought, I think,
19 does subject this witness to having to
20 speculate.

21 Q. (By Mr. Bailey) That's the difficulty of state
22 of the art, and that's why I'm glad I get to visit with
23 you. And we will -- I will try to limit my questions to
24 your experience, your beliefs as we came through.

25 You said you visited with people regarding the

1 Fleisher-Drinker study. Do you recall any of those
2 conversations?

3 A. Ege, John Ege was one of those people. He and
4 I worked together in Massachusetts. So, normally, when
5 we'd see each other at the conferences, we usually had
6 lunch and dinner together; and we usually discussed
7 whatever he'd been doing and whatever I'd been doing.

8 Q. Did any of the people that you discussed the
9 Fleisher-Drinker study with criticize either the
10 scientific data used or the conclusions drawn in
11 connection with that study?

12 A. I don't recall that I ever discussed that
13 Drink -- I mean that particular study with anyone
14 individually and separate.

15 Q. As an industrial hygienist, do you use case
16 studies and epidemiologic studies in your capacity as a
17 hygienist; or do you let the medical section rely upon
18 them?

19 A. I'm not at all a specialist in epidemiology,
20 and all of the studies I did were our own plants. I
21 always had an epidemiologist work along with me and --
22 and furnish that part of the information.

23 Q. When you, in the forties or fifties, heard of a
24 reported case of a particular disease, be it a cancer,
25 whatever, and it was limited to one case study, as an

1 industrial hygienist, would you feel as though that one
2 finding in a case report was sufficient to establish a
3 cause and effect relationship?

4 A. I don't ever remember making that type of
5 application to exposure.

6 Q. Would you generally, then, apply or require
7 epidemiological studies before you would draw a
8 conclusion of a relationship between disease and
9 exposure to a particular mineral or product?

10 A. I didn't attempt to do that. I was only
11 interested if there were a exposure determination been
12 made on the individual that was involved. And how much
13 and how long he was exposed and things of that type were
14 much more interesting to me than the individual medical
15 finding of one case or two cases or whatever.

16 Unless I had supporting data that this was a
17 suspicious correlation between exposure and -- and the
18 disease and was far beyond -- out beyond the
19 epidemiological likelihood that it would occur normally
20 among the general population, I ignored it.

21 Q. Right. That's what you were talking about
22 earlier with two reports or allegations of mesothelioma
23 among all of your Exxon employees. What you were saying
24 was that's not outside what you would expect in the
25 general population; so, maybe it's not of sig -- of

1 significance in determining the cause and effect. Is
2 that what you're saying?

3 A. Absolutely.

4 I had a very close friend of mine 30 years, and
5 he died 85 years old of epidem -- the epithelioma. And
6 I don't know where in the world he could have gotten it.
7 He was chairman of the board of a utility company for
8 many years and president before that and was strictly an
9 executive as far as I know. And, yet, he died of
10 epithelioma. And that was -- in six months, he was gone
11 after they discovered it. He was 85 years old.

12 Now, how could I go back and tie that in to any
13 occupational report?

14 Q. And that's what I was getting at with respect
15 to your job as an industrial hygienist. You didn't
16 necessarily -- because you read a case report in the
17 forties that said there was a report of cancer among an
18 asbestos worker, you didn't necessarily, at that time,
19 believe that there was a direct correlation, cause and
20 effect, between asbestos and cancer. You'd seen a case
21 report; is that right?

22 A. I didn't -- I didn't read those case reports.

23 Q. Epidemiological studies followed much later, in
24 the sixties and seventies, didn't they, with respect to
25 cancer?

1 A. I was not familiar with them until after '65.

2 Q. After Dr. Selikoff's study; is that right?

3 A. (Nodding head)

4 Q. Lastly, did you play any role in the
5 development of threshold limit values for the state of
6 Texas and the adoption in the statute?

7 A. For asbestos?

8 Q. Yes, sir.

9 A. No.

10 Q. Can you tell me briefly what a threshold limit
11 value is and how you use it as an industrial hygienist?

12 A. Well, it's a guideline where at you would want
13 to maintain exposures below that level and not even
14 permit them to get up to that level if you could do
15 better, was my theory. And I looked at an operation;
16 and I'd say to myself, when I see the employees working
17 there, "Would I be willing to spend 40 years at this
18 job? Would I feel perfectly safe, with no danger of my
19 developing a disease or problem?"

20 Q. I guess that's what I'm getting at with respect
21 to the TLV's and your opinion in connection with relying
22 on the TLV's, first off. But before we get to that
23 point, what is a time-weighted average?

24 A. That would be the concentration that an
25 employee, in eight hours, might be exposed to over --

1 one day or over a week of 40 hours.

2 Q. It's the theory that you can be exposed to
3 levels of -- or to certain levels or less eight hours a
4 day, five days a week, and still be safe. Is that the
5 theory of a time-weighted average and a TLV?

6 A. When --

7 Q. Whether or not you agree with it, is that the
8 theory?

9 A. Well, let me tell you. They have to be applied
10 and used by a professional industrial hygienist. They
11 can't be used by lay people.

12 Q. Well, no question about that. I'm just going
13 into what the thought process was as we developed the
14 TLV's. And that was the thought, is we're going to make
15 a determination with respect to what level below which a
16 worker can work eight hours a day, five days a week, and
17 be safe from becoming increased likelihood of developing
18 disease. Is that the thought of a TLV?

19 A. That was based upon the United States Public
20 Health Service recommendation and Department of Labor,
21 too.

22 Q. Okay.

23 Now, I understand you did not always agree with
24 the application of TLV's. You were much more
25 conservative, I think, from what I've heard you testify.

1 Is that right?

2 A. I was conservative to do the best control that
3 we could, and -- and nothing less than that would
4 satisfy me.

5 Q. Was it reasonable to rely upon the TLV's as
6 they were published at 5 million particles per cubic
7 foot, for example, at the time that they were originally
8 published in the forties?

9 A. That involves a lot of -- of professional
10 explanation to you about why and how you apply that,
11 because it depended on the composition that you were
12 looking at, the size of particles you were looking at,
13 and who was doing the work and so forth.

14 Q. Well, the TLV's, as later adopted by the ACGIH,
15 defined the size of particles relevant to the
16 measurement of 5 million particles per cubic foot.

17 A. But that came very late, like in 1970... And we
18 had to operate before that.

19 Q. Okay.

20 A. And we used the total count rather than the
21 fibers.

22 Q. When was the first time you saw any suggestion
23 with respect to TLV's for asbestos?

24 A. That was -- next door to us in Massachusetts
25 was Warren Cook. And Warren Cook came out with a list

1 of about 35 or 40 substances, chemicals and material, in
2 1940, '39 or '40. So, about 1940, I became familiar.

3 Q. And it wasn't until '46 that the ACGIH finally
4 established what we knew as the original TLV's; is that
5 right?

6 A. I -- it was about that time, yeah. I don't --

7 Q. Now, how long -- the original TLV's, as
8 established by the ACGIH, were 5 million particles per
9 cubic foot; is that true?

10 A. Total particles. And that included -- maybe 90
11 percent of those particles were not related at all to
12 asbestos.

13 Q. When you say they were not related at all, it
14 was specifically addressed in the ACGIH of how many
15 particles of asbestos would be allowed.

16 A. No. No, that didn't have application to that.
17 You might only have 10 percent asbestos particles in
18 that total 5 million particles. So, you'll -- your
19 protection was pretty keen at that because the nuisance
20 dust and the other dust particles in there didn't have
21 any effect on it.

22 Q. When was it that the ACGIH finally changed
23 their original TLV of 5 million particles?

24 A. About 1970.

25 Q. Did you play any role in that at all?

1 A. No. That was a different group. I was -- no,
2 I didn't have any part to do with it.

3 Q. When did Texas first adopt the TLV's? Was it
4 1957?

5 A. Approximately.

6 Q. Did you play any role in that at all?

7 A. No, I didn't. They took that from the ACGIH.
8 It was just a copy of the ACGIH list.

9 Q. In your role as industrial hygienist for Exxon,
10 did you ever criticize the TLV's by written editorials
11 or anything of that nature?

12 A. No, I did not. And I'm glad I didn't because,
13 when I went back to teaching in 1978, I was immediately
14 placed in charge of the chemicals and the subsection of
15 the TLV committee to set on most chemicals, and which I
16 was chairman of that subcommittee for the next ten
17 years, 12 years.

18 Q. So, as the chairman of the subcommittee to
19 develop TLV's, you have an appreciation as to the
20 responsibility.

21 A. I do.

22 Q. And you understand that, when you set a TLV,
23 the rest of the industry is going to rely on that TLV.
24 That's the thought, isn't it?

25 A. Yeah. Not only did the United States rely on

1 it, but Canada, Germany, West Germany, England, and many
2 other nations adopted our TLV's.

3 Q. Okay.

4 MR. BAILEY: Professor, I think
5 that's all I have. Thank you very much.

6

7 EXAMINATION BY MR. BISHOP:

8 Q. Professor Hammond, my name is Charles Bishop.
9 We've met. I represent a company named Mine Safety
10 Appliances Company, and they're involved also. I
11 previously told you that.

12 I'd like to ask you a few more questions about
13 TLV's generally. And I'd like to ask you a few other
14 questions about respirators.

15 You were just asked -- Mr. Bailey asked you
16 what the purpose of TLV's, and I -- I didn't -- I'm not
17 sure I quite understood your answer. And let me ask it
18 another way.

19 Is the purpose of a TLV to establish a safe
20 level?

21 A. No, it was not. It was a guideline for
22 professional industrial hygienists to use. And it
23 had -- and except for a few states that made it legal,
24 we didn't have any enforcement, so to speak, nationwide
25 on TLV's. It was a voluntary thing.

1 Q. Right.

2 But aside from enforcement, what -- what's the
3 purpose of establishing a TLV?

4 MR. GROVE: I'm going to object to
5 that. It calls for speculation.

6 A. Strictly as a guideline, in my opinion.

7 Q. A guideline to help people in industry
8 determine what is a safe level?

9 MR. GROVE: Same objection.

10 A. No. Guideline to protect most everybody that
11 would work and normally exposed to no greater than that
12 concentration over a period of a lifetime of 30 or 40
13 years.

14 Q. That is its intent, then?

15 A. That intent.

16 Q. That -- the concept of TLV's has been around in
17 the medical literature since 1938, hasn't it? --

18 A. That was about the time that Warren Cook came
19 out with the first list.

20 Q. And in 1938, Dr. Dreesen conducted a study to
21 determine a safe level of exposure to asbestos, correct?

22 A. He did that on a research basis for individual
23 substances and compounds. I didn't remember that he did
24 it on asbestos per se, but I know he did on many other
25 products.

1 Q. Have you -- have you read Dr. Dreesen's 1938
2 article?

3 A. I -- I think I did, just -- you know, that
4 would have been 50 years ago, 55. I'm familiar with him
5 as an individual. I saw him a good many times.

6 Q. You've worked with Dr. Dreesen?

7 A. Yes. When I first reported to the United
8 States Public Health Service division of industrial
9 health, he was active there at NIOSH in research on --
10 on these matters and had been for several years. Yeah.

11 Q. He was one of the most knowledgeable people in
12 the country concerning that subject, was he not?

13 A. I'm not qualified to say that. Because of the
14 age I knew him, I was so inexperienced I wouldn't be
15 able to say.

16 Q. Do you recollect if Dr. Dreesen concluded in
17 1938 that, if asbestos exposure was beneath 5 million
18 particles per cubic foot of air, he would not expect to
19 see asbestos disease?

20 A. I -- I do not know about that. I'm sorry.

21 Q. Okay.

22 Are you familiar with a 1953 study by Dr.
23 Harriett Hardy with Doctors Isselbacher and Klaus?

24 A. I knew Dr. Hardy, but I don't remember the
25 particular study. Now, she was at MIT at that time, I

1 think. And she was also affiliated with us in
2 Massachusetts Department of Labor, occupational
3 diseases. But I didn't have knowledge of her work,
4 knowledge intimately of her work. But I saw her
5 frequently and heard her papers, but I didn't know her.

6 Q. As part of your work as the chief industrial
7 hygienist for Exxon -- and let me just interject this.
8 Will you agree with me that if I refer to Exxon that we
9 will mean Exxon and its predecessors?

10 A. I will.

11 Q. Okay.

12 During the course of your work with Exxon, you
13 made it your business to keep up with the -- with the
14 literature pertaining to industrial hygiene, did you
15 not?

16 A. I attempted to, yes.

17 Q. And attend the seminars and so forth? --

18 A. Uh-huh. I did. And I say -- express it this
19 way: "Alice in Wonderland." You had to run as fast as
20 you could to stay in one place it was moving upwards so
21 fast.

22 Q. And do you recall whether, in 1953, Dr. Hardy
23 concluded that exposure to asbestos of 5 million
24 particles per cubic foot of air was a safe working
25 environment?

1 A. No, I'm not familiar with that particular
2 study.

3 Q. You don't recall that?

4 A. No, I do not.

5 Q. Did you -- do you believe you've read Dr.
6 Hardy's major articles?

7 A. I -- I don't recall that I did. That was 40
8 years ago, and I don't remember.

9 Q. Do you recall -- it wasn't until approximately
10 1970 that the ACGIH lowered its standard, its TLV, from
11 5 million particles per cubic foot of air, wasn't it?

12 A. It was in that period range of -- but I don't
13 remember whether it was '70 or '72 or '73.

14 Q. And it was not until approximately that time
15 that the Walsh-Healey Act established federal standards,
16 wasn't it? Well, let me -- that's a terrible question.
17 Let me rephrase it.

18 The Walsh-Healey Act, which first established
19 federal standards for exposure to asbestos, simply
20 adopted the ACGIH standards, did it not?

21 A. It did, yes.

22 Q. Do you recall when that was?

23 A. It was early in the sixties they adopted those
24 standards, but I don't remember just which year.

25 Q. And at that time, the ACGIH standard, which was

1 adopted as federal law, was 5 million particles per
2 cubic foot of air, correct?

3 A. That's what I recall.

4 Q. And prior to that, there were no federal
5 standards, were there?

6 MR. LEDYARD: I'm going to object to
7 the form of the question --

8 A. I don't --

9 MR. LEDYARD: -- as being outside
10 the --

11 A. Yeah. I don't know --

12 MR. LEDYARD: -- his knowledge.

13 A. -- that much about everything.

14 Q. Yeah. No. I --

15 A. Because they had a standard -- the Bureau of
16 Standards in the Department of Labor, and they were
17 coming out with standards and recommendations. They
18 didn't have any enforcement features to them federally,
19 but some of the states adopted those.

20 Q. Some -- some states had their own standards,
21 correct?

22 A. Yes, California, Ohio, New York.

23 Q. New York, Massachusetts, and Connecticut all
24 had a 5 million particle per cubic foot of air standard
25 at this time, didn't they?

1 A. I don't recall.

2 Q. Okay.

3 You mentioned -- I forget when. I think it
4 was -- I think it was yesterday -- that in approximately
5 1942, you first became aware of the fact that there may
6 be a relationship between cancer and asbestos.

7 That was -- that knowledge came to you by way
8 of your colleague Dr. Lynch, correct?

9 A. That's true.

10 Q. And that was his -- his study of autopsies?

11 A. Autopsies of textile mill workers that used an
12 asbestos for fibers.

13 Q. And all of those autopsies were of people who
14 had asbestosis, correct?

15 A. All of those people in which he found any
16 carcinoma, yes.

17 Q. Correct.

18 But there were -- he studied no cancer cases in
19 that study which were not also people who had
20 asbestosis. Is that true?

21 A. He published only those cases that were
22 asbestos and cancer.

23 Q. Asbestosis?

24 A. Asbestosis and cancer. Did I -- and the
25 particular paper I had. And that came out in the

1 "National Journal of Cancer." I guess the proper name
2 would be the -- it was national, but I don't think that
3 word appeared in the title. It was cancer -- cancer
4 journal -- cancer journal of the NIH, which was the
5 organization that he represented.

6 Q. Dr. Lynch's premise was that if you -- and
7 conclusion -- his conclusion was that if you eliminated
8 the dust concentration that would cause the asbestosis,
9 you would eliminate the cancer; is that correct?

10 A. He put it to me in a little different light
11 because I was interested in what concentration I had to
12 protect the workers so that they didn't end up with
13 carcinoma. And he says, "You prevent --" he just said,
14 "Well, if you prevent them from developing asbestosis,
15 you won't have -- be bothered by the carcinoma."

16 Q. And that was the first study that had ever --
17 or first published material that ever drew a correlation
18 between cancer and exposure to asbestos, wasn't it?

19 A. There was some publications over in England,
20 but the first American publication. But I didn't know
21 about the English publications until later. But there
22 are some dated a little ahead of his.

23 Q. When -- do you recollect when you did learn
24 about the English publications?

25 A. I do not recall. But it was after his

1 publication came out in '35. It was maybe around '40 or
2 '42, while I was with Massachusetts Division of
3 Occupational Disease. Of course, we had textile mills
4 up there using asbestos.

5 Q. I'm -- I'm sorry. What -- did you believe that
6 Dr. Lynch's publication on the relationship between
7 asbestosis and cancer was published in 1935?

8 A. That's my memory.

9 Q. You mentioned the 1964 Selikoff study in prior
10 testimony; and that was a study of insulators, was it
11 not?

12 A. I -- I don't recall who all they included
13 occupationally. It was an epidemiological study. I
14 guess that was Selikoff and Hammond, wasn't it? Yeah,
15 the epidemiologist with him.

16 Anyway, Hammond published a lot relating
17 asbestosis or cancer and smoking. It wasn't me--- it
18 wasn't I, rather. He was an epidemiologist.

19 Q. Up until at least 1970, based upon the Dreesen
20 study, the state standards that we've discussed, the
21 ACGIH standard that we've discussed, the federal
22 standard that we've discussed, and the available medical
23 literature, do you believe that it was reasonable to
24 assume that a level of exposure up to 5 million
25 particles per cubic foot of air was reasonably safe?

1 MR. LEDYARD: I'm going to object to
2 the form of the question. That
3 necessarily calls for an expert opinion,
4 an expert conclusion on the part of this
5 witness.

6 MR. GROVE: And I'm -- I'm sorry. I
7 didn't mean to interrupt.

8 MR. LEDYARD: Okay.

9 MR. GROVE: I'm going to further
10 object that it calls for speculation and
11 it's also overbroad and that it doesn't
12 limit the scope to any particular area
13 of -- of anything, actually.

14 Q. (By Mr. Bishop) Okay. They're just talking to
15 a judge, Professor. You can go ahead and answer now.

16 MR. LEDYARD: No. We're doing more
17 than that.

18 MR. BISHOP: Okay.

19 MR. LEDYARD: He has, again, not been
20 designated as an expert witness. He is
21 not here as an expert witness. He's not
22 going to give expert testimony. And I'll
23 instruct him not to answer that question
24 or any other question that calls for a --
25 for him to assume facts or otherwise

1 calling for purely an expert opinion.

2 MR. BISHOP: Okay.

3 Q. (By Mr. Bishop) Professor, you were
4 instrumental in establishing safe working conditions at
5 Exxon, were you not?

6 A. That's a very broad subject. You're talking
7 about safety conditions. Strictly limiting my specialty
8 as occupational health disease control.

9 Q. Okay.

10 MR. BISHOP: Can we just go off the
11 record a second?

12 MR. LEDYARD: Sure. It's been about
13 an hour. Let's take a break, anyhow.

14 (RECESS FROM 1:54 TO 2:00 P.M.)

15 (MR. BAILEY IS NO LONGER PRESENT)

16 Q. (By Mr. Bishop) Professor Hammond, you've
17 testified that some concentrations of asbestos fibers in
18 air are invisible.

19 Do you have any knowledge of what
20 concentrations must be in the air for asbestos dust to
21 become visible?

22 A. No, I do not know.

23 Q. Do you know if you ever had such knowledge and
24 just don't recollect it now?

25 A. I have made such statements as it would be

1 greater than some number, but I don't know what the
2 range would be. I've seen that -- some attempt to
3 determine that, but it depends on the nature of the
4 materials and colors and so many things.

5 Q. Exhibit 4A to this deposition, at Page 3, says
6 it's important to point out that dust concentrations
7 below about 5 million particles per cubic foot of air
8 are generally invisible to the naked eye.

9 Are you prepared to adopt that statement?

10 A. If the particles are less than 1 micron in the
11 air and so forth. And again, if you're dealing with
12 chicken feathers, you'd have quite a different picture.

13 Q. So, it's possible, in your view, that there may
14 be up to 5 million particles per cubic foot of air -- of
15 asbestos dust in the air and those fibers still be
16 invisible to the naked eye, correct?

17 MR. GROVE: I'm going to object to
18 this as ambiguous.

19 A. No, I won't make that type of supposition. No,
20 I wouldn't want to confirm or deny that.

21 Q. Do you recall whether you've testified on that
22 subject in the past?

23 A. As I said, I made a general statement that, if
24 you're visible and met all the criteria that I point out
25 about size and limitations there and being silica or

1 other minerals of this type, it would have to be quite
2 high. And I give you a rough-hand -- I might have given
3 a rough-hand estimate that it would be quite high.

4 Q. Are you able to -- you'd agree with me that
5 it's possible for some number of fibers to be in the air
6 and be invisible to the naked eye? We can get that far,
7 you and I, today, here, can't we?

8 A. I would say to you, you go out here on the
9 street and you're exposed to asbestos fibers. But you
10 don't -- you're not aware of them. You don't see them.

11 Q. Sure, because we're all exposed to asbestos
12 fibers every day, correct?

13 A. Well, you wouldn't notice them in the air is
14 what I mean.

15 MS. KYLE: Not in this building.

16 A. Wouldn't be a fog or anything like that.

17 MS. KYLE: Not with him sitting here.

18 Q. It's just a fact of life that there are
19 asbestos fibers in the air and they can't all be seen,
20 correct?

21 A. I never noticed one in my own eye.

22 Q. Because you can't see them, right?

23 A. I'm sure that fibers have stuck in my eye, but
24 I didn't notice them. I didn't recognize them. I
25 didn't see them.

1 Q. Sure.

2 Are you able to give me any kind of an estimate
3 at all of the number of fibers per cubic foot of air or
4 cc., if you're more comfortable with that measurement,
5 that would be necessary for those fibers to be seen
6 visible to the naked eye?

7 MR. GROVE: I'm going to object as
8 ambiguous. And it's not clear if you're
9 talking about a hundred percent asbestos
10 fibers or asbestos fibers in conjunction
11 with some other type of dust.

12 Q. And in response to that, I say whichever you
13 like. Just let me know.

14 A. I could -- I could give you no help on that.

15 Q. Okay.

16 Will you -- I'd like to talk about respirators
17 for a few minutes.

18 Will you agree with me that the best respirator
19 in the world isn't going to do any good in protecting a
20 person if that person doesn't wear it?

21 A. Sounds like a sure thing, doesn't it?

22 Q. And I was pretty sure you and I could agree on
23 that much. It's after that that it gets more difficult.

24 MS. KYLE: It was lunch.

25 Q. Would you agree that it is necessary to a

1 successful program which involves the use of respirators
2 that workers be educated in the necessity of -- of using
3 respirators?

4 A. Come again with the conditions you put on that
5 question, please.

6 Q. Yeah.

7 If -- if a part of your program is -- is having
8 workers wear respirators, do you believe that education
9 of that worker in the necessity for and use of
10 respirators is important?

11 A. I don't think you're going to get satisfactory
12 cooperation from the workers unless you do that. And
13 first, you've got to make sure you've eliminated every
14 practical condition that would generate exposure by
15 engineering means, other practical means of substitution
16 or whatever. And then, once they get confident you've
17 got -- you have their health only in -- their health as
18 number one, then, they will cooperate with you to do
19 whatever necessary without much complaint.

20 Q. Do you believe that in elimination of hazards
21 relating to asbestos dust that the use of a respirator
22 is the last line of defense?

23 A. To get workers' cooperation is essentially
24 that.

25 Q. Is that -- did you agree with me, with my

1 premise that the use of respirators is probably the last
2 line of defense after elimination of the hazards by
3 other methods if possible?

4 A. I think I made that point yesterday. Our
5 program included everything else before we asked them to
6 wear a respirator.

7 Q. The -- the Bonsib report that's been
8 discussed -- it's been marked as Exhibit 6 to your
9 deposition -- indicates at -- I'm sorry. The top page
10 is cut off on my copy. The Bates stamp number is 1540
11 hyphen 4 -- indicates, in response to dust respirators
12 and air masks, that control of the dust hazard by means
13 of respiratory protective equipment is effective
14 provided that the equipment is efficient and provided
15 that it is worn continuously.

16 Do you agree with that statement?

17 MR. GROVE: I can show him mine.

18 A. No, I don't...

19 MR. LEDYARD: You need to look at
20 this?

21 THE WITNESS: I don't think so.

22 MR. GROVE: It's right down there
23 where the little numbered paragraphs are
24 at the bottom of the page.

25 A. Provided that it's protective, is efficient,

1 and -- and it is worn continuously during the period of
2 exposure was what you -- I read into that. But I don't
3 know what your question is in regard to that or any -- I
4 don't know that I would have any reason to discuss Mr.
5 Bonsib's decision.

6 Q. Do you agree with that view, though? That's my
7 question.

8 A. You have to read the rest of that paragraph
9 to -- to really appreciate where I am.

10 Q. We'll, let me -- let me break it down a little
11 bit.

12 Do you agree that, in order for the use of a
13 respirator to be effective, it must be worn continuously
14 during times of exposure to hazardous dusts?

15 A. We have to read on. Efficient equipment is
16 available; but the continued use day to day, this method
17 of control cannot be depended upon to provide the first
18 line of defense and so forth. That's Mr. Bonsib's own
19 words. And I'd hate to just take a little bit out of
20 context.

21 Q. Do you believe that -- well, let me rephrase
22 this.

23 A respirator that's worn 50 percent of the time
24 in conditions involving exposure to asbestos dust is not
25 going to do much good, is it?

1 MR. LEDYARD: I think we're beating a
2 dead, obvious horse. He's already
3 testified that, if you don't wear the
4 respirator, it can't help you.

5 Q. (By Mr. Bishop) Was it important to you to
6 establish that workers using respirators at Exxon wore
7 their respirators continuously during periods of
8 exposure to asbestos dust?

9 A. That's a very broad question you're asking. I
10 can't answer that well.

11 Q. Did Exxon ever -- to your knowledge, did Exxon
12 ever reprimand a worker for failure to wear a mask?

13 A. I wouldn't know the answer to that detail.

14 Q. Okay.

15 I'd like to ask you a couple of questions about
16 Exhibit 7 to your deposition, which is a report dated
17 September 1, 1972, authored by you, entitled "Asbestos
18 Handling Guidelines."

19 A. What year was this written?

20 Q. It's dated September 1, 1972.

21 A. And this was written to comply with OSHA?

22 MR. LEDYARD: He hasn't asked you the
23 question, yet.

24 THE WITNESS: Oh. Excuse me. I'm
25 asking him.

1 Q. Professor, you wrote it; and, so, you know a
2 lot more about it than I do. I'm going to try and get
3 you to help me out a little bit about it, though.

4 Do you believe that this report was written in
5 response to OSHA requirements?

6 A. I'm sure it was.

7 Q. Who was this -- this set of guidelines given
8 to?

9 A. Through -- throughout the company, all
10 operating management.

11 Q. Were all employees given a copy of this?

12 A. Not individual employees. They wouldn't -- no.
13 To the management who had supervision over the employees
14 to make sure that all of these things were carried out.

15 Q. Did -- was a copy of this sent to each
16 refinery?

17 A. Every refinery and many up and down in terms of
18 management above the operating manager and down below to
19 supervisors of mechanical departments and so forth and
20 engineering departments and purchasing departments.

21 Q. Were Exxon employees directed to comply with
22 these guidelines?

23 A. They were actually required to do that before
24 these were put out. And it was nothing new to them to
25 have these additional because this involved mainly paper

1 work.

2 Q. I understand that there may have been guide --
3 that you've testified there were guidelines in effect
4 before this.

5 Was this the first written set of guidelines?

6 A. As -- as comprehensive as these are and in
7 detail to comply with OSHA. And that was the purpose of
8 writing it up this way.

9 Q. And this set of guidelines was written before
10 the Benicia refinery ever opened, correct?

11 A. No, I don't think that's true.

12 Q. They had been opened?

13 A. I think they had been open about four to five
14 years.

15 Q. Oh. I beg your pardon. I wasn't trying to be
16 tricky. I guess I was just being stupid.

17 A. You thought I had gone to sleep, I guess.

18 MR. GROVE: So stipulated.

19 Q. You expected Exxon personnel to comply with
20 these written guidelines, did you not?

21 A. Explain the group you're talking about
22 complying, please.

23 Q. Well, all employees who -- who handled asbestos
24 were expected to comply with these asbestos handling
25 guidelines, were they not?

1 A. I can't overemphasize we had a program where
2 they were complying with these requirements many, many
3 years before OSHA was ever thought of.

4 Q. Right.

5 Although that was -- there was no written set
6 of guidelines, correct, prior to this?

7 A. Different types of written, but not in
8 compliance with OSHA's specific requirements. We no
9 longer had our own independent program that we could
10 carry out that wasn't on paper. We now had to put it
11 all down just as they wanted us to do to comply with the
12 bureaucrats.

13 Q. And was this the first written set of
14 comprehensive asbestos handling guidelines which Exxon
15 had?

16 A. This was a first that -- a advisory group of
17 OSHA worked quite awhile, maybe a year or two, getting
18 up these lists. And then there -- until 1972, there was
19 no such list that had to be complied with.

20 Q. Okay.

21 And after this list, after these guidelines
22 went out, you expected Exxon employees who handled
23 asbestos to comply with these asbestos handling
24 guidelines, true?

25 A. Well, primarily it was for the purpose that,

1 when OSHA inspectors showed up, wanted to know how we
2 were handling asbestos, we could show him these
3 guidelines. But the employees were already following
4 the program for the last 20 or 30 years out there in the
5 plants, if it had been in existence that long.

6 Q. I understand that there were previous
7 guidelines. I just want to ask you this -- I'm going to
8 try one more time with this question.

9 You already had previous guidelines. I
10 understand that. After these guidelines went to
11 Benicia, did you expect Benicia employees to comply with
12 these guidelines?

13 A. I expected these guidelines to be enforced by
14 the management of the Benicia or Billings refinery.
15 That's the reason I wrote them the letter that we don't
16 know what you're doing because you haven't given us this
17 policy back in writing.

18 Q. Do you know if, after 1972, either addenda to
19 this set of guidelines or a subsequent edition of these
20 guidelines was sent to the refineries?

21 A. If there -- these guidelines were amended by
22 OSHA, we then brought these guidelines in compliance
23 with the OSHA's requirements.

24 Q. Do you have any recollection of that ever
25 happening, of either amendments, addenda, or subsequent

1 editions being sent out?

2 A. I don't recall.

3 Q. Okay.

4 In 1972, according to this set of guidelines at
5 Page 11, Exxon was using disposable, valveless-type
6 respirators.

7 Do you recall if -- if such respirators were
8 actually used in the refineries? Your guideline calls
9 for their use.

10 A. I notice that these were approved respirators
11 only. They had to be approved by OSHA, NIOSH, or your
12 Bureau of Mines. Up until OSHA became in being, it was
13 always the Bureau of Mines approved respirators.

14 MR. LEDYARD: Was your question
15 simply whether or not dispose -- does he
16 know if disposable dust masks were being
17 used in Benicia?

18 MR. BISHOP: Right.

19 A. I do not know. I didn't check in on the
20 manufacturing, model, and type that they were
21 purchasing.

22 Q. Did you write this report, or does it simply
23 bear your name?

24 A. It was a combination of us, a team that wrote
25 this report.

1 Now, in regard to the respirators, we likely
2 took that from a list that was published by the
3 OSHA-NIOSH group.

4 Q. Okay.

5 A. Whether we ever bought any of these or not, I
6 don't know.

7 Q. But this was sent out to Benicia, correct?

8 A. To the managers of the various departments and
9 plants.

10 Q. Page 7 of that report, Section I, concerns
11 its -- well, actually, Section I goes over to Page 7,
12 Page -- begins on Page 7, goes through Page 8 and into
13 Page 9, and concerns itself with employee education.

14 Do you recollect if you actually wrote that
15 part of the guidelines?

16 A. It -- I don't remember whether those are my
17 words or not. But, anyway, those are my thoughts in
18 regard to the use and continued use of asbestos products
19 if they could substitute new material.

20 Q. Out in the refineries such as Benicia, who did
21 you anticipate would conduct that employee education?

22 A. You discuss that with Mr. Naugle, who was our
23 operations manager at that time and -- and would know
24 all about -- answers to all those questions, just who
25 did that. I have an impression, but I'm not sure.

1 Q. I understand that Mr. Naugle would know, more
2 than you, the nuts and bolt details of how that
3 education took place. I'd like you to tell me what your
4 anticipation was when you sent this report out.

5 A. That it be complied with completely.

6 Q. And did you have any notion of who would
7 conduct the employee education that you've referred to
8 at Pages 7, 8, and 9?

9 A. Not at -- not at any particular location. But
10 generally, it was carried out with the safety department
11 in regard to these matters; and they had training
12 personnel in connection with the safety department as
13 well as other training specialists for the operation of
14 the plant.

15 Q. The people who trained the employees -- and let
16 us say in connection with the use of respirators -- did
17 they themselves receive any training? --

18 A. They did. There were professionals, safety
19 specialists or engineers; and they had been through
20 schools and were well prepared to do that.

21 Q. Did they go through Exxon schools for that
22 purpose?

23 A. Some of them did. Others went through schools
24 that were conducted on a regional basis by the safety
25 engineering groups and industrial hygiene groups. And

1 sometimes we brought in specialists that spent full time
2 on respiratory protection and training programs. We had
3 several of them right here in -- in our School of Public
4 Health during my teaching ten years that we taught
5 there. That was beginning 1978.

6 Q. That was when you were teaching at the
7 University of Texas?

8 A. School of Public Health, 1978 through 1987.

9 Q. The reason I raised the subject is that, in
10 that slightly more than two-page discussion of employee
11 education, I see no reference to education in the proper
12 use of respirators.

13 Can you address that omission?

14 A. No. It was just the fact that we were well
15 established and had been for years, that the safety
16 department training and safe -- and respirators were an
17 essential part of the program and they trained the
18 employees.

19 Also, the care and protection of the
20 respirators by bringing them in, washing them, cleaning
21 them, and repairing them and then reissuing them again
22 to the next user as if they were new respirators was all
23 well established when I came in '47.

24 Q. And that would apply to cartridge types of
25 respirators only, correct?

1 A. Well, most everything that was -- I didn't know
2 of any disposable respirators that were approved before
3 about 1960's. I didn't hear of them.

4 Q. Well, to your knowledge, Exxon never reused a
5 disposable respirator, did it?

6 A. Not to my knowledge, it never bought any. It
7 was always the type -- but I'm sure they may have since
8 I -- maybe they did since I left.

9 MR. LEDYARD: I think his question
10 was --

11 THE WITNESS: I didn't hear it.

12 MR. LEDYARD: His question was not
13 whether they bought them, but whether or
14 not Exxon would have ever reused a
15 disposable mask.

16 A. Did you ask about reuse of them?

17 Q. (By Mr. Bishop) Yeah. That would -- you'd
18 agree that that would be inappropriate, correct, to
19 reuse a disposable --

20 A. Never would have been thought of. And,
21 actually, we never issued respirators without bringing
22 them back in and reexamining them and resupplying the
23 cartridges and everything else, washing them,
24 sterilizing them, and put it in a box and reissue them.

25 Q. Do you know if that was done at Benicia?

1 A. I do not know about Benicia's particular
2 program on that. But the people who were out there in
3 charge, like Don Fields and Jim Owens, had been
4 accustomed to that from the refineries they went -- went
5 from.

6 Q. Was Fields in charge of employee education on
7 the use of respirators at Benicia?

8 A. He was -- he was responsible for it. Whether
9 he did it himself or brought in a professional trainer,
10 I do not know about that.

11 Q. Do you believe that each Exxon employee who was
12 required in the course of his duties to use respirators
13 received such training?

14 A. They did.

15 Q. And do you believe that, in order for them to
16 be protected, it was essential that they receive such
17 training?

18 A. It was just not a point of -- essential to --
19 in my opinion; but it was just the proper means to go
20 about training them before you issued them respirators,
21 because it's so many limitations in proper use of
22 respirators. And proper fits and all was such a likely
23 thing if you didn't actually have somebody in charge
24 that would issue with the proper fit to the man's shape
25 and face and so forth.

1 Q. Do you have any understanding whether a medical
2 examination was required for clearance to wear a
3 respirator?

4 A. I don't recall.

5 Q. Do you know if Exxon required -- imposed those
6 same requirements on independent contractors who worked
7 at the Benicia refinery, if any?

8 A. I'm not familiar with that enough to answer
9 your question. We did it for respirators -- contract
10 workers when they had to enter an operation we felt
11 necessary. And if they didn't have their respirators
12 with them, we'd furnish them respirators.

13 Q. The Exhibit No. 12 to this deposition is the
14 doc that -- document dated June 5, 1972, entitled
15 "Humble ENJAY Safety Regulations."

16 What does the number two on that page indicate,
17 up in the right-hand corner?

18 A. I am not familiar with why this was not number
19 one, what it followed behind. I don't recall.

20 Q. Did this -- was this document sent to all
21 refineries?

22 A. It was specifically ENJAY safety regulations.
23 That was chemical operations at Humble. That was a
24 subdivision, a small department of Humble.

25 Q. Okay.

1 Do you have -- do you believe that this was not
2 sent to refineries?

3 A. This was incorporated in everything that was
4 sent to refineries, as you -- I pointed out already by
5 the big -- big procedure that was sent out to them.

6 Q. I'm sorry, Professor. I'm sure -- well, I'm
7 not positive; but I suspect that you were asked this
8 question. I simply don't remember your answer or didn't
9 take note of it.

10 Did you write -- did you author this -- this
11 exhibit?

12 A. I don't remember writing the wording in this
13 exhibit. I approved it, though.

14 Q. In -- in 1972 -- well, this -- let me -- I'll
15 just tell you what I'm trying to figure out.

16 This document seems to indicate to me that, in
17 1972, single use dust respirators were in effect,
18 disposables. And I'm specifically looking at Paragraph
19 1 of the exhibit.

20 My question to you is: Was a separate document
21 ever sent out to the refineries specifying the use of
22 nondisposable cartridge respirators?

23 A. I think that we have looked at that already;
24 and we've found it over there in part of the extensive,
25 many-page document we sent out to the refineries.

1 Q. Well, we were just looking at -- at that
2 document; and it, too, specified the use of disposable
3 respiratory protection.

4 And my question is: Do you recall ever sending
5 out or there ever being sent out by someone else a
6 document to the refineries specifying that only reusable
7 cartridge respirators were authorized for use?

8 A. No. Again, let me point out that these were
9 written in anticipation of when an OSHA standard was
10 coming out in which they spelled out these types of
11 respirators being available and not for people who were
12 well established in using the cartridge type that we
13 were and set up to handle them. It was trying to make
14 the use of them, I think, available to the small type of
15 one or two-man job. And we were trying to anticipate
16 what they would require and meet their standard and have
17 them available if they were required.

18 MR. LEDYARD: I'm going to object to
19 the form of the question if you assumed in
20 your question that Exhibit 7 specified
21 that only disposable-type respirators
22 could be used.

23 MR. BISHOP: I didn't. I said that
24 Exhibit 7 appears to authorize.

25 MR. LEDYARD: Okay. Then, I stand

1 corrected.

2 Q. (By Mr. Bishop) There's another document
3 that's not in my book, which is just as well, because my
4 book's falling apart. And that was one that we first
5 looked at yesterday. And it's a memorandum which
6 purports to be from Venable to yourself, dated March
7 9th, 1972. I do not recollect what the exhibit number
8 is.

9 MR. GROVE: It's Exhibit 17. I think
10 it was just marked today, actually.

11 Q. (By Mr. Bishop) That memorandum indicates at
12 Page 2, Paragraph 3, that, as of March 9, 1972, the
13 first priority would be to require the immediate use of
14 approved single use or reusable filter respirators for
15 all asbestos work pending development and acquisition of
16 more acceptable supplied air respirators.

17 MR. LEDYARD: Do you see where he's
18 reading?

19 THE WITNESS: Uh-huh. I hear.

20 MR. LEDYARD: No. Do you see where
21 he's reading on this?

22 We got lost. Where were you? Page
23 2 --

24 MR. BISHOP: Page 2, Paragraph 3
25 is -- is under "Priority I."

1 MR. LEDYARD: Okay.

2 Q. And it indicates one of -- and I don't mean to
3 imply that this is the only Priority I or even that it's
4 the first Priority I, but it's a Priority I item
5 requiring the immediate use of approved single use or --
6 et cetera.

7 Do you see that?

8 A. Uh-huh.

9 MR. LEDYARD: What's the question?

10 Wait a minute.

11 Q. I just wanted you to identify the section
12 first.

13 Now, looking at that, do you know when
14 acquisition of an air supplied respirator was achieved
15 by Exxon?

16 MR. LEDYARD: Well, I'm going to
17 object to the form of the question if it
18 assumes through this that it was not
19 already in place at the time this was
20 written.

21 Q. Okay. Well, it appears to me from this
22 document that Mr. -- Dr. Venable is saying, "We're going
23 to use this kind of respirator pending development and
24 acquisition of more acceptable supplied air
25 respirators."

1 MR. LEDYARD: I think --

2 Q. To me, that means that, in 1972, March of 1972,
3 you weren't using air supplied respirators.

4 A. Well, you go back to the first paragraph of the
5 first -- in this letter. You see why this was written?

6 Q. I do.

7 A. The U.S. Department of Labor's advisory
8 committee has made recommendations to the Secretary of
9 Labor on many phases. Those items included in the
10 report of -- and so forth cover monitoring. Later
11 reports will cover final recommendations of the advisory
12 committee on the subject.

13 At this time, we are not certain what those are
14 going to be; but they include all of this. And we
15 wanted to be in compliance with the office's
16 bureaucratic requirement. Not that we weren't doing a
17 better job and had better equipment and better --
18 supervision of our respirators, but we didn't want
19 our -- any of our management to be embarrassed by the
20 fact that they didn't have at least what the
21 department -- OSHA required, you see.

22 So, you do -- you can't apply this to our
23 application, what we were doing or wasn't doing.

24 Q. Well --

25 A. It has no -- it has no connection to our

1 program. It only tells us what the minimum
2 requirement's going to be when OSHA comes out finally
3 with this type of a document.

4 Q. There are no factual misstatements in this that
5 you're aware of, are there?

6 A. Only -- these are statements that would be
7 found in OSHA's to be announced later specifications for
8 compliance.

9 Q. Are any of these statements untrue, to your
10 knowledge?

11 A. Some of them are much less than what we were
12 already requiring.

13 Q. In other words, Exxon may have provided far
14 more protection than --

15 A. Absolutely.

16 Q. -- provided for in here?

17 A. Absolutely. We didn't have to change our
18 program the least bit, except the paper work.

19 Q. But none of these statements are false?

20 A. I don't --

21 Q. You just did a better job?

22 A. I didn't analyze it in that respect.

23 Q. Do you know whether, in 19 -- in March of 1972,
24 a supplied air respirator had been developed and
25 acquired which was acceptable to Exxon?

1 A. We used many of those type of respirators for
2 the last 40 years.

3 Q. The last document that I want to ask about
4 is -- I believe it's the exhibit immediately following
5 the one that we just discussed. And it purports to be a
6 memorandum from Dr. Venable to Dr. Jones --

7 MR. LEDYARD: Is that it?

8 Q. -- undated, regarding the subject of asbestos
9 exposure.

10 MR. GROVE: Just for the record, that
11 is Exhibit 15.

12 MR. BISHOP: Okay.

13 MR. GROVE: The other one was 17. In
14 case anyone's looking for an exhibit
15 following 17, they won't find it.

16 MR. BISHOP: Oh. Thanks.

17 Q. (By Mr. Bishop) We don't know when this
18 document was prepared; but we do know that it was
19 prepared sometime after October of 1974, true?

20 A. That's what it says on here.

21 Q. This document indicates that, in October of
22 1974, an Exxon insulator was wearing a Welsh disposable
23 dust respirator.

24 Do you know when the use of disposable
25 respirators was discontinued by Exxon altogether?

1 A. No, I do not know about discontinuing
2 disposable respirators.

3 Q. And I mean by that question in connection with
4 asbestos dust.

5 A. I notice that this was at -- you didn't read
6 the rest of it, disposable dust respirator approved for
7 concentration up to ten times the limit of a hundred
8 fibers per cc. and so forth. That was the limit at that
9 time. It's different now. And, so, I would assume that
10 it met that requirement.

11 Q. And I didn't mean to -- to mislead or to imply
12 that it wasn't approved. I was just attempting to see
13 if this could jog your memory on the subject of when the
14 use of disposable respirators was discontinued
15 altogether. And it did not, I gather.

16 A. I do not know.

17 Q. Okay.

18 MR. BISHOP: Well, I took a little
19 longer than I anticipated I would; and I
20 appreciate your assistance. That's all I
21 have.

22 MS. CLOY: I know you're going to be
23 upset. I'm going to reserve my questions.
24 And I have no questions at this time.

25 MR. LEDYARD: We demand you ask

1 questions.

2 THE WITNESS: Well, we have one other
3 choice.

4
5 EXAMINATION BY MR. CHUSID:

6 Q. Professor Hammond, my name is Bruce Chusid. I
7 represent Plant Insulation Company. And I'd like to ask
8 you a couple of questions about the Exxon refinery in
9 Benicia.

10 Yesterday you had stated that you were there
11 twice in the year 1967, and you were also there in the
12 year 1969.

13 Do you recall that?

14 A. Yes, I do.

15 Q. When is the last time that you visited the
16 Exxon Benicia refinery?

17 A. I know I was there in '75. I don't know
18 whether I was there after that or not. I've forgotten.
19 But I was there in '75 for a week or so.

20 Q. Was there a specific purpose for your week-long
21 visit in 1975?

22 A. No. Only to review the program and its
23 success.

24 Q. The program being the safety program?

25 A. Mainly the occupational disease prevention

1 program, industrial hygiene program.

2 I had noticed that Mr. Meyer was there in 1970.
3 And he was back there again in '73, I believe. Mr.
4 Diserens was there one year, and Mr. Eric LeBroc was
5 there another year, in addition to my -- and they're all
6 members of my immediate staff.

7 Q. And these were the associated industrial
8 hygiene directors?

9 A. They were -- they were there to work with Mr.
10 Fields and Mr. Owens.

11 Q. Were you at the Exxon Benicia refinery between
12 1969 and the week-long visit in 1975?

13 A. I was -- I was there in '67 and in '69, twice
14 '67, '69. I don't, at this moment, remember how many
15 times I might have gone in between that period. But I
16 know my other -- the other members of my staff went.

17 Q. Those being Mr. Diserens, Meyer, and LeBroc?

18 A. Yes. And they left sampling equipment and
19 sampling instructions with Mr. Owens to collect samples
20 and send them to us, which he did.

21 Q. And these samples are air samples, dust
22 samples?

23 A. They were air samples, asbestos and other types
24 of...

25 Q. When -- what year was the first time that you

1 had an opportunity to either test the air samples
2 yourselves or have one of your associates test the
3 samples coming from the Exxon Benicia refinery?

4 A. When was the very first time?

5 Q. Or what year -- approximately what year was the
6 first time that you or your associates tested the dust
7 samples or air samples from Exxon Benicia?

8 A. I know that Mr. Meyer collected samples in '70.
9 I guess that was the first -- first time after my visit
10 in '69.

11 Q. Now, did you -- I believe that you testified
12 yesterday that you -- that you never observed any
13 insulation work being done, either application or
14 removal, while you were at the Exxon Benicia refinery.
15 Is that correct?

16 A. I never did, no.

17 Q. And that would go for all --

18 A. In my memory, I don't remember seeing it done,
19 no.

20 Q. That would be from the first time you were
21 there in 19 -- early 1967 until your last visit in 1975?

22 A. Personally, I don't remember seeing any.

23 Q. Do you have any personal knowledge, other than
24 your own witnessing of it, of any -- of the conditions
25 of either the installation or the removal of any

1 asbestos insulation? And I mean either pipe insulation
2 or vessel insulation, tank insulation.

3 A. I just make sure that we have the best
4 information possible to us. I would like for you to
5 discuss that with Mr. Naugle, operation manager even
6 during the construction period and during any repair and
7 expansion of the refinery after we got it. And Mr.
8 Naugle...

9 Q. So, I understand that Mr. Naugle would have
10 more direct knowledge of the conditions under which
11 insulation was either applied or removed at Exxon at
12 Benicia.

13 My question is: Do you have any specific
14 recollection of Mr. Naugle relaying to you any of the
15 conditions at the refinery under which insulation was
16 either applied or removed?

17 A. I -- as I said, that would have been unexpected
18 and just odd type of emergency jobs that might have
19 developed, that I wouldn't know about. And it might
20 happen in the middle of the night or some other period
21 that I wouldn't have been there, anyway.

22 Q. Did any of this information ever get back to
23 you from Mr. Naugle or -- or any of your associates?

24 A. Yeah. When I went out there, I discussed all
25 these matters with Mr. Naugle. They were pleased that

1 everything was running in accordance with our program.

2 Q. Do you know the identity of any of the
3 insulation subcontractors that performed any work at the
4 Exxon Benicia refinery from the initial stages of
5 construction through the -- through, I guess, your
6 retirement?

7 A. I recall that I've heard Mr. Naugle mention the
8 names of these organizations, but -- contractors. But I
9 don't remember any of them by name.

10 Q. Sir, do you have any formal training in the
11 field of epidemiology?

12 A. That's not one of my specialties. No, I always
13 had -- I did look at the cancer rates in our refineries
14 from 1918 through 1960. And we looked at all the death
15 certificates and so forth, and we determined that our
16 cancer rate was only 50 percent of what was expected.
17 And I had a doctor -- epidemiologist assisting me at
18 that time. But I never did -- I don't claim to be a
19 specialist in that field.

20 But this study's at the Baytown refinery, for
21 example, of several hundred employees. At that time, we
22 had up to 2 -- 2,000 employees there. And we looked at
23 all of the death certificates and all of the other
24 information we had, and we found that we only had 50
25 percent of the expected rate of cancer in our employees.

1 MR. GROVE: I'm going to object and
2 move to strike as nonresponsive except to
3 the extent that he indicated that he was
4 not a specialist in the field.

5 Q. (By Mr. Chusid) Was that study of the Baytown
6 refinery ever published in --

7 A. Yes, it was. It was published by a medical
8 bulletin. And there were three of us authors of that, a
9 Hammond and Baird and Bertner, I believe his name was,
10 B-e-r-t-n-e-r, Bertner. And then that was given
11 internationally at the petroleum medical conference over
12 in London. And Dr. Baird, one of the authors, gave it
13 there. And it was published in the "Industrial Medical
14 Journal of America"; and that would have been about
15 1967, '8, or '9.

16 MR. GROVE: Can I just clarify one
17 thing?

18 You said Baird, Hammond. And who was
19 the other?

20 THE WITNESS: Dr. Bertner,
21 B-e-r-t-n-e-r, Bertner.

22 (DISCUSSION OFF THE RECORD)

23 MR. CHUSID: Okay. We're back on the
24 record now.

25 Q. (By Mr. Chusid) Professor Hammond, you've

1 located in your CV a cite to the article concerning
2 cancer rates that you just previously mentioned. Can
3 you just -- why don't you just read the title of that
4 article and the authors.

5 A. J.W. Hammond; Dr. V.C. Baird, B-a-i-r-d; and
6 Dr. B.E. Bennison, B-e-n-n-i-s-o-n. And the title, "An
7 Analysis of Cancer Mortality in Employees and Annuitants
8 of an Oil Company and/or Pipeline Company." The
9 publication, "The Medical Bulletin," Volume 18, No. 1,
10 March of 1958.

11 MR. BISHOP: Is that No. 2? My copy
12 of your CV indicates that it's No. 2, and
13 I think you read --

14 THE WITNESS: Well, that's another
15 article. But it's not the same. It
16 doesn't deal with this epidemiological
17 study of the cancer that we're talking
18 about.

19 A. The only -- and that same -- but that -- and
20 you will not find my name on the V.C. Baird publication
21 that occurred in "Industrial Medicine" because that was
22 given in Europe and that was an amended study that went
23 on for another ten years beyond '58. And it would have
24 been published about 1968. But Baird would be the
25 author.

1 Q. Sir, are you familiar with an Exxon employee in
2 Benicia by the name of N.W. Benetti, B-e-n-e-t-t-i?

3 A. No, I'm not.

4 Q. How about Dick Benetti?

5 A. No, I don't know that.

6 Q. You're not familiar with that name; or you
7 don't associate that name with an employee at the Exxon
8 Benicia refinery, do you?

9 A. No, I don't.

10 Q. What is a PCLA as far as -- as far as a
11 description of a unit at a refinery?

12 A. Let's see. Polymerized catalytic -- I think
13 I'll defer to Mr. Naugle about that because I haven't --
14 I'd only have to go by the words and what they might
15 stand for. But I wouldn't be accurate enough that I
16 could tell you. But Mr. Naugle would know.

17 Q. What is your understanding of what a turnaround
18 is at a refinery?

19 A. Generally, it is a major overhaul of a unit
20 that's been operating for some time.

21 Q. So, the unit itself is shut down and
22 overhauled?

23 A. Yes. It's cleaned out and then opened up and
24 re -- repaired or redone.

25 Q. Does the length of this overhaul, is that

1 determined by what type of unit is being turned around?

2 A. And how complex it is, yes.

3 Q. Are you familiar with the mineral zeolite?

4 A. Yes, I am.

5 Q. Do you know of any uses of zeolite at any of
6 the Humble or Exxon refineries during your career?

7 A. I know it's used sometime in treating certain
8 oil streams or petroleum streams.

9 Q. What form of the zeolite is used to treat the
10 oil or petroleum streams?

11 A. The general mine and refine -- the mine product
12 that's found natural in nature.

13 Q. So, is that product in powder form?

14 A. It's generally a very finely divided material.

15 MR. CHUSID: Those are all the
16 questions I have. Thank you, sir.

17 MR. LEDYARD: Anybody else have
18 anything?

19 MR. GROVE: No, I don't have anything
20 else.

21 MR. LEDYARD: That's it.

22 (DEPOSITION CONCLUDED AT 3:02 P.M.)

23

24

25

SIGNATURE OF WITNESS

I, JAMES HAMMOND, solemnly swear or affirm,
under the pains and penalties of perjury, that the
foregoing 150 pages contain a true and correct
transcript of the testimony given by me at the time and
place stated, with the corrections, if any, and the
reasons therefor noted on a separate sheet of paper and
attached hereto, and that I am signing this before a
Notary Public.

JAMES HAMMOND

THE STATE OF TEXAS]

Subscribed and sworn to before me, the
undersigned authority, by the said JAMES HAMMOND on this
the ____ day of _____, 1992.

Notary Public in and for
the State of Texas

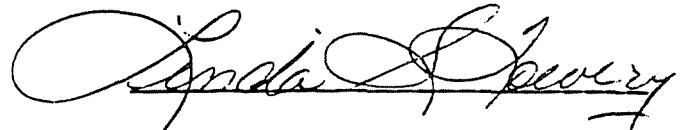
1 THE STATE OF TEXAS:

2 I, LINDA S. TOWERY, Certified Shorthand
3 Reporter, hereby certify that the foregoing testimony
4 was given before me after the Witness had been first
5 duly sworn.

6 I further certify that this deposition was
7 prepared under my direction and is a complete and
8 correct transcript of the proceedings and that the
9 original is being delivered to Frank A. Grove.

10 I further certify that I am neither attorney
11 for, related to, nor employed by any of the parties to
12 the lawsuit in which this deposition was taken.
13 Further, I am neither related to nor employed by any
14 attorney of record in this cause; nor do I have a
15 financial interest in this matter.

16 GIVEN UNDER MY HAND AND SEAL OF OFFICE in
17 Houston, Texas, on this the 23rd of October, 1992.

18
19 

20 Linda S. Towery, CSR, RPR

21 CSR No. 2413

22
23 My Certificate Expires December 31, 1993.
24
25

January 18, 1973

C. B. Moore
Hq. Refining
Room 3621

Re: Refinery Programs
for Handling Asbestos.

Charles:

In reply to your recent question.

Attached is a safe handling guide sheet from Baton Rouge Refinery. The Daytown program was given as a model in the asbestos guide. Dayway has a similar program. Billing and Benicia have less formalized programs and seem to depend more on Contractors to follow safe practices.

Dayway, Baton Rouge and Daytown supervise the Asbestos practices through the OSHA Steering Committees. Their chief concerns are that Exxon employees follow the regulations while doing small jobs in the units. These jobs might be done by insulators, mechanics, laborers and/or operators. The big jobs are generally done by Contractors. Housekeeping and disposal of the scraps are practices needing close supervision.

These refineries have been held back in the substitution of all non-asbestos insulation by not having available unlimited amounts of suitable replacements. As shown by the attached Johns-Manville Company's technical sheet, this situation is improving.

Although each location in the past has been following its own standard, the three large refineries have had the same basic policies. If either Billing or Benicia have established a safe asbestos policy we have not seen it.

If HQ Refining management were to emphasize the importance of supervisor training their employees and then enforcing the DOL regulatory practices, this would assure there should be no citation from violations.

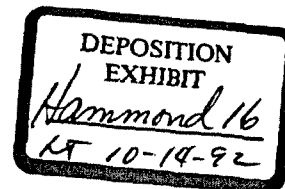
JWM/ra
Attachments

James W. Hammond

18-0000798

602216

510



EXX-MOR-003805

MEMORANDUM

TO Mr. J. W. Hammond	SUBJECT Asbestos Hazard Control Program	
F. S. Venable <i>FS</i>	DATE 3/9/72	FILE NO.
BATON ROUGE, LA.		

The U. S. Department of Labor 's Advisory Committee on Asbestos has made recommendations to the Secretary of Labor on many phases of the proposed asbestos hazard control program. Those items included in the report of February 23, 1972, cover monitoring and records. Later reports will cover final recommendations of the Advisory Committee on the subject of asbestos standards.

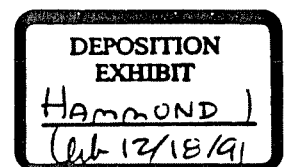
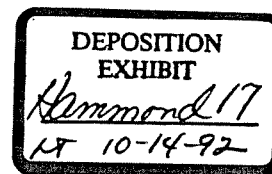
At this time, we are not absolutely certain as to the scope of the Committee's final recommendations to the Secretary of Labor, nor can we be certain as to which of these specific recommendations will be adopted by the Secretary. There is good indication, however, that most of the recommendations of the Committee will be adopted without change. A minority of the Committee has objected to certain requirements concerning details of sampling and frequency of monitoring, and the requirement for protective clothing when dust concentrations exceed 10 times the limit has been termed "unnecessarily restrictive" by two members of the five man Committee. However, the Committee unanimously agreed on the recommendations for respiratory protection and two members also called for "registration", presumably a program of registering all asbestos users.

It is not yet certain as to the final values of permissible dust counts (fibers greater than 5 microns in length per cc of air). The Secretary may begin with 5 and within several years lower this to 2. There is no indication as yet as to the timing of, or effective date for, meeting the various requirements.

It would appear desirable, however for Humble to initiate a program for controlling asbestos dust exposures without delay, emphasizing compliance with certain recommendations which appear to be incontrovertable. This program should employ a stepwise approach and, depending upon the effective dates specified by USDL, work toward a complete company-wide program. Three priority classifications are suggested and are outlined below.

Priority I

1. Eliminate, or use substitutes for, all asbestos-containing materials possible. Minimize or eliminate the use of talc, asbestos insulation materials, building and construction materials (except floor tiles containing asbestos) asbestos fire blankets, etc.



2. Identify all materials purchased or used which contain more than 1 % asbestos fibers. If dust concentrations of 1000 particles/cc of air are generated then one per cent asbestos material would theoretically yield 10 fibres/cc, the upper limit for use of single use valveless filter respirators. A figure of 5% asbestos content may be more reasonable and might be adopted if subsequent dust level studies prove concentrations to be low enough to permit filter type respirators.

3. Require immediate use of approved single use or reusable filter respirators for all asbestos work pending development and acquisition of more acceptable supplied air respirators.

4. Immediately initiate cleanup operations around asbestos work. Employ wet cleanup and prompt removal of asbestos scrap to minimize attrition from traffic.

5. Rope off or restrict areas where asbestos dust is generated. Use signs stating "Keep Out" until final wording of caution signs is issued by USDL.

6. Compile a list of all asbestos exposed employees with estimates of the number of years of exposure whenever possible.

Priority II

1. Evaluate typical jobs involving the use of asbestos. Obtain representative fiber counts for such operations as rip-off, cement mixing, installation of piping insulation, hand cutting or sawing, warehouse handling of asbestos materials and asbestos cleanup operations.

2. Develop as rapidly as possible the use of advanced types of respiratory protective devices. Particularly needed is a low pressure, air supplied respirator with positive pressure in the face piece.

3. Begin vacuum clean-up procedures for removal of asbestos dust as an alternative to wet clean-up methods.

4. Set up a protective clothing program for employees exposed to dust concentrations greater than 10 times the permissible limit.

5. Obtain pulmonary function studies and chest x-rays on all "insulators" and other employees exposed to asbestos dust.

Priority III

1. Establish a regular monitoring program for all operations involving asbestos. Obtain breathing zone samples according to the schedule established by USDL. Obtain samples on all representative jobs and from representative work groups.

2. Reduce asbestos dust levels by all feasible engineering means. Provide adequate dust collection and air cleaning facilities for all shop machinery (saws etc.) working asbestos materials.

3. Obtain and post approved warning signs for asbestos areas.

4. Restrict the total number of employees working with asbestos insofar as possible.

5. Carry out preplacement examinations on all employees newly assigned to jobs involving exposure to asbestos dust. Establish periodic examination program as outlined by USDL.

You may wish to add to or shift the items listed under each priority. This may depend upon the regulations as finally adopted, or upon certain factors within the company, such as the problems peculiar to refining, pipeline or production units.

Mr. Don Hyde should be alerted to the probable influx of dust samples for evaluation. Also, some education and training in the proper procedures for dust sampling may be desirable in the case of safety personnel in remote operations where monthly monitoring is required.

We should not overlook the fact that employees must be informed of the asbestos health problem, their responsibilities for good work practices and the need for their cooperation in every operation involving asbestos dust exposure.

Transcript Quality Assurance Checklist

Deposition scheduled by:

JM

Notice prepared by:

Subpoena prepared by:

Subpoena served by:

Setting confirmed by:

Deposition reported by:

MTB

Deposition videoed by:

Transcript edited by:

Transcript proofread by:

Transcript copied by:

WH

Exhibits prepared by:

WH

Transcript bound by:

WH

Transcript page-checked by:

WH

Transcript billed by:

CM

Transcript packaged by:

CM

Transmitted for signature by:

CM

Certified Mail and
Notice to opposing counsel by:

Transcript delivered by:

Nell McCallum & Associates, Inc.