

FILE NAME: Exxon (EXX)

DATE: 2004 Apr 23

DOC#: EXX053

DOCUMENT DESCRIPTION: Legal - Deposition of Neill K. Weaver, M.D.
with BC Notes, Volume 2

- 278-280 1961 paper he authored in 1961 showed awareness of asbestos as lung hazard, no asbestos in, at Baton Rouge refinery & petrochem plant
- 280, 290 NW was med. dir. of API for years, likewise Exxon until 1977
- 283, 89 involving, as API, contacts with the US gov't (EPA, OSHA)
- 287, ~~Exxon~~ Exxon made at least one product with asbestos added in it
- 294-295 He was Assoc. Med. Dir. of Exxon, until 1977 - for production (not explanation)
- 307-311 although invisible concentrations of ash. dust can be harmful, he is not aware of any Exxon publications for workers warning abt.
- 329 Med. Bull. was not generally available, it was published on a pro. that
- 332-333 NW's opinion is that carcinogenicity of A not est. until 1970, 1972.
- 333-34 lauds Bensif rpt. and agrees with it that nonvisible dust could harm
- 347 top Exxon manager was dying of meso in 1951
- 363-65 process workers sometimes were present and exposed next to maintenance workers handling asbestos, yet in NW's study process workers were the controls (unexposed) - same cancer rates (1966 NW letter to R. Doolup)
- 371-373 article he wrote on "chronic pulmonary disease" excluded LCa & TB
- 375 A's is could develop in as little as 5-10 yrs in shipbuilding wks
- 377 Dusty trades subgroup of 1960 study incl. insulators had the most disease
- 378 Process wks. in 1960 study had 2x rate of disease in admin. wks. - that excess was caused by irritating dust
- 380 20% in study had no description/classification of their work env't.
- 382 Ex. 10 an unpubl. 1958 API study of cancer in petroleum industry (epi)
- 392 This study was halted "because they weren't getting the data they needed from the member companies", partly
- 393-94 NW denies there was a duty to report occ. ca. to states, but the paper says they "customarily" even
- 395-6 NW was med. dir. at Exxon Baton Rouge refinery in 1958, world's largest A, and did not report occ. ca. to state of LA
- 398 NW determined that no LCa and leukemias were occurr. in 1958
- 406 Kattering unpubl. 1958 rpt. said there was excess per & digestive Ca
- 412-414 1974 API study incl. non-production/maint. wks w/ stop during 10-yr period pre-1950
- 409% not long-term employees
- 418 study found excess LCa, leukemia & lymphoma
- 434-437 1981 API study incl. workers just hired, excluded sicked retirees
- 440 1984 API also epi. study
- 444, 50 nine d.c.'s and mesothelioma v. 3.73 expected
- 454-58 same study incl. path. exam of all mesos but no effort to find ↑ mesos among LCa cases, etc.
- 476 even so, study said excess mesos probably a real risk.
- 480-82 this study counted as refining workers exp. to A only insulators, some labourers transporting A, wks. dumping A rocks to make lab oil pipe fitters & other trades not counted esp. if they had worked in shipyard.
- 506 1960 study found no A's says 5 MPPEF is viable / 520 he spoke to insulators abt. A in 1950s

C.A. No. 08-CV-0588

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2 - - - - - x
3 LOUISE ALTIMORE :
4 Plaintiff, : IN THE DISTRICT COURT OF
5 v. : GALVESTON COUNTY, TEXAS
6 QUIGLEY COMPANY, INC., : 405TH JUDICIAL DISTRICT
7 et al., :
8 Defendants. :
9 - - - - - x

ORAL and VIDEOTAPED DEPOSITION OF

NEILL K. WEAVER, M.D.

FRIDAY, APRIL 23, 2004

VOLUME 2

16 DEPOSITION OF NEILL K. WEAVER, M.D., produced
17 as an expert witness at the instance of the Defendant
18 EXXON MOBIL CORPORATION and duly sworn, was taken in
19 the above-styled and numbered cause on the 23rd day of
20 April 2004, from 10:00 a.m. to 4:40 p.m. before SHEILA
21 M. LYONS, RDR, CRR and Notary Public in and for the
22 District of Columbia, reported by machine shorthand,
23 at Steptoe & Johnson, 1330 Connecticut Avenue, N.W.,
24 Washington, D.C., pursuant to the Texas Rules of Civil
25 Procedure.

1 APPEARANCES:

2 On behalf of the Plaintiff:
 3 TROY D. CHANDLER, ESQUIRE
 4 Heard, Robins, Cloud, Lubel & Greenwood
 5 One Allen Center
 6 500 Dallas, Suite 3100
 7 Houston, Texas 17002
 8 (713) 650-1200

9
 10 On behalf of Exxon Mobil Corporation:

11 GLENNA M. KYLE, ESQUIRE
 12 Exxon Mobil Counsel
 13 800 Bell Street
 14 Corp-emb 1686M
 15 Houston, Texas 17002
 16 (713) 656-6522
 17 and
 18 CRAIG LEDET, ESQUIRE (by phone)
 19 King & Spalding
 20 1100 Louisiana, Suite 4000
 21 Houston, Texas 17002-5213
 22 (713) 276-7426
 23
 24
 25

1 PROCEEDINGS

2 THE VIDEOGRAPHER: This begins videotape
 3 number 1 in the deposition of Dr. Neill K. Weaver,
 4 M.D., in the matter of Louise Altimore versus Quigley
 5 Company, Incorporated et al., in the District Court of
 6 Galveston County, Texas, 405th Judicial District,
 7 civil action number 03-CV-0588. Today's date is
 8 April 23, 2004. The time on the video monitor is
 9 10:01 a.m. the video operator is Joey Thrower,
 10 employed by Olender Reporting in Washington, D.C. The
 11 court reporter is Sheila Lyons, also from Olender
 12 Reporting. This video deposition is taking place at
 13 1330 Connecticut Avenue, Northwest, Washington, D.C.
 14 Will counsel please identify yourselves and state the
 15 parties you represent.

16 MR. CHANDLER: Troy Chandler on behalf of
 17 Mrs. Altimore.

18 MS. KYLE: Glenna Kyle on behalf of Exxon
 19 Mobil.

20 MR. LEDET: Craig Ledet attending by
 21 telephone back in Houston, also on behalf of Exxon
 22 Mobil.

23 THE VIDEOGRAPHER: Thank you. Would the
 24 reporter please swear in the witness.
 25 Whereupon,

1 INDEX

2
 3 Witness: Page
 4 DR. NEILL WEAVER
 5 Examination by:
 6 Troy Chandler 274
 7 Glenna Kyle 497
 8 Troy Chandler 518
 9

10 EXHIBITS

11 (no new exhibits marked)
 12
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1 DR. NEILL K. WEAVER

2 was called as a witness, and having been first duly
 3 sworn, testified as follows:

4 CONTINUATION OF CROSS EXAMINATION

5 BY MR. CHANDLER:

6 Q. Good morning again, Dr. Weaver. We are here
 7 in Washington, D.C. as part of the continuation of the
 8 deposition that the jury has seen part of already in
 9 this case. And I think what I would like to do today
 10 is a couple of things.

11 Number 1, I have asked you pretty much the
 12 general knowledge questions on asbestos that I
 13 intended to ask you in this case, so I would look to
 14 move to two other matters. Number 1, some of the
 15 issues that the Exxon lawyer brought up during her
 16 direct examination of you, and then, finally, some of
 17 the exhibits that were attached to your deposition and
 18 some of the exhibits that the jury will have seen in
 19 this case. Okay?

20 A. Very well.

21 Q. Okay. I understand the reason that you can't
 22 come to Houston, Doctor, is it because you are going
 23 on vacation at the end of the month and just out of an
 24 abundance of caution, the jury needs to see you this
 25 way rather than in person; is that a fair

Page 275 1 characterization? 2 A. I appreciate that. That is usually the way 3 my depositions have been held in Washington, D.C. 4 Q. Okay. Let's talk about the issues raised by 5 Exxon on direct, pretty much in the order they came. 6 One of the first things we talked about was your 7 experience and your training, and you have been a 8 medical doctor or a practicing medical doctor for 9 many, many years; is that right? 10 A. That is correct. 11 Q. You were certified in occupational medicine. 12 Did you hold any other board certifications other than 13 occupational medicine? 14 A. Yes, I'm certified first in internal 15 medicine, and then the subspecialty of allergy and 16 immunology, and then in the general board of 17 preventive medicine, with the subspecialty of 18 occupational medicine, and later in environmental 19 medicine, as well. 20 Q. Did you ever hold the certification, a board 21 certification in pulmonology and lung diseases? 22 A. No. 23 Q. Doctor, briefly the field of occupational 24 medicine is a very wide field covering a lot of 25 different areas, isn't it?	Page 277 1 did that on tuberculosis in an industrial plant; 2 didn't you? 3 A. Yes. 4 Q. Why was it significant to you to investigate 5 tuberculosis in an industrial plant? 6 A. It was of interest to us because in doing 7 periodic examinations on employees, we found a number 8 with a risk of tuberculosis, and again this is back in 9 the 1950s, so tuberculosis was not a rare or uncommon 10 disease. And we chose to follow those cases. We 11 wanted to see how they were getting along in the 12 working environment. 13 Q. What are some of the risk factors for getting 14 tuberculosis, Doctor? 15 A. Well, of course, exposure to a bacterium that 16 causes the disease, and the general state of health of 17 the patient. There may be susceptibilities. That 18 varies from person to person, but exposure to 19 infection is the main thing for consideration. 20 Q. Are people who work in dusty environments at 21 a greater risk for either development or complication 22 of tuberculosis? 23 A. That may be the case. 24 Q. In fact, we know that people who have 25 silicosis, for example, are at greater risk for
Page 276 1 A. Indeed. 2 Q. And occupational medicine covers everything 3 from strained backs when you are picking up heavy 4 boxes or equipment on the job site to diseases that 5 are caused on the job because of occupational 6 exposures; is that fair? 7 A. That is correct. 8 Q. And it could cover things like carpal tunnel 9 syndrome on the wrist, that is an occupational disease 10 that occupational medicine doctors would be aware of; 11 right? 12 A. It may be. 13 Q. But occupational medicine in and of itself is 14 not the subspecialty of lung diseases or pulmonology, 15 is it? 16 A. No, it is not. 17 Q. One of the papers we discussed first, I think 18 it may be attached, yes, it is, Exhibit 2 to your 19 deposition, entitled, "Tuberculosis in an Industrial 20 Plant," out of Baton Rouge, Louisiana, and you were 21 one of the authors on that; is that right? 22 A. That is correct. 23 Q. And that actually got published in a magazine 24 like a lot of doctors do, they publish their 25 literature, their work in medical journals, and you	Page 278 1 getting tuberculosis, dusty environments like that, 2 don't we? 3 A. Yes. 4 Q. Now, the paper on Exhibit 2, "Tuberculosis in 5 an Industrial Plant," mentions nowhere in it asbestos 6 or asbestos diseases, does it? 7 A. I don't recall that it does. 8 Q. If you want to look at it, you take your time 9 and look at anything I give you today. You feel free 10 to read it all, because if you don't recall, I want 11 you to be sure that what I'm saying is right. 12 A. Well these things, you know, go back 30, 35, 13 40 years, and I have not recently reviewed these 14 things, but we will proceed as you wish. 15 Q. Yes, sir. "Tuberculosis in an Industrial 16 Plant," published in 1961, mentions nothing about dust 17 diseases in plants, does it? 18 A. I don't know. 19 Q. Okay. Here, take a look at it and just, I 20 just want an affirmative answer for the ladies and 21 gentlemen of the jury one way or the other. 22 A. The summary contains the following sentence: 23 "None of the affected workers had significant 24 occupational exposure to silica, asbestos, or 25 recognized pulmonary irritants." So that, indeed, we

1 were cognizant of the potential possible significance
2 of exposure to the dusty trades.

3 Q. Good. Then let me ask re-ask my question.
4 See, that's why we need to look at these. Dr. Wier --
5 sorry. Dr. Wier is another doctor who is testifying
6 in this case who made quite an impression. That is
7 why he is on my mind.

8 Dr. Weaver, in the summary of your paper on
9 tuberculosis, one of the things that you mentioned is
10 that none of the patients had significant occupational
11 exposure to silica, asbestos or recognized pulmonary
12 irritants; is that right?

13 A. That is correct.

14 Q. And the reason you think that is relevant to
15 point out in a tuberculosis article is because, as we
16 talked about, working in dusty environments is a risk
17 factor in the development and progression of
18 tuberculosis; is that right?

19 A. It may be.

20 Q. So dusty environments in plants is certainly
21 something that by 1961 was recognized; is that fair?

22 A. Oh, yes.

23 Q. Okay. And what industrial plant were you
24 looking at? What kind of an industrial plant were you
25 looking at in your article back in 1961?

1 members public health officials from, say, the Public
2 Health Service, did it?

3 A. No.

4 Q. The American Petroleum Institute did not have
5 as its members -- let me re-ask the question. The
6 American Petroleum Institute did not have as members
7 officials from any state, local or federal government
8 oversight agencies at all, did it?

9 A. No.

10 Q. It was exclusively a membership of people
11 interested in those things relevant to the petroleum
12 industry; is that fair to say?

13 A. True.

14 Q. And one of the things the American Petroleum
15 Institute did, and you alluded to it in your prior
16 deposition, was lobby for the interests of the
17 petroleum industry. That's fair, isn't it?

18 A. Yes. I think I also mentioned that the
19 institute was primarily a technical and scientific
20 organization, and I believe I mentioned that in my
21 entire career, 12 years there, I had met only two
22 lobbyists within the institute.

23 Q. Yes, sir. That is because your part of the
24 institute was in the medical side, not the lobbying
25 side, that's fair to say, right?

1 A. This was the Baton Rouge refinery and
2 petrochemical plant.

3 Q. Very similar to the plant in Baytown, Texas,
4 or at least they made the same kinds of things; right?

5 A. Yes, very similar.

6 Q. Baytown was bigger, as I understand it?

7 A. Not at that time. Baton Rouge was somewhat
8 bigger.

9 Q. Okay. Now, you were for many years the
10 medical director of the American Petroleum Institute;
11 is that right?

12 A. Yes.

13 Q. The American Petroleum Institute is an
14 organization made up of what kind of companies, sir?

15 A. The American Petroleum Institute is
16 comprised, the membership is comprised of petroleum
17 corporations.

18 Q. Like Exxon, like Texaco, like Mobil, those
19 kinds of companies?

20 A. That is correct. It is open to the whole
21 industry. There are no constraints or constrictions
22 with respect to membership.

23 Q. Although there are no restrictions with
24 respect to membership among the petroleum industry,
25 the American Petroleum Institute did not have as its

1 A. Yes.

2 Q. They didn't have Dr. Weaver go to up D.C. and
3 lobby. You live here in Virginia, but it's not
4 because you were lobbying for the industry, it's just
5 where you live; right.

6 MS. KYLE: Objection, form.

7 THE WITNESS: What is your definition --

8 MS. KYLE: Excuse me. Objection, form. Just
9 give me some time. Thanks.

10 THE WITNESS: I was on occasion invited to
11 appear before governmental organizations in a
12 scientific context, and, so, you know, what is your
13 definition of lobbying? I did not feel that I was a
14 lobbyist. I was a technical, scientific advisor.

15 BY MR. CHANDLER:

16 Q. So one of the things you did as a medical
17 director of the American Petroleum Institute is go to
18 government bodies and tell them the state of the
19 medicine or the state of the research done by the
20 American Petroleum Institute, give them kind of the
21 industry side of the story. Is that fair, or am I
22 mischaracterizing it?

23 A. I think that is somewhat mischaracterizing,
24 because the basis was the scientific facts that were
25 available from the knowledge, literature,

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1 publications, research. And we had an active research
2 program and this, of course, was shared with
3 governmental organizations.

4 Q. But while you were speaking to the
5 governmental organizations, you were employed and paid
6 by the American Petroleum Institute. That is
7 certainly true, isn't it?

8 A. Yes.

9 Q. Did you ever once testify in front of a
10 government agency, and if so give me the example,
11 where you said the petroleum industry is not doing an
12 effective job in taking care of its workers. Did you
13 ever do that?

14 A. I can't really answer that, but offhand I
15 would say no, that wouldn't be the point of
16 testifying.

17 Q. Okay. So none of your testimony to any
18 government agency admitted any flaws with the
19 petroleum industry, as far as protecting the workers
20 in the petroleum industry. Is that a fair
21 characterization?

22 MS. KYLE: Objection, form.

23 THE WITNESS: That would not have been a
24 relevant part of the type of information I was
25 involved in.

1 Dr. Weaver. My question is did you ever go in front
2 of any government agency and admit to them that
3 petroleum workers were at higher risk for any type of
4 disease, and if so, tell us what diseases those were
5 that you admitted to a government agency petroleum
6 workers were at higher risk for.

7 MS. KYLE: Objection, form.

8 THE WITNESS: I'm bothered by, when you say
9 high risk, but I don't know. I can't answer your
10 question.

11 BY MR. CHANDLER:

12 Q. Okay. It is true, isn't it, that members of
13 the American petroleum industry, whether it was you or
14 not, actually lobbied to lower the restrictions on
15 asbestos exposure. Part of their input in the
16 development of the regulations was we don't think they
17 need to be that low. That is a true statement, isn't
18 it?

19 A. I'm not aware that the American Petroleum
20 Institute had any stated positions with respect to
21 asbestos sanders.

22 Q. But you weren't involved in any American
23 petroleum institute activities with respect to the
24 asbestos regulation?

25 A. No.

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1 BY MR. CHANDLER:

2 Q. Okay. Tell us what type of information you
3 were involved in, then.

4 A. Scientific research with respect to the
5 occupational and environmental environment.

6 Q. And whether workers -- whether safety
7 standards were being met or not, you don't consider
8 relevant in the areas you testified to in front of
9 government agencies?

10 MS. KYLE: Objection, form.

11 THE WITNESS: Yes, regulation would have been
12 relevant.

13 BY MR. CHANDLER:

14 Q. But at no time did you go in front of any
15 governmental agency and say we are having a problem in
16 industry and I'm here to tell but it. That has never
17 happened, has it?

18 A. I don't know.

19 Q. Do you recall an instance where it might have
20 happened?

21 A. In discussions of toxicity, potential
22 toxicity of hydrocarbons, there was indeed
23 considerable focus on potential harm or dangers that
24 might occur, yes.

25 Q. And my question is a little bit different,

1 Q. Would it surprise you if the American
2 petroleum institute did in fact lobby the federal
3 government to try to raise the permissible exposure
4 limits to asbestos?

5 MS. KYLE: Objection, form.

6 THE WITNESS: I'm not aware of any such
7 activities.

8 BY MR. CHANDLER:

9 Q. My question wasn't whether you were aware,
10 Dr. Weaver. My question is would it surprise you to
11 learn that the American Petroleum Institute did in
12 fact lobby for higher exposures to asbestos among
13 workers?

14 MS. KYLE: Objection, form.

15 THE WITNESS: I would need to know the
16 context and the nature of the communication that you
17 are referring to. I can't answer that.

18 BY MR. CHANDLER:

19 Q. Fair enough. Nobody ever consulted you from
20 the American Petroleum Institute when they did any
21 work with the federal government on lobbying asbestos
22 regulations; is that fair?

23 MS. KYLE: Objection, form.

24 THE WITNESS: The American Petroleum
25 Institute was not involved in asbestos-related

1 concerns, since asbestos is not a product of the
2 industry.
3 MR. CHANDLER: Objection, non-responsive.
4 BY MR. CHANDLER:
5 Q. Dr. Weaver, my question wasn't whether
6 asbestos was a product of the industry. I think we
7 will get to that, because the fact of the matter is
8 there were certain products that Exxon made in which
9 asbestos floats were a component of the product; isn't
10 that right?
11 A. Yes.
12 Q. In fact, Exxon Company made a product that
13 had asbestos as a part of it. Didn't it?
14 A. Yes.
15 Q. So it is a true statement that the Exxon
16 Company made certain asbestos-containing products,
17 didn't they?
18 A. Yes.
19 Q. Okay. Now, my question to you about the
20 regulations is a little different, and it's because
21 I'm asking bad questions, I know it is, but here is
22 the question. Nobody from the American Petroleum
23 Institute approached you, Dr. Weaver and asked you
24 what you thought about whether the American Petroleum
25 Institute should lobby the federal government to try

1 MS. KYLE: Objection, form.
2 THE WITNESS: I recall no such communication.
3 BY MR. CHANDLER:
4 Q. Okay. And that, and you have had
5 communications with OSHA, the Occupational Safety and
6 Health Administration, as director of the API; right?
7 A. Yes, and these matters were with respect to
8 hydrocarbons.
9 Q. Yes, sir. And you have had communications
10 with the Environmental Protection Agency as director
11 of the American Petroleum Institute; right?
12 A. Yes.
13 Q. You have had communications with the National
14 Institute of Occupational Safety and Health as
15 director of the American Petroleum Institute; right?
16 A. Yes.
17 Q. And in none of the conversations you have
18 ever had, regardless of whatever you were talking
19 about with the federal government agencies, none of
20 them ever told you, Dr. Weaver, we recognize a level
21 of asbestos exposure below which mesothelioma will not
22 occur. Is that a fair statement?
23 MS. KYLE: Objection, form.
24 THE WITNESS: That would be true.
25 BY MR. CHANDLER:

1 to keep exposure limits to asbestos higher. Is that a
2 true statement?
3 MS. KYLE: Objection, form.
4 THE WITNESS: That is a somewhat compound
5 statement, but, no one --
6 MS. KYLE: Would you like it reread?
7 THE WITNESS: Yes, please restate the
8 question.
9 BY MR. CHANDLER:
10 Q. No one from the American Petroleum Institute
11 approached you to be involved in their lobbying
12 efforts to try to keep asbestos regulations higher
13 than the federal government wanted to institute; is
14 that right?
15 A. I'm not aware of any such contacts.
16 Q. Okay. You did, however, work, while you were
17 director of the American Petroleum Institute, with
18 different government agencies like OSHA, like EPA, and
19 like NIOSH, didn't you?
20 A. Yes.
21 Q. None of those agencies, OSHA, EPA or NIOSH,
22 ever communicated to you, as the medical director of
23 the American Petroleum Institute, that they thought
24 there was a level of asbestos below which mesothelioma
25 would not occur, did they?

1 Q. Okay. I guess I should have started with
2 this, but I'm just kind of going in the order that
3 Ms. Kyle went in your deposition, because it seems
4 like a logical order that she did at the time and for
5 me to do today, so my next subject is your consulting
6 fees. You were a loyal Exxon employee for many, many
7 years, weren't you, Dr. Weaver?
8 A. I think so.
9 Q. And Exxon was a loyal employer to you for
10 many, many years, don't you think?
11 A. I think so.
12 Q. That is good, loyalty between employer and
13 employee, isn't it?
14 MS. KYLE: Objection, form.
15 BY MR. CHANDLER:
16 Q. That is a good thing.
17 A. I think it's desirable.
18 Q. And it should never been one -sided, so that
19 the company is always loyal to the employee, but the
20 employee is not loyal to the company. You agree that
21 it shouldn't be a one -sided thing?
22 MS. KYLE: Objection, form.
23 THE WITNESS: Well, in such
24 interrelationships, there are, you have loyalty on the
25 one hand and you have ethical principles and moral

Page 291 1 principles are also involved. 2 BY MR. CHANDLER: 3 Q. Yes, sir. And my point is just very simple. 4 Whatever ethical or moral principles you want to talk 5 about, loyalty between an employer and an employee and 6 his family is a good thing; wouldn't you agree? 7 A. When it's desirable, it is a good thing. 8 Q. Is there ever a point when loyalty from an 9 employer to an employee and his family is not 10 desirable, Dr. Weaver? 11 MS. KYLE: Objection, form. 12 THE WITNESS: When you say loyalty, one may 13 be loyal to an organization and yet criticize or find 14 fault or be unhappy with some of the things that are 15 going on. 16 MR. CHANDLER: Objection, non-responsive. 17 BY MR. CHANDLER: 18 Q. I guess my point is much simpler than I am 19 trying to make it, than I am making it, Dr. Weaver, 20 and the question is this. Mr. Altimore by all 21 accounts, nobody will dispute, he was a very loyal 22 Exxon employee for 35 years. You certainly don't 23 dispute that, do you? 24 A. I have no basis to dispute that. 25 Q. And in fact, I think the evidence is going to	Page 293 1 Q. Yes, sir. That's my fault. Wouldn't you 2 agree, Dr. Weaver, that Mike Altimore deserved the 3 same kind of loyalty from Exxon that he gave to them? 4 MS. KYLE: Objection, form. 5 THE WITNESS: You are speaking of a 6 reciprocal relationship. In general terms, that would 7 seem to make sense, yes. 8 BY MR. CHANDLER: 9 Q. Okay. That's all I was getting at. Thank 10 you, sir. You shared information -- I'm sorry, I was 11 talking about one subject and want to get off it. As 12 a loyal employee of Exxon for many, many years, did 13 you ever make the kind of money you are making today 14 for testifying, \$350 an hour, Dr. Weaver? 15 MS. KYLE: Objection, form. 16 THE WITNESS: I don't understand the 17 question. 18 BY MR. CHANDLER: 19 Q. Yes, sir. You left Exxon in 1974; right? 20 A. Yes. 21 Q. Do you remember, and if you don't, that's 22 fine, what your rough annual salary was at the time 23 you left as the corporate medical director of what at 24 the time was the largest corporation in the world? 25 MS. KYLE: Objection, form.
Page 292 1 be in this case that Mike Altimore received awards for 2 his work at Exxon. Did you know that? 3 A. I didn't know that, but I would not be 4 surprised. 5 Q. Did you know what the CYI program was? 6 A. Offhand I don't place that. 7 Q. Cash for your ideas or your improvements, 8 something like that. I'm not quite sure exactly what 9 Exxon called it. 10 A. I don't recall that. 11 Q. But it was a program from when employees 12 actually made Exxon a better place, they were 13 acknowledged and rewarded. Did you know that there 14 was a program in place and that Mike Altimore was a 15 recipient of that kind of award? 16 A. I didn't know that, but that doesn't surprise 17 me. 18 Q. Okay. My point is, don't you agree that Mike 19 Altimore deserved the same kind of loyalty from his 20 employer that he gave to them? 21 MS. KYLE: Objection, form. 22 THE WITNESS: Sir, I'm having some, my 23 hearing is not acute today, and please speak up just a 24 little bit and please repeat the question. 25 BY MR. CHANDLER:	Page 294 1 THE WITNESS: I really don't remember what my 2 salary was at that time. 3 BY MR. CHANDLER: 4 Q. Okay. Now, we are here 30 years later, so we 5 have to adjust for inflation, I'm sure? 6 A. That's why I was reluctant to try to answer. 7 Q. Yes, sir, I understand. But here 30 years 8 later, even with adjustment for inflation, you never 9 made anywhere near the kind of money you are making 10 today for your time consulting with the company; 11 right? 12 MS. KYLE: Objection, form. 13 THE WITNESS: I don't know. 14 BY MR. CHANDLER: 15 Q. Do you think you made, even if we adjust it 16 for inflation, something in the area of \$350 an hour 17 while you were the corporate medical director of 18 Exxon? 19 A. No. 20 Q. I didn't think you did. 21 A. Let me correct this. I was not corporate 22 medical director of Exxon. 23 Q. Tell me your title. I'm sorry. Go ahead. 24 What was your title? 25 A. Well, I was associate medical director.

1 Q. Of the entire corporation; right?
 2 A. Yes.
 3 Q. So that's a great point. Thank you for
 4 clearing that up. Any time I screw anything up, tell
 5 me, because we want to make a very clean record, and I
 6 will do that a lot today. At the time you were the
 7 associate corporate medical director for Exxon, it was
 8 the largest corporation in the world, wasn't it?
 9 A. I don't know.
 10 Q. At the time you were associate corporate
 11 medical director for Exxon, you never made anywhere
 12 near the kind of money you are making today for
 13 testifying here --
 14 MS. KYLE: Objection, form.
 15 BY MR. CHANDLER:
 16 Q. -- is that fair?
 17 MS. KYLE: I'm sorry, Troy. Objection, form.
 18 THE WITNESS: On a monthly basis or annual
 19 basis, you know, what is your basis for comparison
 20 here. What are you driving at?
 21 BY MR. CHANDLER:
 22 Q. Yes, sir. That's fair. Okay. I'm driving
 23 at your hourly rate. Doctor, it's \$350 an hour today,
 24 isn't it?
 25 A. Yes, for a deposition.

1 Q. And even if we adjust it for inflation back
 2 to 30 years, that is nowhere near the kind of hourly
 3 rate you were being paid when you were associate
 4 corporate medical director of the entire corporation?
 5 A. All right. On an hourly rate, that is
 6 correct.
 7 Q. Okay. That's all I'm getting at.
 8 A. However, I'm not working at this rate for 365
 9 days a year.
 10 Q. And you certainly didn't work 365 days a year
 11 for Exxon either, did you?
 12 A. I may have approached that.
 13 Q. Sorry to hear that. They expected a lot out
 14 of their employees, didn't they, and you gave a lot,
 15 didn't you?
 16 MS. KYLE: Objection, form.
 17 THE WITNESS: I think I was highly motivated
 18 yes, to do my job at Exxon or wherever.
 19 BY MR. CHANDLER:
 20 Q. Thank you. That's all I'm getting at. How
 21 many times do you think in the course of the last,
 22 say, year, just in the last 12 months, have you
 23 consulted for Exxon on any subject?
 24 A. In the last 12 months, one time.
 25 Q. That is for this case?

1 A. No.
 2 Q. Okay. There was another time that you have
 3 consulted other than this case?
 4 A. Yes.
 5 Q. So that would really be two?
 6 A. Yes.
 7 Q. What was the other consulting experience
 8 about? What were we talking about?
 9 A. I don't recall the case. The reason the
 10 reason I have this somewhat precisely in mind is
 11 because of income tax, showing earned income.
 12 Q. Yes, sir. But do you remember the kind of,
 13 was it about -- let me re-ask the question. In the
 14 other case was it about a toxic substance or something
 15 that had to do with medicine or injuries at Exxon?
 16 A. The other case in the past 12 months had to
 17 do with asbestos.
 18 Q. Okay. Did the other case that had to do with
 19 asbestos have to do with cancer, mesothelioma or lung
 20 cancer?
 21 A. I don't recall the focal point of the disease
 22 in the other case.
 23 Q. Did you give a deposition in that case,
 24 Dr. Weaver?
 25 A. No. I prepared for a deposition, but I don't

1 recall, the case I recalled did not involve a
 2 deposition.
 3 Q. Okay. How many other associate medical
 4 directors were there of the Exxon Corporation at the
 5 time you retired in 1973?
 6 A. One.
 7 Q. Okay. So how many, there was only one
 8 corporate medical director; right?
 9 A. Right.
 10 Q. So of all the medical doctors in the entire
 11 Exxon Corporation, you are either number 2 or 3 in the
 12 chain of command; is that fair?
 13 A. Yes. That was essentially true, yes.
 14 Q. Were you 2 or were you 3, or was it equal?
 15 MS. KYLE: Objection, form.
 16 THE WITNESS: I can't answer that.
 17 BY MR. CHANDLER:
 18 Q. I mean, the other associate medical
 19 directors, did they have similar responsibilities to
 20 you or did they have another area of responsibility?
 21 A. Another area of functional organization.
 22 Q. Who was that person?
 23 A. Dr. Robert Wise.
 24 Q. W-i-s-e?
 25 A. W-i-s-e.

Page 299 1 Q. Dr. Robert Wise had a different function than 2 you as the corporate medical director? 3 A. Yes. 4 Q. What was his function, sir? 5 A. Production, operations of the company. 6 Q. So there was an associate medical director 7 whose position or responsibility was for production, 8 the production side of the company? 9 A. Yes. 10 Q. What does that entail, the production side of 11 the company? 12 A. The upstream operation, and that is not 13 clear. The drilling, the bringing of the petroleum 14 out of the ground, the search for petroleum sources. 15 That is the production and exploration segment of the 16 industry. 17 Q. Okay. Was your segment of the industry the 18 actual making of the products in the refineries and 19 plants? 20 A. Yes. That was part of my responsibility. 21 Q. And okay, so let's make this clear for the 22 jury. Of all the medical directors at Exxon, you were 23 the top guy when it came specifically to the health 24 and safety of refinery workers in the plants; right? 25 MS. KYLE: Objection, form.	Page 301 1 reviewed reports by a Dr. Wier and a Dr. Dyson; 2 correct? 3 A. Yes. 4 Q. Did you review any reports from a Dr. Sam 5 Hammer in this case? 6 A. No. 7 Q. Have you reviewed any reports from a Dr. Jay 8 Segarra in this case? 9 A. I don't recognize the name. 10 Q. Okay. So the only reports that you have 11 reviewed in this case are those reports of -- and I 12 will represent to you they are experts retained by 13 Exxon. The only reports you have reviewed are those 14 reports written by Exxon-retained experts; correct? 15 A. No. 16 Q. Tell me what other reports you have reviewed? 17 A. I indicated that I reviewed a book 18 publication, authoritative book, the section on 19 asbestos, yes. 20 Q. I'm sorry, sir. I was thinking in my mind of 21 a different subject, so I will object as 22 non-responsive, but my question is this. As far as 23 reports prepared specifically for the Altimore case by 24 experts -- 25 A. Oh.
Page 300 1 THE WITNESS: Refining and petrochemical 2 manufacturing was one of my responsibilities. 3 BY MR. CHANDLER: 4 Q. But you were the top guy with that specific 5 responsibility of monitoring health and safety of the 6 plant workers; is that fair? 7 A. Yes, but reporting to the corporate medical 8 director. 9 Q. Yes, sir. 10 A. That was the chain of command, yes. 11 Q. Certainly. You had a boss to whom you 12 reported, but that boss, the corporate medical 13 director, didn't have as his direct responsibility the 14 same things you did; right? 15 A. True. 16 Q. And the responsibilities that you did have 17 were for the health and safety on the refinery or 18 plant side of the company; right? 19 MS. KYLE: Objection, form. 20 THE WITNESS: That was part of my 21 responsibility, a major part of my responsibility. 22 BY MR. CHANDLER: 23 Q. Okay. That's all I was getting at. I 24 noticed in your report or your deposition when we were 25 here a couple weeks ago or so that you mentioned you	Page 302 1 Q. -- the only reports that you have reviewed 2 are those reports that are by experts retained by 3 Exxon in this case? 4 MS. KYLE: Objection, form. 5 THE WITNESS: That is true, with respect to 6 these two reports, yes. 7 BY MR. CHANDLER: 8 Q. The Exxon lawyers haven't given you any 9 reports of any of the plaintiff's retained doctors, 10 like Dr. Hammer or Dr. Jay Segarra; is that true? 11 A. I have not received such reports. 12 Q. Okay. Are process operators -- you told us 13 in your last deposition that process operators are 14 those people who actually see the operations. They 15 make certain that temperature and pressure 16 requirements are met, and see to the input and outflow 17 of products and materials. That is the process 18 people; right? 19 A. Yes. 20 Q. And the maintenance people are those guys who 21 keep all the processes running? 22 A. That's one way to state it, yes. 23 Q. Do the process operators interact with the 24 maintenance workers? 25 A. Yes.

1 Q. When the maintenance operators come on a
2 unit, for example, the polyolefin unit, it's the
3 process people at the polyolefin unit that would tell
4 them where things are, don't touch that kind of line,
5 because it's full of chemicals or something like that.
6 It that fair?

7 A. It could be stated that way, yes.

8 Q. And my point is, when maintenance work is
9 being done on a unit, process folks at Exxon don't
10 leave. They stay there and kind of oversee what is
11 going on, don't they?

12 A. Process people are always on duty.

13 Q. And even if maintenance is going on, process
14 operators are there on the unit?

15 MS. KYLE: Objection, form.

16 THE WITNESS: Yes. When the unit is
17 operating, yes.

18 BY MR. CHANDLER:

19 Q. But even if the unit is not operating, and
20 maintenance is being done, process operators have to
21 be there, don't they?

22 MS. KYLE: Objection, form.

23 THE WITNESS: Not invariably, no.

24 BY MR. CHANDLER:

25 Q. Certainly it's not uncommon for process

1 operators to stay on their unit when maintenance
2 workers are doing their work. You would agree with
3 that?

4 A. I would agree to that.

5 Q. Okay. Why would a process operator have to
6 stay on the unit when maintenance workers are doing
7 their craft? Tell us what their responsibility might
8 be during maintenance?

9 A. Well, they are responsible for, assuming the
10 unit is operating, and so if the operations are
11 underway while some type of maintenance work is being
12 carried out, of course the operators are there to
13 continue their responsibility.

14 Q. Because not all maintenance work on a unit
15 shuts the whole unit down, does it?

16 A. No, not all maintenance work, no.

17 Q. Some maintenance work shuts it down?

18 A. Uh-huh.

19 Q. And some maintenance work can be done while
20 the unit is up; that's fair?

21 A. Right.

22 Q. Now, have you ever seen process operators
23 stay on their units even when the whole thing is shut
24 down to kind of oversee what the maintenance workers
25 err doing?

1 MS. KYLE: Objection, form.

2 THE WITNESS: I'm aware that that may be the
3 case.

4 BY MR. CHANDLER:

5 Q. Okay. Is it fair to say that a process
6 operator, a guy who is not the maintenance worker but
7 he keeps the unit, he does what you describe as making
8 sure temperature, pressure requirements are met, those
9 kinds of things. Is it fair to say that if
10 maintenance work is being done, that that process
11 operator could have potential exposure to whatever
12 chemical or substance the maintenance workers are
13 having exposure to?

14 MS. KYLE: Objection, form.

15 THE WITNESS: Here we need an understanding
16 of what you mean by exposure.

17 BY MR. CHANDLER:

18 Q. Yes, sir. I will give you an example then.
19 Thank you. If a maintenance worker like an insulator
20 or a machinist or a pipefitter is working on insulated
21 lines or turbines and they are removing asbestos such
22 that it's creating visible clouds of asbestos dust,
23 that is what I'm talking about. Do we have that
24 understanding.

25 A. All right.

1 Q. Under that kind of scenario, is it fair to
2 say that if a process operator is there on the unit
3 and he is overseeing their work, he could have
4 potential exposure to the same kinds of dust?

5 MS. KYLE: Objection, form.

6 THE WITNESS: Yes, but in looking at this
7 potential exposure, is it meaningful, is there a
8 significant physiologic, potentially harmful exposure.
9 Here we get into the consideration of a dose,
10 intensity and duration, and so this may or may not be
11 of consequence.

12 Q. Yes, sir. And certainly if the insulator or
13 the machinist is right there ripping it off, he has
14 the most intensive exposure, as opposed to somebody
15 who may be five or 10 feet away. We can all agree to
16 that; right?

17 MS. KYLE: Objection, form.

18 THE WITNESS: Well, there's a difference with
19 an observer. However, depending on the climatic wind
20 conditions, the individual farther, 5 feet away might
21 actually have more exposure than the person taking
22 off the asbestos.

23 BY MR. CHANDLER:

24 Q. Sure. Because if he is up wind of the
25 asbestos, he may not be getting any exposure; right?

Page 307 1 A. Yes. 2 Q. But if he is down wind, he could be getting 3 more than the guy ripping it off? 4 A. Yes, but, of course, he should not be 5 standing down wind. 6 Q. Yes, sir. Why shouldn't he be standing down 7 wind of asbestos when it's getting ripped off, by the 8 way? 9 MS. KYLE: Objection, form. 10 THE WITNESS: Our general operating procedure 11 was to not have exposure to a dust, to maintain it as 12 low as feasible. 13 BY MR. CHANDLER: 14 Q. Yes, sir, and the reason he shouldn't be 15 standing down wind of asbestos dust is because you 16 don't want to get some kind of physiologically 17 significant level of exposure that might cause harm. 18 That's fair, isn't it? 19 A. That's fair. 20 Q. Okay. Can you point to the ladies and 21 gentlemen of the jury a single publication ever 22 published that was given to any Exxon employee 23 anywhere in the corporation that told them that there 24 could be hazardous levels of asbestos that are 25 invisible?	Page 309 1 MS. KYLE: Objection, form. 2 THE WITNESS: That I would have to speculate 3 to, you know, what was in somebody's mind. I can't do 4 that. 5 BY MR. CHANDLER: 6 Q. Okay. When the Exxon Company issued safety 7 manuals that said, and I'm paraphrasing, don't be 8 exposed to excessive levels of dust, what did that 9 mean? What was it supposed to mean to the worker in 10 the field? 11 A. To don't breathe it. 12 Q. Don't breathe -- 13 A. Very simple terms. 14 Q. Don't breathe excessive levels; right? 15 A. In counseling workers, I well recall a nurse 16 simply saying, "Don't breathe asbestos dust. It can 17 kill you." And so that the consideration of what is 18 visible and what is invisible would not be adequately 19 addressed in a statement like that. 20 Q. Yes, sir. And that is exactly my point. If 21 the worker doesn't see the asbestos dust, is it fair 22 to say you, as an expert, that he may not even know he 23 is breathing it, if the levels are invisible? 24 MS. KYLE: Objection, form. 25 THE WITNESS: No. If he is aware of the,
Page 308 1 MS. KYLE: Objection, form. 2 THE WITNESS: I can't answer that. There 3 were publications that were available to Exxon 4 employees that in all probability would have included 5 that information. 6 BY MR. CHANDLER: 7 Q. Okay. And in fact, if there is, if there are 8 Exxon safety manuals, you agree that they should 9 include information about hazardous levels of asbestos 10 being present, even though the levels can't be seen. 11 You agree to that, don't you? 12 MS. KYLE: Objection, form. 13 THE WITNESS: I can't really respond to that. 14 BY MR. CHANDLER: 15 Q. Okay. Let me re-ask it then. You agree that 16 there can be hazardous levels of asbestos in the air, 17 yet have those levels be invisible to the naked eye. 18 We can agree to that? 19 A. Yes. That could be the case. 20 Q. Okay. Now, if you tell an employee, you as 21 the corporate medical director, sir, told an employee, 22 "Don't be exposed to excessive levels of asbestos," 23 and that is what you told them, what in your mind is 24 the expectation that that employee will have in his 25 mind about those levels?	Page 310 1 that some material has asbestos in the content, and so 2 whether or not it's invisible, I think he would be 3 aware that exposure was possible. 4 BY MR. CHANDLER: 5 Q. Okay. Can you point to the ladies and 6 gentlemen of the jury to a single publication in the 7 entire history of the Exxon Corporation that wrote 8 down for a man like Mr. Altmore or anybody else that 9 invisible levels of asbestos dust could kill you, as 10 this nurse, you claim, said? 11 MS. KYLE: Objection, form. 12 THE WITNESS: I'm not familiar with all the 13 publications in the Exxon Corporation with respect to 14 this point. 15 BY MR. CHANDLER: 16 Q. If there was a publication in which the Exxon 17 Corporation communicated to its workers that even 18 invisible levels of dust could kill, would you have 19 expected as the corporate medical director to have 20 seen that throughout your career? 21 A. I may have seen it, but I can't recall 22 whether such a publication exists or not. I can't 23 remember. 24 Q. Yes, sir, and we are here on the second day 25 of your deposition, and the first day was a couple of

1 weeks ago. At any time in the last couple weeks since
2 we took a break in your deposition, has any Exxon
3 representative or lawyer showed you a publication in
4 which they said here it is. We are warning workers
5 that even invisible levels of dust could kill. Have
6 you seen that at all?

7 A. I have not seen any publication that stated
8 that or did not state that.

9 Q. Okay. Dr. Weaver, would you look at Exhibit
10 5 to your previous deposition, and I will represent to
11 you that that is a report on the, "Summary of Plant
12 Industrial Hygiene Problems," dated April 12, 1949.
13 Go ahead, sir. It's Exhibit 5.

14 MS. KYLE: I pieced this together. Let's
15 make sure. Yes. Okay.

16 BY MR. CHANDLER:

17 Q. Now, the report entitled, "Summary of Plant
18 Industrial Hygiene Problems" is written by four
19 different people. All the way back, boy, we are
20 talking 55 years ago now; right?

21 A. Yes.

22 Q. And some of those people were actually
23 working at Baytown, weren't they, the Baytown
24 refinery?

25 A. Yes, one of them was, J.W. Hammond.

1 Q. Wasn't Mr. -- Dr. Berry at Baytown, also?

2 A. No, he was not at Baytown. No.

3 Q. Would you look at page 64 of your deposition,
4 line 6. I believe you told the ladies and gentlemen
5 of the jury under direct examination that Dr. Clyde
6 Berry was at Baytown. Is that not right?

7 A. That is a, the statement should have read,
8 "Dr. Clyde Berry at Bayway."

9 Q. Okay. Very good.

10 A. I have not seen this deposition. It has not
11 been corrected, but the statement was that he was at
12 Bayway refinery, not Baytown.

13 Q. That's why we get the opportunity to review
14 these and correct them. Bayway is a different
15 refinery than Baytown?

16 A. Indeed.

17 Q. Where it Bayway, by the way?

18 A. In New Jersey.

19 Q. In New Jersey. Okay. So Dr. Clyde Berry,
20 one of the authors of the "Summary of Plant Industrial
21 Hygiene," was the doctor at the New Jersey plant?

22 A. He was the industrial hygiene engineer at the
23 Bayway refinery.

24 Q. You call him a doctor. Was a medical doctor
25 or Ph.D.?

1 A. Ph.D.

2 Q. Okay. Now Jim Hammond was an engineer; is
3 that right?

4 A. Industrial hygiene engineer.

5 Q. And Mr. Hammond was actually at the Baytown
6 plant where Mr. Altmore worked, wasn't he?

7 A. Yes.

8 Q. Mr. Hammond, 55 years ago in 1949, helped put
9 together the document titled, "Summary of Plant
10 Industrial Hygiene Problems" that is marked, "Company
11 confidential, not for publication in present form;"
12 right?

13 A. Yes. He is listed as one of the authors.

14 Q. Okay. And this report went all the way up to
15 the headquarters of the Exxon Company up there in
16 Rockefeller Plaza, New York, New York.

17 A. Yes.

18 Q. What was the purpose for writing the Exhibit
19 5, "Summary of Plant Industrial Hygiene Problems," all
20 the way back in 1949?

21 A. Well, I was not with the corporation at that
22 time, so I can speculate that the four industrial
23 hygiene engineers, well, one was a safety engineer,
24 Mr. Bonsib, their responsibility was to point out
25 potential problems, things that might be considered

1 that could be corrected or should be looked at then.

2 Q. Okay.

3 A. And so that is my understanding of why this
4 was written.

5 Q. Fair enough. Let's talk about a couple of
6 matters that were discussed in the document, Doctor.
7 First of all, do you know why it's marked company
8 confidential? And if you don't, just tell me.

9 A. I don't know.

10 Q. Okay. It is a fair statement that the
11 information that is imparted to the headquarters of
12 the company up there in New York in Rockefeller Plaza
13 is it kind of information the workers in the plant
14 should be getting. You agree to that, don't you?

15 MS. KYLE: Objection, form.

16 THE WITNESS: No, not necessarily.

17 BY MR. CHANDLER:

18 Q. Okay. Now, let's go to the page that
19 Mr. Hammond actually helped provide. And they are,
20 it's, I don't know if it has a number on it, Doctor,
21 but it's Bates stamped at the bottom 3125, looks like.

22 A. My copy has numbers at the top.

23 Q. But this page doesn't.

24 A. Here it is. All right.

25 Q. Now what you are looking at is a page that is

1 in the 1949 document and it's got a subtitle on it
 2 called, "Industrial hygiene problems observed in the
 3 Baytown refinery," by J.W. Hammond, MS; right?
 4 A. That is correct.
 5 Q. So this part of the report is specific to
 6 Baytown and other parts of the report are specific to
 7 other plants in the company; right?
 8 A. Yes. Of course there could be overlap.
 9 Q. Certainly. And I want to talk to you about a
 10 few of the issues that Mr. Hammond brings out in his
 11 report, specifically on the appendix that is the
 12 summary of preliminary industrial hygiene survey at
 13 Baytown. That is what it is. We are going to the end
 14 of it now on the summary.
 15 MS. KYLE: Do you have it?
 16 BY MR. CHANDLER:
 17 Q. It's the next page sir, very next one.
 18 A. Thank you.
 19 Q. Now, the information that is in the summary
 20 of the preliminary industrial hygiene survey is that
 21 information for the Baytown, Texas refinery, isn't it?
 22 A. As so stated in the title. It, of course,
 23 could be applicable to other locations, as well, but
 24 that is the focus of it, yes.
 25 Q. Yes, sir. By the way, did the Exxon Company

1 have for the most part uniform industrial hygiene
 2 policies and practices throughout the corporation?
 3 A. In general, yes.
 4 Q. One plant wasn't allowed to do things more
 5 lax than another, were they?
 6 A. They would be compatible.
 7 Q. Okay. Under "Materials or conditions,"
 8 Mr. Hammond from Baytown lists silica and asbestos;
 9 right?
 10 A. Yes, at the bottom of the list.
 11 Q. How many different materials or conditions
 12 were actually being used at the Baytown refinery, say
 13 in 1951, when you joined? It's potentially hundreds
 14 of different chemicals; isn't it?
 15 A. Yes, thousands.
 16 Q. Okay. In the Baytown refinery, at least in
 17 1951, when you joined it, they were using thousands of
 18 different chemicals in making the products, right?
 19 MS. KYLE: Objection, form.
 20 THE WITNESS: Including the streams to make
 21 the products and the products, yes.
 22 BY MR. CHANDLER:
 23 Q. And what Mr. Hammond does is he just lists a
 24 summary of six different, at least categories of
 25 materials or conditions; right?

1 A. Yes.
 2 Q. One of them hydrogen, organic sulfides. That
 3 is probably a number of different products; right?
 4 A. Yes. It's particularly for hydrogen sulfide,
 5 but there are others, as well, yes.
 6 Q. And then lead. That is only one; right?
 7 A. Yes.
 8 Q. Mercury. That is only one; right?
 9 A. Yes.
 10 Q. And then we have zinc, metal fumes. That
 11 could potentially be a few different chemicals or
 12 materials at the Baytown plant in 1949, right?
 13 A. Yes, metal fumes is rather a general, all
 14 inclusive, yes.
 15 Q. Then we have chromates and beryllium, and
 16 lastly we have silica and asbestos; right?
 17 A. Uh-huh.
 18 Q. But of the thousands of different chemicals
 19 or materials being used at Baytown in 1949, we have a
 20 very, very small percentage of them in Mr. Hammond's
 21 report; right?
 22 A. Yes.
 23 Q. And one of the materials that Mr. Hammond
 24 notes of the very, very small percentage of the
 25 thousands of different chemicals and processes being

1 used at Baytown is asbestos. It makes the list,
 2 doesn't it?
 3 A. Of course.
 4 Q. Of course. Why do you say of course.
 5 A. Because that was a material that industrial
 6 hygienists were trained and had experience in working
 7 with.
 8 Q. Okay. And one of the potential diseases
 9 identified all the way back in 1949 from silica and
 10 asbestos exposure, of course, is silicosis. That is
 11 caused by exposure to silica particles; isn't it?
 12 A. Yes.
 13 Q. And the other, it says "fibrosis," but I
 14 think it means "fibrosis;" right?
 15 A. I assume that is the case.
 16 Q. And fibrosis is caused both by silica and
 17 asbestos; isn't it?
 18 A. Yes.
 19 Q. And other is erythema. Am I pronouncing that
 20 correct? I don't know if I am or not. Erythema.
 21 What is that?
 22 A. I don't know.
 23 Q. I don't know what that is, either, because I
 24 didn't think it was arrhythmia, but I assumed he was
 25 trying to say that.

Page 319 1 A. No, it's not arrhythmia. 2 Q. All right. You don't know what that 3 potential disease might be? 4 A. There's some error here. I can't account for 5 it. 6 Q. Okay, fine, and the last one -- 7 A. And I won't try to explain it. 8 Q. I don't blame you. The last one is cancer of 9 the lungs; correct? 10 A. Yes. 11 Q. Now, the state of the medical and scientific 12 literature at the time certainly had zero indication 13 that silica was a cancer-causing agent, isn't that 14 fair? 15 MS. KYLE: Objection, form. 16 BY MR. CHANDLER: 17 Q. Let me re-ask the question. She's right. 18 It's kind of weird. There was no evidence in the 19 medical or scientific literature in 1949 that silica 20 caused cancer, was there? 21 MS. KYLE: Objection, form. 22 THE WITNESS: No conclusive or nothing to 23 bring the scientific community to that decision. 24 BY MR. CHANDLER: 25 Q. Well, I work on a number of silica cases,	Page 321 1 under silica and asbestos, cancer of the lung is 2 listed; right? 3 A. It is listed. 4 Q. And so the logical inference from that is it 5 was being referenced because of asbestos and not 6 because of silica; right? 7 MS. KYLE: Objection, form. 8 THE WITNESS: That would be the inference, 9 yes. 10 BY MR. CHANDLER: 11 Q. But it would be a correct inference, a 12 logical one in your mind, wouldn't it? 13 A. Not that this is correct, no. 14 Q. Okay, but the logical inference from 15 Mr. Hammond's report is that the cancer of the lungs 16 under potential diseases does not apply to silica; 17 right? 18 A. Right. 19 Q. Okay. Now, the departments or crafts 20 affected by the recommendation of Mr. Hammond under 21 the diseases he listed next to silica and asbestos did 22 not just include insulators, did it? 23 A. Right. 24 Q. It included brick masons and even their 25 helpers, didn't it?
Page 320 1 Doctor, and if the Exxon Company has any indication 2 that silica might have caused lung cancer back in '49, 3 I would love to know it, because I have never found 4 any evidence all the way back in 1949 that anybody 5 thought silica caused lung cancer. Do you have any 6 information? 7 A. I'm sure your review is accurate in that 8 context. 9 Q. Okay. So let me try to bring it home. I 10 thought so, because if Exxon knew that it causes lung 11 cancer in '49, I would love to know that. Here is the 12 question. 13 MS. KYLE: No comment. I wish I could 14 respond. 15 BY MR. CHANDLER: 16 Q. We will, for purposes of this, we will 17 stipulate, you had no knowledge silica could cause 18 lung cancer. Let me get back to what we are doing. 19 In 1949 there was certainly no evidence in the medical 20 or scientific literature at all anywhere that silica 21 was a cancer-causing substance, isn't that fair? 22 MS. KYLE: Objection, form. 23 THE WITNESS: That's correct. 24 BY MR. CHANDLER: 25 Q. So the one thing we do know, though, is that	Page 322 1 A. Yes. 2 Q. And included insulators who we all agree are 3 exposed to asbestos, don't you think? 4 A. Uh-huh. 5 Q. We can all agree to that? 6 A. Yes. 7 Q. It also included laborers under the potential 8 diseases caused by silica and asbestos. Can you 9 explain why they might be listed? 10 A. Because laborers might be handling or in the 11 transport of asbestos-containing materials. 12 Q. And why would a pipebender be listed under a 13 craft affected by the potential diseases of silica and 14 asbestos, including silicosis, fibrosis and cancer of 15 the lungs? 16 MS. KYLE: Objection, form. 17 THE WITNESS: Because asbestos-containing 18 materials would be, could be present on pipes as 19 insulation. 20 BY MR. CHANDLER: 21 Q. Are pipebenders the ones removing the 22 insulation? 23 A. They might, yes. 24 Q. Certainly. Other crafts at Exxon removed 25 insulation other than just insulators, and that is why

Page 323 1 other crafts are listed; right? 2 MS. KYLE: Objection, form. 3 THE WITNESS: Yes. 4 BY MR. CHANDLER: 5 Q. Okay. Under the, go to the next page, 6 Doctor, for me, please. Exhibit, page 3. Under the 7 materials or conditions continuing at Baytown, they 8 list silicates and coke dust. Do you see that, the 9 first one? 10 A. Silicates and coke dust, yes. 11 Q. Asbestos is a silicate, isn't it? 12 A. Yes. 13 Q. I'm curious -- 14 A. It may be, yes. 15 Q. And do silicates and coke dust, you were not 16 specifically talking about, at least this report 17 doesn't specifically talk about asbestos. If we want 18 to refer to asbestos, we need to go to page 2 of the 19 appendix, not this page; right? 20 MS. KYLE: Objection, form. 21 THE WITNESS: I think I follow you, yes. 22 BY MR. CHANDLER: 23 Q. My point is there are all kind of silicates, 24 silica is a silicate, asbestos is a silicate, and 25 there could be many other types of silicates?	Page 325 1 Mr. Hammond about this document, the "Summary of Plant 2 Industrial Hygiene Problems," didn't you? 3 A. I don't recall discussing it with 4 Mr. Hammond. 5 Q. You did see this report. Certainly in the 6 medical field there at Exxon, one of the things they 7 might give you is a summary of the plant industrial 8 hygiene problems that was created just two years 9 before you got there? 10 A. Yes. 11 Q. They would do that; right? 12 A. I have probably seen it, but I don't recall 13 specifically. 14 Q. At any time in your career at Exxon, did you 15 ever tell Mr. Hammond you were wrong in your 16 April, 12, 1949 summary of industrial hygiene problems 17 at Baytown? 18 A. I don't recall ever discussing it with 19 Mr. Hammond. 20 Q. At any time in your career at Exxon, which 21 spanned how many years, sir? 22 A. 22. 23 Q. Including the highest position over the 24 health and safety of plant refinery workers as the 25 associate corporate medical director; right?
Page 324 1 A. Yes. 2 Q. But for the two specific once, silica and 3 asbestos, those are mentioned on a prior page; right? 4 A. Yes. 5 Q. Now, under materials or conditions under the 6 appendix at page 3, under silicates and coke dust, we 7 list fibrosis and possibly lung tumors; right? 8 A. Yes. 9 Q. So there's an indication that we are not so 10 sure, it's just possible; correct? 11 MS. KYLE: Objection, form. 12 THE WITNESS: That is what is stated here. 13 BY MR. CHANDLER: 14 Q. Now, if you will go back to the prior page 15 where silica and asbestos are listed, can you go back 16 there? 17 A. Yes. 18 Q. The word "possible" does not exist next to 19 cancer of the lung on silica and asbestos; does it? 20 A. That is the case, yes. 21 Q. Okay. Do you think Mr. Hammond was a 22 reasonably competent industrial hygienist, sir? 23 A. He is a highly competent industrial 24 hygienist. 25 Q. Is there any -- in fact you talked to	Page 326 1 A. Yes. That was my responsibility, yes. 2 Q. In any of your 20-plus years' time at Exxon, 3 did you ever author a document, a memo to the 4 president of the company, to any other doctor, that 5 says Dr. Hammond or Mr. Hammond, rather, was not 6 correct about some of the things in his April 12, 1949 7 summary of plant industrial hygiene problems at the 8 Baytown refinery. Is that a document you ever 9 authored? 10 A. I never authored any commentary on this 11 report. 12 Q. Did you ever make a phone call to anybody at 13 Exxon Company that said Mr. Hammond was wrong on 14 April 12, 1949? 15 A. I don't know. 16 Q. Okay. Is that something that you have any 17 recollection of today doing? 18 A. I have no such recollection. 19 Q. Okay. Tell me if I'm wrong. As you pointed 20 out to me before, and I'm glad, I will refer your 21 attention to Defendants' Deposition Exhibit 6, which 22 is an article titled, "Humble Oil and Refining 23 Company's Baytown" -- restart the question. Exhibit 6 24 to your deposition is an article titled, "Humble Oil 25 and Refining Company's Baytown Refinery;" right? Do

Page 327 1 you have it? Is it in there? 2 MS. KYLE: What number is it? 3 BY MR. CHANDLER: 4 Q. I'm sorry, Exhibit 6. Yes, there we go. 5 A. Thank you. 6 Q. Now, Exhibit 5 was something that was marked 7 company confidential. It wasn't for publication in 8 its present form. I'm sorry, Doctor, I'm being 9 confusing and it's not on purpose, but let me refer 10 your attention back to Mr. Hammond's article. This 11 was something that was not to be published out in the 12 public. It wasn't for publication in present form, 13 Doctor or Mr. Hammond's and Mr. Berry and Mr. Bonsib 14 and Mr. Hendricks' April 12, 1949 report. 15 A. That is what is stated, yes. 16 Q. They didn't go out and publish this in the 17 medical and scientific literature, did they, Exhibit 18 5, the summary of plant and industrial hygiene 19 problems? 20 A. No. It hadn't been proofread and corrected, 21 so it wasn't ready for outside publication. 22 Q. And it was even stamped "company 23 confidential," right? 24 MS. KYLE: I don't know, was it? 25 BY MR. CHANDLER:	Page 329 1 scientific literature; right? 2 A. That's generally correct. I'm not saying it 3 was withheld from other people, individuals, no. But 4 the objective here was for the overall Esso Standard 5 organizations, medical organizations. 6 Q. This was, to whom was it intended to go. 7 That is I guess what I'm getting at. Was it only the 8 doctors, or was it plant safety people, plant medical 9 people, plant industrial hygiene people? Tell me who 10 was the intended audience. 11 A. The intended audience would be the medical 12 personnel, medical department personnel. This medical 13 bulletin was really only published once a year and was 14 based on the meeting of the medical department 15 physicians, industrial hygienists, and papers were 16 prepared and presented at this annual meeting, and 17 some or most of those papers were published in this 18 medical bulletin. 19 Q. Okay. This medical bulletin reference a 20 number of meetings that occurred in the very same year 21 that Mr. Hammond and Mr. Barry or Dr. Berry and 22 Mr. Hendricks and Mr. Bonsib all prepared the report 23 on summary of the plant industrial hygiene problems; 24 right? 25 MS. KYLE: Objection, form.
Page 328 1 Q. Or typed on it, not stamped, whatever you 2 want to say. 3 A. Yes. 4 Q. Now, Exhibit 6 is the medical bulletin, 5 Humble Oil and Refining Company's Baytown Refinery. 6 Do you see that? 7 A. The medical bulletin is the top line, and 8 then "Humble Oil and Refining Company, Baytown 9 Refinery" is the main title. 10 Q. This Exhibit 6, Humble Oil and Refining 11 Company, Baytown Refinery, the medical bulletin, is 12 something that was meant for public consumption. It 13 was published and available to folks who wanted to 14 read it; right? 15 A. The medical bulletin referred to here is a 16 publication by Esso Standard, and while not, and was 17 not generally available, it listed in medical 18 libraries and things like this. This is, so it was a 19 corporate publication and was not listed in the 20 Cumulous Index Medicus, for example. 21 Q. Perfect. Thank you. Now I understand. 22 Great. Defendants' Deposition Exhibit 6, the medical 23 bulletin, was an internal Exxon medical bulletin meant 24 for publication among Exxon employees or officials, 25 but not generally published in the medical or	Page 330 1 THE WITNESS: I don't understand. 2 BY MR. CHANDLER: 3 Q. That's okay. The medical bulletin, it 4 references meetings held in April of 1949. For 5 example, on the second page marked 465, it says from 6 April 1, 1949 to September 1, 1950, inclusive, 3,000 7 skin examinations have been made. It references 8 things that happened in the very same year that the 9 Exhibit 5 to your deposition was created; right? 10 A. Yes. 11 Q. And, in fact, on the first page it discuss as 12 meeting held in February of 1949, doesn't it? 13 A. Yes. 14 Q. And it discusses a meeting in May, one month 15 after the report marked company confidential, the 16 report on the summary of the plant industrial hygiene 17 problems, as on page 467, we see a meeting happening 18 the very next month, May of 1949. No. No. Let me -- 19 that is totally incorrect. Let me redact all that. 20 Let me re-ask the question. 21 The medical bulletin marked as Defendants' 22 Deposition Exhibit 6 references even adding doctors in 23 May of 1949 on page 467. It's the next page, sir, 24 flip the page. There we go. It's on this side. 25 Somewhere down there. Very bottom of that page.

1 A. Yes. This speaks of some expansion of the
2 medical staff, yes.
3 Q. And my point is, we are looking at a medical
4 bulletin intended for the doctors among the Exxon
5 Corporation that included events happening at the very
6 same time and immediately before and immediately after
7 the summary of plant industrial hygiene problems
8 marked as company confidential was published; right?
9 A. Yes.
10 MS. KYLE: We need to take breaks on the
11 hour. So either --
12 MR. CHANDLER: Sure. Let me just finish this
13 one line of questioning and we will break in one
14 minute.
15 MS. KYLE: Okay.
16 BY MR. CHANDLER:
17 Q. Nowhere in Exhibit 6, and correct me if I'm
18 wrong, because I could be. Nowhere in the medical
19 bulletin that went to the Humble Oil medical doctors
20 does it mention asbestos as a problem, does it?
21 A. I don't know.
22 Q. You have a copy in front of you. Take a look
23 at it and just tell us whether I'm right.
24 A. I can't -- I don't question that, but I don't
25 know.

1 Q. Okay. I will tell you what. It's only four
2 pages. If at any time today you find, whether you are
3 on a break or at lunch or whatever, if at any time
4 today you find that it does mention asbestos, bring it
5 to my attention; all right?
6 A. I would not expect it to mention asbestos.
7 Q. Okay. Even though Mr. Hammond, Dr. Berry,
8 Mr. Bonsib, Mr. Hendricks identified specifically at
9 the Baytown refinery asbestos and silica and the
10 potential diseases being fibrosis and cancer of the
11 lungs, right?
12 MS. KYLE: Objection, form.
13 THE WITNESS: Yes. We referred to that
14 report.
15 MR. CHANDLER: Okay. We will take a break.
16 THE VIDEOGRAPHER: Going off the record. The
17 time is 11:09.
18 (Recess)
19 THE VIDEOGRAPHER: We are going back on the
20 record. The time is 11:19.
21 BY MR. CHANDLER:
22 Q. Sir, since your last deposition when we met,
23 have you changed your position at all as to whether
24 lung cancer was not established as being caused by
25 exposure to asbestos until the early 1970s, 1971 or

1 '72, or is that still your position?
2 A. It is still my position.
3 Q. There is another exhibit to your deposition
4 and it's Exhibit 7, sir, and I know you have seen
5 this. You told us on direct examination you thought
6 it was an excellent document, and that is the 1937
7 Bonsib report. Do you recall that?
8 A. I recall the report, yes.
9 Q. And two, a couple weeks ago when we were
10 here, you told Mrs. Kyle, the Exxon lawyer taking your
11 examination, that you thought the Bonsib report was an
12 excellent document, and you still hold that position
13 today?
14 A. I would hold that position today, yes.
15 Q. I want to direct your attention to one or two
16 of the things in this excellent document authored by
17 Roy Bonsib, the chief safety inspector of the Standard
18 Oil Company and Willard J. Denno, the general medical
19 director of the Standard Oil Company, which, of
20 course, is Exxon; right?
21 A. The parent company of Exxon, yes.
22 Q. I will direct your attention to the
23 conclusion of the Bonsib report, and on page 81, sir,
24 all the way to the back, it's the second to last page
25 of the Bonsib report, under, "Conclusion."

1 A. 81, conclusion; right.
2 Q. Yes, sir. I'm looking at the last paragraph,
3 page 81, where it reads, "One common sense answer is
4 that any atmosphere in which dust is visible to the
5 naked eye is certainly too dusty to be breathed with
6 safety by human beings. And the Wise, farsighted and
7 human employer will immediately start to decrease the
8 dust content in any atmosphere where dust is visible.
9 After he has eliminated visible dust, there may still
10 remain enough very small, invisible dust to cause harm
11 to the health of those who breathe it, but in any
12 event, if he has exerted sufficient well directed
13 effort to remove the visible dust, it is certain that
14 much of the smaller, invisible and probably most
15 harmful dust has also been removed." Did I read that
16 correctly?
17 A. Yes, you read it correctly.
18 Q. And you agree that very small, invisible dust
19 can cause harm to the health of those who breathe it,
20 don't you?
21 MS. KYLE: Objection, form.
22 THE WITNESS: Yes.
23 BY MR. CHANDLER:
24 Q. And you agree that it's just common sense, as
25 Mr. Bonsib states, that any atmosphere in which dust

Page 335 1 is visible to the naked eye is certainly too dusty to 2 be breathed with safety by human beings. Do you agree 3 with that? 4 MS. KYLE: Objection, form. 5 THE WITNESS: Well, yes, in a general context, 6 in a very general context, I would agree. 7 BY MR. CHANDLER: 8 Q. Yes, sir. Dr. Weaver, is there anything in 9 the Bonsib report of 1937 that you have ever told 10 anybody at the Exxon Company you disagreed with, you 11 thought they were way off, he was wrong about certain 12 things? 13 A. I'm not aware of anything. I don't know, but 14 I'm not aware of anything. 15 Q. The Bonsib report is telling the Exxon 16 Company and anybody else who wanted to read it, 17 because as I understand it, you shared the Bonsib 18 report with members of industry, didn't you? 19 A. That's my understanding. 20 Q. In fact, you had assistance from the Exxon 21 Company -- not you specifically, sir=, but the Exxon 22 Company had assistance from the U.S. Public Health 23 Service in preparing the Bonsib report, didn't it? 24 A. Among other sources, yes. 25 Q. Yes, sir. The U.S. Public Health Service,	Page 337 1 no law preventing it. That is not reasonable, is it? 2 MS. KYLE: Objection, form. 3 THE WITNESS: The concept of feasibility must 4 be entered here, of course, but in general, well, go 5 ahead with your line of questioning. 6 BY MR. CHANDLER: 7 Q. Nothing Mr. Bonsib talked about in 1937 was 8 unfeasible; right? 9 A. I don't know. 10 Q. Well, point out if you can anything in 11 Mr. Bonsib's report where you say, well, he may have 12 said it, but that wasn't feasible at the time. 13 A. I'm not aware of anything. 14 Q. All right. So everything that they are 15 talking about in 1937 are feasible things, like 16 wetting asbestos down, like using a hose and making 17 sure it's wet when you sweep it, those kind of things. 18 Though are all feasible and readily available and all 19 very, very possible to do; right? 20 MS. KYLE: Objection, form. 21 THE WITNESS: As far as I know, that would be 22 correct. 23 BY MR. CHANDLER: 24 Q. Okay. I forgot my question. Go back two or 25 three questions, before his answer that as long as it
Page 336 1 the U.S. Bureau of Mines, The Division of Industrial 2 Hygiene, Department of Labor, all of those 3 organizations came together to try to help the Exxon 4 Company and Mr. Bonsib specifically prepare his report 5 entitled, "Dust-Producing Operations in the Production 6 of Petroleum Products and Associated Activities," 7 published all the way back in July, 1937; right? 8 A. I would believe that they were consultants in 9 this effort. 10 Q. Yes, sir. And it's fair to say that one of 11 the things the government was telling Exxon and that 12 Exxon was telling anybody who wanted to read the 13 report is that it is important to suppress dust; 14 right? 15 A. Yes. 16 Q. And it doesn't take a state regulation, 17 whether it was published and issued in 1958 or a 18 federal regulation, whether it was published in 1972 19 or whenever, it doesn't take laws to make companies do 20 the right thing, does it? 21 A. A company should do what is believed the 22 correct thing without laws, yes. 23 Q. Because if a company doesn't do what they 24 think is the correct thing, it's not reasonable for 25 them to say, well, we could do it, because there was	Page 338 1 was feasible. 2 (The record was read as requested) 3 BY MR. CHANDLER: 4 Q. Sir, Dr. Weaver, you agree that it would not 5 be a reasonable position for a company to take that 6 just because there is no law making them do something, 7 they didn't have to do it. That is not reasonable, is 8 it? 9 A. No. 10 Q. Okay. For example, if a company knew there 11 were hazards that could affect the health of their 12 workers, they should take precautions to protect those 13 workers, even if the federal government doesn't make 14 them; right? 15 A. Yes. 16 Q. And if a company knows there are hazards that 17 affect the health of the workers, they should take 18 those precautions even if the state government doesn't 19 make them do it; right? 20 A. Yes. 21 Q. Okay. I just love that picture. On picture, 22 Exhibit 8, do you know what trade those guys had? 23 A. No. 24 Q. They are not managers though, are they? 25 A. No.

1 Q. Those are the guys in the field, aren't they?
 2 A. Right.
 3 Q. Sir, I know you told us under direct
 4 examination by Ms. Kyle that you personally observed
 5 industrial hygiene sampling being done for asbestos at
 6 the Baytown refinery; is that right?
 7 A. Yes.
 8 Q. Tell us for how long they took that sample,
 9 how long was the monitor on?
 10 A. I don't remember any specific example.
 11 Q. Do you know how long a monitor should be on
 12 in order to get an adequate sample of dust where a
 13 worker might be working?
 14 A. It depends on the particular circumstances at
 15 the time.
 16 Q. What we are looking for, though, is what his
 17 average eight-hour exposure might be; right?
 18 A. That's, you look for a TLV for an eight-hour
 19 time.
 20 Q. Yes, sir. I mean would a reasonable
 21 industrial hygienist come in and just say take a
 22 sample for two minutes, or would it be an hour, or two
 23 hours, or three? Does he have to do the whole eight?
 24 Tell us --
 25 A. It depends on his objective at that

1 particular time.
 2 Q. Would a reasonable industrial hygienist do
 3 the sampling for the whole eight hours?
 4 A. Ordinarily that is not feasible, but I can't
 5 say that it was never done by switching filters and
 6 things like that. But that would not, that would be
 7 out of the ordinary, definitely.
 8 Q. Would a reasonable industrial hygienist take
 9 the other extreme and say take a sample just for two
 10 minutes?
 11 A. He might.
 12 Q. In an environment where we know there are
 13 hundreds of fibers per cubic centimeter, why might he
 14 take a sample only for two minutes in order to get an
 15 eight-hour average. Tell me why that might happen.
 16 MS. KYLE: Objection, form.
 17 THE WITNESS: It depends on the
 18 circumstances, his objective at the time. He may not
 19 have an interest in the eight-hour, time-weighted
 20 average. He may be looking for a peak level under
 21 particular circumstances.
 22 Q. Why might an industrial hygienist not be
 23 interested in what the eight-hour average is if that
 24 is what the regulations require?
 25 A. Well, he is interested in that, but what is

1 he testing for at the moment. And that may have
 2 nothing to do with an eight-hour time period or have
 3 nothing to do with the regulation.
 4 Q. What is the highest peak exposure that any of
 5 the regulations allowed for asbestos dust, if you
 6 know?
 7 MS. KYLE: Objection, form. Would you repeat
 8 that question for me.
 9 BY MR. CHANDLER:
 10 Q. And by peak exposure I mean ceiling limit.
 11 A. I don't know.
 12 Q. Do you know whether -- how many different
 13 air samples do you think you saw being done at the
 14 Baytown refinery in your career?
 15 A. I can't estimate that.
 16 Q. Have any of those samples been shared with
 17 you in preparation for your deposition today?
 18 A. No.
 19 Q. Have any of the samples been shared with you
 20 in preparation for your deposition that we had here a
 21 couple weeks ago?
 22 A. No.
 23 Q. What kind of activity would you expect to
 24 release asbestos dust?
 25 A. Sir, please speak up a little bit.

1 Q. I'm sorry. What kind of activity,
 2 Dr. Weaver, would you expect to release asbestos dust
 3 in a refinery?
 4 A. Asbestos dust might be released in activities
 5 that involve products that contain asbestos.
 6 Q. Like --
 7 A. The application of insulation, the removal of
 8 insulation are two obvious examples.
 9 Q. Yes, sir. I understood you when we were here
 10 earlier to say that you didn't think it was necessary
 11 just to take a representative sample of every job
 12 that, with experience, an industrial hygienist could
 13 look at a job and just make the conclusion there were
 14 no samples necessary for a specific job that might
 15 involve asbestos; is that right?
 16 MS. KYLE: Objection, form.
 17 THE WITNESS: I think I was referring to the
 18 fact that an experienced industrial hygienist who has
 19 taken many, many samples in the course of his
 20 monitoring of a refinery, he develops a background of
 21 experience that enables him to use professional
 22 judgment with respect to deciding when he has to take
 23 a sample.
 24 BY MR. CHANDLER:
 25 Q. Is there anything in the history of any

Page 343 1 experience of any industrial hygienist in the world at 2 any time that you have ever been aware of that has 3 allowed that industrial hygienist to see invisible 4 dust? 5 MS. KYLE: Objection, form. 6 THE WITNESS: I don't understand the 7 question. 8 BY MR. CHANDLER: 9 Q. Yes, sir. Let me re-ask it then. You don't 10 claim the Exxon industrial hygienist had super powers 11 and could see the invisible, do you? 12 A. No. 13 Q. And there's no trained industrial hygienist 14 that you are aware of in the entire world history that 15 has ever been able to say I can see the invisible dust 16 and therefore I know what level it is. I don't need 17 to sample. That is just completely unreasonable, 18 isn't it? 19 MS. KYLE: Objection, form. 20 THE WITNESS: No. That's compound again. If 21 the dust is invisible, why, that, he can't see it. 22 BY MR. CHANDLER: 23 Q. That's my point, exactly. So since you have 24 given Ms. Kyle the objection to the question, 25 compound, let me re-ask it. There is no industrial	Page 345 1 they were seeing they didn't need to take a sample. 2 That occurred, didn't it? 3 MS. KYLE: Objection, form. 4 THE WITNESS: There might be an occasion 5 where that could occur. 6 BY MR. CHANDLER: 7 Q. Have you ever seen any Exxon documents where 8 the Exxon industrial hygienists or safety inspectors 9 are acknowledging as late at 1971, sir, that workers 10 are not wearing respirators like they should? Have 11 you ever seen anything like that? 12 MS. KYLE: Objection, form. 13 THE WITNESS: I don't know. 14 BY MR. CHANDLER: 15 Q. Have you ever seen any Exxon documents that 16 indicate as late at 1971 that Exxon workers are still 17 performing dry sweeping when it comes to asbestos as 18 late at 1971? 19 A. I don't know. 20 Q. Dry sweeping of asbestos should not have been 21 occurring in 1971, should it? 22 MS. KYLE: Objection, form. 23 THE WITNESS: In general, no. 24 BY MR. CHANDLER: 25 Q. And adequate respiratory protection should
Page 344 1 hygienist that has ever had any experience, no matter 2 how great, that could tell what the levels of 3 invisible dust were without taking a sample; is that a 4 fair statement? 5 A. I can conceive of situations where he may 6 have taken samples of an activity and measured the 7 invisible dust with an electron microscope so that, 8 and if the same situation would be duplicated again, 9 his experience and judgment would enable him to know 10 what the situation is. And so that is my answer. 11 Q. And that is what happened at Exxon, isn't it, 12 sir? Some of the industrial hygienists would see a 13 job occurring. They would take a sample, even if it 14 was invisible dust, and just based on that sample, 15 they would apply that to other jobs and making their 16 determinations whether another job might have to have 17 sampling, even if we are talking about invisible 18 levels. That is what they did at Exxon, isn't it? 19 MS. KYLE: Objection, form. 20 THE WITNESS: The industrial hygienists would 21 use his best professional judgment in deciding what to 22 do or what not to do. 23 BY MR. CHANDLER: 24 Q. And it occurred at Exxon that industrial 25 hygienists eyeballed jobs and decided based on what	Page 346 1 have been available as late as 1971 to workers and for 2 decades before that; right? 3 A. In general adequate respiratory protection 4 should be available. 5 Q. Dry sweeping, you would agree, is something 6 with respect to asbestos that was pretty much taboo, 7 wasn't it? 8 MS. KYLE: Objection, form. 9 THE WITNESS: Pretty much taboo. I can 10 conceive of an instance where a dry sweeping could be 11 properly utilized, but in general, the material would 12 be wetted down or a vacuum would be used. 13 BY MR. CHANDLER: 14 Q. Yes, sir. Sir, you told us under direct 15 examination that you, when you got to Exxon, there was 16 a worker who was a very high executive, one of the top 17 management people in the refinery and he was dying, 18 and you were asked to go to the Tulane Medical Center 19 by Dr. Hanson, who was the medical director of the 20 Baton Rouge refinery at the time. Do you recall that? 21 A. Yes. 22 Q. And you recall that incident pretty well even 23 though it's 50-some years later, don't you? 24 A. In general, I recall it well. 25 Q. That very high executive, one of the top

Page 347 1 management people at the Baton Rouge refinery was 2 dying of mesothelioma back in, was it 1951, sir? 3 A. Yes. 4 Q. At that time you made the conclusion that 5 that worker, that very high executive's mesothelioma 6 was not caused by exposure to asbestos, right? 7 MS. KYLE: Objection, form. 8 THE WITNESS: Based on the information that I 9 had at that time, that was my conclusion, yes. 10 BY MR. CHANDLER: 11 Q. Based on the information you know today, sir, 12 do you believe that that very high executive's 13 mesothelioma was caused by exposure to asbestos at the 14 Baton Rouge refinery? 15 A. I don't recall his past work history, but it 16 is entirely likely that the mesothelioma was not 17 caused by exposure to asbestos in the Baton Rouge 18 refinery. 19 Q. Why do you say that? Tell me all the bases 20 for that opinion? 21 A. Well, very simply, at least one out of five, 22 20 percent mesotheliomas are not related to asbestos 23 exposure. 24 Q. But 80 percent of them are, in your opinion; 25 right?	Page 349 1 and you worked hard and you came up through the ranks 2 to the top; isn't that fair? 3 A. That's an ideal situation, isn't it. 4 Q. And that is what -- 5 A. Success story. 6 Q. That is what Exxon was in 1951. If you 7 wanted be a top executive of that company, you started 8 at the bottom, you worked your way up through the 9 ranks, you did a good job and you became an executive. 10 A. No. 11 Q. You don't agree with that? 12 A. No. 13 Q. Tell me why that is not true. 14 A. Most high executives had, were highly 15 educated, engineering backgrounds or other disciplines 16 and -- 17 Q. Do you remember what the work experience of 18 this, what you called a very high executive, one of 19 the top management people in the refinery was back in 20 1951? 21 A. I don't recall his work history at this time. 22 Q. It was not uncommon for management people to 23 go into the refineries and supervise the operations. 24 Was it, or did they stay behind a desk all the time? 25 You tell me.
Page 348 1 A. Well, those numbers vary somewhat, but up to 2 80 percent are. All right. 3 Q. So why are you taking the one out of five 4 instead of the four out of five in reaching your 5 assumption that a very high executive who worked at 6 the Baton Rouge refinery in 1951 had a mesothelioma 7 that was not caused by asbestos? 8 A. That was the conclusion I derived from my 9 investigation of what was known about the cause of 10 mesothelioma at that time. 11 Q. Yes, sir. But I mean looking back today, now 12 that you know everything you have in your history as 13 associate medical director of Exxon, even today you 14 are not going to admit that that very high executive 15 had an asbestos-related mesothelioma, are you? 16 MS. KYLE: Objection, form. 17 THE WITNESS: Today I would classify his 18 mesothelioma as idiopathic, unrelated to asbestos 19 exposure. 20 BY MR. CHANDLER: 21 Q. In 1951 how did you get to be a very high 22 executive in the Exxon refinery at Baton Rouge? 23 A. By recognized talent and ability. 24 Q. But Exxon in 1951, sir, was like a lot of 25 good American companies. You started at the bottom	Page 350 1 A. It's not uncommon. 2 Q. So even if you were a high very executive and 3 you were one of the top management people at Exxon, 4 you routinely toured the refinery, didn't you? 5 A. I did. 6 Q. And other executives, especially if they were 7 at the refineries, went around the refinery to look at 8 work, didn't they? 9 A. They did. 10 Q. Now, in 1951, is it more likely than not that 11 an executive would have worked his way up through the 12 ranks or that he would have got hired as an executive 13 at that time? What is more likely? 14 A. Not hired as an executive, but hired with a 15 rather extensive educational background. 16 Q. Yes, but the more likely scenario in 1951 is 17 that, let's say you had a college degree and you were 18 an engineer. The first thing you would do is you 19 would go out to the plant and you would work there. 20 You wouldn't immediately become a top management 21 person, would you? 22 MS. KYLE: Objection, form. 23 THE WITNESS: Not top management, no. He 24 would be a technical employee. 25 BY MR. CHANDLER:

Page 351 1 Q. And as a technical employee, when he would 2 have started with Exxon Company, you would agree that 3 he would have had to go out to the plant, and that is 4 where he really would have started, out in the plant, 5 not behind a desk in the office. 6 A. Well, let's agree that they had experience 7 out in the field, yes. 8 Q. Okay. And even though this top management 9 official would have had experience out in the field at 10 the Baton Rouge refinery, you are not going to admit 11 to this jury that his mesothelioma, even with 12 everything you know today, was an asbestos related, 13 are you? 14 MS. KYLE: Objection, form. 15 THE WITNESS: Please repeat the question. 16 BY MR. CHANDLER: 17 Q. Yes, sir. Even though management people back 18 in 1951 had experience in the field when they started 19 with the company, you are not going to admit to this 20 jury that that top executive, knowing everything you 21 know now, must have had an asbestos-related 22 mesothelioma, are you? 23 MS. KYLE: Objection, form. 24 THE WITNESS: I still don't understand the 25 question. You will have to rephrase it.	Page 353 1 Q. No, sir. My statement is correct, that is 2 part of the reason you are charging \$350 an hour 3 today, because they have hired you as an expert, as a 4 consultant in the field of occupational medicine. 5 A. Because of my professional qualifications. 6 Q. Yes, sir. And because of your professional 7 qualifications, you know that mesotheliomas, at least 8 80 percent of the time when we consider everything, 9 are caused by asbestos, in your opinion; right? 10 A. Up to 80 percent. 11 Q. Now, if you take out all the background 12 exposures, where nobody can find the asbestos 13 exposure, if you consider only asbestos exposed 14 individuals, is that short enough and clear enough? 15 We are looking at a cohort that is only asbestos 16 exposed individuals, okay. Do you understand the 17 parameters? 18 A. No, I don't understand, because it is not 19 clear. 20 Q. Yes, sir. Let me try to make it clear. 21 A. When you say asbestos exposed individuals, 22 you have to get into the concept of intensity and 23 dose. 24 Q. For purposes of my question, I want you to 25 assume that everybody in the cohort were people who
Page 352 1 BY MR. CHANDLER: 2 Q. Yes, sir, and I will rephrase it as many 3 times as we need to. You are not going to agree, no 4 matter what the plaintiffs in this case say, that that 5 top executive would have had asbestos exposure in the 6 Baton Rouge refinery that was a causative agent in his 7 mesothelioma, even today, knowing everything you know; 8 right? 9 MS. KYLE: Objection, form. 10 THE WITNESS: This is unanswerable. You are 11 asking me to speculate. 12 BY MR. CHANDLER: 13 Q. Well, sir, I will represent to you -- 14 A. Break it down into a couple of 15 straightforward questions and I will indeed try to 16 answer to the best of my ability. 17 Q. I will try. You know that the Exxon Company 18 has designated you as an expert in the field of 19 occupational medicine. You know that; right? 20 A. Yes. 21 Q. It's part of what you are charging \$350 an 22 hour today for, for that consulting work; right? 23 A. That is relevant. 24 Q. But it's right, isn't it? 25 A. I think I earn it.	Page 354 1 had whatever you consider to be enough exposure to 2 cause mesothelioma. 3 A. Good. 4 Q. All right. Now, in that cohort of asbestos 5 exposed individuals, what percentage of mesotheliomas 6 found in that cohort would be related to asbestos? 7 Would it still be only 80 percent or would it be 8 higher? 9 MS. KYLE: Objection. 10 THE WITNESS: It might be higher, but there 11 would still be individuals whose mesothelioma would 12 have occurred irrespective of the exposure to 13 asbestos. 14 BY MR. CHANDLER: 15 Q. Then among the asbestos exposed cohort, sir, 16 what would you put the percentage as, of mesotheliomas 17 caused by that asbestos exposure? 18 A. I don't know. 19 Q. But it's definitely higher than 80 percent? 20 A. It would be higher than 80 percent. It would 21 not be 100 percent. 22 Q. Okay. And you have no idea where in the 23 spectrum that falls, whether it's the 99, 98, 81 or 24 82? 25 MS. KYLE: Objection.

Page 355 1 THE WITNESS: Or lower; right. 2 BY MR. CHANDLER: 3 Q. For that we would need to speak to like an 4 epidemiologist, wouldn't you agree? 5 A. No. 6 Q. Who would know the answer then, if not an 7 epidemiologist? 8 A. It's unanswerable. 9 Q. You think it's unanswerable? 10 A. Yes. The epidemiologist cannot answer that 11 question. 12 Q. Okay. You are not an epidemiologist, are 13 you? 14 A. No. 15 Q. You don't have a Ph.D. in epidemiology? 16 A. No. 17 Q. You have a medical degree? 18 A. Yes. 19 Q. Have you ever worked for -- I know you were 20 in the Army for quite some time. We went over that a 21 lot in your direct examination, but have you ever 22 worked for the Public Health Service? 23 A. No. 24 Q. Have you ever worked for, since Exxon was 25 headquartered in New York, any New York public health	Page 357 1 occupational health? 2 A. No. 3 Q. Has anybody other than the industry ever 4 hired you as a consultant in occupational health? 5 A. No. 6 Q. The only people who have sought out your 7 knowledge in the field of occupational health and your 8 expertise have been members of industry, like Exxon 9 and other petroleum companies; is that fair? 10 A. The reason I'm hesitating, I'm trying to 11 think of instances where I was hired as a consultant 12 to address a particular problem, and if I could recall 13 them all, I probably have been hired as a consultant 14 to address a particular question by individuals or 15 bodies other than industry. 16 Q. Like who, you have, give me a specific 17 recollection of any time in a specific case anybody 18 other than a member of industry has hired you as a 19 consultant or an industry lawyer. 20 MS. KYLE: Objection, form. 21 BY MR. CHANDLER: 22 Q. If you have a specific recollection. 23 A. I was once asked by an individual in the 24 governmental organization of the state of Connecticut 25 to address a problem.
Page 356 1 service in that state? 2 A. Have I ever? 3 Q. Yes, sir. 4 A. No. 5 Q. Have you ever worked for any public health 6 organization or agency of any state? 7 A. No. 8 Q. All right. How about organizations like the 9 American Cancer Society? Have you ever worked for 10 them or done any work for them? 11 A. No. 12 Q. Has the Environmental Protection Agency ever 13 hired you as a consultant? 14 A. No. 15 Q. Has OSHA ever hired you as a consultant, the 16 Occupational Safety and Health Administration, as 17 opposed to just talking with you while you were with 18 the American Petroleum Institute. Have they ever 19 hired you as a consultant? 20 A. No. 21 Q. Has the Department of Justice ever hired you 22 as a consultant in the field of occupational health? 23 A. No. 24 Q. Has any governmental agency or non-profit 25 agency ever hired you as a consultant in the field of	Page 358 1 Q. What was the problem? 2 A. It related to a hydrocarbon. 3 Q. Did the State of Connecticut hire you as a 4 consultant, sir? 5 A. I was paid by a branch of the State of 6 Connecticut, to address a particular problem. 7 Q. What branch of the State of Connecticut? 8 A. I don't recall now. 9 Q. But it was about hydrocarbons, not asbestos? 10 A. Yes, hydrocarbon. 11 Q. Because hydrocarbons is overwhelmingly what 12 you spent your time on? 13 A. Absolutely. 14 Q. Other than that one instance, where somebody 15 from the State of Connecticut hired you to look into 16 hydrocarbons, can you think of any other time you have 17 been hired by somebody other than industry or an 18 industry lawyer? 19 A. Well, my consulting with the governmental 20 agencies was on a voluntary or invitation basis, but 21 not for, to be paid. 22 Q. While you were working for the American 23 Petroleum Institute; right? 24 A. Yes. 25 Q. So the work that you gave and consulted with

1 in the government, with the government was while you
2 were a member and while you were on the payroll of the
3 American Petroleum Institute?

4 A. Yes.

5 Q. Have you -- strike that. Since the last
6 deposition we have had, have you come across any of
7 these brochures that you talked about that you claim
8 were in the infirmaries at refineries of Exxon that
9 mention asbestos? Have you seen any of those?

10 A. I haven't seen any and I don't have them in
11 my files.

12 Q. I will represent to you that we have safety
13 manuals from Exxon that have survived over 50 years
14 with the company. Have you seen any of these
15 pamphlets about asbestos disease you claim were in the
16 infirmaries survive?

17 A. No, but I haven't seen safety manuals,
18 either. They could well survive, but I haven't, they
19 haven't come into my vision.

20 Q. Okay. No one from the Exxon Company has
21 produced to you any of these pamphlets you claim were
22 in the infirmaries at Exxon about asbestos disease?

23 A. No. I haven't requested any.

24 Q. And they haven't volunteered to show you
25 them, have they?

1 A. It was done within the industrial hygiene
2 laboratory, the counts were made.

3 Q. At Exxon?

4 A. Yes. I don't know if they had electron
5 microscopy, if they may have been sent out. There may
6 have been some sent out on an experimental basis or a
7 particular basis, but the ordinary routine counts were
8 done in the Baytown laboratory.

9 Q. So it was the Baytown Exxon industrial
10 hygienist who was doing the asbestos dust counts.
11 They weren't sending them out to a private
12 organization, a neutral third party; right?

13 A. Not on a routine basis.

14 Q. Do you think it would be a good idea for a
15 company to send samples out to a neutral third party
16 to say tell us what is here, so that everybody knows
17 we are not being biased in our counts? Would that be
18 a good idea?

19 A. I have confidence in the professional
20 abilities of the industrial hygienists and their
21 trained technologists, and so I think their experience
22 and knowhow in this business would be equal to or
23 better than they might be sent out.

24 MR. CHANDLER: Objection, non-responsive.

25 BY MR. CHANDLER:

1 A. True.

2 Q. Okay. Well, you know we are here speaking
3 about an asbestos disease case; right?

4 A. Indeed.

5 Q. And you never said to any of the Exxon
6 lawyers, hey, why don't you find some of those
7 pamphlets that were in the infirmaries about asbestos.
8 You never did that?

9 MS. KYLE: Objection, form.

10 THE WITNESS: I didn't say that.

11 BY MR. CHANDLER:

12 Q. Why not?

13 A. I didn't feel it was my responsibility to
14 request such things.

15 Q. Well, as a paid consultant earning \$350 an
16 hour, you understand that you can request information
17 from Exxon to form your opinions. You know that;
18 right?

19 MS. KYLE: Objection, form.

20 THE WITNESS: I don't understand.

21 BY MR. CHANDLER:

22 Q. Okay. That's fine. We will move on. Who
23 did the -- if there were asbestos dust samples being
24 done at Baytown, who counted them? Was it Exxon or
25 did they send it out?

1 Q. My question was different than that, sir. My
2 question is do you think it would be, and if you
3 disagree, just tell me. Do you think it would be a
4 good idea for a neutral third party to count asbestos
5 samples for Exxon, so that nobody could allege there
6 was any bias involved in the counts?

7 A. I don't know, that there may have been
8 circumstances where this in fact was done, but, again,
9 I come back to the point that I had confidence in the
10 professional abilities of the industrial hygiene staff
11 and accepted their data.

12 MR. CHANDLER: Objection, non-responsive
13 again, sir.

14 BY MR. CHANDLER:

15 Q. I'm not asking you whether it was done,
16 because I understand you don't know. I'm not asking
17 you about your confidence in the lab. The question is
18 much simpler than that. I'm trying to make it anyway.
19 Do you think it would be a good idea for a company
20 like Exxon to send out their dust monitoring data, so
21 that a neutral third party might do the counting, so
22 there could be no allegation that there was a bias in
23 the counting. Would that be a good idea or not, do
24 you think?

25 MS. KYLE: Objection, form.

1 Q. And you were not reporting occupational
2 cancers to the state of Louisiana, were you?
3 MS. KYLE: Objection, form.
4 THE WITNESS: I don't know the answer.
5 Whether the refinery was or not, I don't know.
6 BY MR. CHANDLER:
7 Q. You certainly --
8 A. Again, the question is occupational cancers,
9 not all cancers. The Kettering study was involved
10 with all cancers.
11 Q. Yes, sir. In 1958, your position at the
12 Baton Rouge facility was what?
13 A. Medical director.
14 Q. You were the medical director of the entire
15 plant, weren't you?
16 A. Yes.
17 Q. And you were not aware of anybody reporting
18 occupational cancers to state health departments, were
19 you?
20 A. I have no recollection of such knowledge.
21 Q. Well, if Exxon wasn't reporting cancers that
22 were occupationally related to state health
23 departments, you would agree that they couldn't
24 possibly report the kind of information Kettering was
25 looking for in 1958; is that fair?

1 A. No.
2 Q. Okay.
3 MS. KYLE: Objection, form.
4 BY MR. CHANDLER:
5 Q. What Kettering was looking for was
6 essentially the inclusion of items customarily
7 required for notification of occupational cancers to
8 state health departments. You agree that is what it
9 says; right?
10 A. Yes, that is what it says.
11 Q. And in 1958 as the medical director of what
12 was at the time the largest refinery in the world,
13 wasn't it?
14 A. Yes.
15 Q. You were not reporting occupational cancers
16 to the state of Louisiana?
17 A. That doesn't follow, that the refinery was
18 not reporting.
19 Q. But you as the medical director of the
20 refinery didn't know if they were, did you?
21 MS. KYLE: Objection, form.
22 THE WITNESS: I have no recollection at this
23 time what was required by the state of Texas in the
24 way of reporting.
25 BY MR. CHANDLER:

1 Q. Or the state of Louisiana, where you were?
2 A. Or Louisiana, excuse me. I don't know what
3 was required.
4 Q. Well, if, you were the guy, the head medical
5 doctor of the largest refinery in the world in 1958,
6 weren't you?
7 A. Yes.
8 Q. And you don't have any recollection of
9 occupational cancers being reported to the state of
10 Louisiana, do you?
11 A. I don't have recollection of the occurrence
12 of occupational cancers.
13 Q. And therefore you certainly weren't telling
14 the state of Louisiana you had any, did you?
15 A. If we had any and were required to do so, we
16 would have done, would have reported them.
17 MS. KYLE: Objection, form.
18 THE WITNESS: Most assuredly.
19 BY MR. CHANDLER:
20 Q. Is it your claim as you sit here today to the
21 ladies and gentlemen of this jury that in 1958, no
22 matter what type of cancer it was, lymphoma, leukemia,
23 whatever, you don't think in 1958 you had any of those
24 in Baton Rouge. Is that what you are saying?
25 MS. KYLE: Objection, form.

1 THE WITNESS: We had all tumors that occur,
2 you know, representative tumors that occur in a
3 population. Yes.
4 BY MR. CHANDLER:
5 Q. Okay. So you had all of these tumors in
6 Baton Rouge that occur in populations; right?
7 A. That occur naturally in populations.
8 Q. We are talking leukemia; correct?
9 A. Yes.
10 Q. Lung cancer; right?
11 A. Yes.
12 Q. But what you are saying is you made the
13 decision in 1958 none of those were occupationally
14 related; correct?
15 MS. KYLE: Objection, form.
16 THE WITNESS: There was no basis for
17 considering them occupationally related.
18 BY MR. CHANDLER:
19 Q. And therefore Exxon wouldn't have been
20 sending that information to the Kettering study,
21 because they were looking for occupationally related
22 cancers.
23 A. No, they used forms that were compatible with
24 those that the states use. Kettering was looking for
25 all tumors.

1 THE WITNESS: I see no need for that.
 2 BY MR. CHANDLER:
 3 Q. Okay. We agree that process -- we went
 4 through this earlier, but I need to come back to this
 5 for my next line of questioning. Maintenance workers
 6 versus process workers, we talked about that
 7 distinction; right?
 8 A. Yes.
 9 Q. We talked about the fact that process workers
 10 can be present while maintenance work is going on;
 11 right?
 12 A. Yes.
 13 Q. All right. If you will look at page, what is
 14 Exhibit 9 to your deposition, sir, that is what you
 15 have discussed with Ms. Kyle on direct examination.
 16 It is a letter dated 1966 from you to Mr. Dooley at
 17 Texaco, and it's dated April 6, 1966. Do you see
 18 that? It's Exhibit 9.
 19 A. What number?
 20 Q. Nine, sir.
 21 MS. KYLE: It's not in that book. I'm not
 22 sure I have got it.
 23 MR. CHANDLER: You can use my copy. The
 24 whole thing, right here.
 25 THE WITNESS: Thank you. I will return it.

1 BY MR. CHANDLER:
 2 Q. That's what you were discussing under direct
 3 examination. Is a letter from you to somebody at
 4 Texaco that essentially says we compared asbestos
 5 exposed individuals to non-asbestos exposed
 6 individuals and we don't see any excess of cancer. Is
 7 that a fair characterization of what you believe
 8 Exhibit 9 is, the letter dated 1966?
 9 A. Yes, within the limitation and constraints of
 10 this, what is reported here.
 11 Q. So what you did back in 1966 in order to
 12 determine whether you had an excess level of disease
 13 among employees was you took maintenance workers,
 14 right, and you compared them with process workers;
 15 right?
 16 A. Yes.
 17 Q. And one of the assumptions you made was that
 18 it was the maintenance workers who were the exposed
 19 populations and the process workers who were the
 20 unexposed populations; right?
 21 MS. KYLE: Objection, form.
 22 THE WITNESS: Only selected maintenance
 23 workers were considered to be exposed.
 24 BY MR. CHANDLER:
 25 Q. Okay. And then you compared those selected

1 maintenance workers with process workers that you
 2 considered the unexposed population; correct?
 3 A. Unexposed. That is correct, yes.
 4 Q. Now, you agree that in an epidemiologic study
 5 or any study the control group or the unexposed
 6 population, and in this case it was the process
 7 workers you considered to be the control group; right?
 8 A. Yes.
 9 Q. You agree that that control group should in
 10 fact be people who were not exposed to the substance
 11 you are trying to study in the exposed group, like
 12 maintenance workers?
 13 A. With reference to the dose, the amount of
 14 exposure, intensity and duration, the control workers
 15 are a proper control to be compared with the exposed,
 16 who had been defined by observation and judgment had
 17 been exposed. So this gets into what constitutes an
 18 exposure, and I will support the comparison that was
 19 made.
 20 MR. CHANDLER: Objection, non-responsive.
 21 BY MR. CHANDLER:
 22 Q. And you can support the comparison you made
 23 all you want, because I know Ms. Kyle is going to have
 24 more questions for you. You will have an opportunity.
 25 My question is different. It's just general. My

1 question is general at this point. We will get to the
 2 specifics. So you agree if you need to study, say,
 3 asbestos among exposed populations, if you are going
 4 to compare them to a control group, the control group
 5 should in fact be a group that is not being exposed to
 6 asbestos. That is basic; right?
 7 MS. KYLE: Objection, form.
 8 THE WITNESS: No.
 9 BY MR. CHANDLER:
 10 Q. You don't agree that the exposed group
 11 shouldn't be exposed to asbestos?
 12 A. Well, we are all exposed to asbestos, so it's
 13 all relative.
 14 Q. Do you believe the process workers at Exxon
 15 are exposed to asbestos the same way that a housewife
 16 or somebody who doesn't work in a refinery might be?
 17 A. Yes.
 18 Q. So that is the basic assumption that you were
 19 using in 1966. You assumed process workers were
 20 getting the same exposure as anybody else in the
 21 country, like a housewife or truck driver; right?
 22 A. Within the range of ambient exposures, yes.
 23 Q. Now, so if your assumption is wrong -- let me
 24 ask it this way. You agree that if the control group
 25 is being exposed to levels that are above the

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1 background levels of asbestos, if that is happening,
 2 then your conclusions are not going to be correct?
 3 A. I can't -- that is hypothetical. I can't
 4 assume that that is the case.
 5 Q. Well, let me ask you this then. If a control
 6 group is indeed exposed to asbestos above background
 7 level, then you are not going to get a fair comparison
 8 when you try to compare the exposed populations like
 9 maintenance workers to the process workers. Can you
 10 agree to that?
 11 A. No. That was not the case.
 12 Q. Okay. I know you are saying that was not the
 13 case. You believe that was not the case. That is not
 14 the point. The point of my question is, you agree
 15 that if the process workers are an exposed population
 16 above background level, they are not an appropriate
 17 control group to compare to maintenance workers,
 18 because you are going to get artificially inflated
 19 levels of cancer in the control group. Do you agree
 20 to that?
 21 A. That is again hypothetical.
 22 Q. But given the hypothetical, do you agree?
 23 A. It might be the case, but that was not the
 24 case here.
 25 BY MR. CHANDLER: All right. Objection as

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1 non-responsive to everything after, "That might be the
 2 case."
 3 BY MR. CHANDLER:
 4 Q. What you did in your letter in April, 1966
 5 was to compare maintenance workers with what you
 6 thought was an unexposed population, process workers;
 7 right?
 8 A. I did not use maintenance workers in a
 9 generic context.
 10 Q. You used specific maintenance workers you
 11 thought were exposed to asbestos, and you compared
 12 them to the people on the unit, like the operators who
 13 were running the unit; right?
 14 A. All right. Yes.
 15 Q. You did not compare the specific maintenance
 16 workers to people like office workers or to people who
 17 didn't work in the refineries at all. You didn't do
 18 that, did you?
 19 A. I did not do that.
 20 Q. You compared one maintenance worker who was a
 21 specific maintenance worker you believed worked with
 22 asbestos with another refinery worker whose job it was
 23 to stay on a unit, didn't you?
 24 MS. KYLE: Objection, form.
 25 THE WITNESS: I compared selected maintenance

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1 workers who were known to be exposed to asbestos with
 2 workers who were known not to be exposed to asbestos,
 3 within the occupational exposure context.
 4 BY MR. CHANDLER:
 5 Q. And that group that you thought was known not
 6 to be exposed to asbestos was the process workers, the
 7 people who ran the unit, who kept the pressure and the
 8 lines going?
 9 A. Yes.
 10 Q. Even though you admit at times they are
 11 present while maintenance work is going on; right?
 12 A. Yes.
 13 Q. Okay. If the process workers are being
 14 exposed to levels of asbestos above a housewife, they
 15 are going to have higher levels of asbestos disease,
 16 wouldn't you agree?
 17 A. Here we get into the threshold concept.
 18 Q. Yes, sir.
 19 A. And so that I don't necessarily agree with
 20 what your statement was.
 21 Q. Okay. Well, let me ask you this. If a
 22 process worker at Exxon's plant is exposed to more
 23 asbestos than just a guy who works in a supermarket,
 24 he is not an appropriate control group to compare to
 25 maintenance workers who you do believe are exposed to

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1 asbestos. Do you agree to that?
 2 A. We have very extensive evidence from multiple
 3 epidemiologic studies that the employees such as
 4 process workers do not have excess levels of diseases
 5 due to asbestos. There's a tremendous volume of
 6 evidence to establish this.
 7 MR. CHANDLER: Objection, non-responsive.
 8 BY MR. CHANDLER:
 9 Q. Sir, my question is much more basic than we
 10 are trying to make it and much less specific than you
 11 are trying to make it. You agree that if you include
 12 in the control group workers who were exposed to
 13 asbestos above background level, that is not an
 14 appropriate control group. Do you agree to that?
 15 A. No.
 16 Q. Okay. Good. Thank you. But there is no
 17 question in your mind in 1966 what you did was control
 18 specific maintenance workers with process workers who
 19 were guys whose job it was to stay on the unit, even
 20 though maintenance work may be done. You don't
 21 disagree with that?
 22 MS. KYLE: Objection to form.
 23 THE WITNESS: I agree with that. Yes.
 24 Q. We have 3 minutes; 2-1/2 left on the tape
 25 now. You can change it. We have again going. Well,

Page 371 1 45 minutes. You tell me what you want to do. We will 2 keep going if you want to. 3 MS. KYLE: He's going to change it? 4 MR. CHANDLER: Yes. 5 THE VIDEOGRAPHER: Going off the record. The 6 time is 12:07. This marks the end of videotape number 7 1, volume 2 of the deposition of Dr. Neill Weaver. 8 (Recess) 9 THE VIDEOGRAPHER: This marks the beginning 10 of videotape number 2 of volume 2 in the deposition of 11 Dr. Neill Weaver. We are going back on the record. 12 The time is 12:19. 13 BY MR. CHANDLER: 14 Q. Dr. Weaver, I want to direct your attention 15 to Exhibit 10 now from your deposition that was 16 discussed with you by the Exxon lawyer the last time 17 we met here. And it is a cohort study entitled, 18 "Chronic Pulmonary Disease in Industrial Populations," 19 that you did with another doctor. Do you remember 20 that study? 21 A. I do. 22 Q. What year was that done, by the way? 1960, 23 wasn't it? 24 A. Is that the date of the report? 25 Q. Yes, sir.	Page 373 1 they be? 2 A. Sales, bulk sales, in some case retail sales. 3 Q. So the marketing employees you looked at 4 aren't people who work in the refinery, are they? 5 A. No. 6 Q. And you go on to say that, "Diagnoses 7 selected for study were restricted to the following: 8 Number 1, bronchiectasis, A; B, bronchitis, C, asthma, 9 and D, emphysema, pulmonary fibrosis and cystic 10 disease of the lung." Did I read that correctly? 11 A. Yes. 12 Q. The next sentence, "Pulmonary tuberculosis 13 and cancer of the lung were excluded;" right? 14 A. Yes. 15 Q. You specifically excluded cancer of the lung 16 in your study of 1960, entitled, "Chronic Pulmonary 17 Disease in Industrial Population," didn't you? 18 A. Yes. 19 Q. All right. Why did you do that? 20 A. Because cancer is not a chronic pulmonary 21 disease. 22 Q. You were only looking for diseases that take 23 a lot of years; is that right? 24 MS. KYLE: Objection to form. 25 BY MR. CHANDLER:
Page 372 1 A. Yes, it was done in the two, three years 2 prior to 1960. Two years prior to 1960. 3 Q. In the report entitled, "Chronic Pulmonary 4 Disease in Industrial Population," did you look for 5 specifically asbestos-related diseases in that report? 6 A. We did. 7 Q. Okay. I want to talk to you about some of 8 the results in that study. I want to talk to you 9 about the first page, because I want to talk to you 10 about what you looked for in the study. On the first 11 page of the report, that is 381, sir. 12 A. Thank you. 13 Q. It's the paragraph marked, "Method of Study." 14 You say and Dr. Thorpe says -- by the way, was 15 Dr. Thorpe an Exxon doctor? 16 A. Yes. 17 Q. Okay. So this is a report done by two Exxon 18 physicians; right? 19 A. Yes. 20 Q. No independent, outside third parties here? 21 A. Yes. 22 Q. Okay. The study, you and Dr. Thorpe write 23 that "The study population totaled 23,142 males 24 engaged in refining and marketing petroleum." Who are 25 marketing employees? That is my question. Who would	Page 374 1 Q. A lot of years to develop? 2 A. Chronic. 3 Q. Chronic. Is that your definition of chronic 4 disease? 5 A. Yes. Yes. In contrast to acute, which is 6 something happening very quickly, chronic occurs over 7 a period of years. 8 Q. You understand that -- so the only asbestos 9 disease you were looking for was, would have been 10 asbestosis; right? 11 A. Yes. 12 Q. So you understand that asbestosis has a very 13 significant latency period; right? 14 A. Yes. 15 Q. What is the average latency period of 16 asbestosis? 17 A. It depends on the exposure time. In severe 18 exposures of the textile industry, it may take seven, 19 eight, nine, 10 years. In other occupations where the 20 exposure is less, the latent period would 21 correspondingly be longer. 22 Q. Let me ask re-ask the question this way then. 23 Among workers like insulators or pipefitters or 24 somebody like that, what do you understand the latency 25 period to be among, for the disease asbestosis?

1 A. Well, again, it would depend on the exposure.
2 As we would expect in refineries, the exposure, we
3 don't expect to find this disease.

4 Q. What is the average latency period among
5 asbestos exposed individuals, like insulators, for
6 example, we will use them.

7 A. Insulators where?

8 Q. Wherever you want -- let's say Dr. Selikoff's
9 study of 1964. What was the average latency period he
10 found?

11 A. I don't recall in his specific study, but let
12 me answer it this way. In the exposures of severe
13 nature in confined spaces in shipbuilding, the latency
14 period could be as short as five, six, seven, 10
15 years. In Dr. Selikoff's cohort, where the exposure
16 included shipbuilding, but also some refinery work and
17 other industry exposures, we would expect the latency
18 period to be longer.

19 Q. Is it fair to say then, just on average, if
20 we consider the extremes on both ends, that the
21 average latency period for asbestos diseases is
22 somewhere in the range of 20 to 30 years?

23 A. I would accept that.

24 Q. Okay. Now, the study that you looked at,
25 "Chronic Pulmonary Diseases in Industrial Population,"

1 products processes. Those would be the guys who,
2 well, were the guys on the unit that we have already
3 been discussing?

4 A. Yes.

5 Q. And you included the guys who were the same
6 process people, but on the chemical plant side, as
7 opposed to the petroleum side; right?

8 A. Yes.

9 Q. And you included metal trades; right?

10 A. Yes.

11 Q. Finally you included, or firstly, however you
12 want to say it, you included the dusty trades workers?

13 A. Yes.

14 Q. Now, the level of disease among which trade
15 for chronic pulmonary diseases -- let me re-ask the
16 question. We trade had the highest level of chronic
17 pulmonary disease in an industrial population, in your
18 study in 1960?

19 A. The dusty trades group, which included
20 insulators, brick masons, sand blasters.

21 Q. Yes, sir, it did. So when you isolate just
22 the people like insulators, even insulators in a
23 refinery, they had the highest level of chronic
24 pulmonary disease?

25 A. They were in the group that had the highest

1 did not just include workers of dusty trades in the
2 petroleum industry; right?

3 A. No.

4 MS. KYLE: Objection to form.

5 BY MR. CHANDLER:

6 Q. It included people who worked in offices,
7 didn't it?

8 A. Yes.

9 Q. It included people who were outdoor salesmen,
10 didn't it?

11 A. Yes.

12 Q. It included people who were in other
13 mechanical groups, according to page 382. Do you know
14 what "other mechanical groups" would have included?

15 A. I would have to read the context to get that
16 context, but, well, it could have been meter readers
17 in the refinery, things like that, technologists,
18 technicians.

19 Q. I see. Okay. I will accept that definition.
20 Meter readers. So you included meter readers in your
21 study?

22 A. Uh-huh.

23 Q. Yes?

24 A. Yes.

25 Q. Okay. And you included the petroleum

1 level of chronic, of emphysema and fibrosis.

2 Q. Now, we discussed earlier petroleum process
3 workers that you compared in your first letter to
4 Texaco. You said I'm comparing process workers to
5 maintenance workers. Do you remember that?

6 A. Yes.

7 Q. In your study, you found a higher level of
8 chronic pulmonary diseases among process workers than
9 you did for people like administrative or clerical
10 workers; right?

11 A. Yes.

12 Q. There's something going on among process
13 workers, according to your study in 1960, that made
14 them have over twice the level of chronic pulmonary
15 disease than did administrative or clerical workers.
16 Something was going on there, right?

17 MS. KYLE: Objection, form.

18 THE WITNESS: That was the finding.

19 BY MR. CHANDLER:

20 Q. What was that something that was going on.
21 Do you know?

22 A. Exposure to irritating dust.

23 Q. Exactly. Process workers were getting more
24 exposure to irritating dust than office workers,
25 weren't they?

1 A. Yes.
 2 Q. In fact, process workers were getting
 3 exposure to irritating dust, causing twice the level
 4 of chronic pulmonary diseases, over twice the level of
 5 chronic pulmonary diseases, than was being experienced
 6 by administrative or clerical workers; correct?
 7 A. Yes, and, again, the distinction is that the
 8 process workers were out in the field, whereas the
 9 office workers were in air conditioned, filtered air.
 10 Q. Exactly. People out in the field, even
 11 process workers, were getting exposure to chronic,
 12 irritating pulmonary dust.
 13 A. Yes. It showed remarkable sensitivity in
 14 this study.
 15 Q. Okay. In fact, one of the things you learned
 16 in your study was that as people got older, they got
 17 more chronic pulmonary disease?
 18 A. Yes.
 19 Q. That is consistent with latency. It's
 20 consistent with just getting older, you get more
 21 disease; right?
 22 A. Yes.
 23 Q. Is it also consistent with a latent effect?
 24 A. Yes.
 25 Q. All right. So as you saw a latent period

1 reported, accurately reported.
 2 Q. Yes, sir, but since you can't get an accurate
 3 judgment about people, of up to 20 percent of the
 4 people you included in your study, about those
 5 people's work environment, do you consider that to be
 6 high?
 7 A. Again, the study speaks for itself. We found
 8 remarkable correlation, unexpected, remarkable
 9 correlation, when was this, 1960, with respect to
 10 potential exposure to dust. It was some 10, 15 years
 11 later that the Environmental Protection Agency began
 12 to pay attention to the possible deleterious effects
 13 of breathing "dust." "Dust" in quotation marks.
 14 MR. CHANDLER: Objection, non-responsive.
 15 Read back the answer -- never mind. I will just do it
 16 later.
 17 BY MR. CHANDLER:
 18 Q. All right. So the ladies and gentlemen are
 19 perfectly clear about the study you did in 1960 that
 20 the Exxon lawyer went over with you, there is no
 21 question in your mind that one out of every five of
 22 the workers, you could not tell anybody who read this
 23 study what their work environment was like, but you
 24 included them in your study anyway?
 25 A. Which is entirely proper for a concurrent

1 increase in 1960, you saw more chronic pulmonary
 2 disease?
 3 A. Chronic pulmonary disease, yes.
 4 Q. Yes, sir. Now, in the study that you did in
 5 1960 that you discussed with the Exxon lawyer on
 6 direct examination, it is true that about 20 percent
 7 of the cases in that study had data that were
 8 inadequate to make any judgment about their work
 9 environment at all; isn't that right?
 10 A. As best I can recall.
 11 Q. 20 percent of the people you couldn't even
 12 tell us what their work environment was like in that
 13 study in 1960, could you?
 14 A. As best I can recall.
 15 Q. Is that a significant number in your mind, 20
 16 percent of the workers being unable to tell anything
 17 about their work environment?
 18 A. The publication speaks for itself.
 19 Q. Yes, sir. Is 20 percent of the work
 20 environment for which you could not make any judgment
 21 about their work environment, is that a high rate in
 22 your mind?
 23 A. Again, the publication speaks for itself.
 24 This is an observational study, concurrent
 25 observational study, and that is how the data are

1 observational study. And again, the study speaks for
 2 itself with the quite surprising and remarkable
 3 correlations that we report.
 4 MR. CHANDLER: Objection, non-responsive.
 5 BY MR. CHANDLER:
 6 Q. Is that Exhibit 10? Yes, it is. I have my
 7 exhibits out of order, that's why. All right. The
 8 next study that the Exxon lawyer went over with you
 9 under direct examination was Exhibit 11, and it's
 10 entitled "An Epidemiological Study of Cancer Among
 11 Employees in the American Petroleum Industry," and is
 12 dated March, 1958; is that right?
 13 A. Yes.
 14 Q. Now this study was paid for by the American
 15 petroleum industry, wasn't it?
 16 A. Yes.
 17 Q. And it was not for publication at the time it
 18 was done, wasn't it?
 19 A. I believe that is correct.
 20 Q. It is not a publication that was put forth in
 21 the medical and scientific literature, was it?
 22 A. The report was not published in a journal.
 23 The report was archived in the library of the American
 24 Petroleum Institute, where it was available to anyone
 25 who wanted to see it.

Page 383 1 Q. Yes, sir, but -- 2 A. It was released extensively throughout the 3 petroleum industry, to all the participating companies 4 and reported widespread throughout the whole petroleum 5 industry, which is rather broad. 6 Q. I don't doubt that the people who paid for 7 the study got to see it. I'm not disputing that. 8 Those people you talked about as being "participating 9 companies" paid for the study; right? 10 A. Yes. 11 Q. So they got to see it. 12 A. Yes. 13 Q. That's normal? 14 A. Sure. 15 Q. But what did not happen with this 16 epidemiologic study that you talked about with the 17 Exxon lawyers is it did not go to any medical or 18 scientific journal to be subject to peer review by 19 reviewers of the study for publication in the 20 widespread medical or scientific literature, did it? 21 A. Yes, because that was not an objective of 22 this preliminary groundbreaking study. 23 MR. CHANDLER: Okay. Objection as 24 non-responsive to everything after, "Yes." 25 BY MR. CHANDLER:	Page 385 1 circumstances, Dr. Weaver. Whatever the details and 2 circumstances are, we can agree that the Kettering 3 Laboratory terminated the study back in 1958 because 4 they weren't getting the data they needed; right? 5 A. I don't know that that is right. 6 Q. Okay. Well, let's look at it and tell the 7 ladies and gentlemen of the jury. The Kettering 8 Laboratory did rely on the member companies, the 9 petroleum member companies for the data; right? 10 A. Yes. 11 Q. They got their data from people like Exxon, 12 Texaco. That is where they were getting it? 13 A. Yes. 14 Q. Kettering Laboratory people didn't go to 15 Exxon and look through Exxon files. The reality is 16 people like Exxon or any other company sent to the 17 Kettering Laboratory the information? 18 A. Yes. I'm sure the Kettering Laboratory 19 people did in fact inspect and study the corporate 20 files, medical files. 21 Q. But it's Exxon who sent Kettering Laboratory 22 the information, and all of the other participating 23 companies? 24 A. The industry was the source of the 25 information.
Page 384 1 Q. You considered -- well, let me ask you this. 2 What you consider a "groundbreaking study" was a study 3 that was terminated because industry didn't fully 4 cooperate with the Kettering Laboratory, isn't that 5 true? 6 MS. KYLE: Objection, form. 7 THE WITNESS: The study was terminated 8 because the practicality or feasibility led the 9 industry to stop participating. 10 BY MR. CHANDLER: 11 Q. Industry failed to cooperate with the 12 Kettering Laboratory, and therefore the Kettering 13 Laboratory terminated the study of cancer among 14 employees in the American petroleum industry back in 15 March of 1958. Is that fair or true? 16 MS. KYLE: Objection, form. 17 THE WITNESS: I don't know the detailed 18 circumstances that led to the termination of the 19 study. I know that the effort required was beyond 20 what the companies could carry out. 21 MR. CHANDLER: Okay. Objection, 22 non-responsive, to everything after "the detailed 23 circumstances." 24 BY MR. CHANDLER: 25 Q. Let's talk about the details and	Page 386 1 Q. Right. Now, let's look at what the summary 2 and conclusions were, and it's the fourth page of the 3 Kettering Laboratory study, which was terminated in 4 1958. He needs a copy, Glenna. It's Exhibit 11, sir. 5 MS. KYLE: I don't have it by that number, is 6 the problem. 7 MR. CHANDLER: There it is. 8 THE WITNESS: Thank you. What page? 9 BY MR. CHANDLER: 10 Q. Well, it doesn't have page numbers on mine. 11 It's the fourth page, sir, marked, Summary and 12 conclusions." There you go, yes, sir. 13 A. All right. 14 Q. Now, the real purpose of the study that was 15 undertaken was for detecting the presence of 16 carcinogenic substances in the petroleum products. 17 That is what the companies were making; right? 18 A. Yes. To see if it was feasible to find 19 evidence of deleterious effects from the products of 20 the industry. 21 Q. The purpose of the Kettering Laboratory study 22 that was sponsored by the American petroleum industry 23 and its members in March of 1958 was not to look at 24 asbestos-related diseases, was it? 25 A. True.

Page 387 1 Q. In fact, it was only to look at diseases in 2 the things that y'all at Exxon and companies like you 3 were actually making? 4 A. Yes. 5 Q. And although Exxon did make at least one 6 specific asbestos-containing product, of which we have 7 discussed, the vast majority of its products did not 8 contain asbestos; right? 9 A. Yes. 10 Q. Now, at the bottom of the summary and 11 conclusions page, it was acknowledged back in 1958 in 12 the middle of the last paragraph, "The reports 13 received were not only few, but there was very 14 definite bias in their selection." Do you see where 15 that is written? 16 A. Yes. 17 Q. Did I read that sentence correctly? 18 A. Yes. 19 Q. So what we were being told by this study that 20 you consider groundbreaking back in 1958 was, number 21 1, they were getting very few data from the member 22 companies; right? 23 A. They got lots of data, but of course the 24 investigators always wanted more. 25 Q. And they wrote that they considered they were	Page 389 1 BY MR. CHANDLER: 2 Q. Why is it important not to consider data that 3 have a "very definite bias in their selection." Why 4 would it be important not to consider that data? 5 MS. KYLE: Objection form. 6 THE WITNESS: You are aware of the limitation 7 and as they very clearly stated, you are aware of the 8 limitations, but they nonetheless chose to go ahead 9 and see what analysis could be made. 10 BY MR. CHANDLER: 11 Q. Why did the member companies make selections 12 that had a "very definite bias" in their selection, 13 sir? 14 A. Because the medical departments had different 15 records. They had no standardized medical record 16 within the company, within the different corporations. 17 Q. One of the desirable objectives of the study 18 that they tried to figure out in 1958 before 19 terminating it was the following: Number 1, "To 20 ascertain the incidence and prevalence rates of 21 neoplastic disease in the employee population of the 22 various participating petroleum companies." If you go 23 to, flip, sir, five more pages for me. That is where 24 I read that from. Let's start over on the tape. Five 25 more pages.
Page 388 1 getting only few data, right? That is what they 2 called it. They called it few data. 3 A. All right. Uh-huh. 4 Q. Correct? 5 A. All right. Uh-huh. 6 Q. And they also acknowledged what they were 7 getting from the member companies had a "very definite 8 bias in their selection." That is what they 9 acknowledge in the report. 10 A. Yes. That bias was based upon the variation 11 between the companies in the information submitted. 12 Q. They couldn't trust what was coming from the 13 companies, that is the point, because all of the data 14 varied so widely among the member companies. 15 MS. KYLE: Objection, form. 16 BY MR. CHANDLER: 17 Q. Right? 18 A. I have forgotten the starting of your 19 statement or question. 20 (The record was read as requested) 21 THE WITNESS: I don't think the sentence 22 really makes sense. They trusted the data that they 23 got. They wanted more data and they would like to 24 have had more equal submissions from the different 25 companies.	Page 390 1 A. It's under planning and development? 2 Q. No, sir, one more page. 3 A. One more page. 4 Q. It starts, the paragraph I think, try one 5 more. There's it is. It starts where it reads, sir, 6 "After careful consideration," do you see that? 7 A. Yes. 8 Q. Okay. Let me re-ask the question. 9 A. All right. 10 Q. One of the objectives, at least the certain 11 desirable objectives of the 1958 study sponsored by 12 the American petroleum industry was, "To ascertain the 13 incidence and prevalence rates of neoplastic disease 14 in the employee population of the various 15 participating petroleum companies." Do you see that? 16 A. Yes. 17 Q. That's a desirable objective, you would 18 agree? 19 A. It's desirable. 20 Q. Yes, sir. Were there some petroleum 21 companies in the American petroleum industry who chose 22 not to participate in this study? 23 A. I would assume that is the case. There's 300 24 different companies in the industry. 25 Q. Well, you would agree that if a company

Page 391 1 chooses not to participate in a study -- let me re-ask 2 the question. Strike that. 3 Do you know the reason those companies chose 4 not to participate in a study of cancer among their 5 employees? Do you know why those companies might not 6 have wanted to participate in a cancer study? 7 MS. KYLE: Objection to form. 8 THE WITNESS: Well, it might be because they 9 have no medical department. 10 BY MR. CHANDLER: 11 Q. Okay. Any other reason a company might 12 consider I don't want to be involved in a study of 13 cancer among my employees. Do you know? 14 A. I think if you look at it on the other hand, 15 quite a number of companies did want to be involved in 16 a study of cancer in the industry. 17 Q. So many companies wanted to be involved that 18 the study actually had to be stopped because they were 19 getting such few data, though. That's true, isn't it? 20 A. Well, you can look at the amount of data they 21 did have. They had a large number of reports of 22 cancers in the industry. A very large number. In 23 fact sufficient number to make, carry out analyses. 24 Q. But even though they were getting what you 25 characterize as very large numbers of reports of	Page 393 1 THE WITNESS: And Kettering was in a position 2 to go ahead and conduct analyses. 3 BY MR. CHANDLER: 4 Q. And we will talk about the analysis Kettering 5 Laboratory did, sir, and what it really means, but I 6 will object to non-responsive after, "That was part of 7 the problem." 8 Sir, in 1958, did the Exxon Company have to 9 report to state health departments -- let me re-ask 10 the question. In 1958 was Exxon required to report 11 cancer among its employees to state health 12 departments? 13 A. I'm sure they were not. 14 Q. They were not? 15 A. No. 16 Q. Okay. Would you flip a couple more pages, 17 sir. Three more pages in the study. I wish they were 18 numbered, but mine are not. It's one more, sir. Yes, 19 sir. Right there. On Kettering's laboratory report, 20 it states -- You just tell the ladies and gentlemen 21 whether I read it correctly. "With this limited 22 authorization, clinical and occupational history 23 record forms were devised based essentially upon the 24 format and the inclusion of items customarily required 25 for notification of occupational cancers to state
Page 392 1 cancer in the industry, they still said we are not 2 getting enough data. We can't do an adequate study. 3 We are going to terminate it. That is a true 4 statement, isn't it? 5 A. The termination was not entirely by 6 Kettering. The termination was by agreement between 7 Kettering and the committee representing the industry. 8 Q. Exactly. The American petroleum industry 9 said stop this study, as well; didn't they? 10 MS. KYLE: Objection, form. 11 THE WITNESS: No. 12 BY MR. CHANDLER: 13 Q. The American petroleum industry participated 14 in the decision to terminate the Kettering study, 15 didn't they? 16 A. Because of lack of feasibility. 17 Q. And the feasibility you claim there was a 18 lack of is they weren't getting the data they needed 19 from the member companies, were they? 20 A. That was part of the problem. 21 Q. Yes, sir. 22 A. On the other hand, they also had a large 23 quantity of data that had been reported. 24 Q. Yes, sir. 25 MR. CHANDLER: Objection, non-responsive.	Page 394 1 health departments." Did I read that correctly? 2 A. I don't see where that is. I'm sorry. 3 Q. Very top of the page, sir. 4 A. Oh, yes. Now. 5 Q. I will read it again. The Kettering 6 Laboratory wrote in 1958, "With this limited 7 authorization, clinical and occupational history 8 record forms were devised based essentially upon the 9 format and the inclusion of items customarily required 10 for notification of occupational cancers to state 11 health departments." Did I read that correctly? 12 A. Yes. 13 Q. Yet it's your claim in 1958 Exxon wasn't even 14 required to report occupational cancers to state 15 health departments, were they? 16 MS. KYLE: Objection, form. 17 THE WITNESS: I was not aware that Exxon was 18 required to report occupational, to report cancers, 19 occupational cancers to state health departments. 20 BY MR. CHANDLER: 21 Q. Where were you working in 1958, sir? 22 A. At the Baton Rouge refinery. 23 Q. You were one of the doctors at a major 24 refinery in 1958; right? 25 A. Yes.

Page 399 1 Q. They were looking for inclusion of items 2 customarily required for notification of occupational 3 cancers to state health departments, right? 4 MS. KYLE: Objection, form. 5 THE WITNESS: This is related to the form 6 that was devised for reporting, but Kettering was 7 looking for a complete reporting of all cancers that 8 were diagnosed, occupational or non-occupational. 9 BY MR. CHANDLER: 10 Q. And as the medical detector of the largest 11 refinery in the entire world in 1958, you have no idea 12 what the state of Louisiana's requirements were at 13 that time for reporting of occupational -- 14 A. I don't recall at this time. 15 Q. Okay. How many different refinery -- no, let 16 me ask you this. How many different members were 17 there in the American petroleum industry in 1958, 18 approximately? 19 A. I don't know, but a few hundred. 20 Q. A few hundred. Okay. Would you turn the 21 page for me, sir. This is the next page. There were 22 a few hundred members in the American petroleum 23 industry in 1958, but by Kettering's own statements, 24 only 13 companies had forwarded records, right, on the 25 top of the page, the second sentence.	Page 401 1 page, because we are increasing the level of 2 participation by three years later, 1955, 1,800 3 reports had been received from 16 companies. We are 4 still a very low percentage of participating 5 companies, aren't we? 6 A. Yes, a low percentage of the total. We don't 7 know what percentage that would be of those with 8 medical departments and records that would permit them 9 to report. 10 Q. Now, didn't the Kettering Laboratory inform 11 the American petroleum industry that, "In order to get 12 a sufficiently large group of cases, a much longer 13 collection period would be required" than was actually 14 being done in this study in 1958. And that is at the 15 bottom of that page. Do you see that? 16 A. Yes. That was a problem encountered. 17 Q. So, now look at the next page. I want to ask 18 you if I'm reading this correctly. This is a 19 groundbreaking study, as you told the Exxon lawyer in 20 direct examination; right? 21 A. Yes. 22 Q. "Late in April, 1956 the medical advisory 23 committee, upon the recommendation of the subcommittee 24 of carcinogenicity, decided to terminate the 25 epidemiological investigations as of July 1, 1956.
Page 400 1 A. Somehow I'm not finding it, but I'm not 2 questioning it. 3 Q. It's the second sentence, I will read the 4 entire top of the page. "The historical and current 5 case records came in slowly. By March of 1952, 900 6 records had been forwarded from 13 companies." At 7 least by that time. 8 A. Yes, okay. 9 Q. Now there were a couple of hundred members of 10 the American petroleum industry by that year, weren't 11 there? 12 A. All together, yes. 13 Q. A very, very tiny percentage of companies 14 even chose to participate in this study, didn't they? 15 MS. KYLE: Objection, form. 16 THE WITNESS: Yes and very few companies had 17 medical departments or medical records -- 18 MR. CHANDLER: Okay. Objection, 19 non-responsive. 20 THE WITNESS: -- that would enable them to 21 participate. 22 MR. CHANDLER: Objection, non-responsive, to 23 everything after "Yes." 24 BY MR. CHANDLER: 25 Q. All right. Now, look at the top of the next	Page 402 1 The justification for this action stemmed essentially 2 from the failure of the medical advisory committee to 3 secure complete cooperation and greater participation 4 in the reporting of cases. Since the sample would be 5 limited both in number and kind and the results 6 forthcoming would be of doubtful validity, the 7 committee was unwilling to support the longer study 8 period required to overcome the reporting deficit. 9 Inasmuch as the occupational coding and transference 10 to cards could not be completed in the two remaining 11 months, it seemed wise to stop all work immediately 12 and reassign the statistical staff to other ongoing 13 projects of the Kettering Laboratory." Did I read 14 that correctly? 15 A. You did. 16 Q. In 1958, the Kettering Laboratory was telling 17 the American petroleum industry that the results 18 forthcoming would be of doubtful validity, weren't 19 they? 20 A. That is what is stated, yes. 21 Q. And in fact, on the next page, the Kettering 22 Laboratory tells the advisory committee of the 23 American Petroleum Institute, "It was recognized that 24 these comparisons would not be satisfactory and that 25 little reliance could be placed on the findings." Did

Page 403 1 I read that correctly? 2 A. You did. 3 Q. Finally the next page, the third piece of 4 advice the Kettering Laboratory was giving. Tell the 5 ladies and gentlemen of the jury whether I read this 6 correctly. "The relative short period of collection 7 and the admittedly small sample of the cases and 8 deaths which occurred during this period also limited 9 seriously the number of comparisons that could be 10 readily made." Did I read that correctly? 11 A. You did. 12 Q. No less than three times -- go to the next 13 page. We have another one. The last sentence of the 14 fourth paragraph. "The inadequacies of reporting are 15 quite apparent, even with only a superficial study of 16 table 1 of the appendix 2." Did I read that 17 correctly? 18 A. Yes. 19 Q. That is four different times so far that the 20 inadequacies of this study are being reported to the 21 American Petroleum Institute. So far we have four; 22 right? 23 A. Yes. 24 Q. Okay. The conclusion of the American 25 petroleum -- the conclusion of the Kettering	Page 405 1 BY MR. CHANDLER: 2 Q. At the time it was done, you got a copy? 3 A. I'm sorry. 4 Q. You got a copy of the study? 5 A. The report, you are speaking of. 6 Q. Yes, sir, this report. 7 A. Yes. 8 Q. It was kept in the files of the Exxon 9 Company? 10 A. Yes. 11 Q. It was kept as part of the normal business 12 operations of Exxon; right? 13 A. Well, I wouldn't relate this to business 14 operations, no. 15 Q. It was kept in the normal course of your job? 16 A. This report was made available to the medical 17 director of Exxon Corporation. 18 Q. And was kept in your files? 19 A. No. It did not come to me. 20 Q. I'm sorry. Whose files was it kept in? 21 A. The medical director. 22 Q. Of Exxon? 23 A. Yes. 24 Q. Thank you. 25 A. It may have come to me at a later date, but
Page 404 1 Laboratory was that, "At best, therefore, one will 2 believe that less than half of the cases were reported 3 to their researchers." Would you agree with that? 4 A. If that is what it says, yes. 5 Q. Okay. Let's go to another criticism in the 6 Kettering Laboratory study, and it's on the page with 7 the title, "Occupational History" at the top, sir. 8 A. Yes. 9 Q. And it's the second paragraph. Let the 10 ladies and gentlemen of the jury know whether I read 11 this correctly. "The answers received proved most 12 troublesome, both in coding and in the preparation of 13 work tables. As can be seen in the accompanying 14 case" -- let me restart. 15 "The answers received proved most troublesome 16 both in coding and in the preparation of work tables. 17 As can be seen in the accompanying summary, table 1, a 18 fairly sizable proportion, 35 percent of the cases, 19 could not be categorized, even with the use of very 20 broad occupational groupings." Did I read that 21 correctly? 22 A. You did. 23 Q. By the way, this study was given to the Exxon 24 Company, right? 25 MS. KYLE: Objection, form.	Page 406 1 this report did not come to me at the Baton Rouge 2 refinery. 3 Q. Okay. Look on what is marked page 21, sir, 4 at the top. It's one of the few pages with the actual 5 page number on it. 21. It's a second paragraph, 6 under, "Primary site," and these are primary sites of 7 all cancers; right? 8 A. Yes. 9 Q. It states, "It will be noted that the 10 proportion of tumors of the digestive system and 11 peritoneum having their onset among males prior to 12 1950 was much larger than that found in the United 13 States as a whole and among the current cases reported 14 after 1950;" right? 15 A. Yes. 16 Q. Now, you understand that in 1964 Dr. Selikoff 17 did find an excess incidence of the cancer of the 18 digestive system and the peritoneum, specifically 19 peritoneal mesothelioma, among insulation workers, 20 didn't he? 21 A. That was reported in a preliminary way by 22 Dr. Selikoff. 23 Q. And it's not -- okay. Sir, under table 3, if 24 you will go to table 3 of the study. Do you see that? 25 A. Yes.

Page 407 1 Q. If we look at the different breakdowns in 2 age, what table 3 does for the ladies and gentlemen of 3 the jury, is breaks down disease by the age of the 4 participants; right? 5 A. Yes. 6 Q. And what you are seeing among the cancers of 7 the digestive system and the respiratory system are 8 that the older the person gets, the more cancer you 9 are finding; right? 10 A. Yes. 11 Q. That is consistent with a latent effect in 12 cancer. That is what happens with cancer. There's a 13 latent effect between exposure and development of the 14 cancer, isn't there? 15 MS. KYLE: Objection. 16 THE WITNESS: No, that isn't due to latent 17 effect. That is the way cancers are distributed by 18 age. It's not latency. 19 BY MR. CHANDLER: 20 Q. It is true that in occupational cancers -- 21 A. In occupational cancers, yes. 22 Q. -- in occupational cancers, there is a 23 significant latent effect; right? 24 A. Of course, this study deals with all tumors. 25 Q. Yes, sir. I'm only talking specifically	Page 409 1 Q. And one of the reasons it's not comparable is 2 because the members of the insulators union cooperated 3 with Dr. Selikoff and he did not have to terminate his 4 study for failure of participation, did he? 5 MS. KYLE: Objection, form. 6 BY MR. CHANDLER: 7 Q. Is that a true statement? 8 A. He continued with the study. 9 Q. Okay. Now, what you found -- pardon me. 10 What the study here found was that cancers in the 11 digestive and respiratory system increased with the 12 age of the study participants; right? 13 A. Which is a normal pattern for cancer 14 occurrence. 15 Q. It's also a normal pattern among occupational 16 cancers, too, isn't it? 17 A. Yes. 18 Q. Okay. If you will go into the discussion 19 section, sir. Just tell the ladies and gentlemen of 20 the jury whether I have read this correctly. "From 21 several points of view, this attempt to estimate by 22 epidemiologic techniques the hazards of occupational 23 cancer from exposure to petroleum and its fractions 24 cannot be considered an entirely successful venture. 25 Only two relatively simple approaches were implemented
Page 408 1 about two of the primary sites that are mentioned on 2 table 3, the digestive system and respiratory system. 3 Okay. Do you see that? 4 A. Yes. 5 Q. We can agree that Dr. Selikoff in 1964 did 6 find excess incidents of both digestive and 7 respiratory system cancers among insulators in 1964; 8 right? 9 MS. KYLE: Objection, form. 10 THE WITNESS: His report in 1964 was a 11 preliminary report, and was to be subject to further 12 study and confirmation -- 13 BY MR. CHANDLER: 14 Q. And his report wasn't terminated because of 15 lack of cooperation among the insulators union, was 16 it? 17 MS. KYLE: Objection, form. 18 THE WITNESS: His, he continued with further 19 studies. 20 BY MR. CHANDLER: 21 Q. But he did not terminate the report because 22 the members failed to cooperate, did he? 23 A. Since his study has continued, this is not a 24 comparable situation in any way, but he was able to 25 continue with further studies.	Page 410 1 and neither was expected to do more than to indicate 2 the presence of a possible hazard. Even though the 3 limited objectives were selected, a number of old and 4 current cases assembled proved far too small to permit 5 detailed or elaborate analyses." Did I read that 6 correctly? 7 A. You did. 8 Q. Sir, if you will go to the appendix, and its 9 page 1/18, I believe, at the very top. You are 10 getting there. Do you see that? 11 A. No. Not there yet. There. 12 Q. Do you see where it's marked literature 13 survey? Item 7. Do you see that? 14 A. Yes. 15 Q. Now one of the things that was done for the 16 members of the American Petroleum Institute was that 17 there were literature surveys done so that the member 18 companies didn't have to go out and research all the 19 medicine. That was done for you. It was kind of 20 summarized and put in an abstract format and issued to 21 all of the members by 1958; correct? 22 A. I believe that was the case, yes. 23 Q. So what was going on, is that there were 24 researchers collecting everything that was known in 25 the medical and scientific community, kind of

1 summarizing it and giving it to the members of the
2 American Petroleum Institute, including Exxon;
3 correct?

4 A. That was the purpose.

5 Q. So it's fair to say if there were medical or
6 scientific articles that appeared in the published
7 literature, that the Exxon Company, through its
8 association with the American Petroleum Institute, got
9 at least abstracts or summaries of those articles,
10 wouldn't you agree?

11 MS. KYLE: Objection, form.

12 THE WITNESS: I can't comment on what, how
13 extensive or what abstracts or what the nature of the
14 review that was carried out.

15 BY MR. CHANDLER:

16 Q. But do you know there was a service by which
17 Exxon got abstracts of the medical and scientific
18 literature as it relates to occupational cancer as
19 early as 1958. That's fair?

20 A. That was reported as reported here.

21 Q. Okay. I'm done with that Exhibit 11. If you
22 want to keep going, we will, or if you want to take a
23 break. Whatever you would like to do.

24 (Discussion off the record)

25 BY MR. CHANDLER:

1 Q. Let's turn to the next study that you talked
2 about with the Exxon lawyer on direct examination, and
3 that is what is identified as Exhibit 12 to your
4 deposition. The title of the report is "A mortality
5 study of petroleum refinery workers, project OH-1,
6 September 15, 1974, prepared for the American
7 Petroleum Institute."

8 A. I'm having trouble finding things.

9 Q. Ms. Kyle has her copy. It's this one --

10 A. Thank you.

11 Q. Sir. All of the studies on direct
12 examination, regardless of what they were, all of the
13 studies attached to your deposition and discussed with
14 you by the Exxon lawyer were studies that were done
15 for and paid by the American Petroleum Institute;
16 correct?

17 A. I believe that is the case.

18 Q. Okay. In fact, on the preface of this
19 report, we can see on the second page, sir, the
20 preface, they state, "This report is based on research
21 sponsored by the American Petroleum Institute."
22 That's fair; right?

23 A. Yes.

24 Q. I want to talk to about a few things that
25 were not discussed in direct examination on this

1 report. If you go to the summary and conclusions, it
2 is the 5th page of the report. The very first thing
3 that we are being told is, "A mortality study of
4 petroleum refinery workers was carried out in 17
5 refineries. The study group consisted of every worker
6 employed in the refinery for at least a year between
7 January 1, 1962 and December 31, 1971." Do you see
8 that?

9 A. Yes.

10 Q. So we are only looking at employees who
11 worked for a maximum of a -- would that be 10 or nine
12 years, 10 years?

13 A. No, no.

14 Q. They only worked during that 10-year period.

15 A. They worked during that 10-year period, yes.

16 Q. That's fair. Thank you. Let me re-ask the
17 question. The study group that was considered was
18 every worker in the refinery, not just insulators and
19 not just process operators; correct?

20 A. Yes.

21 Q. Like your other study, it would include
22 clerical workers; right?

23 A. Yes.

24 Q. Security guards; right?

25 A. Yes.

1 Q. Okay. And if they worked for at least a
2 year, so they could, the study group included people
3 who only worked a year, and it included people who
4 worked more than that; right?

5 A. Yes.

6 Q. Now, the bulk of the population were what
7 they considered long-term employees at that part. Do
8 you agree with that?

9 A. I do.

10 Q. That is, 60 percent of the employees were
11 long term, according to the study; right?

12 A. Yes.

13 Q. That means 40 percent were not long term,
14 doesn't it?

15 A. Yes.

16 Q. All right. Sir, when you consider
17 epidemiological studies, what does the dilution effect
18 mean?

19 A. I can't answer that without a context in
20 which to place it.

21 Q. Well, do you agree that there are biases that
22 can be included in an epidemiological study?

23 A. Indeed.

24 Q. And one of those biases is what is called a
25 dilution bias, where you include people in the study

Page 415 1 who were not really exposed to the substance you are 2 trying to look at? 3 A. Oh, yes. Yes. 4 Q. Okay. There is also another bias called the 5 healthy worker effect; right? 6 A. Yes. 7 Q. And what that means is if you look at people 8 who were working, naturally they are going to be 9 healthier than people who were sick and therefore not 10 working? 11 A. Yes. 12 MS. KYLE: Objection, form. 13 BY MR. CHANDLER: 14 Q. Now, I want to look at the data collected in 15 the study. It's on page 5. The numbers of the pages 16 are on the bottom, sir. It's page 5. In this study 17 the data that was collected was on all eligible 18 workers in each sample refinery were included in the 19 study. Now an eligible worker was defined as an 20 hourly employee who wasn't clerical, who had worked in 21 the refinery for at least one year between January 1, 22 '62 and December 31, 1971; right? 23 A. Yes. 24 Q. So we are not looking, doesn't look like we 25 are looking at secretaries here, if it's not clerical;	Page 417 1 we? 2 A. Yes. 3 Q. All right. Now, if you look at page 8, what 4 they tell us in the study, and you tell us whether I'm 5 reading this correctly, is that, "The overwhelming 6 majority of the study population was part of the 7 current work force at the time the study began." Did 8 I read that right? 9 A. I don't see it, but I don't question it. 10 Q. I'm sorry, page 8. 11 A. Page 8? 12 Q. Yes, sir. At the top. Dr. Weaver, the 13 overwhelming majority of the study population was part 14 of the current work force, so they were part of that 15 healthy workers, weren't they? 16 MS. KYLE: Objection. 17 BY MR. CHANDLER: 18 Q. The overwhelming percentage. 19 A. They were a part of the workers, yes, the 20 work force. 21 Q. The overwhelming majority of the study 22 population were workers who were currently working. 23 A. Yes. That was the objective, to study the 24 current workers. 25 Q. Yes, sir, and workers with cancer probably,
Page 416 1 correct? 2 A. Yes. 3 Q. But we are looking at people like truck 4 drivers and security guards? 5 A. Yes. 6 Q. Okay. Now, if you will look at the next 7 page, I want to talk about the different categories of 8 people that were included in this study, and it starts 9 at the top of the page. "In consultation with a 10 refinery safety engineer, job titles were divided into 11 three broad exposure categories. Although specific 12 job titles differed from one refinery to another, the 13 high exposure category contained laboratory, 14 maintenance and salvage recovery jobs, while the low 15 exposure contained plant security, utility, purchasing 16 and motor transport jobs. All other jobs were 17 considered to be medium, those including people like 18 laborers." Did I read that correctly? 19 A. Yes. 20 Q. So we got people in this study who were 21 people who were in charge of purchasing materials; 22 right? 23 A. Yes. 24 Q. We got the security guards, as we discussed, 25 and we have got people who even drive trucks, don't	Page 418 1 would you agree, wouldn't be current workers? 2 MS. KYLE: Objection, form. 3 THE WITNESS: All right. Yes. 4 BY MR. CHANDLER: 5 Q. Okay. And workers with severe respiratory 6 diseases wouldn't be in the current work force, would 7 they? 8 A. If they are unable to work, they would not be 9 in the work force. 10 Q. That's right. 11 A. Yes. 12 Q. Sir, on page 12 of the study, even though we 13 considered security guards, truck drivers, guys who 14 were in the purchasing department, on the last 15 paragraph, what they found was, "Some of the 16 malignancies showed an upward trend; namely, lung 17 cancer leukemia and lymphomas. Only the last of these 18 has more deaths than expected." So we did show an 19 upward trend in lung cancer in this study, didn't we? 20 A. The upward trend is relating to the age 21 effect, and which is the normal way that lung cancers 22 occur. 23 Q. Yes, sir. And on page 13 what we found was, 24 on the last paragraph, the cancers which showed an 25 increased risk with increasing exposure are those of

Page 419 1 the buccal cavity and pharynx, respiratory system and 2 genital organs; right? 3 A. Yes. 4 Q. So even though in this study we considered 5 truck drivers, security guards and purchasing agents, 6 we still discovered an increasing risk of respiratory 7 system cancer, didn't we? 8 MS. KYLE: Objection, form. 9 THE WITNESS: No, not necessarily. 10 BY MR. CHANDLER: 11 Q. Did I read it correctly, page 13. "The 12 cancers which showed an increased risk with increasing 13 exposure are those of the buccal cavity, pharynx, 14 respiratory system and genital organs." Did I read 15 that correctly? 16 A. Yes. All right. 17 Q. So you would agree with that statement that I 18 made, that even though we included all workers in the 19 plant, we still found increased risk with increased 20 exposure in respiratory system cancer; right? 21 A. Yes. There may be other explanations for 22 this, but that is what is stated. 23 Q. Yes, sir. Now, look at page 14. I want to 24 ask if you this concerns you at all when we are 25 talking about the validity of a study. "It is	Page 421 1 follow up were not included, yes. 2 Q. And the deaths that couldn't be included 3 because of follow up were disproportionate to the 4 deaths in this. That means higher, according to the 5 report; right? 6 A. It could have been, yes. 7 Q. Okay. If you look at page 16, let's talk 8 about what they are looking at, what exposures are 9 being looked at in this study. This is the only place 10 in the entire study where I have found exactly the 11 exposure they were looking at, and if I'm wrong, 12 you tell me. It states in the middle of the last 13 paragraph, "Also, the exposure being measured is to 14 atmospheric hydrocarbons. So that the medium or low 15 exposure may sometimes imply a relatively high 16 exposure to other substances." Did I read that 17 correctly? 18 A. Yes. 19 Q. Is there anywhere in this study that you have 20 identified, because I haven't -- tell me if I'm 21 wrong -- where they looked at exposures to asbestos 22 the way they did atmospheric hydrocarbons. 23 A. This gets back to the objective of the study. 24 The study was to focus on hydrocarbons. 25 Q. Exactly.
Page 420 1 possible that the observed SMR or standard mortality 2 rate in this study may be low because there are a 3 disproportional number of deaths among 1,120 workers 4 who were not found." Did I read that correctly? 5 A. Yes. 6 Q. So what happened is they were trying to find 7 all these workers. They couldn't find 1,120 of them. 8 They wanted to include it, right. They wanted to 9 include; correct? 10 A. That would have been to have 100 percent 11 follow up, yes. 12 Q. Yes, sir. But there were over a thousand 13 guys they couldn't find that they wanted to include. 14 Is that a fair statement? 15 A. That is what, they noted they couldn't find 16 that many employees. 17 Q. And what they note is that there may be low 18 standard mortality in this because there are a 19 disproportional number of deaths, that means more than 20 could be expected, among all the guys you couldn't 21 find; right? 22 A. Yes. 23 Q. So that disproportional number of deaths was 24 not included in this study, was it? 25 A. Those deaths that could not have been in	Page 422 1 A. The petroleum industry is not involved with 2 asbestos. 3 Q. It is not a fair use of this study to say we 4 looked at asbestos disease in our plant with this 5 particular study and found it was lower. That is not 6 a fair use of this study, is it? 7 MS. KYLE: Objection, form. 8 THE WITNESS: That is not correct. 9 BY MR. CHANDLER: 10 Q. You weren't looking for asbestos disease in 11 this study. The only thing being measured was 12 atmospheric hydrocarbons. Is that right? 13 MS. KYLE: Objection, form. 14 THE WITNESS: Again, the study speaks for 15 itself. 16 BY MR. CHANDLER: 17 Q. Sir, and because it speaks for itself, the 18 jury should not leave with the impression that this 19 study did one single sample or consideration of 20 asbestos exposure, did it? 21 A. On the contrary, this study sheds 22 considerable light, evidence, with respect to 23 asbestos-related diseases. 24 Q. Can you find for me any reference to asbestos 25 whatsoever in this study? Please look for the

Page 423 1 reference and find it for me, because I can't find it. 2 A. But that doesn't -- I don't, the study was 3 not focused on asbestos -- 4 Q. Exactly. 5 A. -- but the asbestos-related diseases are well 6 covered in this study. 7 Q. Asbestos-related diseases are things like 8 respiratory cancer, aren't they? 9 A. Yes. 10 Q. Turn to page 19, please, of I guess it's the 11 appendix. Whatever page 19 is marked. It's on the 12 third full paragraph. "Respiratory and genital 13 cancers increase with increasing exposure." You agree 14 to that, don't you? 15 A. Increasing exposure to hydrocarbons. 16 Q. Okay. That is the point. But don't 17 respiratory cancers also increase with increasing 18 exposure for asbestos? That's true, isn't it? 19 A. Yes, just as they increase with age. Yes. 20 Q. Okay. But not just age, increasing exposure 21 is the point. That is what we need to consider, 22 increasing exposure to asbestos increases the risk of 23 lung cancer. 24 A. No, no. This word "exposure" here is not 25 related to asbestos.	Page 425 1 a study if you were looking for asbestos disease, 2 would we? 3 A. I don't think you would. 4 Q. Okay. Let's go to what is marked Exhibit 13, 5 the Banbury report. The Banbury report that you 6 discussed with the Exxon lawyer on direct examination 7 is another report that was sponsored and paid for by 8 the American Petroleum Institute, isn't it? 9 A. Yes. 10 Q. In fact, the information provided in the 11 Banbury report in 1981 is information that was 12 provided by the member companies. 13 A. Which is the only way the study could have 14 been carried out. 15 Q. Yes, sir. The people who did the study 16 relied upon the members of the American petroleum 17 industry to give them the information; right? 18 A. Yes. That's the only way it could have been 19 carried out. 20 Q. Yes, sir. And if there was a bias in the 21 selection of information, that would affect the 22 results of the report, wouldn't it? 23 A. Again, that's hypothetical. 24 Q. But that's true. If I didn't report 25 accurately, the study results would be inaccurate.
Page 424 1 Q. That's the point I was trying to get at in my 2 last line of questioning. Nowhere is the exposure 3 considering asbestos? 4 A. Not related to asbestos. 5 Q. Okay. Thank you. I'm done with that study. 6 Let's go to the next one. We are moving along quite 7 quickly. Sir, did security guards have exposure to 8 hydrocarbons in a plant? 9 A. Yes. 10 Q. How? 11 A. By being there. 12 Q. Did security guards have exposure to asbestos 13 in a plant? 14 A. They may or may not. 15 Q. You can say definitely for hydrocarbons, but 16 you are not willing to admit for asbestos, even though 17 they were there at the same place; right? 18 A. Right. 19 Q. Do truck drivers have exposure to 20 hydrocarbons in a plant? 21 A. Yes. 22 Q. Do truck drivers have exposure to asbestos in 23 a plant? 24 A. Probably not. 25 Q. You wouldn't want to include truck drivers in	Page 426 1 A. Yes. If the data are inaccurate, the study 2 is impaired. 3 Q. Now, again, in this study, the Banbury 4 report, at the bottom of page 247, sir -- 5 MS. KYLE: 1981, you said? 6 MR. CHANDLER: Yes, ma'am. 7 BY MR. CHANDLER: 8 Q. In the Banbury report -- 9 A. What page? 10 Q. 247, sir, I think it's the first page, the 11 first real page of the study. 12 A. Yes. 13 Q. There you go. Let's talk about who was 14 included in this study. One of the groups of people 15 were all full-time, active employees at the units. 16 All full-time, active employees; right? 17 A. I believe so. I'm not finding it right now. 18 Q. It's at the bottom of the page, sir. Let me 19 read it from page 247. "The study population is 20 defined by the population census. This consists of 21 basic demographic and employment information on every 22 individual who was attached to a division or plant 23 that had been entered into the study. All full-time, 24 active employees at these units are listed in the 25 initial population census and constitute the active

Page 427 1 study population;" correct? 2 A. Yes. 3 Q. So this one, this study did not exclude 4 clerical workers like the prior one, did it? 5 A. Did not exclude. 6 Q. It included secretaries, truck drivers, 7 security guards, guys who worked in a warehouse, all 8 those people? 9 A. That was the design of the study. 10 Q. Yes, sir. It was specifically designed to 11 include all those people, wasn't it? 12 A. Yes. 13 Q. Another thing, population included were 14 individuals who are annuitants of this plant. That 15 means people who were retired and getting a pension; 16 right? 17 A. Yes. 18 Q. Now, it was in 1981 an option for an employee 19 leaving Exxon to, rather than take a pension, they 20 could take a cash lump sum, couldn't they? 21 A. I don't know. 22 Q. All right. We will get to that later in the 23 study. 24 A. I don't know. 25 Q. Now, what this report did is it had, it's on	Page 429 1 A. Yes. 2 Q. So cancer occurring wasn't reported, but when 3 it was applicable, if they could get it when they 4 died, that is when they counted it? 5 A. Yes. Yes. 6 Q. If they could get it, and as we know from the 7 prior page, it wasn't routinely collected. Deaths or 8 illness of cancer among those who were no longer 9 actively employed, right, page 248? 10 A. Yes. 11 Q. All right. This study does acknowledge on 12 page 252 that there was -- on page 252, sir, you are 13 there. Item 3 under mortality figures, there was in 14 fact an underreporting of deaths, wasn't there? 15 A. That's always the case. Yes. 16 Q. And that was the case in this study. It 17 underreported the deaths, didn't it? 18 A. Yes, as is true in all studies. 19 MR. CHANDLER: Objection, non-responsive from 20 the answer of "yes." 21 BY MR. CHANDLER: 22 Q. Now, I want to talk to you about the summary 23 of the mortality study that is reported that you did 24 not go over in your direct examination with the Exxon 25 lawyer, and it's page 255, sir. I think it's the next
Page 428 1 page 248, sir, the Banbury report, it included deaths 2 among annuitants, and those were reported, the deaths 3 among the annuitants. It's on the first paragraph. 4 "Deaths that occur among the annuitants are reported. 5 However, as they are no longer actively employed, 6 reports of illness or cancer incidents are not being 7 collected routinely." Did I read that correctly? 8 A. Yes. 9 Q. All right. 10 A. It wasn't possible to do that. 11 Q. Wasn't possible to get the reports of all the 12 cancer or illness on the retired people and it wasn't 13 included in this study, was it? 14 A. Yes. 15 Q. Now, this study did not, on page 250, this 16 study did not include cancer that was diagnosed after 17 somebody retired, did it? 18 MS. KYLE: Objection, form. 19 BY MR. CHANDLER: 20 Q. Under methodology, it's the third paragraph 21 under methodology. I will read the paragraph. 22 "Consequently, cancers diagnosed subsequent to 23 retirement were not included in the incidence 24 analysis, but were analyzed, when applicable, in the 25 mortality analysis."	Page 430 1 page of the document. 2 A. Summary of mortality. 3 Q. Under summary of mortality study, you tell 4 the ladies and gentlemen whether I read this 5 correctly. "As we have discussed, there is a number 6 of factors that may have contributed to an 7 underestimation of mortality." 8 A. Yes. 9 Q. All right. 10 A. I'm with you now. 11 Q. Let's discuss some of the factors that may 12 have contributed to an underestimation of deaths. 13 Number 1, do you know -- let me ask you. Do you know 14 what the factors are that may have contributed to an 15 underestimation of the deaths in this study? 16 A. Because no study can have absolute 17 perfection. There are shortcomings in any study of 18 this nature. 19 Q. Let me talk to you about some of the trends 20 or some of the, we will call them issues with this 21 study. This study specifically. And it's under 22 summary of the cancer incidence, sir. Yes, same page, 23 all right. Actually it's not. It's a couple more 24 pages. 25 A. Oh, yes.

Page 431 1 Q. Isn't it true that this study was supposed to 2 be considered only preliminarily, because the period 3 of observation was too short and because the number of 4 older workers included had been limited and because of 5 the underdegree of reporting, particularly of deaths. 6 Isn't that true? 7 A. Yes. This is a preliminary study. 8 Q. And it was preliminary because of a number of 9 issues. Number 1, the observation time was too short. 10 In fact, I think it was 1.6 years, the study will 11 show; right? 12 A. Yes. 13 Q. And because the number of older workers were 14 limited, right? 15 A. I don't know where you are reading, but I'm 16 not questioning it. Have I got the right page? Oh, 17 yes. Okay. I have got it now. 18 Q. The number of older workers included in the 19 analysis was limited, wasn't it? 20 A. Uh-huh. 21 Q. It's the older workers that we would expect 22 to find occupational cancer, if it existed, that's who 23 we would expect to find it in, right? 24 MS. KYLE: Objection, form. 25 THE WITNESS: Yes, but that limitation is	Page 433 1 became notified of deaths among workers who have left 2 employment?" And the answer is, "When an employee is 3 entitled to any kind of benefit, the company is 4 notified and we get the death certificate from the 5 benefit department." So it's only employees who were 6 entitled to death benefits that were reported, because 7 if they weren't entitled to death benefits, the 8 company didn't know about it and therefore it would 9 not have been included in your study; correct? 10 A. Yes, but, of course, in the petroleum 11 industry most employees, very high percentage, are 12 entitled to a death benefit. 13 Q. And we will talk about that later, because I 14 think we will find later that if an employee chose a 15 cash option, instead of retirement pension, he was not 16 included. That doesn't surprise you, does it? 17 A. Yes, but I don't know when that was 18 instituted. 19 Q. We will get to that. 20 A. I can't respond to that. 21 Q. We will get to it. One of the criticisms of 22 one of the commentators, anyway, is that they thought 23 the analysis should be for men hired at the latest 24 before 1965, instead of 1980, which is what was done 25 in this study; right?
Page 432 1 always present in such studies, yes. 2 MR. CHANDLER: Objection, non-responsive to 3 everything after, "Yes." 4 BY MR. CHANDLER: 5 Q. Another reason this was supposed to be 6 preliminary was because there was a degree of 7 underreporting. That's true as well. And it was true 8 specifically as it related to deaths; right? 9 A. As is always the case, yes. 10 Q. You did not tell the ladies and gentlemen of 11 the jury in the direct examination that this was a 12 preliminary study because of all these issues, did 13 you? 14 A. I don't know. 15 Q. All right. Now, what was done at the end of 16 the study, if you will turn to page 261, is that there 17 were researchers who were allowed to make comments and 18 submit questions about the data. That is pretty 19 common in epidemiological studies, isn't it? 20 A. Yes. 21 Q. I want to go over some of the questions or 22 comments that were made about this study at the time 23 it was being made. If you look at the top of page 24 261, Mr. Silberstein or Dr. Silberstein, whoever it 25 is, asked the following question: "How is it that you	Page 434 1 A. That's a comment. 2 Q. Yes, sir. And that means the commentator 3 thought you should have gone back 15 more years and 4 caught people who were hired at the latest before '65 5 instead of 1980. 6 A. Yes, but this is a prospective concurrent 7 study, and so there's a reason why that was done that 8 way. 9 Q. Let me ask you this. This is a study that 10 was issued in 1981, isn't it? 11 A. Yes. That's the date. 12 Q. And it included people who would have been 13 hired prior to 1980, just a year before, didn't it? 14 A. Yes. 15 Q. There's absolutely no way in those people 16 hired prior to 1980 we would expect to find any cancer 17 that was the result of latency in the refinery; is 18 that true? 19 A. That is true, but that is not the purpose of 20 the study. 21 Q. Yes, sir. There were people included in this 22 study for whom we could not possibly have had adequate 23 latency in order to see whether occupational cancers 24 were being found. Is that a true statement? 25 A. Yes, but this was not designed, the study,

Page 435

Page 437

1 was not part of the design of the study, just to find
2 occupational cancers.

3 Q. All right. Here is where I was talking about
4 the lump sum part and how people might not be
5 considered in the death benefit. It's on page 262.
6 I'm starting where commentator Stewart asks questions
7 and the following -- you tell the ladies and gentlemen
8 whether I read this correctly. "Do you hear of a
9 death just because benefits have been awarded to them?
10 Correct. Then presumably the man has subscribed to
11 this benefit while working. Can workers opt for a
12 lump sum benefit payment when they leave? Yes. This
13 is a great catch, because sick people are most likely
14 to do this. They won't wait. They want their money
15 in their pockets." Did I read that correctly?

16 A. You did.

17 Q. So what we see is if I'm leaving sick, I'm
18 not getting the death benefit. I opt out for a lump
19 sum payment, and therefore would not be included in
20 this study; isn't that true?

21 A. Yes. Of course, the question is how
22 significant is that number.

23 Q. Yes, sir. Is there anywhere in the study
24 that tells us that?

25 A. There is no way to find out.

Page 436

Page 438

1 Q. Yes, sir. There is no way to find out how
2 many sick people left and opted out, is there?

3 A. We don't know.

4 Q. And sick people might be people with cancer
5 who were not included in the study?

6 MS. KYLE: Objection, form.

7 BY MR. CHANDLER:

8 Q. Isn't that right?

9 MS. KYLE: Objection, form.

10 Q. Sir?

11 A. The sick people might, might have cancer,
12 yes.

13 Q. One of the other things that, one of the
14 other groups of people who were not included in this
15 study, sir, if you look at page 264, in the middle of
16 the page, it's commentator Wynne, "The death
17 certificates were collected only on those deceased in
18 active service or those on a retirement pension." The
19 answer is, "Yes. Those terminated were not included."
20 Next, "The table that you presented did not include
21 any so-called long term retirees. The retirees were
22 not included. All those were active service deceased
23 people." Correct? Did I read that correctly?

24 A. Yes, you read it correctly.

25 Q. So if I quit before retirement age, and I

1 died of cancer, I would not be included in this study,
2 would I?

3 A. Yes, could not be included, yes.

4 Q. That's right. Sir, do you subscribe to the
5 theory, "junk in, junk out?" Do you know what I'm
6 referring to when I say that?

7 A. Indeed, I do.

8 Q. What does it mean?

9 A. The validity of data is all important.

10 Q. Yes, sir. If the data isn't accurate, the
11 results are not accurate, correct, that's all that
12 means?

13 MS. KYLE: Objection, form.

14 BY MR. CHANDLER:

15 Q. That's all that means; right?

16 A. That's what it means, but who is deciding
17 what is correct and what is incorrect.

18 Q. Yes, sir. And in the studies, all the
19 studies that we have just been going over, the people
20 who decided who was being reported were the member
21 companies of the American Petroleum Institute, weren't
22 they?

23 A. The protocol was established mainly by the
24 investigator, not by the companies.

25 Q. The protocol was established by Kettering,

1 but the data, the people deciding who was included
2 were the member companies who gave that data, weren't
3 they?

4 A. Yes. In accordance with the protocol, yes.

5 Q. Yes, sir. Let's take a break.

6 THE VIDEOGRAPHER: Going off the record. The
7 time is 1:45. This marks the end of videotape number
8 2, volume 2 of the this deposition.

9 (Whereupon, at 1:45 p.m., the hearing was
10 recessed, to be reconvened at 2:15 p.m. this same
11 day.)
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Page 439 1 AFTERNOON SESSION (2:16 p.m.) 2 THE VIDEOGRAPHER: This marks the beginning 3 of videotape number 3 in volume 2 of the deposition of 4 Dr. Neill Weaver. We are going back on the record. 5 The time is 2:16. 6 CONTINUATION OF CROSS EXAMINATION 7 BY MR. CHANDLER: 8 Q. Dr. Weaver, I want to jump ahead now and go 9 to the last epidemiological study that we discussed in 10 the direct examination with Ms. Kyle, and that is what 11 is marked Exhibit 15 to your deposition, "The 12 Occurrence of Mesothelioma in a Mortality Study of 13 Petroleum Refinery Workers Preliminary Report," 14 August 7, 1984, prepared for the American Petroleum 15 Institute. Okay. 16 A. Yes, sir. We will find it in a minute. 17 MS. KYLE: 1984 is the study? I don't have 18 it. Why don't you let him see it. 19 BY MR. CHANDLER: . 20 Q. Certainly. It was Exhibit 15 to your 21 deposition, sir. We may need to go get a copy made. 22 I will get a copy made real quickly, Doctor. Sorry. 23 THE VIDEOGRAPHER: We are going off the 24 record. The time is 2:17. 25 (Recess)	Page 441 1 A. Yes. 2 Q. I want to talk to you about this report in 3 more detail. Included in the cohort were all men who 4 were classified as hourly, non-clerical workers on 5 their last job in the participating refineries who had 6 worked continuously for at least a year between 1962 7 and 1971. So we are looking at a similar kind of 8 cohort that included everybody from insulators to 9 truck drivers and security guards; right? 10 A. This is in fact the same cohort. 11 Q. It's the same cohort we have been talking 12 about all morning? 13 A. Yes. 14 Q. All right. Very good. Now, this study found 15 several deaths related to -- this study found several 16 death certificates, at least, listing mesothelioma as 17 the cause of death, didn't it? 18 A. After a special search, they were found. 19 Q. Yes, sir. Now, I want you to follow along 20 with me on page 2 of the report. It's actually the 21 third page, but it's the one numbered page 2, and let 22 the ladies and gentlemen of the jury know whether I 23 read this correctly. "There were causes of death in 24 which the observed number of deaths exceeded the 25 expected number by more than 10 percent. One of these
Page 440 1 THE VIDEOGRAPHER: We are going back on the 2 record. The time is 2:27. 3 BY MR. CHANDLER: 4 Q. Dr. Weaver, you agree that any 5 epidemiological study can be manipulated to achieve 6 any result if the people who are running the study or 7 providing the information want to do that? 8 MS. KYLE: Objection, form. 9 THE WITNESS: All epidemiologic studies have 10 weaknesses, all epidemiologic studies have biases. 11 The investigator, the principal who is carrying out 12 the study is all important. And you rightfully point 13 out that the data that are the input are also all 14 important. 15 BY MR. CHANDLER: 16 Q. Yes, sir. And with that in mind I want to 17 talk to you about Defendants' Deposition Exhibit 15, 18 "The Occurrence of Mesothelioma and Mortality Study of 19 Petroleum Refinery Workers Preliminary Report," dated 20 August 7, 1984, prepared for the American Petroleum 21 Institute. Now this was actually sent to your 22 attention, wasn't it? 23 A. Yes. 24 Q. Okay. And the American Petroleum Institute, 25 again, paid for the study, didn't they?	Page 442 1 was benign neoplasms, the excess being slightly over a 2 third. Three of the deaths from benign neoplasm had a 3 diagnosis of mesothelioma. 4 "Because of the organization of the 5 international classification of diseases, mesothelioma 6 deaths may occur under any one of several codes. In 7 addition to being coded under benign neoplasms, they 8 could be coded as cancer of the peritoneum, cancer of 9 the lung, cancer of the respiratory organs, including 10 the pleura and mediastinum, or as stated on the death 11 certificate as malignant mesothelioma, with a site not 12 mentioned." Did I read that correctly? 13 A. You did. 14 Q. So basically on the death certificate 15 mesothelioma can be categorized by a number of 16 different causes of death. It may not say 17 mesothelioma. They may categorize it as lung cancer. 18 Is that right? Is that what we are hearing? Is what 19 I'm leveraging from this? 20 A. Yes, because the World Health Organization 21 had no specific code for mesothelioma. 22 Q. Okay. Now, nine of the death certificates 23 you found listed mesothelioma, actually mesothelioma, 24 didn't it? 25 A. Yes.

Page 443 1 Q. I mean, as opposed to one of these other 2 several codes that the World Health Organization had, 3 like benign neoplasm, lung cancer, cancer of the 4 respiratory organ, you found nine that specifically 5 said mesothelioma. 6 A. That is true. 7 Q. And so what you wanted to try to do, what you 8 did after the study, Doctor, is you investigated those 9 nine to find out how many of those nine were really 10 mesothelioma as opposed to something else, and that is 11 what we heard you talk about on direct examination. 12 A. Yes. 13 Q. So of the ones that really, that said 14 actually, "mesothelioma," you investigated to see how 15 many of those might have been something else; right? 16 A. Yes. 17 Q. Did you also find death certificates that 18 were listed as cancer of the lung? 19 A. Of these nine, you mean -- 20 Q. No, sir -- 21 A. -- or in the overall search. 22 Q. -- of this cohort, in the overall search. 23 A. Oh, yes. Cancer of the lung is the most 24 common cancer of all. 25 Q. Yes, sir, and you found cohorts that listed	Page 445 1 Q. Thank you. Okay. 2 A. They were found by a hand search of death 3 certificates after running computer codes where, any 4 place where we thought mesothelioma might be coded 5 rightfully or wrongly. 6 Q. Okay. Now I understand. So in -- let me 7 summarize this. Doctor, in this study that you found 8 death certificates that actually listed the word 9 "mesothelioma," even though they may have been encoded 10 under something else, because the World Health 11 Organization just didn't code mesothelioma; right? 12 A. Yes. 13 Q. Now, is it true that mesothelioma is often 14 miss diagnosed? 15 A. Yes. 16 Q. So somebody could die of cancer of the lung 17 and the doctor, just because it's such a rare 18 disease -- strike that. It's true that a man could 19 die of mesothelioma, but because mesothelioma is such 20 a rare disease, doctors quite often list it as cancer 21 of the lung, don't they? 22 MS. KYLE: Objection, form. 23 THE WITNESS: Mesothelioma is both 24 overdiagnosed and underdiagnosed. 25 BY MR. CHANDLER:
Page 444 1 some of these codes under which mesothelioma might be 2 listed, like benign neoplasm, cancer of the 3 respiratory organ, you found all of those things. In 4 your cohort, all of those things existed? 5 A. It took a special search to find the 6 mesothelioma cases from related codes where they might 7 be perhaps mistakenly coded in or listed in, yes. 8 Q. But my point is there were codes for all 9 these things, lung cancer, cancers of the respiratory 10 organ, that type of thing; is that right? 11 A. Yes. 12 Q. But there were nine specifically that were 13 coded as mesothelioma? 14 A. Not coded as, but were found by a search of 15 the death certificates. 16 Q. What were they coded as, do you remember? 17 A. These various things that are listed here. 18 Q. Okay. Thank you. 19 A. Yes. 20 Q. So when you look back at the death 21 certificates, mesothelioma, did you have any -- re-ask 22 the question. Were there any death certificates that 23 specifically listed mesothelioma? 24 A. These nine cases included the name 25 mesothelioma on the death certificate.	Page 446 1 Q. Yes, sir. 2 A. It is a difficult diagnosis to make. 3 Q. Yes, sir. So you could see a death 4 certificate that said lung cancer, and in fact that 5 happens, that that person could really have 6 mesothelioma, but it's just such a rare disease the 7 doctor may not know about it. That exists, doesn't 8 it? 9 MS. KYLE: Objection. 10 THE WITNESS: Yes. That is true. You might 11 also find a listing of mesothelioma, where in 12 actuality the tumor is a lung cancer. 13 BY MR. CHANDLER: 14 Q. Yes, sir. 15 A. Mistakes are made both ways. 16 Q. Now, the nine individuals that were listed as 17 having mesothelioma on the death certificate, you went 18 through and you really wanted to find out is this a 19 case where it was misdiagnosed, because, as you say, 20 sometimes mesothelioma is misdiagnosed; right? 21 A. Yes. 22 Q. Now, so what you did was you went to the 23 death certificates and you specifically, if you could 24 find it, you went and got the biopsy material and you 25 looked at it, didn't you?

Page 447 1 A. Yes. 2 Q. And by doing that, you were able to whittle 3 this nine number down to a lower number of actual, 4 real mesotheliomas. Is that what you are telling us? 5 A. Yes. 6 Q. So let's go through the study and see what 7 you did. I beg your pardon? 8 A. I'm sorry. I'm just hoping I can remember. 9 Q. Oh, I see. Now, how big a cohort was this? 10 Remind the ladies and gentlemen of the jury how big 11 the cohort was? 12 A. 17 refineries, 20 -- 21,000 workers. 13 Q. Okay. This is not a test, so any time you 14 need to refer to it, please do. I'm not trying to 15 stretch your memory. So is it your testimony, did I 16 understand you right under direct examination that in 17 a cohort of 20,000 people, you expected to find 3.73 18 mesotheliomas? Is that what you are telling us? 19 A. We had no idea what to expect. The 3.4 20 mesotheliomas resulted from a special request to the 21 National Cancer Institute, who are given the 22 definition of the cohort as listed, and the National 23 Cancer made special effort, runs, to find out for us 24 what the expected number would be. And this was, the 25 expected number was 3.4.	Page 449 1 A. Well, again, this is the information we sent 2 to the National Cancer Institute. So they were 3 amassed by the usual parameters of age, sex, and so 4 this was developed to be the best possible mass that 5 could be derived. 6 Q. Is there any other population group in the 7 United States or the world where you would expect to 8 find 3.4 mesothelioma in a population of 20,000 9 people, Doctor? 10 A. I don't know. 11 Q. I want to find out whether it was the 12 National Cancer or the American Cancer Institute, 13 actually the National Cancer Institute here that 14 provided you with that number, or whether these 15 researchers came up from that number from data the 16 National Cancer Institute gave out? 17 A. No, no. The National Cancer Institute 18 specialists developed that number. 19 Q. Let's go through this. It's on page 4, sir. 20 Let's start in this paragraph. I'm about a third of 21 the way down. It says, "In addition, age specific 22 incident rates for white males for the years 1969 23 through 1971 from the third national cancer survey 24 were provided to SRI." SRI, those are the people 25 accumulating all the data and actually doing the
Page 448 1 Q. Is the expected number among your cohort the 2 number that you might be expected to find in a 3 background level or is it the number you would expect 4 to find in a refinery? How do we compare the two? 5 A. The number you would be expected to find in 6 the population at large. 7 Q. So what you are telling the ladies and 8 gentlemen of the jury is that you expected to find 3.4 9 mesotheliomas in the same number of people in the 10 population at large? 11 A. Yes, that was the determination by 12 specialists in the National Cancer Institute. 13 Q. You are not telling us that 3.4 mesotheliomas 14 occur among every 20,000 people in the United States, 15 are you? 16 A. No. This was a particular cohort. The 17 cohort, the study population was not representative of 18 the population of the United States. So the expected 19 number was derived to match as closely, as perfectly 20 as possible by the National Cancer Institute 21 specialists. 22 Q. I'm confused on where, who you are comparing 23 this cohort to. What other cohort exists in which you 24 would expect to find 3.4 mesothelioma among 20,000 25 people?	Page 450 1 report; right? 2 A. Yes. 3 Q. And that information was provided to SRI by 4 the National Cancer Institute, the age-specific 5 incident rate; right? 6 A. Yes. I'm trying to find where you are. 7 Okay. Yes. All right. Yes. 8 Q. Now, "Person years by five-year age intervals 9 separately for white and non-white males were 10 available from the Monson program by five-year 11 calendar time intervals. The age-specific rates for 12 1969 through 1971 were applied to the person years up 13 to and including 1974 and the SEER rates for 1973 14 through 1978 were applied to the person years 15 accumulated for 1975 to 1980." 16 Now here is what I want to focus your 17 attention on. "According to this calculation, the 18 expected number of mesotheliomas in this study cohort 19 was 3.73." 20 A. I stand corrected. I think I said 3.4. I 21 had forgotten the precise number. Sorry. 22 Q. "If that number is taken as the expected 23 number of deaths from this cause, the nine deaths from 24 mesothelioma give a standard mortality rate of 241. 25 If not corrected for unknown deaths." Did I read that

Page 451 1 correctly? 2 A. Yes. 3 Q. So my question to you is who performed this 4 calculation? "According to this calculation, the 5 expected number of mesotheliomas was 3.73." Who did 6 that calculation? 7 A. National Cancer Institute. 8 Q. It wasn't SRI? 9 A. No, not SRI. SRI did not have the raw 10 database to do that sort of thing. That could only be 11 done from national statistics. 12 Q. In the National Cancer Institute, your 13 understanding is who runs that organization? 14 A. I'm speaking of the federally, the federal 15 governmental organization. 16 Q. I just want to make sure. 17 A. Yes. 18 Q. All right. The cohort, though, in which 3.73 19 mesotheliomas was expected was a cohort of 20,000 20 refinery workers, wasn't it? 21 A. Yes. 22 Q. Okay. This is not a cohort of 20,000 23 Americans that you -- you would not expect to find 24 3.73 mesotheliomas in 20,000 Americans who had never 25 worked at refineries; right?	Page 453 1 Q. Well, let's do the math. We have heard that 2 it's approximately one to two cases for every million 3 people in the country. That is when you count all 4 cases of mesothelioma in the country, right? If you 5 accept my 3,000 cases a year number. 6 A. Uh-huh. 7 Q. Can we agree to that? 8 A. Yes. 9 Q. All right. But in your cohort, the National 10 Cancer Institute told you in this cohort of 20,000 11 refinery workers, we would expect to see 3.73 12 mesotheliomas. Is that a fair characterization of 13 what the National Cancer Institute told you? 14 A. That is what they determined. 15 Q. So if we multiply the denominator in that, in 16 other words, the cohort size, and we make it equal to 17 the rate in America, 20,000, and we change it to 18 one million, then I have multiplied that by 50 times; 19 right? 20 A. You can't compare the age group of the 21 refinery workers to the population at large. The age 22 group here does not include children, infants, 23 children, teenagers. 24 Q. Thank you. Okay. That is where I'm 25 confused. What is the population age group in the
Page 452 1 A. I don't know. 2 Q. Would it surprise you to learn that the 3 background level of mesotheliomas in America -- 4 A. I have forgotten what it is. Tell me. 5 Q. -- it's 1 per million or 2 million people in 6 the United States. There are approximately, the 7 ladies and gentlemen have heard, approximately 3,000 8 mesothelioma cases diagnosed in the United States 9 every year. 10 A. Uh-huh. 11 Q. So that means it's only one mesothelioma case 12 for every 1 to 2 million people in the entire country? 13 A. Yes. That's very rare. 14 Q. But in this refinery -- in this cohort of 15 refinery workers of just 20,000 people, what the 16 National Cancer Institute is telling you is that among 17 this refinery cohort, the expected rate of 18 mesotheliomas is 3.73, almost 4, per every 20,000 19 people; right? 20 A. Yes. 21 Q. Do you know how much higher the expected 22 incidence rate of mesothelioma in a refinery then is 23 over the background population? 24 A. There is something here that is eluding me. 25 I can't account for.	Page 454 1 United States that I can compare your study to? 2 A. I don't know. 3 Q. 3.73 mesotheliomas in a cohort of 20,000 4 people is remarkably high, wouldn't you agree, if the 5 background -- 6 A. Yes, I'm aware of that, and yet I accept it 7 as the best yardstick that could be developed for this 8 study. 9 Q. So what you did is you went in to these 10 mesotheliomas and you said let's see if any of these 11 are overdiagnosed and see if it's a real number; 12 right? 13 A. Insofar as possible. 14 Q. Okay. So you went through and one of the 15 things you realized is some of these were benign. 16 They weren't really malignant, and you knocked those 17 numbers off. 18 A. Yes. 19 Q. Then you went through and you found some of 20 them worked in the shipyard industry in addition to 21 the refinery workers and you discounted those shipyard 22 workers, didn't you? 23 A. They worked in, did not have asbestos 24 exposure in their refinery work classification, but 25 they had asbestos exposure in the shipyard.

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1 Q. So you took the shipyard people and you threw
2 them out, too --
3 A. Yes.
4 Q. -- even though they worked in a refinery.
5 A. Yes.
6 MS. KYLE: Objection, form.
7 BY MR. CHANDLER:
8 Q. So after throwing out the people you claim
9 were misdiagnosed as benign, and after throwing out
10 the people who worked both in the shipyards and in the
11 refineries, you got the number down to the expected
12 number or around the expected number of 3.73 for every
13 20,000; right?
14 A. Yes. This is the proper way to further
15 evaluate the study here.
16 Q. But you did not, sir, go back through all of
17 the reported deaths to see if mesothelioma was being
18 underdiagnosed. You only checked to see if it was
19 being overdiagnosed, didn't you?
20 MS. KYLE: Objection, form.
21 THE WITNESS: There is no way to -- again, we
22 found all death certificates that listed the word
23 mesothelioma that we could possibly find.
24 BY MR. CHANDLER:
25 Q. Yes, sir. And then you went through every

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1 one of them and you looked for any excuse to prove it
2 wasn't mesothelioma and you threw it out, didn't you?
3 MS. KYLE: Objection, form.
4 BY MR. CHANDLER:
5 Q. Correct?
6 MS. KYLE: Objection, form.
7 BY MR. CHANDLER:
8 Q. Is that right, sir?
9 MS. KYLE: You can answer.
10 THE WITNESS: We endeavored to ascertain the
11 validity of the diagnosis in each of the nine cases
12 insofar as possible. If a case had a diagnosis of
13 mesothelioma and 10 years later he died, he was run
14 over by a truck, obviously this is an exaggerated
15 example, but obviously he did not have mesothelioma.
16 And where possible, whenever possible, we had the
17 tissues examined by a pathologist, who was absolutely
18 totally credible. So we did everything we could to
19 ascertain the validity of these nine cases with
20 respect to diagnosis.
21 MR. CHANDLER: Objection, non-responsive.
22 BY MR. CHANDLER:
23 Q. Sir, my question is, you made an affirmative
24 attempt to try to determine whether mesothelioma was
25 being overdiagnosed here; right?

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1 MS. KYLE: Objection, form.
2 THE WITNESS: We endeavored to ascertain the
3 correct diagnosis.
4 BY MR. CHANDLER:
5 Q. And you wanted, you even looked at tissue.
6 You said let's find the tissue of those people, those
7 claims that died of mesothelioma and let's see if it's
8 really mesothelioma. You did that, didn't you?
9 A. That is the usual procedure when you want to
10 corroborate a diagnosis, yes.
11 Q. You agree with me that mesothelioma is both
12 overdiagnosed and underdiagnosed; correct?
13 A. Yes.
14 Q. But you did nothing to find out whether it
15 was being underdiagnosed here, did you?
16 A. We did what was possible to do.
17 Q. Sir, this is my question. You went and got
18 pathology samples of these mesotheliomas and you
19 looked at that tissue, didn't you?
20 A. When possible.
21 Q. You did nothing to go look for the tissue of
22 people who were diagnosed as lung cancer to find out
23 whether the lung cancer was really a mesothelioma, did
24 you?
25 A. Not feasible.

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1 Q. Okay. It was feasible for you to try to
2 reduce the number, but what you are telling us is it
3 wasn't feasible to try to find out if there was an
4 underdiagnosis?
5 MS. KYLE: Objection, form.
6 BY MR. CHANDLER:
7 Q. Is that right?
8 MS. KYLE: Objection, form.
9 THE WITNESS: Well, of course, in finding
10 these nine cases, we took extreme, extreme effort to
11 locate them.
12 BY MR. CHANDLER:
13 Q. Sir, tell the ladies and gentlemen of the
14 jury what you did to find out whether mesothelioma was
15 being underdiagnosed in your population, because we
16 already know you went to find out if it was being
17 overdiagnosed. Did you look at any lung tissue of
18 people who had lung cancer to find out whether it was
19 really mesothelioma?
20 A. Not feasible.
21 Q. Then you didn't do it, did you?
22 A. No. We didn't do it.
23 Q. But you did look at tissue for people who
24 claim to have mesothelioma; right?
25 A. Yes.

Page 459 1 Q. And you claim that is feasible, but the other 2 way around is not? 3 A. Yes. The logic is simply clear. 4 Q. Fine. I think it is clear. I think it's 5 exactly clear, sir. Tell us each and every step you 6 took to find out whether mesothelioma was being 7 underdiagnosed in your study? 8 MS. KYLE: Objection, form. 9 THE WITNESS: There is no way to do that. 10 BY MR. CHANDLER: 11 Q. Because you didn't do anything to find out 12 whether it was being underdiagnosed, did you? 13 MS. KYLE: Objection, form. 14 THE WITNESS: There was no way to do that. 15 BY MR. CHANDLER: 16 Q. Sir, my question is you did nothing to find 17 out whether mesothelioma was being underdiagnosed, did 18 you? 19 A. We couldn't do anything to find out if it was 20 being underdiagnosed in this, in the format of this 21 study. 22 Q. Okay. Well, let's talk about what you found 23 out, what you did to try to reduce the number and see 24 if it was being overdiagnosed. One of the things is 25 you got tissue; right?	Page 461 1 that. 2 A. Uh-huh. 3 Q. Yes. Is that a yes? 4 A. Yes. 5 Q. In order to find out whether something is 6 really mesothelioma, a number of special tests have to 7 be done on it, doesn't it? 8 A. Yes. 9 Q. The reality is from a medical and scientific 10 point of view, mesothelioma is more often 11 underdiagnosed than it is overdiagnosed. That is a 12 true and correct statement, isn't it? 13 MS. KYLE: Objection, form. 14 THE WITNESS: No. 15 BY MR. CHANDLER: 16 Q. You disagree with that? 17 A. I disagree with that. 18 Q. If the Surgeon General, a former Assistant 19 Southern General of the United States tells the ladies 20 and gentlemen of the jury that mesothelioma is much 21 more underdiagnosed than it is overdiagnosed, tell us 22 each and every fact you have to refute that statement. 23 MS. KYLE: Objection, form. 24 THE WITNESS: I think it's a matter of the 25 era that we are in. I think in the, if you go back,
Page 460 1 A. When possible. 2 Q. Where did you get it? The tissue, where did 3 you get it? 4 A. From the hospital source, wherever the tissue 5 was. 6 Q. You had people die of lung cancer that had 7 biopsies taken, didn't you? 8 A. Uh-huh. 9 Q. Is that a yes? 10 A. Yes. 11 Q. Why didn't you go get lung cancer tissue, 12 like you did mesothelioma tissue, to find out if it 13 was being underdiagnosed? 14 MS. KYLE: Objection, form. 15 BY MR. CHANDLER: 16 Q. To find out whether mesothelioma was being 17 underdiagnosed. Why didn't you do that? 18 MS. KYLE: Objection, form. 19 THE WITNESS: Because the number of lung 20 cancers are so, so great and the likelihood of 21 misdiagnosis of lung cancer is far, far less than the 22 likelihood of misdiagnosis of mesothelioma. 23 BY MR. CHANDLER: 24 Q. Yes, sir. But the likelihood of misdiagnosis 25 of mesothelioma is quite high, right? We agree to	Page 462 1 10, 15, 20, 30 years, I think the diagnosis was being 2 underdiagnosed. I think in the present time, with all 3 the attention that individuals such as you and Glenna 4 and I have placed on this diagnosis, it is now being 5 overdiagnosed. 6 BY MR. CHANDLER: 7 Q. Yes, sir. 20 years ago mesothelioma was 8 being underdiagnosed; is that what you are saying? 9 MS. KYLE: Objection form. 10 THE WITNESS: Well, at some time in the past, 11 yes. I can't -- 12 BY MR. CHANDLER: 13 Q. Whatever your number is, whether it was 15, 14 as you said, or 20 years -- 15 A. Well -- 16 Q. -- is that right? 17 MS. KYLE: There is a question? Would you 18 repeat the question? 19 BY MR. CHANDLER: 20 Q. Let me re-ask the question. Today you agree 21 mesothelioma -- you think today mesothelioma is 22 overdiagnosed? 23 A. I think it's likely that it's overdiagnosed 24 now. 25 Q. But 20 years ago, if there was a

Page 463 1 misdiagnosis, it was more likely than not an 2 underdiagnosis? 3 A. 20 years ago it might have been the time when 4 it was about right. And sometime in the past is when 5 it was in particular being underdiagnosed. 6 Q. Sir, these study groups are people who died 7 more than 20 years ago. People who died in what 8 years, sir? When was your cohort looked at? 9 A. I'm aware of the fact that you are making. I 10 have forgotten the date of the -- 11 Q. These were people who started work no later 12 than 1980, right, Dr. Weaver? 13 A. I would have to go back to the Tabershaw- 14 Cooper report. 15 Q. Sir, nobody included in the Tabershaw-Cooper 16 report died after 1984, because this report was issued 17 in 1984. 18 A. Okay. Right. 19 Q. Mesothelioma, particularly 20 years ago, was 20 an extremely rare disease, wasn't it? 21 A. And is today. 22 Q. And 20 years ago it was much more 23 misdiagnosed by underdiagnosing it than it is today. 24 Wouldn't you agree? 25 MS. KYLE: Objection, form.	Page 465 1 study. Has anybody that you are aware of done that? 2 A. No. 3 Q. You only checked for overdiagnosis, not for 4 underdiagnosis. Isn't that a fair statement? 5 A. We were checking for correct diagnosis. 6 Q. But only on the nine identified as 7 mesotheliomas; correct? 8 A. Yes. 9 Q. You did nothing to find out whether something 10 that was listed as lung cancer was really a 11 mesothelioma. That didn't happen, did it? 12 A. No. 13 Q. You only tried to reduce the number by 14 checking overdiagnosis. You didn't try to increase 15 the number by checking underdiagnosis, did you? 16 A. We did what was feasible. We didn't do what 17 was not possible to do. 18 Q. It was possible to get mesothelioma lung 19 tissue from the hospitals, wasn't it? 20 A. In a few cases. 21 MS. KYLE: All I would ask is that the 22 argument stop. Your voices are being raised. It is 23 inappropriate. 24 MR. CHANDLER: I agree, and I apologize. 25 BY MR. CHANDLER:
Page 464 1 THE WITNESS: I don't know. 2 BY MR. CHANDLER: 3 Q. Sir, are you telling the ladies and gentlemen 4 of the jury that 20 years ago you believe 5 mesotheliomas were not underdiagnosed? Didn't you 6 tell us earlier you thought it was 15 years ago it was 7 much more common to underdiagnose it. Because if we 8 have to, we will read back when you said. 9 A. All right. It is possible that at that time 10 was an era of underdiagnosis -- 11 Q. Okay. 12 A. -- and today may be an era of overdiagnosis. 13 Q. So when this study, the Tabershaw-Cooper 14 report was done, if mesothelioma was being 15 misdiagnosed, more likely than not it was an 16 underdiagnosis, not an overdiagnosis. We can agree to 17 that? 18 A. It's possible, yes. 19 MS. KYLE: Objection to form. 20 THE WITNESS: It's possible. 21 BY MR. CHANDLER: 22 Q. Okay. All right. Now, has anybody gone back 23 to those cases of lung cancer or any other code that 24 might have been encoded to find out what degree of 25 underdiagnosis was being done 20 years ago, in your	Page 466 1 Q. Dr. Weaver, I'm sorry. I'm trying to get out 2 of here and be quick, but Ms. Kyle is right, and I 3 apologize. Dr. Weaver -- I'm sorry, did you think I 4 was being rude to you, because I really didn't mean to 5 be, and if you did, I apologize. Dr. Weaver, in the 6 mesothelioma cases, the nine that were specifically 7 identified in this case, you went to go find, you made 8 an affirmative attempt to try to go find as much as 9 you could the pathology specimens, didn't you? 10 A. Yes. We wanted to confirm wherever possible. 11 Q. And where did you get that tissue? 12 A. The tissue would be in a repository in the 13 hospital. 14 Q. Why would they keep the tissue? Do 15 hospitals -- let me re-ask the question. Hospitals 16 routinely keep biopsy samples, right, it's not just 17 mesotheliomas they keep? 18 A. Yes. 19 Q. So if it's colon cancer, they keep that 20 tissue routinely; correct? 21 A. Well, not always. It's up to the hospital. 22 It varies from location to location. 23 Q. But there's nothing, 20 years ago there was 24 nothing about mesothelioma tissue samples that made 25 hospitals keep that any more than any other tissue

Page 467 1 samples? 2 A. No. 3 Q. That's a correct statement? 4 A. That is correct. 5 Q. Okay. So if there was lung tissue from 6 somebody who was identified as dying from lung cancer, 7 that would be saved on about an equal basis as 8 mesothelioma tissue would be saved; is that fair? 9 A. Yes, I think so. 10 Q. So you went back and got the mesothelioma 11 tissue, but you didn't go back to get the lung cancer 12 tissue, did you? 13 A. That is true. All right. We had no basis 14 for trying to find -- our focus of the study was 15 mesothelioma. That is what we were studying. 16 Q. You were trying to get an accurate account of 17 the mesothelioma, weren't you? 18 A. Yes; correct, accurate and correct. 19 Q. That's why, if it was overdiagnosed, you took 20 them out; right? 21 A. Yes. 22 Q. But if it was underdiagnosed, you did not 23 include it? 24 A. We did what we could. 25 Q. But you could go get lung cancer tissue if	Page 469 1 the jury that this study includes all the 2 mesotheliomas that were occurring in refineries 3 without accurately checking the level of 4 underdiagnosis with the same level of zeal that you 5 tried to find the overdiagnosis cases. You cannot 6 tell them that, can you? 7 MS. KYLE: Objection, form. 8 THE WITNESS: We made the special effort to 9 find all mesothelioma cases, and when we found them, 10 we did everything possible to ensure the accuracy of 11 the diagnosis. 12 BY MR. CHANDLER: 13 Q. Sir, that is untrue, isn't it? You did not 14 look at lung cancers to find out whether they were 15 underdiagnosed. You didn't do that? 16 A. No. I said we started out by finding out all 17 the mesothelioma cases that we could find. 18 Q. And to find them, you looked at death 19 certificates, and if the death certificate said 20 mesothelioma, that is what you looked at; right? 21 A. Yes. 22 Q. You did not look at death certificates that 23 said lung cancer to find out whether it was really a 24 mesothelioma, true; is that true? 25 A. To find the mesothelioma cases, you look for
Page 468 1 you wanted look at it, couldn't you? You could do 2 that. 3 A. It is possible. 4 Q. But you didn't do it, did you? 5 A. Because it was not feasible. 6 Q. Why is it more -- 7 A. I'm sorry, let me explain. There are simply 8 too many cases. 9 Q. Way too many cases of lung cancer; right? 10 A. Yes, it's the commonest cancer of all. 11 Q. And the more common lung cancer, the more 12 likely it is that there is underdiagnosed 13 mesotheliomas; isn't that true? 14 MS. KYLE: Objection, form. 15 BY MR. CHANDLER: 16 Q. The larger -- is that true? 17 A. Not necessarily. 18 Q. The larger the population, the more 19 likelihood for error, wouldn't you agree? 20 MS. KYLE: Objection, form. 21 THE WITNESS: Okay. 22 BY MR. CHANDLER: 23 Q. All right. 24 A. Yes. 25 Q. You cannot tell the ladies and gentlemen of	Page 470 1 death certificates that have the word mesothelioma on 2 it. We don't look at stomach cancers or skin cancers 3 or so on. We do what in research is feasible and what 4 is the objective of the study. 5 Q. Yes, sir. Did you not believe the death 6 certificates, did you? 7 A. Pardon? 8 Q. You didn't believe the death certificates 9 when they said mesothelioma, did you? 10 A. I didn't dis -- we started out with the 11 assumption that they were correct, yes. 12 Q. Then you tried to find out how many cases 13 were not mesothelioma. You went to affirmatively try 14 to reduce the number, didn't you? 15 A. No. We simply tried to get the correct 16 number, the correct diagnosis. 17 Q. Only, but the only way you looked was for a 18 reduction in numbers. You did not look in any 19 instance under any circumstances for an increase in 20 numbers. Is that fair? 21 A. This gets back to the thing we discussed 22 before of feasibility. We couldn't take every lung 23 cancer, every stomach cancer that had been listed and 24 review all of their, all their slides. 25 Q. How about taking a representative sample of

Page 471 1 lung cancers. Did you try to take a representative 2 sample? 3 A. No. 4 Q. In science, in fact, that is all an 5 epidemiological study is, isn't it? It's just a 6 representative sample of the population, isn't it? 7 A. Well, yes, that's part of it. 8 Q. I'm not saying -- 9 A. Well, not necessarily. Sometimes you are 10 studying something that is highly non-representative, 11 but anyhow, let's go ahead. 12 Q. I'm not saying you had to examine every -- 13 I'm not saying you had to examine every single case of 14 lung cancer. But you didn't even try to take a 15 representative sample to investigate whether there was 16 underdiagnosis in just a representative sample of the 17 lung cancers, did you? 18 A. We did not. 19 Q. You didn't -- okay. If you are only trying 20 to find out overdiagnosis and you are only excluding 21 workers based on prior exposure, does it surprise you 22 at all that at the end of the day, you got the number 23 down to a number where you wanted it? 24 MS. KYLE: Objection, form. 25 THE WITNESS: Our effort was simply to get	Page 473 1 MS. KYLE: Craig, have you counted how many 2 times this question has been asked? 3 MR. LEDET: I think three or four is about 4 right. 5 MS. KYLE: I thought it was 10. 6 Q. Let me ask it, because I have screwed it up 7 so many times by saying "reasonably foreseeable" 8 instead of "feasible," that I don't think there is a 9 clean answer on the record. It was reasonably 10 feasible in 1984 to take a representative sample of 11 lung cancers to find out if mesothelioma was being 12 underdiagnosed; is that fair? 13 A. It could have been done. 14 Q. And it was not done? 15 A. It was not done. 16 Q. So it is a true statement that you did not do 17 everything reasonable feasible at the time to get an 18 accurate count of the mesotheliomas. Would you agree 19 to that statement? 20 MS. KYLE: Objection, form. 21 THE WITNESS: Well, within the limits of our 22 research effort, I think we did what we could to 23 ascertain the correct diagnosis. And if all nine 24 cases had been valid, that would have been the number 25 we were talking about here today.
Page 472 1 the correct number. 2 BY MR. CHANDLER: 3 Q. But you know today, you know today, now, sir, 4 you don't have the correct number, because no attempt 5 was made to find out the degree of underdiagnosis; is 6 that fair? 7 MS. KYLE: Objection, form. 8 THE WITNESS: As researchers, we could only 9 deal with the information that we had available, and 10 we did to the best of our ability everything 11 reasonably feasible to determine the correct number. 12 MR. CHANDLER: Objection, non-responsive. 13 BY MR. CHANDLER: 14 Q. It was reasonably foreseeable in 1984 to take 15 just a representative sample of the deaths listed as 16 lung cancer and check those. That was reasonably 17 foreseeable? 18 A. I answered that before, yes. 19 Q. I'm sorry, that was reasonably feasible, 20 wasn't it? I said foreseeable, I just need to correct 21 it. It is reasonably fore -- feasible -- I'm screwing 22 it up. 23 A. We've been through that three times, so -- 24 MR. CHANDLER: Well, there is not an answer 25 on the record.	Page 474 1 BY MR. CHANDLER: 2 Q. Well, if it was reasonably feasible to look 3 at a representative sample of lung tissues to find out 4 if there was underdiagnosis going on, if that was 5 reasonably feasible, why didn't you do it? 6 A. Cost and effort, but let's go on. 7 Q. Did you say cost and effort? 8 A. Yes. 9 Q. Thank you. At the end of the day, 10 Dr. Weaver, the study that you discussed with the 11 Exxon lawyer on direct examination that was specific 12 to mesothelioma, even after you took out the cases of 13 mesothelioma that you wanted to, even after you took 14 those numbers out, it's a true statement that the 15 increased risk of mesothelioma in the cohort was still 16 noteworthy and was most likely to be real. Don't you 17 agree? 18 A. I don't know. 19 Q. Would you look at page 6 of the report. 20 A. I'm sorry. 21 Q. Look at page 6 of the report. It's the 22 conclusion. 23 A. Yes. 24 Q. It's on the conclusion, the very last 25 paragraph. "In any event" --

Page 475 1 A. I'm not on the right page. I don't have the 2 right report. 3 Q. Is that the 1984 report? 4 A. Yes. 5 Q. It's really the 7th page, but it says 6 at 6 the bottom. Okay. Right before the references. Do 7 you see that? The last paragraph right before 8 references. 9 MS. KYLE: What page are you on? 10 MR. CHANDLER: The page right before the 11 references. It's really page 7, but it's identified 12 as page 6 on the report. You had the right one in your 13 hand. 14 MS. KYLE: That is page 34. There are 15 two-page 6s. 16 MR. CHANDLER: Let me see the front of your 17 report. I'll find it for you. One is like appendix 18 something or other. 19 MS. KYLE: Okay. Go ahead. 20 BY MR. CHANDLER: 21 Q. Okay. We are on the same page literally now? 22 A. Yes. Your question please. 23 Q. Yes, sir. I will direct your attention to 24 this report on page 6 about mesotheliomas. Just tell 25 the ladies and gentlemen of the jury whether I read	Page 477 1 BY MR. CHANDLER: 2 Q. Yes, sir. 3 A. You have to give me time to respond. 4 Q. Let me know whether I read this correctly. 5 "Although there is probably a real excess of risk for 6 mesothelioma in the OH-1 cohort, the possibility that 7 it's related to factors other than occupational 8 exposures within the petroleum industry cannot be 9 ruled out. It is true that there are asbestos 10 exposures within the industry, and that some of the 11 individuals who died from mesothelioma have evidence 12 from their occupation and employer listed on the death 13 certificates, that they worked in jobs in the industry 14 with asbestos exposure. 15 "In addition, for all these individuals, the 16 long interval between onset of employment in the 17 participating refineries and death from this cause is 18 compatible with the occupational exposures in the 19 petroleum industry being the cause of the excess risk 20 of mesothelioma. 21 "However, four of the nine individuals were 22 first hired after World War II and two of the others 23 were hired in 1943 and 1944 respectively. For these 24 individuals, at least, employment in a shipyard during 25 World War II is a possibility that cannot be ruled out
Page 476 1 this correctly. "In any event, the increased risk of 2 mesothelioma in the cohort is noteworthy and is most 3 likely to be real." Did I read that correctly? 4 A. Yes. 5 Q. That's after you would have taken out the 6 people who worked in both the shipyard -- 7 A. No, no. This is before we had -- we in fact 8 proceeded as the investigator recommended -- 9 Q. Got you. 10 A. -- to confirm the diagnosis and see if they 11 have shipbuilding exposure. We did precisely what he 12 recommended. 13 Q. Well, didn't this report consider the workers 14 in the shipyards? This report took that into 15 consideration, didn't it? 16 A. No. We didn't have past occupational 17 histories in the basic study. No. 18 Q. Okay. Let's go to page 5, sir, the previous 19 page before that. The last paragraph, and let me know 20 whether I read this correctly. "Although there is 21 probably a real excess of risk from mesothelioma" -- 22 A. I'm not with you. Please bear with me. 23 MS. KYLE: What page now? 24 THE WITNESS: All right. Okay. I have got 25 it. Bottom paragraph of page 5. I'm sorry.	Page 478 1 at present. Such employment was known to result in 2 extensive asbestos exposure with documented increased 3 risk of mesothelioma. 4 "Although eight of these nine individuals 5 worked in refineries located in areas where 6 shipbuilding activity was likely to be extensive, this 7 point is not particularly useful, because 8 approximately 90 percent of the cohort worked in such 9 refineries." 10 Did I read that correctly? 11 A. You did. 12 Q. So what you did was you went out to go see if 13 you had any people who worked in both shipyards and 14 refineries? 15 A. Yes. 16 Q. And you excluded those people? 17 A. If their refinery occupation did not entail 18 asbestos exposure. 19 Q. And tell me what the occupation those people 20 who you excluded that worked in shipyards had in the 21 refinery, sir? 22 A. Here we go into what constitutes occupational 23 exposure to asbestos, and they did not have what was 24 considered to be valid occupational exposure to 25 asbestos in their refinery work.

Page 479 1 Q. What was their trade in the refineries? 2 A. I don't know now. 3 Q. Well, at the time that you excluded them, did 4 you consider that pipefitters had viable occupational 5 exposure to asbestos? 6 A. That would have been considered, yes. 7 Q. And would, is pipefitters a trade that had 8 occupational exposure to asbestos -- 9 A. Because oftentimes pipefitters may have 10 worked as insulators before attaining the skill of 11 pipefitter. 12 Q. And so pipefitter could be a guy exposed to 13 asbestos in the refinery; right? 14 MS. KYLE: Objection, form. 15 THE WITNESS: In our classification of 16 asbestos workers, their current classification may be 17 pipefitter, but he may have worked for six, eight, 10 18 years previously as an insulator. And in that case, 19 he is always retained on the list as exposed to 20 asbestos -- 21 Q. Sir, I want -- 22 A. -- even though his current occupation does 23 not have occupational exposure to asbestos. 24 Q. I want you to tell the ladies and gentlemen 25 of the jury so they can assess the credibility of what	Page 481 1 A. There might be in a few cases a laborer who 2 was transporting packages of asbestos in storage, in 3 transport. 4 Q. Did you consider a laborer who transported 5 asbestos materials to have enough asbestos exposure so 6 that if he got mesothelioma, you could relate it to 7 that exposure and therefore leave him in the study? 8 MS. KYLE: Objection, form. 9 THE WITNESS: Let me get back. I don't 10 understand. 11 BY MR. CHANDLER: 12 Q. Well, you looked at your workers and you said 13 those kinds of workers didn't have asbestos exposure. 14 We can kick them out and assign all of their exposure 15 to the shipyards. That is what happened, right? 16 A. No. 17 Q. You had workers who worked in shipyards and 18 refineries at the same time. You had three of those. 19 33 percent of the mesotheliomas fell under that 20 category? 21 A. Yes. 22 Q. And with 33 percent of the mesotheliomas that 23 fell in that category, you kicked them out, because 24 you took it unto yourself to say they had a job that 25 did not have enough exposure to asbestos in the
Page 480 1 you did, tell us all of the occupations in the 2 refinery that you would have considered at the time as 3 being that's not an occupation that would have been 4 exposed to asbestos in the refinery, and therefore we 5 can discount that exposure and assign all of his 6 exposure to the shipyard, and therefore exclude it 7 from the list. What kinds of trades would you have 8 said were not exposed to asbestos and therefore 9 excluded? 10 A. We are not getting anyplace. I mean, I can 11 say office workers. 12 Q. Okay. What else? 13 A. We had criteria for designation of a worker 14 exposed to asbestos, and all occupations which did not 15 meet that criteria would not be listed as asbestos 16 exposed. 17 Q. What were the occupations that were included 18 then. Let's do the shorter list. What occupations 19 did you consider to have enough asbestos exposure to 20 have caused mesothelioma, and therefore would have 21 left in the number? 22 MS. KYLE: Objection, form. 23 THE WITNESS: Well, principally insulators. 24 BY MR. CHANDLER: 25 Q. Okay, who else?	Page 482 1 refinery to cause the mesothelioma; is that right? 2 A. That is right. 3 Q. So tell me the jobs that you would have said 4 we need to leave them in, because he had the kind of 5 job that would have caused enough asbestos exposure in 6 a refinery so that we can't kick him out of the study. 7 Tell me those jobs. 8 A. I'm trying to list the criteria that we used 9 in our refinery. 10 Q. Tell me. 11 A. And that is jobs that entail occupational 12 exposure to asbestos for a proper period of time. 13 Q. What are those jobs? 14 A. Okay. So we said insulators. In some cases 15 there were laborers -- 16 Q. Okay. 17 A. -- who were involved in transport of asbestos 18 materials. The bags would split and there could be 19 spills. And then, anyhow, there were a few 20 individuals such as that. There were, well, you 21 brought up the subject of petroleum products. Certain 22 lubricants, greases. Say a grease, say a degrease. 23 The individuals who dumped the fibrous material into 24 the vat until it was engineered so it was, no longer 25 entailed exposure, they were listed as asbestos

1 exposed.
 2 Q. Were pipefitters listed as asbestos exposed?
 3 A. No.
 4 Q. Okay. Were machinists listed as asbestos
 5 exposed?
 6 A. No.
 7 Q. Were carpenters listed as asbestos exposed?
 8 A. No.
 9 Q. Were electricians listed as asbestos exposed?
 10 A. No. Again, all these no's, unless there were
 11 special things about the individuals work history that
 12 had him working with asbestos, particularly if he had
 13 been an insulator in the past.
 14 Q. Yes, sir, but if a worker had never been an
 15 insulator, he was not considered -- strike that. If a
 16 worker like Mr. Altimore was a machinist and never
 17 been an insulator, he was not somebody you would have
 18 kept in the study?
 19 A. No. He was not occupationally exposed to
 20 asbestos.
 21 Q. Okay. So you kicked -- if the three people
 22 you kicked out were pipefitters, you would have
 23 excluded them from the study, if they were the same
 24 people who worked in the shipyard; right?
 25 A. Yes.

1 Q. So the point is you took it upon yourself to
 2 assign which trades in your opinion would have been
 3 exposed to asbestos, and if that trade also worked in
 4 the shipyard, you reduced and took out that number
 5 from the study, if there was a mesothelioma there; is
 6 that true?
 7 A. I think I follow you. That if their work
 8 history in the refinery did not entail occupational
 9 exposure to asbestos and they had previously worked in
 10 a shipyard, they were not considered to be
 11 mesothelioma cases due to refinery work.
 12 Q. And if those work histories included work as
 13 a pipefitter, a machinist, a carpenter, those would
 14 all be work histories you would have taken out,
 15 because you would have made the decision those were
 16 not occupationally exposed workers; is that true?
 17 A. Yes.
 18 Q. Okay. Would you look at page 9, sir.
 19 MS. KYLE: Troy, I have a question. You said
 20 a while back you had a few minutes left. How much do
 21 you have?
 22 MR. CHANDLER: Five.
 23 BY MR. CHANDLER:
 24 Q. Sir, on page 9, the third, the second full
 25 paragraph, it states, "In the course of carrying out

1 MS. KYLE: Objection, form.
 2 BY MR. CHANDLER:
 3 Q. If one of the three workers who worked in the
 4 shipyard was a machinist, you would have kicked him
 5 out of the study, if he also worked in the shipyard?
 6 A. If he had no prior service as an insulator or
 7 something else in the refinery where he was exposed,
 8 occupationally exposed, yes.
 9 Q. If the worker was a carpenter and never was
 10 an insulator, you kicked him out of the study if he
 11 also worked in the shipyard; right?
 12 A. If he was not occupationally exposed to
 13 asbestos, yes.
 14 Q. And you don't, you hold the opinion that
 15 carpenters, if they were never insulators, were not
 16 occupationally exposed to asbestos, such that if they
 17 also worked in the shipyard, you would have kicked
 18 them out of the study; right?
 19 A. Yes.
 20 Q. Okay. How about, let's see. I'm trying to
 21 think of the other trades that might go out on a job.
 22 If a supervisor got mesothelioma and prior to coming
 23 to the refinery that supervisor also worked at a
 24 shipyard, you would have excluded him; right?
 25 A. Yes.

1 this additional task" --
 2 A. Wait a minute. Oh, yes.
 3 Q. Right above data analysis.
 4 A. Yes.
 5 Q. Let me know whether I read in correctly. "In
 6 the course of carrying out this additional task, it
 7 was discovered that 264 of the death certificates were
 8 not in the records and apparently had become separated
 9 and had disappeared between SRI's original preparation
 10 of the records for shipment to API and the return of
 11 the records from API to SRI. These missing death
 12 certificates were requested from the refineries and
 13 from the states for those that the refineries did not
 14 have on file." Did I read that correctly?
 15 A. You did.
 16 Q. Did the missing death certificates get
 17 shipped back to SRI, sir?
 18 A. I don't know.
 19 Q. Do you know how death certificates came up
 20 missing somewhere between SRI and the American
 21 Petroleum Institute?
 22 A. I don't know.
 23 Q. And you can't tell us whether they were ever
 24 returned from the American Petroleum Institute or
 25 whatever happened to these missing 264 death

Page 487 1 certificates, can you? 2 A. At this time, I cannot say. 3 Q. Okay. I don't remember if I asked this 4 before. Do you know Admiral or Dr. Richard Lemen of 5 the United States Public Health Service, sir? 6 A. No. 7 Q. Do you have any reason to disagree that he is 8 an internationally renowned epidemiologist in the 9 field of asbestos science and medicine? 10 MS. KYLE: Objection, form. 11 THE WITNESS: I can't respond to that. I 12 don't know. 13 BY MR. CHANDLER: 14 Q. Okay. Would you look at table 7 on this 15 report, some ways back. It's really page 23 of the 16 report, because 24 is the next page. Do you see the 17 table? 18 A. Yes. Table 7. 19 Q. What we are looking at on table 7 are the 20 nine men who had mesothelioma on the death certificate 21 and their occupations; right? 22 A. Yes. 23 Q. Now, so we have got a machinist, an 24 insulator, another machinist, another machinist -- by 25 the way, what trade was Mr. Altimore?	Page 489 1 is greater than machinist on this list, is there? 2 A. That is true. 3 Q. Okay. 4 A. I would say what is their statistical 5 significance. 6 Q. I will tell you the significance. 7 Mr. Altimore was a machinist, wasn't he? 8 A. Yes. 9 Q. Thank you. Sir, you knew at the time this 10 was written that the literature supported the fact 11 that mesotheliomas are missed, didn't you? 12 A. Are -- 13 Q. Are missed. You knew that. 14 A. Yes. 15 Q. The report told you that, didn't it, on page 16 27, sir. Go farther back in the report, Dr. Weaver. 17 The very last sentence on page 27, under the heading, 18 "Mesothelioma." You have got it. The very last 19 sentence reads -- and you let the ladies and gentlemen 20 of the jury know whether I read this correctly. "In 21 addition, the literature contains supportive evidence 22 that some mesotheliomas are missed." Correct? 23 A. Yes. 24 Q. Page 29, again, Doctor, the increased risk -- 25 this is the second full paragraph on page 29. "The
Page 488 1 A. Machinist. 2 Q. You have got a maintenance supervisor, a 3 welder, a utility division, a welder, and a 4 pipefitter; right? 5 A. Yes. 6 Q. Now, in looking at these nine, you decided 7 after looking at their occupational histories three of 8 these men worked in a shipyard and did not have 9 occupational exposure to asbestos based on their trade 10 at the refinery; right? 11 A. Yes. 12 Q. Which three? 13 A. Well, this table doesn't identify the ones 14 with previous work history in the shipyards. 15 Q. But machinist is the most common occupation? 16 A. Yes; right. 17 Q. The most common occupation among the 18 mesotheliomas found on this cohort of the American 19 Petroleum Institute, even before you reduced it to the 20 number you got, was machinist; isn't that right? 21 A. There are three machinists here, yes. 22 Q. That is the greatest occupation represented 23 in this study cohort for mesotheliomas, isn't it? 24 A. That is three out of nine. 25 Q. Yes, sir. There's no other occupation that	Page 490 1 increased risk of mesothelioma in the OH-1 cohort is 2 noteworthy and is most likely real." Did I read that 3 correctly? 4 A. Yes. The continuing sentence -- well, okay. 5 Q. "Further investigation to document the degree 6 of misclassification of the diagnosis and/or to rule 7 out previous shipyard employment as a possible 8 explanation may be appropriate." Is that what you 9 wanted to comment on? 10 A. Yes, and that is what we did. 11 Q. The further investigation, nowhere in this 12 document does it limit the further investigation to 13 document the degree of misclassification only to 14 overdiagnosis. Nowhere in this document does it say 15 just consider the overdiagnosis, does it? 16 A. I think we have been through that before. 17 Q. Well, my question is different now, though. 18 Nowhere in this document do the researchers say when 19 you go and do further investigation to document the 20 degree of misclassification, do they tell you only 21 consider overdiagnosis. 22 A. You have read it correctly, and they do not 23 talk about over or underdiagnosis in either way. 24 Q. Well, they do. On page 27. 25 A. All right. Well, yes, that was --

Page 491 1 Q. On page 27, they acknowledge mesotheliomas 2 are missed; right? 3 A. Yes. 4 Q. And they tell you further investigation to 5 document the degree of misclassification may be 6 appropriate. 7 A. Misclassification, yes. 8 Q. But nowhere do they limit misclassification 9 only to the overdiagnosed cases; right? 10 A. True. 11 Q. Who is it that made the decision only to look 12 at overdiagnosis and not to consider underdiagnosis? 13 Who made that decision? 14 A. I don't know. 15 Q. It was somebody at the American Petroleum 16 Institute, wasn't it? 17 A. I don't know. 18 MS. KYLE: Objection, form. 19 BY MR. CHANDLER: 20 Q. Who conducted the investigation? 21 A. Dr. Kaplan. 22 Q. When the further investigation to document 23 the degree of misclassification was done, you are 24 telling the ladies and gentlemen of the jury that 25 Dr. Kaplan did that?	Page 493 1 Q. Okay. Nowhere in the document that the jury 2 will see, because this is the only thing they get to 3 see. Nowhere in this entire document does it say, 4 hey, you researchers only consider one side of the 5 story. Don't consider underdiagnosis, does it? 6 A. I think -- well, your statement, yes. 7 Q. That's correct? 8 A. I think so. 9 Q. Okay. Mr. Raddliff in this case has told the 10 jury, "Now it's time for the rest of the story." Who 11 is famous for saying that? 12 A. I didn't hear you. 13 Q. Yes, sir. Mr. Raddliff is a lawyer that the 14 ladies and gentlemen of the jury has met. He is 15 trying the case for the Exxon Company. You have never 16 met him, have you? 17 A. No. 18 Q. He told the ladies and gentlemen of the jury, 19 "Now it's time for the rest of the story," in his 20 opening statement. Who is the famous person that says 21 that? Paul Harvey. Do you recognize the name? 22 A. It doesn't ring a bell to me. 23 Q. Okay. Whatever the rest of the story is on 24 any underdiagnosis of mesothelioma, we will never 25 know, will we?
Page 492 1 A. Dr. Kaplan was involved in that, and of 2 course the data, the information, had to come from the 3 petroleum industry. 4 Q. So the people who made the determination only 5 to look at overdiagnosis was somebody from the 6 petroleum industry? 7 MS. KYLE: Objection, form. 8 THE WITNESS: This gets back to feasibility, 9 and Dr. Kaplan was involved in the follow-up studies 10 that were done. 11 BY MR. CHANDLER: 12 Q. I'm just trying to find out who made the 13 decision, Doctor, that it wasn't feasible even to do a 14 representative sample of the lung cancer tissue. Who 15 made that decision? 16 A. I don't know. 17 Q. Okay. It was somebody at the American 18 Petroleum Institute, though, wasn't it? 19 MS. KYLE: Objection, form. 20 BY MR. CHANDLER: 21 Q. Can you say with reasonable certainty, 22 Doctor, that it was somebody at the American petroleum 23 industry, regardless of who it was? 24 A. It could have been somebody at Stanford 25 Research Institute.	Page 494 1 MS. KYLE: Objection, form. 2 THE WITNESS: I'm not sure I'm following 3 this, but -- 4 BY MR. CHANDLER: 5 Q. We will never know the degree of 6 underdiagnosis of mesothelioma because you never 7 looked for it? 8 A. We will never know the degree of 9 underdiagnosis. We will never know the degree of 10 overdiagnosis. 11 Q. Well, isn't that exactly what you did? You 12 went and specifically looked for overdiagnosis. We 13 know exactly what that was, don't we? 14 A. We corrected the diagnosis as best we could. 15 Q. Yes, sir. We do know the degree of 16 overdiagnosis, because you specifically went to do 17 that; right? 18 A. Oh, you are speaking -- all right. The nine 19 cases. 20 Q. Yes, sir. I'm speaking of the study. 21 A. All right. 22 Q. Let me re-ask the question then. It's my 23 fault, because I wasn't specific. In this study, we 24 will never know the rest of the story and never know 25 the degree of underdiagnosis, because it was never

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1 specifically looked for the way overdiagnosis was,
 2 will we?
 3 MS. KYLE: Objection, form.
 4 THE WITNESS: We went as far as we could to
 5 find the correct diagnosis. There still could be,
 6 within these nine cases, examples of under or
 7 overdiagnosis.
 8 BY MR. CHANDLER:
 9 Q. Sir, it is not true that you did everything
 10 you could. Didn't you tell us earlier --
 11 A. All right, we --
 12 MS. KYLE: I'm going to object to form. I
 13 resent the fact that you are calling this witness a
 14 liar.
 15 MR. CHANDLER: I'm not saying that.
 16 MS. KYLE: So I object to form. It's
 17 totally inappropriate, and I don't want that repeated
 18 in that fashion.
 19 BY MR. CHANDLER:
 20 Q. Sir, it is not an accurate statement to say
 21 you did everything that was feasible. We do know it
 22 was feasible to look at a representative sample of
 23 lung tissue, don't we? We do know that to be true.
 24 Sir?
 25 A. Yes, it could have been done.

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1 Q. And it wasn't done?
 2 A. It wasn't done.
 3 Q. So if somebody tells the ladies and gentlemen
 4 of the jury we did everything that was feasible at the
 5 time, that is not entirely accurate, is it?
 6 A. We did what we could.
 7 Q. By the way, the ladies and gentlemen of the
 8 jury see you looking to your left. Who is sitting
 9 next to you?
 10 A. Glenna Kyle, attorney.
 11 Q. For Exxon; right?
 12 A. Yes.
 13 Q. Okay. Doctor, if there was an asbestos
 14 product that people at the Exxon refinery knew to be
 15 worse from a dust angle, you know, was more dusty than
 16 other asbestos products that were feasible to use,
 17 should they have used those other products, the less
 18 dusty products?
 19 A. It was our desire to reduce all dust
 20 exposures as low as feasible and substitution is one
 21 of the mechanisms to achieve that.
 22 Q. And it was feasible to substitute a dustier
 23 product with a less dusty product, that should be
 24 done, given feasibility?
 25 A. Yes.

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1 Q. Somebody shouldn't wait until it goes off the
 2 market to substitute a dustier product for a less
 3 dusty product, should they? That should just be done
 4 as soon as it's feasible to do it.
 5 A. Assuming you have the knowledge and assuming
 6 the other alternate material speaks specifications.
 7 Q. Yes, sir. Assuming you know it's dustier
 8 than other products and assuming there are other
 9 feasible products available that are less dusty,
 10 specifically asbestos-containing products, the less
 11 dusty products should be used. Wouldn't you agree?
 12 A. Yes.
 13 Q. All right. Dr. Weaver, thank you for your
 14 time today. I appreciate it. I know Ms. Kyle is
 15 going to have some questions for you and I will pass
 16 the witness.
 17 (Recess)
 18 THE VIDEOGRAPHER: We are going off the
 19 record. The time is 3:38.
 20 (Recess)
 21 THE VIDEOGRAPHER: We are going back on the
 22 record. The time it's 3:48
 23 REDIRECT EXAMINATION
 24 BY MS. KYLE:
 25 Q. Dr. Weaver, I have just a few questions for

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1 you. I do hope a few. The studies that Mr. Chandler
 2 just covered, if I can generally refer to them as the
 3 API studies. They began with the 19 -- I have the
 4 1958 Kettering study, the 1964 Cooper-Tabershaw, and
 5 they basically cover the next several years until the
 6 1984 Kaplan SRI report. Can I refer to those as the
 7 API studies?
 8 A. I understand. You may.
 9 Q. Or refinery studies, either one. Is that
 10 okay with you?
 11 A. Yes.
 12 Q. The 1984 study, who did that?
 13 A. Dr. Kaplan. That is Stanford Research
 14 Institute.
 15 Q. Mr. Chandler referred to you doing the study;
 16 is that correct?
 17 A. No.
 18 Q. Who, again, did this study?
 19 A. Who did the study? Dr. Kaplan.
 20 Q. And he is where? Where was he located?
 21 A. The senior epidemiologist at Stanford
 22 Research Institute, International, in San Francisco.
 23 Q. And who funded the refinery studies?
 24 A. I am having trouble hearing you.
 25 Q. Who funded the refinery studies?

Page 499 1 A. The American Petroleum Institute. 2 Q. Did the government come to you and ask if 3 they could do these refinery studies, fund them? 4 A. They did not. 5 Q. Did labor come to you and ask you if they 6 could dot refinery studies and fund them? 7 A. No. 8 Q. Did any other organization come to you when 9 you were at the API and ask that they be able to do 10 these studies? 11 A. No. 12 Q. If it had not been for refinery members of 13 the API, would these studies have been done? 14 A. They could not have been done otherwise. 15 Q. What is epidemiology? 16 A. The science of study of populations, with 17 respect to state of health, well being, illnesses, 18 cause of death, in an effort to improve the health of 19 the population under study. 20 Q. Are they basically -- strike that. Do epi 21 studies incorporate statistical samples of certain 22 populations? 23 A. Ordinarily they do, yes. 24 Q. Statistics plays a significant role in 25 epidemiology studies; is that correct?	Page 501 1 Q. Were they age matched for sex -- excuse me, 2 were they matched for sex? 3 A. Yes. 4 Q. Were there lung cancers in the general 5 population? 6 A. Yes. 7 Q. Would it have been feasible to have reviewed 8 the pathology for the lung cancers in the general 9 population? 10 A. It would not have been feasible to do so. 11 Q. How many thousand lung cancer cases are 12 reported annually in the United States? 13 A. I don't know, but it's the most common 14 cancer, so the number is extremely large. 15 Q. How many years would it have taken to review 16 the lung cancer cases reported in the United States on 17 an annual basis? 18 A. More years than there are available to do it. 19 Q. If in fact we have a misdiagnosis, an 20 underdiagnosis of mesothelioma in refinery workers, 21 would you expect an underreporting of mesothelioma in 22 the general population? 23 MR. CHANDLER: Objection, form. 24 THE WITNESS: You would think they would err 25 in the same direction, that if there is underreporting
Page 500 1 A. Yes, and in the present time they play an 2 exceedingly important role, overly stressed role. 3 Q. Mr. Chandler asked you more than once 4 regarding the feasibility of redoing pathology or 5 reviewing pathology for lung cancer cases in the 6 refinery cohort. 7 A. He did. 8 Q. Would it be valid to look at lung cancer 9 cases in the refinery cohort without looking at the 10 lung cancer cases in the general population, which was 11 the comparison group for these refinery workers? 12 A. To be done properly, you would have to look 13 at the studies of both populations. 14 Q. Let's break this up a little bit. The 15 refinery cohort consisted of how many individuals? 16 A. 20-, 21,000 people, is that correct? I 17 think so. 18 Q. These 21,000 people, who were they compared 19 to? 20 A. The population at large. The United States 21 population based on census or Social Security numbers. 22 Q. Were the members of the refinery cohort age 23 matched with the general population? 24 A. Yes. They were age matched in the Monson 25 program.	Page 502 1 in one population, you would expect the same thing to 2 be reflected in the other population. 3 BY MS. KYLE: 4 Q. Isn't that a basic tenet for epidemiology? 5 A. Yes. The epidemiology is fraught with 6 weaknesses and with possible errors, and of course 7 competent investigators know of this. They even point 8 it out in the report, which makes criticism relatively 9 easy to be arrived at. 10 Q. In fact, if you have random error in one 11 population, you expect to have the same random error 12 in the other population; is that correct? 13 MR. CHANDLER: Objection, leading. 14 THE WITNESS: You would expect that to be the 15 case. 16 BY MS. KYLE: 17 Q. Do you expect the random error in the study 18 population, as well as the general population? 19 A. Yes. In most cases they would tend to 20 balance out. 21 Q. If a physician was presented with a 22 mesothelioma patient who had occupational exposure to 23 asbestos, would you expect the diagnosis, for 24 instance, in a refinery cohort to be a misdiagnosis, 25 an overdiagnosis or underdiagnosis, when compared to

Page 503 1 an individual from the general population? 2 MR. CHANDLER: Objection, form. 3 THE WITNESS: Well, with the exposure to 4 asbestos or presumed exposure to asbestos, this would 5 tilt the balance over to overdiagnosis. 6 BY MS. KYLE: 7 Q. In which cohort? 8 A. The refinery cohort. 9 Q. Dr. Selikoff -- Mr. Chandler also referred to 10 Dr. Selikoff's studies. Are you familiar with the 11 Selikoff studies? 12 A. Somewhat. 13 Q. Did Selikoff do an epidemiology study of 14 insulators? 15 A. He did. 16 Q. We have also discussed follow up. Did 17 Dr. Selikoff have 100 percent follow up in his 18 insulator population? 19 A. No, he did not. 20 Q. Do you know what percent follow up 21 Dr. Selikoff had in his population? 22 A. I don't know at this time, but I would like 23 to, well, you can refer to the follow-up in the 24 refinery studies, if you choose to do so. 25 Q. Do you recall the follow-up in the Selikoff	Page 505 1 Petroleum Institute's industrial hygiene committee. 2 They were, had invited comments such as this from 3 member companies, because of questions that had been 4 raised about the potential deleterious effects on the 5 health of asbestos exposed workers. 6 Q. Is this a listing of disease incidents in 7 exposed workers? 8 A. Yes. This is a listing of health effects 9 found in asbestos exposed workers as compared to 10 non-asbestos exposed workers. 11 Q. The data in its entirety for both exposed and 12 non-exposed is set out in this letter; is that 13 correct? 14 A. Yes. This is based on the medical file and 15 the evaluation of the each worker. 16 MS. KYLE: What is the 1960 document? What 17 exhibit is that? 18 MR. CHANDLER: Exhibit 3. 19 BY MS. KYLE: 20 Q. Dr. Weaver, not to change documents on you 21 too quickly, but to get through here today, Exhibit 22 Number 3, would you remind the jury what Exhibit 23 Number 3 is? 24 A. This is a published medical study by Dr. John 25 Thorpe and myself. It's dated 1960, and the title is,
Page 504 1 cohort? 2 A. No, I do not. It was well short of 100 3 percent. It was, I think less than 90 percent. 4 Q. Do you know of any epidemiology study 5 reported to date that has achieved 100 percent follow 6 up? 7 A. Not any sizable study, no. 8 Q. Just one moment. Is the Dooley letter 9 Exhibit 5? 10 MR. CHANDLER: No. That is the Bonsib 11 report. The Dooley letter is Exhibit 9. 12 BY MS. KYLE: 13 Q. Dr. Weaver, would you look at Exhibit 9. 14 What is that, what is Exhibit 9? 15 A. This is a letter dated April 6, 1966, from 16 myself to a Mr. Dooley at Texaco. 17 Q. Does that cover letter report an epidemiology 18 study? 19 A. No. This would not be considered in any 20 light an epidemiology study. 21 Q. What are you doing in Exhibit 9? What are 22 you reporting to Dr. Dooley? 23 A. We are reporting our experience with study, a 24 study of the health condition of asbestos, of 25 insulators as part of an inquiry from the American	Page 506 1 Chronic "Pulmonary Disease in an Industrial 2 Population." 3 Q. Did you look for the incidence of 4 pneumoconiosis in this particular study? 5 A. Yes, we in particular looked for cases that 6 would be properly diagnosed as an occupational dust 7 disease, pneumoconiosis. 8 Q. Would that include asbestosis? 9 A. It would, indeed, include asbestosis. 10 Q. Did you find an increased incidence of 11 asbestosis in this study? 12 A. We found no cases of asbestosis. We found no 13 pneumoconiosis, no case of occupational dust disease. 14 Q. I happen to agree with Mr. Chandler, you 15 can't see invisible dust. 16 MS. KYLE: I do agree with you, Troy. 17 MR. CHANDLER: Let's all just kiss and make 18 up then and go home. 19 BY MR. CHANDLER: 20 Q. Well, actually, excuse me -- strike that. 21 Were insulators followed both industrial hygiene-wise, 22 as well as medical-wise, if I can use those phrases, 23 at Exxon as a, in any particular fashion? 24 A. Yes, they were. 25 Q. How were they followed?

Page 507 1 A. Well, with respect to the work environment, 2 the industrial hygiene and safety and advisors and the 3 first-line foremen were aware and made the workers 4 aware of the potential hazards of asbestos in causing 5 diseases. 6 In the medical evaluation program, they were 7 studied with emphasis on efforts to find if they had 8 any evidence of an asbestos related disease. And this 9 would be done by the medical, all tools of medical 10 type available, the physical examination, taking the 11 history, chest x-rays in particular, laboratory tests, 12 pulmonary function tests, electrocardiograms. All of 13 this was done with respect to medical monitoring. 14 Q. Do you know what advice they received 15 regarding respiratory protection on the job? 16 A. Would you please -- 17 Q. Do you know what advice, warnings they were 18 given regarding respiratory protection to be worn on 19 the job? 20 A. In general, they were, had training sessions 21 on how to use a respiratory protective device, which 22 type of device would be appropriate for a particular 23 condition. There's different devices to choose from. 24 They were taught how to wear the device, to properly 25 protect the intake to the airway and they were	Page 509 1 possibility, not likelihood, but a possibility that 2 dust could be developed, and of course the working 3 conditions, different methods of dust suppression can 4 be considered, but the overall objective was to reduce 5 dust in the inhalation area to the lowest feasible 6 amount, as possible. 7 Q. Let's now refer to the dust clouds and the 8 invisible dust. What was the PLV for asbestos 9 exposure from the 1930s through the 1960? 10 A. It was 5 million particles per cubic foot, 11 was the guideline, first by the SHIGH, the American 12 conference of Industrial Hygienists, and this same 13 level was accepted, promulgated first by the 14 Department of Labor, and then by OSHA, when OSHA was 15 established, and both SHIGH and the Department of 16 Labor and OSHA moved quickly to reduce this level in 17 the early 1970s. But that 5 million particles per 18 cubic foot was the guideline in use during this long 19 period of time that you referred to. 20 Q. If a worker was exposed to 5 million 21 particles per cubic foot, an insulator, for any 22 significant period of time, would you expect to see 23 some dust in the area? 24 A. Certainly in the majority of instances, the 25 dust would be visible. Again, the asbestos would be
Page 508 1 instructed with respect to the dust conditions, dust 2 exposure conditions during which they should use these 3 devices. 4 This instruction would take place at safety 5 meetings or in training sessions with respect to a 6 turn around or a particular job. The point I'm making 7 is that this was something that was done repetitively 8 and in general terms, and also in specific terms for a 9 particular work task. 10 Q. Did you personally advise insulators to wear 11 respiratory protection when doing rip out? 12 A. I did. 13 Q. Did you tell them to wait until they saw 14 clouds of dust? 15 A. I'm sorry -- 16 Q. Did you tell them to wait and wear 17 respiratory protection only when they saw clouds of 18 dust? 19 A. No. 20 Q. When did you tell them to wear their 21 respiratory protection? 22 A. When the material -- well I didn't tell them, 23 but the instruction process, standing operating 24 methodology here is when material they were working 25 with contained asbestos and when there was a	Page 510 1 mixed with a carrier dust, with other components, and 2 from the mixture of dust in virtually every case, you 3 would expect to have a visible component. 4 Q. Was 5 million particles per cubic foot 5 considered a safe working level for an insulator from 6 the 1930s through the 1960s? 7 MR. CHANDLER: Object to the form. 8 THE WITNESS: It was considered safe, 9 protective in virtually all instances. It was a 10 guideline, and I think as we mentioned before, we 11 always were striving to go below the guideline, well 12 below the guideline in our work environment. 13 BY MS. KYLE: 14 Q. I believe during the direct which we, which 15 you did last week or the week before, you referred to 16 the Kettering study as having some weaknesses. You 17 also referred to it, as Mr. Chandler remarked today, 18 as groundbreaking. What do you mean by 19 groundbreaking? 20 A. It was the first of its kind with respect to 21 studying an industrial population with a primary focus 22 on the occurrence of cancer, and as we mentioned 23 before, this was ahead in time of comparable data from 24 the general population. So that there was, this was 25 before any yardsticks for comparison were really

Page 511 1 available. This was ahead of any studies by the 2 Department of Labor or the National Cancer Institute 3 or other organizations, other industries of any type. 4 Q. Efforts to investigate disease incidents in 5 refinery cohorts, did they end in 1958 after the 6 Kettering study? 7 A. No. That is an important feature of the 8 Kettering study. With the recognized weaknesses, yet 9 the Kettering investigators have data that they saw 10 fit to analyze and they, which they did, and which 11 they reported. But this was, opened the door for more 12 sophisticated, more complete, more meaningful studies 13 that followed, and we mentioned previously there are 14 now well over 100 epidemiologic studies in refinery 15 workers. 16 Q. If we can again then refer to the refinery 17 studies, I understand that some were initiated to 18 investigate hydrocarbon exposure. However, if a lung, 19 if a cancer is reported in one of the refinery 20 studies, does one know if it's caused by hydrocarbon, 21 zinc, lead or any other material? 22 A. No. There is no label in any given cancer 23 case with respect to causation. 24 Q. If you have a deficit in lung cancer and the 25 refinery epi studies, you simply have a deficit in	Page 513 1 A. According to the design, it could report 2 either or both. 3 Q. Does it report either morbidity or mortality 4 for the cohort regardless of what specific chemical or 5 fiber initiated the study? 6 A. Yes. 7 Q. Why did refineries and chemical plants use 8 asbestos-containing products? 9 A. Repeat the question. 10 Q. I'm sorry. Why did refineries and/or 11 chemical plants use asbestos-containing products? 12 A. Why do refineries use asbestos products? 13 Q. Yes. 14 A. Because of the desirable features of 15 asbestos, uniquely desirable features of asbestos to 16 meet specifications, engineering specifications and to 17 achieve the needs of the product. 18 Q. Did it make the site safer, a safer 19 workplace? 20 MR. CHANDLER: Objection, leading. 21 THE WITNESS: As used, asbestos products have 22 been extremely useful in making work safer and in 23 saving lives and in prolonging life. 24 BY MS. KYLE: 25 Q. Who was the chief industrial hygienist for
Page 512 1 lung cancer; is that correct? 2 A. That is indeed correct. 3 MR. CHANDLER: Objection leading. 4 BY MS. KYLE: 5 Q. That's a strange question. Let's go off the 6 record a minute. 7 THE VIDEOGRAPHER: We are going off the 8 record. The time is 4:14. 9 (Recess) 10 THE VIDEOGRAPHER: Woo are going back on the 11 record. The time is 4:17. 12 BY MS. KYLE: 13 Q. Pardon the interruption, Dr. Weaver. Let's 14 see if I can do a better job of asking that question. 15 Regardless of what specific chemical product or fiber 16 is the basis for an epidemiology study, the disease 17 incidents reported reflects either morbidity or 18 mortality for that population; is that true? 19 MR. CHANDLER: Objection, leading. 20 THE WITNESS: That would be a type of 21 epidemiology study, yes, morbidity and mortality. 22 BY MS. KYLE: 23 Q. And in light of that objection, let me ask 24 you this. Does an epidemiology study report either 25 morbidity or mortality in the cohort studied?	Page 514 1 the Baytown complex in the 1940 through 1970 time 2 frame? 3 A. Mr. J.W. Hammond. 4 Q. Did you receive industrial hygiene monitoring 5 or review industrial hygiene monitoring from Baytown 6 when you were associate medical director? 7 A. Did I observe. 8 Q. Or review. 9 A. Or review. Yes, I would monitor reports 10 would often cross my desk, as well as Mr. Hammond's 11 desk, or he would show the reports to me, yes. 12 Q. Are you aware of how frequent industrial 13 hygiene sampling was done at the Baytown plant? 14 A. It was done very frequently, as compared to 15 other refineries or other industries, because of the 16 fact that not only Mr. Hammond in Houston was close by 17 to the Baytown refinery, but he also had associate or 18 assistant industrial hygienists who were assigned 19 specifically to Baytown, as well as to corporate 20 headquarters. And they were readily available for 21 monitoring in the Baytown refinery. And for most 22 procedures they had two or more technologists who were 23 trained to carry out the industrial hygiene analyses 24 or measurements, whatever was needed. So this, the 25 Baytown refinery was a subject of extremely effective

Page 515 1 industrial hygiene monitoring and environmental 2 control. 3 MR. CHANDLER: Objection, non-responsive. 4 (Discussion off the record) 5 BY MS. KYLE: 6 Q. Were you satisfied that -- is it Professor 7 Hammond? 8 A. Yes, he is also known as Professor. He was a 9 professor in the department of environmental medicine 10 at Baylor University Medical Center. 11 Q. Were you satisfied that Professor Hammond 12 appreciated the potential harm associated with 13 significantly elevated asbestos exposures? 14 MR. CHANDLER: Object to the form. 15 THE WITNESS: Indeed, asbestos was a, 16 throughout his tenure at Baytown and corporate 17 headquarters, he never lost focus on asbestos, and I 18 will say along with silica and lead, three components 19 that might be, not forgotten, but pushed to a lower 20 rung because of their overfamiliarity, but Jim 21 Hammond -- 22 BY MS. KYLE: 23 Q. Let me ask another question, so we don't draw 24 another objection. How did you have this 25 appreciation? Why? I asked if you were satisfied.	Page 517 1 frequency of monitoring, asbestos monitoring at the 2 plant. How were you familiar with the frequency? You 3 explained that earlier. Would you reexplain for the 4 jury? 5 A. I would see reports of the industrial 6 hygienist who was doing the monitoring, would discuss 7 it with me. The physicians in the medical department 8 were aware of this, and when I was visiting, they 9 would discuss these things with me, and of course 10 personal observation. 11 Oftentimes when I went to Baytown, it would 12 be because Mr. Hammond or Mr. Diserans or Mr. Meyer, 13 industrial hygiene engineers, would say, hey, Neill, 14 I'm going to Baytown this afternoon. You want to come 15 along? And I would call the medical director, 16 Dr. Pipkin, and say I would like to come by, that is 17 okay, and he would say sure. And so many of my visits 18 to Baytown happened to be in the company of an 19 industrial hygienist. 20 Q. Did they have a lab at Baytown? 21 A. Yes. The corporate industrial hygiene 22 laboratory was situated in the Baytown facility. 23 MS. KYLE: Okay. I'm going to pass the 24 witness. Do you want to do some more? Do you have 25 any other questions, Troy.
Page 516 1 Now I'm asking you why you were satisfied. 2 A. I have already answered a good part of that, 3 but his, he continued throughout his career to focus 4 on asbestos and the two others of the triad, silica 5 and lead. This prompted the other industrial 6 hygienists and the technologists and the safety 7 advisors and the medical staff to be, continue to be 8 aware of the potential of asbestos to induce disease 9 in workers and to keep us their preventive efforts of 10 any disease being conditioned disease, evoking 11 conditions to exist. 12 Q. Prior to coming to Exxon, was Professor 13 Hammond an industrial hygienist in the textile 14 industry? 15 A. Yes. He was assigned I think as a U.S. 16 Public Health Service employee to North Carolina, and 17 I recall talking with him, that he had experience, 18 some personal observations in the textile mills in 19 North Carolina. There was a time at a later date when 20 the NJ Chemical Company had a textile mill there and 21 he and I both visited. So we had occasion, I had 22 occasion to talk with him about the fact that he had 23 experience in the early or mid 1940s with the textile 24 industry in North Carolina. 25 Q. I asked you if you were familiar with the	Page 518 1 RECROSS EXAMINATION 2 BY MR. CHANDLER: 3 Q. Just a few. Doctor, you can continue to look 4 at -- I know your hearing is -- let me get to the 5 other side. Doctor, was Mr. Hammond's office at the 6 Baytown plant or was it in Houston at the corporate 7 headquarters? 8 A. He had, at times had offices at both 9 locations. In the later years, the '60s, his major 10 base was at corporate headquarters. And at that time 11 there was another, he had a secondary industrial 12 hygienist who might be based in both locations. 13 Q. Okay. So what percentage of Mr. Hammond's 14 time was spent at Baytown, versus in corporate 15 headquarters in Houston or anywhere else? 16 MS. KYLE: Objection, form. 17 THE WITNESS: That's difficult to determine. 18 As I say, the proximity to the Baytown refinery, it 19 was convenient for him to go there, so his time, he 20 spent far more time at Baytown than at the other 21 seven, eight, nine refineries. I can't come up with a 22 percentage. Of course he traveled extensively on 23 behalf of the corporation and would be at neither 24 location much of the time, too, some of the time, as 25 well.

1 BY MR. CHANDLER:
 2 Q. Whatever time he, Mr. Hammond spent at
 3 Baytown, he also split his time among eight or nine
 4 other refineries; is that right?
 5 A. Yes, he would visit other refineries as well
 6 in the course of a year.
 7 Q. And he would also be at corporate
 8 headquarters in Houston; right?
 9 A. Yes.
 10 MS. KYLE: Go off the record.
 11 THE VIDEOGRAPHER: Going off the record. The
 12 time is 4:30.
 13 (Recess)
 14 THE VIDEOGRAPHER: We are going back on the
 15 record. The time is 4:33.
 16 BY MR. CHANDLER:
 17 Q. Dr. Weaver, you discussed the standard
 18 operating procedure for telling insulators when they
 19 needed to wear their respirators. Do you recall that
 20 just a few moments ago?
 21 A. I don't recall the specific words I used, but
 22 yes, we covered that point.
 23 Q. Yes, sir. But the standard operating
 24 procedure being communicated to insulators is not
 25 anything you ever did. You are just saying that was

1 procedures, weren't they?
 2 A. I think there's a double negative here
 3 someplace.
 4 Q. Okay. Let me re-ask it. The procedures
 5 outlined in Mr. Bonsib's report of 1937 were standard
 6 operating procedures for insulating operations, as he
 7 described in that report; correct?
 8 A. Yes, and they were generally in use.
 9 Q. And if they weren't being followed, the
 10 methods that Mr. Bonsib described in 1937, then
 11 Exxon's own standard operating procedure was being
 12 violated; correct?
 13 A. Yes, within the reason of judgment, deciding
 14 when, what procedure should be used, but those
 15 procedures were known and utilized as deemed
 16 appropriate.
 17 Q. Did you communicate the standard operating
 18 procedure with respect to asbestos insulation to any
 19 trade other than the insulators, sir?
 20 A. Meetings where such discussions were held
 21 could be limited to insulators, but in many occasions,
 22 for example, a turn around or a major refinery repair
 23 task, other crafts would be present. The people
 24 working on the task, whatever their craft, would be
 25 included on occasion.

1 the standard procedure, so I assume it was done. Is
 2 that fair?
 3 MS. KYLE: Objection, form.
 4 THE WITNESS: With this exception. On a few
 5 occasions I was invited by the safety advisor or a
 6 foreman to talk to the insulators or the asbestos
 7 workers, and on a few occasions I participated in such
 8 a training program.
 9 BY MR. CHANDLER:
 10 Q. Do you remember when the earliest year it was
 11 you would have participated in a training program for
 12 insulators?
 13 A. It would have been in the 1950s, but I don't
 14 recall the earliest year, no.
 15 Q. Were you telling insulators yourself as early
 16 as the 1950s about the hazards of asbestos, sir?
 17 A. In accordance with the knowledge existing in
 18 the scientific community at the time, yes.
 19 Q. So if insulators at Exxon were using asbestos
 20 in such a way so that it wasn't being wetted down and
 21 wasn't being hosed down before being swept up or in
 22 none of the common industrial hygiene methods
 23 described by Mr. Bonsib in his report in 1937 were
 24 being done, if that is the way insulators were
 25 working, they were violating Exxon standard operating

1 Q. And that is because we know that during
 2 significant maintenance operations insulators and
 3 other trades like machinists work side by side
 4 sometimes, don't they?
 5 MS. KYLE: Objection, form.
 6 THE WITNESS: Their work may be staggered,
 7 according to a scheduling program, or, yes, certainly
 8 at times they would work in the same vicinity on a
 9 task that had responsibilities for more than one
 10 craft.
 11 BY MR. CHANDLER:
 12 Q. All right. Did you ever personally advise --
 13 did you personally, sir, ever advise any other craft
 14 other than insulators -- sir, did you ever personally
 15 advise any other craft other than insulators about the
 16 hazards of asbestos?
 17 A. Well, I mentioned I attended, I was invited
 18 to lecture at a few meetings, and I don't think the
 19 attendance at those meetings was limited to
 20 insulators. I want to further state that our criteria
 21 for asbestos exposed was not limited to insulators.
 22 That point was made previously. And at the time of
 23 periodic examination, when the doctor is one-on-one
 24 with an employee, asbestos avoidance could be
 25 discussed with a pipefitter or even a machinist.

Page 523 1 Anybody, supervisors, as the conversation, the history 2 taking, medical discussion proceeded. 3 MR. CHANDLER: Objection, non-responsive. 4 BY MR. CHANDLER: 5 Q. So it's not true, if somebody tried to say 6 the only craft that Exxon considered asbestos exposed 7 was insulators, that is not a true statement, is it? 8 A. That is contrary to what I have already 9 stated. 10 Q. Yes, sir. Sir, is it your opinion that the 11 5 million particles per cubic foot standard that was 12 in effect at any time in history was ever meant to 13 protect somebody from the development of malignancy or 14 cancer? 15 MS. KYLE: Objection, form. 16 THE WITNESS: Well, would you repeat the 17 question please. 18 BY MR. CHANDLER: 19 Q. Sir, is it your opinion that the 5 million 20 particles per cubic foot was at any time ever meant to 21 protect a worker from getting cancer? 22 MS. KYLE: Objection, form. 23 THE WITNESS: This guideline originated to 24 protect workers against asbestosis. As indicated 25 previously, we tried to keep below the guideline, well	Page 525 1 CERTIFICATE OF DEPONENT 2 I hereby certify that I have read the 3 foregoing pages of my deposition testimony in the 4 proceedings, and with the exception of changes and/or 5 corrections, if any, find them to be a true and 6 correct transcription thereof. 7 8 9 Deponent 10 11 12 Date 13 14 NOTARY PUBLIC 15 Subscribed and sworn to before me this 16 day of , 2004. 17 18 19 20 21 22 23 24 25
Page 524 1 below the guideline, and as the scientific, as the 2 evidence before the scientific community became 3 acceptable, that asbestos in fact did cause lung 4 cancer, this initial guideline was lowered in the 5 early 1970s. 6 Q. Yes, sir. And 5 million particles per cubic 7 foot was never meant to protect specifically cancer, 8 was it? 9 A. It was not designed for that purpose. I say 10 it was designed to protect against asbestosis. 11 MR. CHANDLER: Pass the witness. We are at 12 one minute of tape. That's why I quit. 13 THE VIDEOGRAPHER: Going off the record. The 14 time it 4:40. This marks the end of videotape number 15 3. Volume 2 in the deposition of Dr. Neill Weaver. 16 This concludes this deposition. 17 (Whereupon, at 4:40 p.m., the deposition was 18 concluded) 19 20 21 22 23 24 25	Page 526 1 CERTIFICATE OF COURT REPORTER 2 UNITED STATES OF AMERICA) 3 DISTRICT OF COLUMBIA) 4 I, Sheila M. Lyons, the reporter before 5 whom the foregoing deposition was taken, do hereby 6 certify that the witness whose testimony appears in 7 the foregoing deposition was sworn by me; that the 8 testimony of said witness was taken by me in machine 9 shorthand and thereafter reduced to typewriting under 10 my direction; that said deposition is a true record of 11 the testimony given by said witness; that I am neither 12 counsel for, related to, nor employed by any of the 13 parties to the action in which this deposition was 14 taken; and, further that I am not a relative or 15 employee of any attorney or counsel employed by the 16 parties hereto, or financially or otherwise interested 17 in the outcome of this action. 18 19 Sheila M. Lyons 20 Notary Public in and for 21 The District of Columbia 22 My Commission expires October 31, 2007. 23 24 25

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