

FILE NAME: Celanese (CEL)

DATE: 1998 Oct 13&14

DOC#: CEL037

DOCUMENT DESCRIPTION: Legal - Deposition of Dixon, Vol. 1

BERNICE DENKELER,
INDIVIDUALLY AND AS
INDEPENDENT EXECUTRIX OF
THE ESTATE OF RAYMOND
DENKELER, DECEASED

* IN THE DISTRICT COURT OF

*

*

*

*

*

VS.

* NUECES COUNTY, TEXAS

*

ACandS, INC., ET AL

* 148TH JUDICIAL DISTRICT

* * * * *

VOLUME I

VIDEO DEPOSITION OF

ERNEST MALCOLM DIXON, M.

On October 13th and 14th, 1998, the video deposition of ERNEST MALCOLM DIXON, M.D., a witness in the above-styled cause, was taken at the instance of the Plaintiff at the Tyson's Corner Marriott, 8028 Leesburg Pike, Vienna, Virginia, pursuant to Stipulations contained herein.



1 Those persons present were as follows:

2 JOSEPH C. BLANKS
3 Attorney at Law
4 Route 2, Box 3130
5 Woodville, Texas 75979

6 Counsel for Plaintiff

7
8 NONA B. WALKER
9 Gardere & Wynne
10 1601 Elm Street, Suite 3000
11 Dallas, Texas 75201

12 Counsel for Defendant,
13 HOECHST CELANESE CORPORATION

14 MICHAEL E. HUTCHINS
15 Hawkins & Parnell
16 303 Peachtree Street, N.E., Suite 4000
17 Atlanta, Georgia 30308

18 Counsel for Defendant,
19 HOECHST CELANESE CORPORATION

20 ERIC D. WEWERS
21 DeHay & Elliston, L.L.P.
22 901 Main Street, Suite 3500
23 Dallas, Texas 75202

24 Counsel for Defendant,
25 RILEY STOKER CORPORATION

1 RICK SMITH, CSR
2 Charlotte Smith Reporting, Inc.
3 235 Orleans Street
4 The Kyle Building
5 Beaumont, Texas 77701-2399

6 VIDEOTAPE OPERATOR/TECHNICIAN:

7 Warriene Flatt
8 Legal Images
9 P. O. Box 315
10 Gilchrist, Texas 77617
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 MR. BLANKS: We will take it
2 pursuant to the Rules. And I presume
3 Dr. Dixon will read and sign ---

4 MR. HUTCHINS: Yes, sir.

5 MR. BLANKS: --- whether he
6 wants to or not.

7 THE VIDEOGRAPHER: We are on the
8 record at 9:40 a.m.

9
10 ERNEST MALCOLM DIXON, M.D.,

11 having been duly sworn, testified as follows,
12 to-wit:

13
14 EXAMINATION BY MR. BLANKS:

15 Q Well, good morning again, Dr. Dixon.

16 A Good morning, Mr. Blanks.

17 Q I'm Joe Blanks as I told you, and I
18 represent the Denkeler family in this case, along
19 with Herschel Hobson; and we are here today to take
20 your deposition.

21 A Yes.

22 Q And I again apologize for having you
23 venture out with your recovering injury.

24 A Thank you.

25 Q But thank you for being here. I would

1 like to start by having you sort of introduce
2 yourself to the Jury by way of going through your
3 background, but let's start by telling - telling us
4 your full name, sir.

5 A I'm Dr. Ernest M. Dixon - D-i-x-o-n.

6 Q And could I ask you your date of birth,
7 sir.

8 A January 11th, 1924.

9 Q And where do you reside now Mister -
10 Doctor?

11 A Right here in McLean, Virginia. At least
12 on that side of the road. (Indicating)

13 Q Could I trouble you for your address.

14 A Yes. 6305 Evermay, one word -

15 E-v-e-r-m-a-y - Drive, McLean - and that's
16 capital M, little c, capital L-e-a-n, Virginia,
17 22101.

18 Q All right, sir. And although I don't
19 anticipate having to use it, could I ask you for
20 your telephone number, please.

21 A Yes. Area code is 703, 556-0296.

22 Q Thank you. Could you take us back to
23 your - the conclusion of your high school education
24 and bring us on through your training after that.

25 A I graduated from high school in Roanoke,

1 Virginia, in 1941. I then entered Virginia Tech for
2 one year, followed by a number of years at the
3 University of Virginia. I graduated from medical
4 school at the University of Virginia in 1947.

5 Subsequently I interned there and took a
6 partial residency in medicine and pathology, which
7 was interrupted by recall into the service. Part of
8 my medical school days were in the V-12 Naval
9 program. And there was a shortage of physicians,
10 and they called us back in. And I was in the
11 service for about a year and a half in the Navy at
12 the Naval Hospital in Portsmouth, Virginia, where I
13 was doing internal medicine and cardiology.

14 And then I returned to Roanoke and opened
15 a practice of internal medicine and cardiology with
16 a partner who had been one of my best friends.

17 Q May I interrupt you ---

18 A Yes.

19 Q --- so I can fill the chronology in here?

20 A Yes.

21 Q You went to your undergraduate college
22 beginning in 1941 at ---

23 A Yes.

24 Q --- Virginia Tech and then moved over to
25 the University of Virginia?

1 A The following year, yes.

2 Q All right. And was the program then one
3 where you finished a medical degree without - I mean
4 as part of your undergraduate education plus ---

5 A No.

6 Q --- some more or ---

7 A No, I had to finish my undergraduate
8 education at the University of Virginia. It was
9 abbreviated in wartime because the war had begun in
10 December of '41. I was not old enough to go in, but
11 I signed up for the Naval Reserve so that whenever I
12 did get called, I would go - I would have a choice
13 of service. And I preferred the Navy.

14 And then they started the college
15 programs, and we were mandated to continue as long
16 as we were keeping our grades up and whatnot. So, I
17 had three years - the equivalent of three full years
18 of college done in about two and a half years and
19 then went directly into med school where we did
20 three - four years of work in three years because of
21 no vacations and, you know, trying to get through.

22 So, I actually finished my med school work
23 in '46 when I was 22. And we held graduation over
24 because the war had just ended by that time so -
25 until the following June of '47.

1 Q Was it in the midst of your medical school
2 years that you worked then at the Naval Hospital ---

3 A No. No.

4 Q --- in Portsmouth?

5 A No, that was after I was recalled during
6 my residency period - the postgraduate internship
7 residency program. There was a special doctor draft
8 during - I guess -- The Korean War hadn't started,
9 but there was still a lot of military presence. And
10 they had a shortage of physicians and called us -
11 those of us who hadn't been on active duty aside
12 from school into the service for a while.

13 Q What year would that have been, sir?

14 A '49.

15 Q Okay.

16 A Wait. Yeah. Yeah, '49. I'm sorry. '49
17 to '50. I had a second period. I get the two
18 confused sometimes.

19 Q All right, sir. And then you were telling
20 us how you did your internship in medicine and
21 pathology I believe?

22 A In mostly internal medicine.

23 Q And was the work at Portsmouth Naval
24 Hospital part of your internship or ---

25 A No. No, that was ...

1 Q --- that was real doctoring?

2 A Yes.

3 Q Okay. And then when was it that you began
4 your practice - your first practice in Roanoke?

5 A In 1950 at the end of that period of
6 service. Ironically just after the beginning of the
7 Korean War.

8 Q And then did I understand you got called
9 back a second time?

10 A Because I had four times - four days less
11 than enough time in - in that period of service; so,
12 I was called back toward the end of the Korean War.
13 It was in January of 1953. So, I practiced for
14 nearly three years.

15 Q And then how long did the Navy keep you on
16 this second occasion?

17 A I think it was 17 - 16 or 17 months. I
18 stayed long enough to be sure.

19 Q And where did that - that tour take you,
20 sir?

21 A That's very interesting. I was - ended up
22 switching from the Navy to the Public Health Service
23 because one of my friends who was ahead of me in med
24 school - a very bright fellow - had become head of
25 the Public Health Service's communicable disease

1 section, studying the health hazards of the then new
2 nerve gas and other types of pesticides, which the
3 Public Health Service was using for disease control,
4 particularly malaria and other insect vectored
5 diseases. And they needed a good internist on the
6 intraservice team of scientists who were studying
7 this. And he knew I was being called back into the
8 service. And, so, he arranged for me to be
9 transferred and to come into that - which was my
10 first exposure to that whole field of occupational
11 health and toxicology and so forth.

12 Q Who - who was this friend of yours, sir?

13 A Whalen J. Hayes - H-a-y-e-s - M.D., Ph.D.

14 Q Now, do you ---

15 A He's now deceased.

16 Q Do you recollect, Dr. Dixon, what this -
17 what this branch of the Public Health Service was
18 called back then?

19 A Well, it was part of the Communicable
20 Disease Center. It was actually the technology
21 branch of the Communicable Disease Center at that
22 time. It's now called something else, but it's
23 still CDC.

24 Q Oh, I didn't realize - although I never
25 thought about it - that the CDC goes back ---

1 A A long time.

2 Q --- even that far. But I guess ---

3 A Way back, yeah.

4 Q Way back. So, this 1953 to '54, '55 ---

5 A '54.

6 Q --- hitch was your introduction to -
7 well - public health and the edges of industrial
8 medicine I suppose?

9 A Yeah, that was it; true.

10 Q And I take it your interest was aroused
11 and you thought you would look further into this
12 field?

13 A That is correct.

14 Q Where were -- Where were you working with
15 the ---

16 A For the bulk of the time -- Well, first at
17 Savannah, Georgia, which was the head of the
18 technology branch, to get oriented and learn a lot
19 of things that were new to me; and then a brief
20 period in Atlanta where CDC is headquartered. Well,
21 it's Chamblee now I guess it is. And then I was
22 stationed for the bulk of the period out in
23 Wenatchee, Washington. I think it's
24 W-e-n-a-t-c-h-e-e. That's right north of Yakima.
25 It was right in the heart of the apple and all the

1 irrigated fruit growing section of the State of
2 Washington. So, it was a very rich source of
3 opportunity to study the use of these agents.

4 Q Did your work in Savannah ever bring you
5 in contact with that nuclear plant there?

6 A Not then.

7 Q Later?

8 A Yes.

9 Q Am I right in remembering that it - that
10 the Savannah plant was still under construction in
11 the early '50's?

12 A I don't even think it was under
13 construction back then. I don't know, though.

14 Q Okay.

15 A Yeah. It may have been. I - I shouldn't
16 address that.

17 Q All right, sir. So, then, after
18 completing your stint with the Public Health
19 Service, then did you return to Roanoke?

20 A No.

21 Q Where did you go from there?

22 A I had learned that occupational health was
23 then the newest approved medical specialty under the
24 American Board of Medical Specialties, and training
25 programs had developed in a number of the major

1 schools. And I reviewed all of them and opted to go
2 to what was supposedly the best of the programs at
3 the University of Cincinnati. It's the Kettering
4 Laboratory there. And I was there - well ...

5 Q 1954?

6 A I went there in '54.

7 Q And until when, sir?

8 A With the academic and clinical portions of
9 the -- It was a fellowship actually - not a
10 residency - a teaching fellowship. And it was two
11 years in residence there at Cincinnati, followed by
12 a third year of approved preceptorship in an
13 industrial health setting, approved by the
14 university and the specialty board for actual
15 hands-on, practical experience in the field of
16 occupational health in a - in the setting of a good
17 practice.

18 Q Did that third year practicum have you
19 working at some particular industries ---

20 A Yes.

21 Q --- or companies?

22 A Yes.

23 Q Which were those?

24 A I opted for the American Cyanamid Company.
25 They had been interested in some of the research I

1 had done during that year in the Public Health
2 Service - a year and a half or so in the Public
3 Health Service. And I knew some of the things they
4 were doing. And I applied to them to see if they
5 would do this. And they agreed. And we were
6 approved by the university. And, so, I went with
7 American Cyanamid.

8 Q Every step along the way I think of about
9 ten questions I want to ask you. But it would
10 probably be more fruitful if we finish our outline
11 and then come back. And that's what I would propose
12 to do ---

13 A Okay.

14 Q --- just so I have a clear picture of
15 your - your background. So, we have got you at
16 Kettering for '54, '55. And then in '56 ---

17 A '55, '56.

18 Q --- you do this practicum with American
19 Cyanamid.

20 A Yes.

21 Q And then I'm going to guess that you then
22 took employment with Cyanamid?

23 A I did.

24 Q Okay. And that would have been around ---

25 A In 1957. Wait a minute. 1957.

1 Q Okay. And did you remain at Cyanamid
2 until around '65 or so?

3 A '62.

4 Q And at that point you joined the Celanese
5 Company?

6 A No.

7 Q Okay.

8 A I joined the Bell System first.

9 Q I'm going to quit trying to tell your
10 story and let ---

11 A That's all right.

12 Q --- you tell it. All right, sir.

13 A I joined the Bell System first initially
14 as headquarters medical director of Western Electric
15 there - the manufacturing arm. And a year and a
16 half later I was promoted to medical director of
17 their interstate and international operations. And
18 I was there for another year and a half until March
19 of '65.

20 Q Where did you go then, sir?

21 A That's when I joined Celanese Corporation.

22 Q And the position that you hired on - that
23 you hired in as?

24 A The corporate medical director.

25 Q And then how long did you remain with

1 Celanese, Doctor?

2 A I was there over 17 years, until 1981.

3 Q And then?

4 A I took early retirement to come down here
5 in a consulting capacity.

6 Q And do you mean in a consulting capacity
7 to Celanese?

8 A I'm sorry?

9 Q Was that in a consulting capacity to
10 Celanese ---

11 A No.

12 Q --- or just generally?

13 A Generally.

14 Q Okay.

15 A I was initially in a firm - a partner in
16 Tabershaw Occupational Medical Associates for two -
17 two and a half years. And then we sold that off.
18 And the three principals took shares of the actual
19 consulting practice. And I stayed here, which is -
20 had been my long-term objective. I came back to
21 Virginia.

22 Q And do you still do consulting work?

23 A Yes. It's more limited now, but I'm still
24 doing some.

25 Q And would your consulting since '81 have

1 been mostly in the field of industrial medicine?

2 A Yes, industrial health, toxicology,
3 product safety, some environmental health issues,
4 industrial hygiene. The whole field that represents
5 occupational health.

6 Q All right. So, that brings us up to the
7 present?

8 A Yes.

9 Q Okay.

10 A Yes, sir.

11 Q Now I would like to backtrack in a little
12 more detail if you don't mind ---

13 A Okay.

14 Q --- and try and stay in chronological
15 order as best I can so I can get it organized in my
16 mind.

17 In the -- In your medical school -- Well,
18 let me go back further. During your undergraduate
19 work, what - what area did you specialize in? Was
20 it pretty much just a premed program?

21 A It was basically a premed course because
22 we had to get all of the required subjects done
23 quickly and not stretch it out because of the
24 wartime. It had some other general academic items
25 in addition to premed: Sciences and whatnot. But

1 it was not a full four year -- It was a more general
2 education.

3 Q Did - did your undergraduate education
4 include any foreign language work?

5 A Yes.

6 Q Which one did you work on?

7 A German.

8 Q Now, this was the norm back -- This was --
9 That was customary for a professional or a science
10 major back in those days, wasn't it?

11 A Yes. You had to have some familiarity -
12 reasonably some familiarity with two languages. And
13 I had had Latin earlier. And, so, I took German.

14 Q And would you have been then at least able
15 to read German by the time you graduated?

16 A To a degree, yes.

17 Q Okay.

18 A I laughed. I shouldn't have ...

19 Q Sir?

20 A You know, when you take two years of a
21 course, you are not a linguist; but I could read
22 reasonably ---

23 Q You could understand it?

24 A Yes.

25 Q And it gets away from you all too soon.

1 after that without use I'm sure. So it was for me.

2 And then your medical school program was
3 also I gather somewhat compressed and accelerated
4 because ---

5 A Yes, it was.

6 Q --- of the war?

7 A It was -- It was the full - full extent of
8 the courses, however. It was compressed in time
9 because we only had a week's vacation once a year
10 between the years in effect.

11 Q Yes, sir.

12 A We had no Summer vacation, no long between
13 term vacations. It was highly compressed. But it
14 took three full years to - almost three full years
15 to get four years of work in.

16 Q Now, in 1943, '44, '45 when you - when you
17 began medical school, was there - was there much
18 taught at the University of Virginia in the area of
19 industrial health?

20 A Industry what?

21 Q Of industrial medicine.

22 A No. Virginia was not a highly
23 industrialized state at that time. And most medical
24 schools didn't have much in the way of curriculum in
25 the subject. They would have something - like we

1 studied lead poisoning and a few things. But
2 really no addressing it as an issue or as a subject.
3 So ...

4 Q But in passing at least some of the
5 course - courses might have discussed the more
6 prominent occupational diseases of the preceding
7 decades?

8 A To an extent. More so those that had
9 clinical significance otherwise: Respiratory
10 diseases, for example, and which environments they
11 were a significant element to. But other than that,
12 really very - very little.

13 Q I would suspect that silicosis and the
14 complications of tuberculosis might have been
15 addressed?

16 A Tuberculosis was heavily addressed. And I
17 do recall that silicosis was mentioned as a very
18 significant element - or rather tuberculosis was a
19 very significant element in silicosis. But we
20 didn't really study silicosis.

21 Q Okay.

22 A Except they might have two sentences
23 that ---

24 Q An awareness that - that it was there?

25 A I'm sorry?

1 Q Just an awareness that ---

2 A Yes. Yes.

3 Q --- it existed? And were any of the other
4 dust diseases of the lung covered as you recollect
5 from medical school?

6 A Not that I recall except for the allergic
7 phenomenon. We had quite a bit of work on
8 allergies, not industrial, but just general
9 allergies.

10 Q And did you -- Do you recollect any - any
11 material on the blood diseases from chemical
12 exposures perhaps?

13 A Really very, very little. The only one I
14 can recall specifically was lead. And, of course,
15 lead has a problem with the blood, among other
16 things, too. So, at least it talked about that
17 generally. So, that was the only one we studied
18 with anything of - of consequence. And even then it
19 was very trivial.

20 I recall that our professor was fascinated
21 with the idea of burning lead storage batteries and
22 the vapors being so horribly toxic to - well, golf
23 bums and people like that.

24 Q Uh-huh.

25 A And that's about the extent of it. I look

1 back on it now with some concern because being
2 interested in the field now, it's appalling that
3 they didn't have more. And they still don't in a
4 lot of med schools.

5 Q I suspect that's true.

6 A Yeah.

7 Q And then when you - when you were doing
8 your Navy work at the Portsmouth hospital I would
9 imagine you were dealing mostly with - what, war
10 injuries and communicable diseases or ---

11 A Well ...

12 Q --- pretty much everything?

13 A There were no war injuries during that
14 time. It was sort of between the war periods. But
15 it was general problems of adult illnesses of -
16 nonsurgical illnesses of humans, which is the field
17 of internal medicine and cardiology because that was
18 my subspecialty. For Naval -- That was primarily
19 for Naval personnel.

20 Q Yes, sir. Did you have any public
21 health-type courses in medical school?

22 A We did have public health courses. They
23 related largely to the communicable disease aspects
24 of it.

25 Q Can you remember, Dr. Dixon, any of your

1 textbooks from that - that time in medical school?

2 A Can I remember them?

3 Q Yes, sir.

4 A Very vividly. And I still have most of
5 them.

6 Q Can you - you tell us the names of those
7 that you do recall that would be relevant to - you
8 know, approaching the occupational medicine area or
9 public health area?

10 A Well, the Bible for internal medicine in
11 those days was Cecil's - I can't think of what the
12 title of it was. It was something -- We just called
13 it Cecil's. That was the author. You know, books
14 are so often referred to just by the author's name.
15 Public health -- I can't remember. I know I have
16 got a public health book, but I can't recall the
17 name of it.

18 Q Does Rosenau sound familiar?

19 A No, that was much later.

20 Q Okay.

21 A Yeah, I have that in a more recent
22 edition. Well, I say it was later. There might
23 have been one back at that time, but I'm not
24 acquainted with it.

25 Q Okay.

1 A I can sort of see it, but I can't bring it
2 out.

3 Q Any others come to mind that ---

4 A Well ...

5 Q --- would be relevant?

6 A There were different books in different
7 subjects. Like I had White's Cardiology and all
8 kinds of laboratory books - Bray. Lord, I hadn't
9 thought about it in a long time. It's hard to
10 recall at this moment.

11 Q I gather Mr. Hutchins didn't ask you to -
12 to bring any of those ---

13 A Oh, no.

14 Q --- today? Okay.

15 A I rarely look at them. They are on one
16 shelf in my office library that I see periodically,
17 but it's with a sweep of the vision ---

18 Q Sure.

19 A --- usually for the most part.

20 Q Did you retain your texts from your later
21 years as well?

22 A By in large. I have lost a few in the
23 course of time with moves and probably lending
24 books, but I have most of them. It's quite an
25 extensive library.

1 Q Okay. So, we have moved on through the
2 Portsmouth hospital period, which was mostly
3 internal medicine. And then you opened your
4 practice, and I would guess that was in the same
5 field of internal medicine and ---

6 A Yes, and cardiology.

7 Q --- cardiology?

8 A In July of '50 - '50.

9 Q And then were called away in January of
10 1953 to the Naval Reserve again - or active duty?

11 A To the Public Health Service. They
12 switched me over. So ---

13 Q Oh, did that -- That happened ---

14 A Yeah, in the course of the - going on duty
15 for that particular assignment. The Public Health
16 Service is a quasi-military installation. And
17 during wartime it is full military. But in
18 nonwartime it's usually quasi-military.

19 Q Now, what - what kind of pesticides were
20 you working with back then?

21 A The principal ones we were involved with
22 were categorized as organic phosphate compounds or
23 organophosphates as some people called them. They
24 were derivative-type materials from the work the
25 Germans did in poisonous gas studies during World

1 War II, modified to permit use in agricultural
2 applications, but with quite a hellishly high
3 toxicity nevertheless. You know, there were a lot
4 of fatalities in some of the areas with
5 misuse - accidental or a malicious dosing of people
6 and the like. The potential for harm was very
7 abundant.

8 We also studied some of the other
9 pesticides, the hydrocarbon types like DDT; the
10 whole variety of them in use -- It was mostly
11 halogenated hydrocarbon-type pesticides. The point
12 being that we were studying the ones that were most
13 likely to have application in public health disease
14 control, pesticide eradication in population
15 centers. We studied some of the other ones, too,
16 just so we had a good base of knowledge and had
17 awareness of comparable or comparative problems of
18 other pesticides. We even studied arsenic, for
19 example, and things like that from way back. But
20 the basic fundamentals for us were with the organic
21 phosphates and the DDT-type halogenated
22 hydrocarbons.

23 Q And you mentioned American Cyanamid is one
24 of the companies that was somewhat involved with
25 this. Were there others as well?

1 A There were. It just happened that
2 American Cyanamid was very preeminent in the organic
3 phosphate manufacturing in this country. They
4 manufactured two well-known materials: Parathion
5 and malathion, the former being very highly toxic to
6 humans and the latter being much less so but a
7 similar-type compound - and other analogues and
8 similar products. But there were many other
9 companies involved in the other pesticides, and I
10 think there were some others involved with the
11 organic phosphates to a lesser degree.

12 Q Do you remember the names of any of these
13 other companies?

14 A Well, I recall Shell.

15 Q That's what I was going to guess.

16 A That was a big one. Lord. Let me think.

17 Q Dow?

18 A Yes, Dow was involved. Monsanto. I don't
19 recall whether ---

20 Q Carbide?

21 A Huh?

22 Q Union Carbide perhaps?

23 A Yeah, Carbide was involved, too. I can't
24 recall just which ones they were -- I think du Pont
25 was to a lesser degree. Among the big ten chemical

1 companies that would be the principal ones
2 certainly. There may be some I missed. Well, there
3 is Ciba-Geigy. Oh, I could think of the names of a
4 bunch of them; but they were all lesser players.

5 Q Uh-huh.

6 A And, of course, over time later many
7 companies got involved secondarily and so forth.

8 Q Okay. Well, what did this - this effort
9 of studying the pesticides consist of? I mean
10 what -- What did you do? What facilities did you
11 have?

12 A We studied nearly everything we could
13 about it. We studied what the chemicals were, how
14 they were used, for what purposes, what evidence
15 there was of utility with respect to insect vectors,
16 animal studies of toxicity and finally human
17 experience in the use of the compounds. And that
18 was our principal objective during that time was to
19 study populations who were actually either
20 manufacturing, mixing or applying or otherwise using
21 the compounds in agricultural pursuits, which was
22 different than the public health use but a very
23 parallel-type exposure potential from the standpoint
24 of studying the health effects.

25 Q So, in Savannah where you began this work,

1 was there a laboratory for doing ---

2 A Yes, there was a very big laboratory. And
3 it was the headquarters operation - office operation
4 area for that technology branch. And that was --
5 The principal job of the technology branch at that
6 time was this project.

7 Q This project in particular?

8 A Yes. They were -- They reported to the
9 CDC in Atlanta.

10 Q And at that time back in 1954 ---

11 A '53 and four, yeah.

12 Q --- '53 and four the CDC was part of the
13 Public Health Service?

14 A Yes, and still is.

15 Q And still is?

16 A Yeah.

17 Q Okay. And the Public Health Service back
18 then was under ---

19 A The Surgeon General.

20 Q --- under the Surgeon General of the
21 United States?

22 A Yes.

23 Q Okay.

24 A Which became during about that period a
25 division of the -- What is the ---

1 Q HEW?

2 A HEW, yeah.

3 Q Yeah. That would be from the ---

4 A That was all reorganized with - when they
5 did the Social Security and a bunch of other things
6 and -- That's not quite the way to say it, but there
7 was a lot of change.

8 Q Uh-huh. This -- Was this 1953 employment
9 your first real experience with the Public Health
10 Service? And I guess you knew they were out
11 there ---

12 A Yeah.

13 Q --- but hadn't had any direct dealings
14 with ---

15 A I hadn't had any direct substantive
16 involvement with them previously. I was very well
17 aware of them and so forth, but ...

18 Q And you understand that during the war -
19 the World War II years the Public Health Service had
20 provided industrial hygiene services in the - in the
21 war industries and I guess in the - with the
22 different states ---

23 A Yes.

24 Q --- of the union?

25 A To a degree, yes. Yes.

1 Q And ---

2 A In maritime - military treatments and all
3 the rest of the things ---

4 Q I'm sorry?

5 A In maritime - medical services and so
6 forth.

7 Q Okay. And during the wartime these
8 gentlemen in the Public Health Service as you said
9 were essentially military ---

10 A Yes, they were full military.

11 Q --- officers?

12 A In uniform, yes.

13 Q And then did the - to your understanding
14 this providing of industrial hygiene consulting
15 services or effort continued after the war by the
16 Public Health Service?

17 A I think so. I wasn't directly concerned
18 with that except insofar as it related to measuring
19 exposure potentials in the pesticide work. I had no
20 knowledge of that. I didn't even know the term
21 "industrial hygiene" I think at that point. So,
22 that may be not quite correct; but that's
23 essentially so.

24 Q Okay. At this Savannah job then you said
25 there was a laboratory, and I suppose they were

1 doing toxicology work there?

2 A They were doing toxicology and analytical
3 work, all types of developmental things that would
4 be useful in studying this problem. It was the
5 headquarters of that operation. So, it had the
6 libraries and all the high level, technical
7 operations and people, et cetera.

8 Q What is your understanding, Dr. Dixon,
9 about how long approximately that facility had been
10 there in Savannah - or that that had been the place
11 for this technology branch with the laboratory and
12 the ---

13 A You mean at that particular location?

14 Q Yes, sir.

15 A I did know the history of it. They were
16 at a beautiful facility that had belonged to a
17 railway workers retirement health program from prior
18 years out on an island out from Savannah. I think
19 that that program - whatever it was - had terminated
20 and the Public Health Service acquired that property
21 at some point prior to my involvement in '53. I
22 would think maybe -- It was after World War II
23 ended. So, probably four or five years sooner than
24 I was there.

25 Q Did you have some understanding of how far

1 back in time this technology branch of the Public
2 Health Service existed?

3 A You know, I don't. I really don't know.
4 I suspect it existed for a long time, but I can't
5 recall any knowledge of that.

6 Q At the laboratory in Savannah was the
7 Public Health Service doing animal studies on the -
8 for the toxicology of these pesticides?

9 A I was afraid you were going to ask me
10 that. At the moment I am not sure. If they were
11 doing animal studies there, it was to a very limited
12 degree. Most of the work was being done on animals
13 at universities or commercial toxicological
14 laboratories. But I have a feeling that there was
15 some of it, but I honestly can't recall just
16 what ...

17 Q And if I understand it correctly, many of
18 these pesticides were available both as a liquid and
19 as a dust?

20 A There was a lot of variability, yes.

21 Q I mean it could go either way with ---

22 A Some could.

23 Q --- many of them?

24 A Many of them did, yes.

25 Q I remember malathion just as a milky white

1 liquid.

2 A When you -- When you diluted it, yes.

3 Q And the DDT certainly principally is a
4 dust?

5 A That's right.

6 Q Well, I guess they spray it as a fog, too,
7 for mosquito control?

8 A Yes.

9 Q Would the animal testing then for some of
10 these pesticides that were under study in 1954 have
11 included inhalation studies?

12 A Well, the animal work would have included
13 inhalation studies. And, in fact, the human studies
14 are not designed to be inhalation studies; but in
15 the workers - in applications in particular and some
16 of the manufacturing and mixing-type operations
17 would have the potential for inhalation exposure.
18 So, we measured all of that to the best degree we
19 could. There was dermal, oral and inhalation
20 potential for any of those materials.

21 Q Could you recall for us, please, Doctor,
22 any of those commercial and university laboratories
23 that were around back in '53 or so to do this kind
24 of animal studies, toxicology work?

25 A Yeah. Well, one was Hazleton

1 Laboratories, which is located just down this road
2 here a short distance. It was Hazleton then. The
3 universities? Let me think. I know New York
4 University did some work. God, that's so long ago
5 that I'm just -- I suppose I could sit here and
6 think a long time and come up with something, but I
7 can't recall off the top of my head who was involved
8 in that.

9 Q Well, now that I ---

10 A Well, the University of Washington, for
11 example.

12 Q Oh, in Washington ---

13 A There are ...

14 Q --- state?

15 A ... several other schools in California.

16 Q I'm sorry?

17 A There are several other schools in
18 California. The U. C. San Francisco was one. In
19 fact, that's where all Shell's work was done under
20 Dr. Charles Hine.

21 Q Charlie Hine?

22 A Yeah. And it's just so long ago that it's
23 too - very unclear in my recollection.

24 Q Well, perhaps ---

25 A It was peripheral to my involvement,

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25

3
4
5
6

7

8
9
10
11

12
13
14
15
16
17
18
19
20
21
22
23
24

25

1 through these - we used to call them Beans - the
2 Bean Company. That's a -- It's a huge tank with a
3 big hose - a thing on the back that shot it out in
4 all directions. And they would pull it through
5 orchards and fields with a tractor. And a very
6 important part of it was mixing the loads to be
7 used. And this involved dumping the powder or
8 liquid concentrate into whatever medium it was going
9 to be dispersed from and mixing it thoroughly and
10 then transferring it into the spreading - into the
11 vehicle that would be doing the spraying or
12 application of the material.

13 So, there's a lot of potential for
14 exposure both to the concentrate as it was being
15 handled initially, and then splashing, spilling,
16 vaporization and so forth out of the mixing
17 operations, which were done usually in a pretty big
18 hurry. To get a mix going they had to work like in
19 a hurry to get it ready. And the third was the
20 people actually involved -- Well, there are really
21 four. The third was the group who was actually
22 doing the application, either aerial application,
23 ground application and ancillary people. For
24 example, when they sprayed from the air you had
25 flag ---

1 Q Flaggers?

2 A --- men down on the ground to show the
3 pilot where to come in and where to end his runs,
4 and other associative people involved. And there
5 was a final group, and that was residents in the
6 immediate areas of the applications; people that
7 live near the orchards or near the fields or
8 whatnot. And these things were used at that time
9 almost entirely in the fruit industry initially.
10 So, that was why we were out in that unique part of
11 the country.

12 Q I am inferring that there was some
13 sort ---

14 A The University of Washington. The
15 University of Idaho. Okay. Add those to your list.
16 I'm sorry.

17 Q Thank you.

18 A And Washington State -- Washington State
19 University in particular. That's one of the
20 biggest. In fact, our station was on the grounds of
21 their station.

22 Q Was there then some sort of medical
23 monitoring effort by the Public Health Service to -
24 to examine and - and build histories on the
25 individuals in these four groups that you just

1 described for us?

2 A Yes. And, in fact, that was -- My
3 principal responsibility was to ---

4 Q Okay. Now, that's - that's what I was
5 interested in you telling us. What - what did you
6 doctors actually do in this regard?

7 A Well, we did a number of things. There
8 were some groups and some cases and so forth where
9 we actual did physical exams ourselves. For the
10 bulk of the time we did not examine people, but we
11 closely observed and measured the exposures that
12 happened. You would get a characterization of them.
13 And actually the chemists in the laboratories did
14 that work in parallel with us. We would tell them
15 where they ought to do it and so forth.

16 And we reviewed with the people -- One of
17 the chief methods we used was a symptom inventory.
18 We studied people who were these applicators and the
19 residents nearby and even some far afield to get a
20 parallel group for a comparative study - a
21 nonexposed group.

22 We had a - what was called a one-hundred
23 question - a sample questionnaire about symptoms.
24 And we studied them every month. We went and talked
25 to the people. And if they had any illness or

1 anything more than trivial symptoms, we would go
2 into it to whatever degree was required. If they
3 had an illness, we'd check with the doctors and the
4 hospitals. And then there would be cases of
5 poisoning or suspected poisoning. And we would
6 always get involved with those, even hopefully at
7 the time of the acute episode.

8 One of our problems was that little kids
9 would get accidentally into a barn or somewhere
10 where they had been mixing it - somebody used a
11 coffee can or a coke bottle or something; and some
12 awful things happened. And we would study the cases
13 as they were being treated. And I got published on
14 a couple of those. But -- So, anything that
15 happened clinically with those people was fair game
16 for our study. We were interested in getting
17 everything we could.

18 We did other things, too. For example,
19 the hydrocarbons, they tend to be stored in a vat.
20 And with DTT, which becomes metabolized to DDE and
21 DD - or another one. I can't think of the name of
22 the latter one, but DDE is the first metabolite. We
23 would do studies of people exposed - and get a
24 nonexposed group -- Like we went down to Loma Linda
25 to the Seventh Day Adventist group and got -- Most

1 of it came from meat or - or exposure from out in
2 the field. But we were interested in nonmeat
3 eaters. So, it was the vegetables by in large that
4 would not have significant amounts of -- Most of
5 these materials were pretty well destroyed by any
6 rinsing or any water wetting. So, there wasn't much
7 residual out there on vegetables even if they had
8 been treated. And they weren't using them for
9 vegetables by in large in those days.

10 So, we had a nonexposed group. Then we
11 had people exposed in the same categories that we
12 listed these others that we had studied to see the
13 differences. And then we even did prison studies
14 where we gave prison volunteers - which was
15 permitted back in that day. That's something that I
16 think has pretty much been abandoned subsequently.
17 They were given placebo doses, a low dose and a
18 somewhat higher dose to see what their metabolism of
19 it would be and so forth.

20 Q So, a form of an ongoing epidemiology
21 study I suppose?

22 A I guess you could call it epidemiology,
23 yeah. Almost any study has some epidemiologic
24 statistical analysis and structure to it.

25 Q Now, how -- Well, let me see if I'm - if

1 I'm understanding you correctly. Somebody was out
2 in the field measuring exposure levels, or at least
3 concentrations in air if - if nothing else?

4 A Yes.

5 Q Right.

6 A To a limited degree, but they were doing
7 it.

8 Q Not so much personnel monitoring but area
9 monitoring and ---

10 A Area monitoring, yeah.

11 Q Okay.

12 A We did dermal exposure monitoring by
13 patches applied to the outer garments and then
14 analyzed the amount of pesticide that would be on a
15 given area and then calculate what the total
16 volume - external dose was. It wasn't necessarily
17 the amount absorbed, but it -- And then measure
18 whether they had any absorption of the material
19 internally.

20 One of the things we did extensively was
21 develop and use tests that indicated the level of
22 exposure without measuring the material itself. One
23 of the big ones was the cholinesterase, blood
24 levels, which was something reasonably easy to do.
25 Parathion and the other organic phosphates depressed

1 both serum and red cell cholinesterase which are
2 very essential for nerve functioning. And it was
3 nerve gas effects that we were studying. So, we
4 could use that to measure the body's impact and
5 assess the exposure levels. In fact, those were
6 used practically on all of the aerial applicators to
7 be sure they were safe for ---

8 Q Flying?

9 A --- flying, among other things.

10 Q So, this wasn't measuring so much the
11 exposure as the effect of an exposure on the ---

12 A Well, a measurable effect. It might not
13 have any clinical effects because you would have to
14 get a rather severe degree of suppression before
15 actual symptoms developed. But you could see -- You
16 could get a baseline level on them. And then if
17 week by week it was going down, you would know they
18 were getting more than they ought to and at some
19 point they would be likely to have trouble; or if
20 they did get in trouble, you could see it clearly.

21 Q At least a way of getting some objective
22 data ---

23 A Yes, sir.

24 Q --- that would tell you they had been
25 getting exposures?

1 A Yes, sir.

2 Q Then I guess the task was somehow
3 statistically to try and correlate the exposure data
4 to the symptoms and the observed consequences, if
5 any, in the folks?

6 A That's essentially true, yes.

7 Q So, you had trained people doing air
8 monitoring and analysis of the samples that you
9 described - the patches and such - and you were
10 getting that information; and then you had the
11 physicians dealing with the interviews and the
12 questionnaires?

13 A The clinical aspects, yes.

14 Q How were these two types of information
15 then brought together ---

16 A Well ...

17 Q --- to be useful?

18 A It was a function of the technology
19 branch; people to cooperate and pool things together
20 into whatever category it was appropriate with any
21 study.

22 Q So, there was a -- Well, I think I have
23 got the concept; but I was hoping you could put it
24 in plainer and more articulate language than - than
25 I'm able to. I mean the object of this effort I

1 suppose was to try and - and find potential hazards
2 from - well, first of all, I guess what are - what
3 are the effects of the chemicals to begin with and -
4 right?

5 A Yes.

6 Q And then secondly to determine whether
7 the - the exposure levels that you find in the field
8 are, in fact, going to have the health consequences
9 that you fear?

10 A That's correct.

11 Q And then it lets you determine where to
12 control the exposures for the most ---

13 A Exactly.

14 Q --- benefit?

15 A It ended up being for both agricultural
16 use in this country as well as for the public health
17 use in controlling insect vectors, which was largely
18 a measure in foreign parts of the world.

19 Q Trying to suppress the malaria and ---

20 A And many other disease - or insect-vector
21 or insect-borne diseases.

22 Q Now, did your work during this period with
23 the Public Health Service back in '53, '54 have you
24 at any time counseling with the - the applicators,
25 for example, the pilots or the other folks that you

1 were studying?

2 A Oh, I'm sure we did, yes.

3 Q And would I be right that - that part of
4 your job then was to - to try and make these men
5 aware of the potential for harm from these
6 exposures?

7 A That is correct. There was an educational
8 component as well as a basic clinical approach.

9 Q And would I be right in thinking that your
10 message to the pilot or the mixing man or whatever
11 he might have been was that he should try to have as
12 close to zero exposure to these dusts and vapors and
13 liquids as - as he could practically get?

14 A Well, the word "zero" has no relevance
15 anymore.

16 Q Just as a target, though; as a ---

17 A Well, that they were to be within safe
18 limits. That was one of the objectives. When you
19 use agents like that, there is inevitably going to
20 be some exposure. And the intent was to determine
21 at what point it was imprudent to have exposure.

22 Q So, if I understood you, I mean the effort
23 there was trying to determine, though ---

24 A What level was an appropriate level that
25 they could tolerate adequately and without any

1 adverse effects of any consequence and so forth.

2 Q And ---

3 A Because they would have to be exposed to
4 the agent. So, any exposure would be of concern.
5 But we needed to know how much was tolerable and
6 where to cut it off and so forth.

7 Q I guess what I was getting at was at the
8 beginnings of this study and in the early part of
9 it - and maybe all the way through it - I mean you
10 physicians really didn't know for sure what was a,
11 quote, "safe level"?

12 A That's correct. And that was the reason
13 the studies were undertaken. There was some
14 criticism prior to my time there that we were using
15 these things - and very effectively - but we didn't
16 have an adequate body of knowledge about the human
17 effects of them and what was a safe level and so
18 forth.

19 Q And would I be right that during that time
20 when you really know that you don't know to a
21 certainty what the safe level is that you - you at
22 least would - would want to err on the side of
23 caution when it came to exposures of the men
24 handling the material?

25 A Well, history has not been one in which

1 that was the case. And that was a part of our role
2 was to try to see that that was accomplished. But
3 we needed to learn more about the materials. We
4 were intellectually and scientifically glad when we
5 had an overexposure because it gave us information
6 that we didn't have otherwise. We didn't want that
7 to happen, but we wanted to take advantage of it
8 when it did occur so we did get a clear knowledge of
9 what was happening.

10 Q So, even though you would take advantage
11 of the situation where there was an overexposure,
12 you would darn sure not encourage it and ---

13 A No. Absolutely not, no.

14 Q Indeed you would be encouraging them in
15 the other direction?

16 A Quite the other direction. And we
17 actually participated in doing the actual
18 cholinesterase tests for large groups of them just
19 so that they could be sure to have properly done
20 testing. It was a technique that was a little
21 tricky. And most laboratories weren't interested
22 in it - or didn't do it well. So, we would do it
23 for particularly the pilot groups and some highly
24 selected exposed groups otherwise. And the
25 companies did it in their manufacturing operations.

1 We didn't get involved in doing any of that. We saw
2 the data, but they established what were the proper
3 industrial standards for safety and so forth in the
4 manufacturing and mixing and so forth.

5 Q So, I gather then that - if I understood
6 that - that while the Public Health Service
7 physicians and technicians were working with people
8 in the field at the point of use of the products,
9 the manufacturers such as American Cyanamid and
10 Shell and others were carrying on a similar effort
11 in their plants ---

12 A Yes.

13 Q --- that is, they were measuring or
14 monitoring for exposure levels in the plant with
15 instruments?

16 A That - that is so, yes.

17 Q And medically monitoring the workers
18 potentially exposed ---

19 A Yes.

20 Q --- to these pesticides?

21 A That is correct.

22 Q Just looking ---

23 A Their - their operations were more
24 intensive than those that we did in the field
25 because it was easier to do. So ...

1 Q I'm sorry. Their efforts of ---

2 A Their efforts were more intense in medical
3 monitoring than we could do in the field. So ...

4 Q Everybody was ---

5 A Yeah.

6 Q --- working at the same place and ---

7 A Yes.

8 Q --- accessible to the doctor?

9 A Yeah.

10 Q Everybody was an employee of the company
11 and, therefore, under some control?

12 A That's right. By the way, the people who
13 were our subjects were all there as volunteering
14 people. So ...

15 Q Well, that was going to be my next
16 question because the Public Health Service was
17 always relying on really companies volunteering or
18 inviting you to come ---

19 A Exactly.

20 Q --- to their plants or facilities or
21 volunteering their work force for ---

22 A Or a community in the case of field work,
23 yes.

24 Q And speaking again of the manufacturing
25 environment for these pesticides, just as it was

1 easier to - to do the medical monitoring more
2 completely of the work force, it would also have
3 been let's say more practical to - to provide and -
4 and check your engineering controls to limit
5 exposures in the factory ---

6 A That's correct.

7 Q --- than out in the field?

8 A Absolutely, yes.

9 Q If only because you have the means of
10 putting in mechanical ventilation devices and ---

11 A Engineering and so forth, yes.

12 Q Okay. Which is not always or maybe
13 even not often an option when you are working in
14 the field with hazardous dusts or liquids;
15 correct?

16 A That is correct.

17 Q But aren't I right, Doctor, that even back
18 in 1953 and '54 you public health professionals - as
19 you were becoming then - would have had the - the
20 goal - perhaps an idealized goal, but nonetheless
21 the goal would have been to aim at the complete
22 elimination of the exposures to the workers?

23 A No.

24 Q Well, tell me where I'm wrong.

25 A I'm sorry. I was thinking about its end

1 use in the public health aspects of applying it to
2 eradicate disease. Well, in the case of the - the
3 workers, our objective was to be sure they weren't
4 harmed; but that didn't mean no exposure. It meant
5 they would expect to have as low an exposure as
6 practicable, but certainly one that was well within
7 calculated safe limits, yes.

8 Q And -- But so long as you didn't know with
9 confidence and certainty the safe limits, I think
10 you said you would err on the side of caution and -
11 and still ---

12 A Yes.

13 Q --- aim to get the exposure as low as
14 practical?

15 A I believe that's basically correct, yes.

16 Q Because I tried to phrase that question to
17 state an objective or an ideal. I mean it would
18 never have been your ideal to just settle for
19 exposure levels just below the maximum allowable
20 concentration surely.

21 A Well, what was the question?

22 Q In your later practice as an industrial
23 physician your goal would never have been just to
24 get one point under the TLV or the MAC for
25 exposures?

1 A Well, no, not as such. You want to be
2 sure you were under the MAC. And you would like to
3 have it - anything as low as - that's reasonable.

4 Q Okay. And if by reasonable measures you
5 can get to a tenth of the MAC or the TLV, then
6 that's what presumably a reasonable physician or
7 hygienist would have been recommending?

8 A Well, I don't know about any numerical
9 target of that sort; but it ---

10 Q Well, just by example.

11 A Well, if you say so, yes.

12 Q I mean really the surest way to have no
13 health effects from any of these toxic materials
14 that are handled in industry is to have no exposures
15 to them? That would follow, wouldn't it?

16 A I guess you would say that's true
17 basically, yes. If you didn't do the work even
18 perhaps, but ...

19 Q And if you - if you, for example, through
20 engineering controls and just the design of the
21 plant or the facility could - could completely
22 contain the toxic material, that would be the - I
23 guess the most desirable ---

24 A That's essentially an unattainable
25 possibility virtually. But it would be an ideal

1 goal, but not something that you would really seek.

2 Q But, for example ---

3 A You want to have a safe level and not
4 something that you would expect to be harmful to an
5 individual. And that always allows some exposure.
6 Because if a thing exists in the world, it's always
7 there anywhere. So, there is no such thing as no
8 exposure or zero. It became very difficult in the
9 early part of my career to learn not to refer to
10 zero anymore. In the old days we referred to zero
11 exposure, but that became obvious not to be a
12 reasonable choice of words.

13 Q Did you come to find that to be a less
14 reasonable choice the longer you practiced in the
15 field?

16 A Absolutely, yes.

17 Q And that was because of - what, economic
18 practicalities?

19 A No, not at all. Strictly technology. In
20 the early days analytical methods were very crude by
21 contrast with today's methods. And things that we
22 called no exposure in the old days, they could
23 measure major lesser components of them by new
24 analytic technology. And that's ever-increasing.
25 In fact, it exceeds the capability of people to ..

1 interpret the biological significance it can go down
2 so low as many of these things go. But - but the
3 idea of a zero or no exposure level is just a
4 nonentity anymore in the scientific consideration of
5 issues.

6 MR. HUTCHINS: Is this an
7 appropriate moment for a break?

8 MR. BLANKS: Sure.

9 THE VIDEOGRAPHER: We are off
10 the record at 10:50.

11
12 (AT THIS TIME A BRIEF RECESS WAS
13 TAKEN, AND THE PROCEEDINGS THEREAFTER
14 RESUMED AS FOLLOWS:)

15
16 THE VIDEOGRAPHER: We are on the
17 record at 11:13.

18
19 (By Mr. Blanks)

20 Q Dr. Dixon, returning briefly to this stint
21 in the 1953, '54 period with the Public Health
22 Service and your work on the - the pesticide
23 project, were the - the results of this combination
24 medical monitoring, air monitoring, toxicology study
25 published at some point?

1 A There were a number of publications. Some
2 that were published as interim reports and so forth
3 as we went along. Much of it came along much later.
4 A lot of it was internal publications - internal
5 reports upon which they could base their
6 decision-making. And I don't know how much of that
7 was published or not. But the things that would be
8 of general interest to the medical or scientific
9 community by in large was published.

10 I participated in three or four of the
11 publications as either author or coauthor. Mostly
12 coauthor. But they were not definitive in the
13 long-term sense. And after I left I got too
14 involved with the academic work to keep close track
15 on it like I had. I kept in reasonable touch, but
16 not -- I can't -- I'm not versed in it.

17 Q But you did say that you coauthored a
18 couple of papers along the way ---

19 A Yes.

20 Q --- out of this project?

21 A Yes.

22 Q Were there exposure limits or thresholds
23 or guidelines that - that came out of this pesticide
24 study that you know of?

25 A Not to my knowledge at that point. It

1 probably did at a later date. But I don't recall
2 just what the history was of it after my
3 involvement.

4 Q Did - did your work ever take you to any
5 of the manufacturing plants of the pesticide
6 makers?

7 A Not at the time that I was in the Public
8 Health Service, but in later years it did.

9 Q For example, when you were an American
10 Cyanamid employee?

11 A That is right, and others.

12 Q Did -- Well, did Celanese ever make
13 pesticides?

14 A To my knowledge they never did.

15 Q I didn't think so, but I thought I would
16 cover that while we were at this point.

17 A Yes.

18 Q Did your work in the Public Health Service
19 on the pesticide study in 1953 and 1954 bring you in
20 contact with any physicians or industrial hygienists
21 from industry?

22 A It did.

23 Q And do you recollect which companies'
24 persons you met?

25 A Well, of course, chiefly and most

1 importantly was American Cyanamid who had a very
2 active force involved in that because they had a
3 vested interest, of course. There was some with
4 Shell and some lesser so with others. But I wasn't
5 intimately involved with them. I met people when
6 they would come -- Our station was on the grounds of
7 the university - of Washington State University's
8 field station. And it was an intensive agricultural
9 research center. And we would meet people who came
10 through there of interest. But it's kind of a flash
11 in my memory at this point who, when, where and so
12 forth - I'm sorry - who, what, when, where and so
13 forth.

14 Q Who were the - the folks from Cyanamid
15 that you became acquainted with while in the Public
16 Health Service?

17 A Well, the chief people were those attached
18 to the central medical department headquarters in
19 New York. The medical director was doctor -- I
20 guess you want to hear the names?

21 Q Yes, please.

22 A Dr. D. O. Hamlin, who was corporate
23 medical director. He's deceased. Dr. Arthur
24 Manglesdorff, who was an assistant medical director,
25 as was Harold - Dr. Harold Golz - G-o-l-z. I can't

1 remember how to spell Manglesdorph, but d-o-r-p-h.

2 Q We will mangle it.

3 A There was some other doctors. And then
4 there were all kinds of - the industry hygiene --
5 The chief industrial hygienist was W. R. Bradley.
6 And they had a big force of other industrial
7 hygienists on corporate staff and attached to many
8 of the units of the corporation of divisions.

9 They've got a variety of names, but most
10 of them are deceased now. Then there was the
11 toxicology division headed by Dr. Boyd Shaffer.
12 It's spelled funny. S-h-a-f-f-e-r. And his
13 contingent of people. The No. 2 man was
14 Dr. Levinski, who later became head of toxicology at
15 Monsanto - then Monsanto. He's retired. Shaffer is
16 still alive.

17 Q Do you ---

18 A Oh, there were a variety of others. And
19 there was people in the divisions and in the local
20 plants. And I had an industrial hygienist at the
21 corporate research center named Warren Virchow in
22 Bound Brook when I was there. There was Russ Hunt.
23 I didn't have one in New Orleans. We used
24 industrial hygienists from the division, which
25 included John Pendergrass, who was of late the

1 assistant secretary of OSHA - John Pendergrass, who
2 was of late the secretary of OSHA - the assistant
3 secretary.

4 Q Do you ---

5 A There were many others. I know some of
6 the names, but it gets less and less upper level.

7 Q I think you have gone beyond my time frame
8 in answering this. So ---

9 A I'm sorry.

10 Q --- let me try and clarify it. No, I
11 appreciate you giving us those names. But back to
12 '53, '54 while you were at the Public Health
13 Service, which I think is where I started, we were
14 discussing the people you knew or met from American
15 Cyanamid then. And that included the doctors
16 Hamlin, Manglesdorff and Golz.

17 A Yes.

18 Q And am I right that Bill Bradley was then
19 at American Cyanamid as an industrial hygienist -
20 the '53, '54 time period?

21 A That's correct. And I had involvement
22 with all of these people during that period at the
23 Public Health Service. That's why I named them
24 specifically.

25 Q All right, sir. And at that time - '54 or

1 so - there were other industrial hygienists on the
2 staff of American Cyanamid ---

3 A Yes.

4 Q --- in addition to Bill Bradley?

5 A Yes.

6 Q Okay.

7 A I named several.

8 Q Mr. Virchow?

9 A Huh?

10 Q Mr. Virchow?

11 A Virchow, yeah.

12 Q Virchow. How would you spell that?

13 A V-i-r-c-h-o-w.

14 Q Okay. And Mr. Brook. The first name
15 again?

16 A Russ Hunt. I think that's the one I said.
17 I forgot who else I named.

18 Q Did you mention a Brook?

19 A I don't recall it.

20 THE WITNESS: Did I mention I
21 Brook?

22 Q We think you did, but I didn't hear the
23 first name.

24 A Brook? No, I didn't mention that.

25 Q Or did you say Rook?

1 A Well, he was a very - one of the lead
2 industrial hygienists - James Rook. I don't recall
3 using the name Brook.

4 Q It's the hearing problem over at this side
5 of the table.

6 A Yeah. Yeah, I understand.

7 Q Okay.

8 A But I'm drawing a blank on it now.

9 Q Oh, perhaps you said Mr. Hunt was at - or
10 Mr. Virchow was at a particular location?

11 A Oh, I would have said Bound Brook. That
12 was the location of the plant called Bound Brook.
13 I'm sorry.

14 Q Okay. Well, it's my fault. I apologize.

15 A We were going over the jobs I had at
16 Cyanamid. That's why I ---

17 Q Okay. And then do you - do you associate
18 John Pendergrass with American Cyanamid during this
19 1953, '54 period as well?

20 A Yes.

21 Q Okay. Now, you also, Doctor, mentioned
22 that you had contact with health professionals from
23 Shell - I presume Shell Chemical Company during this
24 Public Health Service period.

25 A Yeah. I'm not quite sure what - how the

1 decisions were called at that time. I just remember
2 it as Shell. It may have been Shell Chemical.

3 Q Well, actually I think Shell Chemical
4 was ---

5 A Yeah.

6 Q --- technically a division of ---

7 A Yeah. I just ...

8 Q --- Shell something.

9 A I just can't recall how that was
10 structured.

11 Q Yes. And who were those folks that you
12 recall?

13 A Well, the principal one I remember, of
14 course, was Charlie Hine. But there were others in
15 the field operations other than Hine. I just
16 thought a moment ago about it. I can't remember any
17 of the names.

18 Q Do you remember Norman White?

19 A Oh, I knew Norm very well, yes.

20 Q Okay.

21 A I'm sorry. I should have thought of him.
22 We were very close associates in professional
23 associations and so forth and in some of this work.

24 Q And Charles Hine was a physician and a
25 toxicologist?

1 A Charlie Hine was a physician who was
2 primarily a consultant to industry. He was a
3 professor of - I don't recall whether it was
4 occupational medicine or toxicology or whatever in
5 San Francisco, who actually I think throughout his
6 career was really a consultant to Shell; but he was
7 considered the "Mr. Medicine" in terms of
8 occupational health, toxicology and so forth for
9 Shell throughout his life - the latter years anyhow.

10 Q And could you tell us what kind of
11 reputation Dr. Hine enjoyed in the medical - the
12 industrial/medical field?

13 A Oh, impeccable, outstanding. He was an
14 early leader.

15 Q I'm surmising that maybe there was a bit
16 of an industrial medicine or an industrial hygiene
17 program at the University of California where
18 Dr. Hine worked ---

19 A That is right.

20 Q --- in this 1950's ---

21 A I don't know the time elements of when it
22 developed and where. But certainly all through my
23 career there have been some degree of programs.
24 Sometimes they were not very great, and sometimes
25 maybe the response was not big. But it's always

1 been there to my knowledge.

2 Q And do you recall then that Dr. Hine would
3 have had some involvement with this pesticide study
4 in the early '50's that you worked on?

5 MR. HUTCHINS: Which pesticide
6 study?

7 MR. BLANKS: The 1953, '54
8 effort.

9 A He was studying pesticides. He wasn't
10 part of our study. I don't know if he studied the
11 organic phosphates as such himself or not. I would
12 be surprised if he hadn't. But I'm not acquainted
13 with his involvement. He was involved with the
14 Shell line of products and their research and
15 whatnot. And I don't have at the tip of my fingers
16 knowledge of all the details of that.

17

18 (By Mr. Blanks)

19 Q I'm sorry. I didn't mean to ---

20 A No. No.

21 Q --- to impose that ---

22 A I'm aware of some of the work he did in -
23 in other fields of toxicology and whatnot because we
24 worked on a number of projects.

25 Q And I suppose just as if one were to

1 compare today's directory of the Industrial Hygiene
2 Association with that of 1955, the numbers have
3 multiplied, you know, many, many, many times - the
4 numbers. The same would be true I guess for
5 toxicologists or industrial physicians ---

6 A If ...

7 Q --- contrasting today with ---

8 A Did you say of directors or members?

9 Q I meant the directory. If you ---

10 A Oh, the directory, yes. Yes, indeed, they
11 have all grown very substantially.

12 Q And that's true in your field ---

13 A Yeah.

14 Q --- industrial hygiene, of course, and I
15 guess it would be true with toxicology as well?

16 A It is, yes.

17 Q So, if we go back to this time when you
18 first began getting involved in toxicology and
19 industrial medicine, there would have been I guess
20 comparatively speaking just a handful of prominent
21 toxicologists around the country ---

22 A Yes.

23 Q --- true?

24 A When I joined the SOT - just after the
25 charter membership group started in about '65 ---

1 That's when I joined in '65. I think it started in
2 '62 probably. And there were fewer than 700
3 members total. And now the membership is in excess
4 of 10,000. And the same is true of the AIHA of
5 which I was a member. And my own organization, the
6 Occupational Health Physicians - which has gone
7 through a number of name changes - now called the
8 American College of Occupational and Environmental
9 Medicine, had probably 15 - 12 to 1,500 members; and
10 now it's I think close to 7,000. So, they have all
11 grown quite substantially. Industrial hygiene is
12 the greatest.

13 Q Yes.

14 A And SOT - the Society of Toxicology next.

15 Q Do you remember becoming acquainted with
16 any toxicologists from Union Carbide or Dow Chemical
17 or ---

18 A Both, yes.

19 Q Who - who do you recall from the earliest
20 period with Union Carbide?

21 MR. HUTCHINS: Well, hold on a
22 second. At what time, Joe?

23 MR. BLANKS: Well, I think the
24 doctor is going to have to tell me
25 what time.

1 A What you are asking me? I'm sorry. I
2 didn't quite get the gist of the question.

3
4 (By Mr. Blanks)

5 Q And it was a poorly put question. I was
6 wondering if you recollect again from this - this
7 early 1950's period when you were in the Public
8 Health Service making the acquaintance of
9 toxicologists from other companies such as Carbide
10 or Dow or du Pont or Monsanto and just sharing those
11 names with us.

12 A I knew virtually all of them. Carbide
13 didn't have its own internal toxicologist. They
14 used the toxicology group at the Carnegie-Melon
15 University's Bushy Run Laboratory. And I would have
16 to scratch my head and think of all the names;
17 but ---

18 Q Does a Henry "Smyth" or "Smith" ring a
19 bell?

20 A Henry Smyth had been head of it for a long
21 time. I knew him very well. Oh, there is so many
22 of them. It's just kind of hard to even think.

23 In the case of Carbide -- In the case of
24 Dow they had their own laboratory up at Midland.
25 And they had a large staff of people. And through

1 the years I have known all of their people. Now
2 that you ask me, I have a hard time bringing out
3 some of the names. There was like Perry Gehring who
4 was a more recent head of it. Good, Lord.

5 Q V. K.?

6 A Huh?

7 Q V. K. Rowe?

8 A Oh, I knew V. K. extremely well. We
9 were -- We -- we became very, very close friends from
10 our first meeting which was in 1955. And he and I
11 were very close. I am closest to him of almost any
12 other toxicologist in the country. But I couldn't
13 think of his name right -- I couldn't bring it out
14 of my memory.

15 Q And was there a Torkelson there? Is
16 that ---

17 A Oh, Ted Torkelson, yes. Oh, gosh. He was
18 close, too.

19 Q And I would presume that -- as well as
20 regarding V. K. Rowe as a friend, you also regard
21 him as an extremely competent toxicologist from --
22 from ---

23 A Outstanding. He was one of the top people
24 I have ever known in that work.

25 Q Did you know any folks from du Pont in the

1 early '50's?

2 A I knew all of the people in du Pont, too.
3 I spent time with them at Haskell. Good, Lord. I
4 mentioned him earlier. John Zapp was the head of
5 the laboratory for most of the time that I was
6 involved. He retired a few years back and had an
7 untimely death a few years ago.

8 Q Are you recollecting now the period after
9 you joined American Cyanamid and ---

10 A In this - in this last little bit of
11 inquiry, yes ---

12 Q Uh-huh.

13 A --- because I didn't have more than casual
14 acquaintance with any of these until after I joined
15 Kettering.

16 Q Okay. Well, maybe that's the ---

17 A Yeah.

18 Q --- logical place to go next.

19 A Well, we had exposure to virtually all of
20 the leading figures in the whole field at Kettering.
21 They were all brought to the laboratories for
22 seminars and whatnot, and that's how I met so many
23 of the early leaders in the field early on in my
24 career. So - foreign and domestic.

25 Q Your Public Health Service work ended in

1 1954?

2 A Yes, June ---

3 Q Or at least your active duty tour?

4 A Yeah, my active duty. It was June or July
5 1st, something like that.

6 Q Did you remain as a reserve officer in the
7 Public Health Service even ---

8 A I did. I let it lapse a few years ago by
9 default.

10 Q And it was at this time near the end of
11 your term out there in Wenatchee ---

12 A Wenatchee.

13 Q --- Wenatchee, Washington, that you
14 decided you might develop your expertise in the
15 field of industrial medicine?

16 A That is correct.

17 Q Could you tell us what - what led you to
18 make that decision?

19 A Well, I became fascinated with the whole
20 field of toxicology in particular, but all the other
21 elements: Industrial hygiene, clinical medicine,
22 industrial hygiene aspects. And as I mentioned
23 earlier, it was then - had just been approved as the
24 latest medical specialty. In fact, they hadn't even
25 positioned it where it would be fit. It finally

1 ended up in preventive medicine.

2 And training courses were already approved
3 and in place. And I just decided that this was what
4 I wanted to do. So, I applied to several of them
5 and was accepted at each and then picked Cincinnati.

6 Q I need to digress. I apologize. But were
7 there -- Of the other Public Health Service
8 physicians with whom you worked in the '53, '54
9 period, did any of those men then go on to - to
10 positions with industry that you know of?

11 A Most of them remained in academic or some
12 form of governmental service. Like Jack Hayes went
13 to Vanderbilt and headed toxicology. I don't
14 recall - I could be totally in error - but I don't
15 recall any that actually went into industry.

16 Q Doctor, do you recall any industrial
17 hygienist, per se, that worked with you or your
18 colleagues on the Public Health Service pesticide
19 project?

20 A Well, they weren't called industrial
21 hygienists. They were chemists by in large; people
22 from the laboratory either in Savannah or - we had
23 one - two at our laboratory in Wenatchee. They were
24 self-trained and trained by the CDC people to do
25 sampling and so forth among the things - among many

1 things that they did. I didn't -- I don't recall
2 that I ever knew the term "industrial hygiene" until
3 late in the course of that period when I was
4 exploring going into the field. Maybe I did know
5 the term, but it was not something that I had a lot
6 of knowledge -- Oh, of course, I did because I knew
7 the industrial hygienists of Cyanamid and so forth.
8 So, I did know the term.

9 But there wasn't formal training in
10 industrial hygiene in those days. All the people in
11 the field were those who had opted to do that type
12 of work through one experience or another and became
13 self-made people in the field, as was true of
14 medicine and otherwise in the early days.

15 Q Yes, sir. You might recollect, however -
16 not meaning to be contrary with you - but the
17 Harvard School of Public Health had a program that -
18 in industrial hygiene that went back - well, I don't
19 know when, but probably before the war.

20 A Probably around in that time really.

21 Q Yes, sir.

22 A I don't know the time tables that the
23 different schools started that. But Kettering,
24 Harvard, New York University, Pittsburgh, Rochester
25 all had semblances of training in those fields. I

1 don't recall formality - even Kettering didn't have
2 a formal name concerning training in industrial
3 hygiene until after I left there in the late '50's,
4 but they had industrial hygienists on staff and so
5 forth. They were very knowledgeable, very
6 well-known people.

7 Q Concerning the industrial hygienists or
8 the persons at the Public Health Service that were
9 doing industrial hygiene that you know - that you
10 knew, did any of those individuals go on to industry
11 as - as you can recall?

12 A No. As I said before, I don't recall any
13 of them having done so; but I can't attest to that.

14 Q Okay. You said you applied to several
15 schools ---

16 A Yeah.

17 Q --- for your advanced studies in
18 industrial medicine. Which ones did you ---

19 A Well, I got information from all of them.
20 And I started to apply to more than I actually ended
21 up sending out. I ended up sending them out to New
22 York University, the University of Pittsburgh,
23 Kettering, I think to Rochester, too. That was
24 under the du Pont - under the Kodak people.

25 Q Uh-huh.

1 A I know about the first three. It's been
2 so long now I can't remember.

3 Q Can you recall ---

4 A I had a hard time deciding which was ...

5 Q Can you recall, Dr. Dixon, the other
6 schools that existed in 1954 that offered a program
7 that you - you know, that you sent off to get
8 information from?

9 A What about them?

10 Q I was just wondering if you could share
11 with us the - the names of the other places to which
12 you didn't apply ---

13 A Oh.

14 Q --- that existed back then.

15 A Harvard, Columbia. It seems like there
16 were about eight.

17 Q Did Johns Hopkins have anything there?

18 A No, they didn't have anything. They don't
19 have much now. I'm trying to think. I can't recall
20 now. That was the bulk of them.

21 Q And how was it that you finally settled on
22 Kettering at the University of Cincinnati as your
23 choice?

24 A Well, I liked what I heard about it and
25 what I saw about it. I visited several of them.

1 Well, I visited two actually - Pittsburgh and, of
2 course, Cincinnati. And in the field the people I
3 talked with all raved about Cincinnati being No. 1.
4 It was under Robert Kehoe, who had had very major
5 support from the Ethyl Corporation because he was
6 the one who studied lead poisoning in the gasoline
7 industry and allowed the modern automobile to
8 evolve. Anyway, I picked them as being the leader;
9 and I guess they still are the leading one.

10 Q And how large was your class that you ---

11 A Very small. We had five.

12 Q That's a small class.

13 A Well, they weren't classes like -- These
14 were postdoctoral doctorates.

15 Q I understand. But suffice it to say, you
16 were able to get acquainted with everybody in
17 your ---

18 A Oh, yes.

19 Q --- in your group? And ---

20 A There were two years at the school. At a
21 time in the class behind me for -- The first year
22 had five; and the class during the second year I
23 think had five, also. They were very selective, and
24 they didn't want them to be big. They wanted them
25 to be intensive. And they were very intensive

1 training programs.

2 Q Now, what did ---

3 THE WITNESS: Am I talking loud
4 enough for all of you?

5 A I have a little trouble when I got this
6 thing in knowing what I'm saying.

7 Q Well, if you think that's going to excuse
8 any of this testimony, you are wrong.

9 MR. HUTCHINS: No excuses needed
10 or offered.

11 Q What was the formal title of the degree
12 that you were striving toward at Kettering in 1954?

13 A Doctor of Science in Occupational Health.
14 They may have called it Industrial Medicine still at
15 that point. I have forgotten which, but it was a
16 Doctor of Science, which is equivalent to a Ph.D. or
17 a Doctor of Philosophy - and of Science.

18 Q And could you recount for us then what the
19 courses consisted of in this two-year study period?

20 A Essentially everything you would be faced
21 with to some degree in industry. From general
22 medicine as it applied to the industrial setting,
23 particularly with respect to doing pre-employment
24 and preventive health examinations and knowing the
25 history of diseases the people would have,

1 et cetera. And then particularly the diseases and
2 conditions that occurred in people as - or might
3 occur, potentially so, from occupational endeavors.
4 I use that word as opposed to exposure because it's
5 a broader thing. It includes radiation, noise,
6 every kind of influence that people are subjected to
7 environmentally in - in a work situation.

8 We had intensive studies in industrial
9 hygiene, in toxicology. We had intensive training
10 in medical/legal aspects, business and management,
11 understanding structures of business endeavors.
12 There were quite a few others. But it was a very
13 broad based thing - to give the people in the
14 training course as broad a picture of the things
15 that they ought to know as they entered industry,
16 which is a totally different world than private
17 practice, for example.

18 Q Uh-huh.

19 A And the training specifically in the
20 scientific sense was much different than that which
21 you got in medical school or residencies because it
22 went far beyond that but also included what you did.

23 Some of the time was involved in visiting
24 various industries, all types of things. Some of it
25 was involved in clinical work at the medical center

1 teaching medical students, too. And it was a
2 teaching fellowship. Meeting with experts in the
3 field, rather extensive people from all parts of
4 this country and from abroad.

5 We had a seminar day every Saturday -
6 people worked in those days on Saturdays, at least
7 half a day; we worked all day - but with leaders in
8 the field and controversial people. And, so, it was
9 an exposure that was unattainable in any other
10 setting.

11 Q It sounds quite fascinating.

12 A And in the third year in addition to
13 whatever responsibilities you had for a given job
14 position -- Most of the time we didn't have a job
15 position. I was sent there originally to be
16 attached to the central medical department in the
17 New Jersey headquarters and then to spend time in
18 each of a major number of plants around the country,
19 particularly the ones in the New York area. It was
20 heavily peppered with them up in that region.

21 But they had a problem in New Orleans with
22 a health matter at a big new plant and they needed
23 somebody with my background to come in on an
24 emergency basis and head it up. And they got
25 permission from the Kettering people for me to do

1 that. So, I became assigned actually to the big,
2 new New Orleans plant but still spent quite a lot of
3 my time visiting other plant locations, attending
4 meetings and things to broaden my knowledge and
5 exposure to the field.

6 Q So, you would -- You would have had
7 courses specifically dealing with what would
8 traditionally have been called occupational
9 diseases ---

10 A Yes.

11 Q --- among many other ---

12 A Intensively, yes.

13 Q --- things? And I take it this - at
14 Kettering is when you first got your teaching
15 specifically about say the pneumoconioses, the dust
16 diseases, for example?

17 A That's right.

18 Q And the various known and suspected
19 industrial carcinogens that were in use in industry
20 back in the mid-'50's and so on?

21 A Those known at that time, yes.

22 Q Who were your instructors that you can
23 recall from the Kettering period?

24 A Well, Dr. Kehoe, Dr. Hayworth, Dr. Princi.
25 Good, Lord. I can see some of them, but I'm having

1 a hard time pulling the names out of the hat.

2 Joe -- Good, Lord. I can't believe I'm having
3 trouble with that.

4 Q Well, I thought I was going to be able to
5 help you. And I'm ---

6 A On some of them I've just got to think. I
7 can see the faces right now of the people and can
8 see where they were in their offices, but I'm having
9 trouble with some of the names.

10 Q I thought I might find some names here to
11 stimulate your recollection with. Well, they will
12 come ---

13 A There was Suskind, a Dr. Folkes,
14 Dr. Phair - P-h-a-i-r.

15 Q J. J.?

16 A J. J.

17 Q Yeah.

18 A Good, Lord. There is so many. And then
19 there was many of them from the university and these
20 other fields: Surgeons, lawyers, technical people
21 of all ilks related to various aspects of what the
22 particular other subject areas were. This was a
23 very full program, very intensive; and we - we had
24 long days and a vast amount of experience for -
25 crammed into the two years there at the - at the

1 school.

2 Q And Dr. Kehoe was still quite active then
3 in ---

4 A Oh, yes, he was.

5 Q --- not only teaching but also as a
6 medical consultant as well; correct?

7 A Yes. That is right.

8 Q I think you mentioned that he had some
9 relationship with the Ethyl Corporation?

10 A Yes.

11 Q And I believe that Dr. Kehoe during this -
12 this era was actually the medical consultant to the
13 Ethyl Corporation; would that be ---

14 A That is right.

15 Q --- right?

16 A Yes.

17 Q Did any of these other physician
18 instructors have similar kinds of roles that you
19 knew of?

20 A Some of them did, yes.

21 Q Could you tell us who you ---

22 A Well, first of all, they had a number of
23 doctors on the staff that were really assigned
24 almost full time to Ethyl operations. I can think
25 of several of their names. We spent time with some

1 of them, but not very much. Dr. Princi who was the
2 assistant director of the operators was very active
3 with Shell Corporation, among others.

4 It's hard to recall at the moment just
5 what other ones were -- If I had a list of the
6 people, I could quickly run off what I knew of them.
7 But the two of them were the ones that had the most
8 involvement as I recall with outside companies.
9 Some of them had lesser affiliations - I mean less
10 intense. But off the top of my head, I can't recall
11 them right at this moment, sir.

12 Q Now, the ...

13 A The Government was a very important one,
14 too.

15 Q Oh, the ---

16 A The U. S. Government, various agencies of
17 the U. S. Government.

18 Q Are you suggesting that these doctors did
19 consulting work with the Government; is that ...

20 A (Nodding affirmatively)

21 Q This shall we say occupational health
22 program at Kettering - if that describes it fairly -
23 had it existed for a number of years before you went
24 there in '54?

25 A The training program for physicians?

1 Q Yes, sir.

2 A Yes, it was in about the fifth year of its
3 existence - fourth or fifth year when I went there.
4 It became developed in anticipation of the approval
5 of its status as a medical specialty. And they
6 had -- They had been training people before that
7 time in various aspects of it, but they had to pull
8 together a program that could be approved for
9 training purposes, like any university program is,
10 and to meet requirements of a board of internal - to
11 a board of medical specialists. And I think it had
12 been formally going probably four or five years.

13 Q But to your understanding many of these
14 doctors were at Kettering before the 1949, 1950
15 inception of this training program that you were in?
16 Would that -- Wouldn't that be right?

17 A I don't quite follow that.

18 Q I guess what I was getting at was the -
19 this collection of experts at Kettering didn't just
20 spring up ---

21 A No.

22 Q --- in 1949 or '50?

23 A The faculty and staff?

24 Q Yes, sir.

25 A No, they had been in existence for quite a

1 long time. Very early -- Dr. Kehoe was a professor
2 or an associate professor or an assistant, something
3 or other, in physiology at the med school - he was
4 an M.D. - when Boss Kettering a famous early
5 inventor of the self-starter and many other things
6 for General Motors came to him with this problem -
7 came down to the school and they called on Dr. Kehoe
8 to give them some help. He didn't know any more
9 about lead than anybody else did at that point
10 probably. But they posed an interesting debacle in
11 that lead in gasoline was about to be banned because
12 there had been a lot of fatalities and serious
13 illnesses and so forth. And they wanted to get some
14 understanding of the toxicity of it and determine
15 what, if anything, could be done to control it.
16 Because without the lead additive at that time, the
17 future of the combustion engine was very much in
18 jeopardy.

19 And he quickly got into it and in no time
20 established what the overall essentials of the
21 toxicity were and then worked on further how to
22 control it and set up some very rigid conditions for
23 control.

24 Q We are talking about Dr. Kehoe now?

25 A Dr. Kehoe - and with lead. It was

1 tetraethyl lead by in large and not just plain lead.
2 That introduces an element of toxicology that's a
3 bit different than just plain lead. It's a lot
4 worse in fact.

5 But anyway, he resolved the key issues;
6 but there still remained much to be done long term.
7 So, the Ethyl Corporation and General Motors and
8 du Pont - who were very active in that whole field -
9 the Christiana Fund - they established a fund to set
10 up a laboratory at the University of Cincinnati,
11 which became named the "Kettering" after Boss
12 Kettering, who also was founding - helped the
13 foundation of Sloan-Kettering in New York.

14 Q What was this gentleman's first name -
15 Mister ---

16 A Kettering?

17 Q Kettering.

18 A Good, God.

19 Q Did you say -- Well, I couldn't hear what
20 you ---

21 A Well, they called him Boss Kettering.

22 Q That's what I thought I was hearing.

23 A I can't even think what his first name
24 was. I never heard him called anything but Boss
25 Kettering.

1 Q Okay.

2 A He was a bossy old boss. Anyway, he was
3 instrumental in pulling the group together and
4 funding the first laboratory there. And they
5 continued to support it through the years; I presume
6 still do. And he embarked on intensive studies of
7 all aspects of lead that have been very helpful.
8 It became the world's center ---

9 Q Uh-huh.

10 A --- the leading center of lead toxicology
11 studies. Since his demise it's probably less so
12 but - because others have gotten into it quite
13 extensively. It's still a matter of great interest
14 in the world. There were things that weren't even
15 known back then - childhood effects and others.

16 Q Yes, sir.

17 A But anyway, that's the basic history of
18 it. So, I don't recall the time. It seems to me
19 that the - his first involvement with it was in the
20 early to mid-'20's, about the time I was born.

21 Q I would think so.

22 A And within a very short time they
23 established the initial laboratory, and then they
24 expanded and built new facilities. After I left the
25 last expansion was larger than the medical school

1 that existed at that point itself. But it was
2 adjacent to the medical school.

3 Q So, though this laboratory named for Boss
4 Kettering ---

5 A Yeah.

6 Q --- started with - with the sole purpose
7 of dealing with tetraethyl lead problems, I
8 gather ---

9 A And lead in general, but ...

10 Q --- it broaden its interest ---

11 A ... he insisted even in the early days
12 that it - he be allowed to look into other things
13 that might come up and be of interest. And they
14 developed an interest in many, many things back when
15 there was no formal field of occupational health or
16 toxicology or industrial hygiene, but they were in
17 the ground work of establishing the principles and
18 the practices that then became that field.

19 Q Was Mr. Kettering connected with or an
20 employee of the Ethyl Corporation?

21 A No, General Motors. He was a
22 Vice-president or Executive Vice-president. He was
23 very high up in the hierarchy of General Motors. I
24 never met him. He had I believe died before I came
25 on the scene. But we sure know about him, except

1 for his first name.

2 Q Okay.

3 A I'm - I'm sure I know it, but I just ...

4 Q Did your work - bouncing back again to the
5 Public Health Service period - did the work of the
6 doctors on the health effects of the pesticides lead
7 to any - any kind of product warnings or safe use
8 instructions or that sort of information, Doctor?

9 A Well, I'm sure the factual information
10 that we evolved ultimately was utilized; but I don't
11 recall precisely. I do know that some of the
12 companies at that time like Cyanamid used some of
13 that data plus much of their own. They had done a
14 great deal of work in this field prior to my coming
15 onto the scene. They used that information that
16 they had and that the Public Health Service had in
17 putting warnings as we did with all industrial
18 chemicals at that time.

19 Q Are you saying that Cyanamid, for example,
20 and then perhaps Shell as well actually put product
21 warnings out with these insecticides in the
22 mid-1950's?

23 A Absolutely. And with the most effective
24 element of labeling that ever occurred, the use of
25 the skull and crossbones, for example.

1 Q And why was it necessary for these - these
2 companies like Cyanamid and Shell to even bother
3 with such a thing on these chemicals?

4 A Well, that's interesting. In industrial
5 bulk chemicals you normally did not use that type of
6 labeling as opposed to household or home - the
7 private use of compounds. You never warned against
8 oral ingestion in industrial labeling because it was
9 implicit that nobody swallowed industrial chemicals.

10 One exception was methyl alcohol because
11 any alcohol could be of interest to the casual
12 worker. And that was a highly toxic thing that
13 could cause blindness or death in a very short time.
14 And we did warn about oral ingestion for that
15 compound. And that was the only one.

16 The labeling parts were really for the
17 user of the products. Some of the companies didn't
18 market themselves. They would market under other
19 companies. Cyanamid did both. And I don't remember
20 the details of the labeling at this point, but I
21 know that they were -- We were very much on the
22 front burner as far as wanting to provide
23 information for safety purposes by other -- In fact,
24 all of the work they did studying it was directed at
25 being able to provide for safe usage of the

1 materials to which there was inevitably some
2 exposure; but telling them how to use it in a manner
3 that was safe and not likely to induce any adverse
4 effects.

5 Q But this was a responsibility that
6 Cyanamid and Shell and the other pesticide makers
7 took on themselves ---

8 A That's right.

9 Q --- in the early '50's?

10 A I know that Shell and Cyanamid did it very
11 well. I can't speak really at this point as to what
12 the other companies did at that time.

13 Q And ---

14 A They were in the forefront of
15 understanding that principle. They were all members
16 of the Chemical Manufacturers Association, and they
17 had a labeling committee even at that time. And,
18 so, they had principles of how to label products and
19 whatnot. And it was a thing that was coming along
20 on its own without Government regulation, long
21 before the regulations came in.

22 Q And your - you emphasized again the - the
23 object was to get information on the package for the
24 benefit of the ultimate users of the product?

25 A For those that were for consumer use, not

1 for the industrial user.

2 Q Yes, sir. But I mean for the individuals
3 that were actually handling the material at the end
4 point of use?

5 A Only for the consumer user, not for the
6 industrial user.

7 Q Well, the industrial user ---

8 A They were provided with what's now the
9 equivalent of Material Safety Data Sheets that gave
10 information - bulletins and papers that informed the
11 industrial clients of every element that they needed
12 to know about a product by in large, which included
13 hazards and so forth. But it was quite variable.
14 They each had different formats and so forth. But
15 the bigger, better companies pretty much did that
16 generally. If their material was not -- They didn't
17 do it for long - for established commodity
18 chemicals; but they did it for chemicals that had
19 unique concerns and new products and that sort of
20 thing.

21 Q Well, you are drawing a distinction for me
22 between consumer use and industrial use.

23 A (Nodding affirmatively)

24 Q And I'm not understanding how that would
25 apply to pesticides, for example. Could you

1 elaborate?

2 A Well, we made concentrate forms of these
3 products - the pesticides - that then went to other
4 companies for preparing consumer packaging, for
5 example ---

6 Q Oh.

7 A --- as well as Cyanamid doing consumer
8 packaging. So, the consumer's use - the ultimate
9 consumer, the household, the private citizen, the
10 use by them is not based on familiarity with the
11 product. It's not based on having an industry that
12 has its own rules of what you did with the product.
13 In industry if it goes to another industry for its
14 use, that was implicit that the industry had a
15 responsibility to take care of its own people. But
16 you can't do that for a world out there - for a
17 consumer package without specific labeling that's
18 relative to the type of exposure they would get as
19 opposed to what would occur in industry.

20 Q Okay. So, if Cyanamid, for example,
21 shipped a tank car of concentrated - say - malathion
22 to the Green Light company for packaging into one
23 quart ---

24 A Or whatever.

25 Q --- or one gallon bottles ---

1 A Yeah.

2 Q --- just for example ---

3 A Yeah.

4 Q --- that would be an industrial customer?

5 A Precisely.

6 Q Okay. But Cyanamid would still even in
7 the mid-'50's provide the Green Light company with
8 the equivalent of a Material Safety Data Sheet for
9 this toxic chemical?

10 A I use that word loosely.

11 Q Yes, sir.

12 A They provided a type of information that a
13 product bulletin and a Material Safety Data Sheet
14 would include.

15 Q And I guess the good sense behind that
16 would be that Cyanamid had probably as much
17 knowledge as anybody out there about their - their
18 products?

19 A Exactly, sure.

20 Q And this - even the industrial customer
21 would be to some extent expected to rely on the
22 manufacturer to inform it of the hazards ---

23 A That is correct.

24 Q --- and the proper precautions for safe
25 use. Would that be right?

1 A That I believe is correct.

2 Q Okay. And then I guess the next step
3 would be that additional labeling and warning that
4 you discussed about for the end user that ought to
5 accompany the product as it is sent out to the end
6 users?

7 A Well, yeah. It's complicated, but that's
8 essentially correct.

9 Q But again, the same principle would
10 apply ---

11 A Principle, yes.

12 Q --- that the company that's selling that
13 product to the end users certainly would be expected
14 to know much more about it than the individual
15 that's going to buy it and apply it out in the
16 field; and, therefore, that company should pass that
17 information on to the end user so he could protect
18 himself.

19 A Yeah. To the best extent they could, yes.

20 Q And as you said back in this period when
21 you first came into the field in the mid-1950's,
22 even though Government regulations didn't require
23 the kind of warning or labeling or Material Safety
24 Data Sheets, the responsible manufacturers did
25 provide them with the material?

1 A By in large, yeah. Not on commodity or
2 generally known compounds. If you are selling
3 tanker cars of Oleo margarine or sodium chloride or
4 common chemical commodities, perhaps it would be
5 very much limited I'm sure. But on those that were
6 new and different with a special type of hazard, you
7 tried to subscribe to that practice.

8 Q Okay. And, of course, I guess the cost of
9 informative labeling or warnings on a package is
10 certainly relatively low at least once you have
11 obtained the data that - that you are going to rely
12 on to - to write your warning or your label? It
13 doesn't cost much to print instructions on a package
14 on how to safely ---

15 A Not to print, no.

16 Q --- use it?

17 A No.

18 Q Or even on some products?

19 A (Nodding affirmatively)

20 Q But the record would require a verbal
21 answer, please.

22 A I'm sorry?

23 Q You just nodded at me as though in
24 agreement, but you didn't say anything.

25 A Didn't I say "yes."

1 Q I don't think so.

2 A I thought I did. I'm sorry. I believe
3 that was the right answer. I can't remember what
4 the question was. Forgive me.

5 Q We are up to around noon. Surely you at
6 least want to stretch your legs here.

7 A I'm all right for the moment, but when you
8 are ready for lunch we can do that.

9 THE VIDEOGRAPHER: I just need
10 to change the tape.

11 MR. HUTCHINS: Let's go off the
12 record.

13 THE VIDEOGRAPHER: We are off
14 the record at 12:04.

15
16 (AT 12:04 P.M. THE DEPOSITION
17 WAS RECESSED FOR LUNCH. AT 1:35 P.M.
18 THE PROCEEDINGS RESUMED AS FOLLOWS:)

19
20 (By Mr. Blanks)

21 Q Doctor, as I recall - although I digressed
22 right before lunch - we had gotten up to the point
23 where you were at Kettering and were kind enough to
24 share with us some aspects of the program and the
25 people that were there. I wonder if you had any

1 training or experience there in laboratory work?

2 A Yes.

3 Q And was that in the - I guess in the
4 context of doing toxicology studies?

5 A No. It was more in the question - in the
6 area of working on research for the dissertation.

7 There was some work in the -- What was the
8 question - the subject area you said before that?

9 Q Well, I was asking you about laboratory
10 work.

11 A Yeah.

12 Q And I thought maybe that was as part ---

13 A There was some -- We were quite active in
14 some of it, but not mostly.

15 Q What was your dissertation, please?

16 A It was diurnal variation in
17 cholinesterase - c-o-h-o-l-i-n-e-s-t-e-r-a-s-e
18 (sic) - levels. That was the ...

19 MR. BLANKS: Let us pause.

20 THE VIDEOGRAPHER: We are off
21 the record at 1:36.

22
23 (AT THIS TIME A BRIEF RECESS WAS
24 TAKEN, AND THE PROCEEDINGS THEREAFTER
25 RESUMED AS FOLLOWS:)

1 (By Mr. Blanks)

2 Q You were describing or telling us the
3 title of your dissertation, Doctor. Diurnal
4 variation in cholinesterase levels. What pray tell
5 does that mean?

6 A Well, that is -- Cholinesterase is an
7 enzyme that is very much affected by the organic
8 phosphate-type pesticides. And that's the material
9 that we test in the body, both in the blood plasma
10 and in the red cells. The red cells reflect more of
11 the tissue levels. And when one is absorbing
12 increasing amounts of the organic phosphates, there
13 will be a gradual - or sudden if it's massive - a
14 decrease in the cholinesterase values.

15 We can check the cholinesterase values of
16 workers, sprayers or whatever over a period of time
17 and see if they are decreasing or are they staying
18 at normal. We want to have normal levels - a
19 baseline level to begin with so we can see any
20 departures from it. But it's an indicator of
21 exposure or toxicity from the organic phosphates.
22 It's very hard to test the body for the actual
23 concentration of the phosphates in the body, but you
24 can measure what it does to this enzyme.

25 Q I see.

1 A And that's the one that had a lot to do
2 with nerve function, which is why the so-called
3 nerve gas type properties of the materials ...

4 Q And the need to have the baseline on an
5 individual would be just because of individual
6 susceptibilities?

7 A Individual variation. And the thing I was
8 looking for - diurnal, that means day and night -
9 actually it was the changes during 24 hours because
10 if one did testing on people and there was a
11 significant variability -- Many things, you know, in
12 the body function differently during different times
13 of the day. Function - like there is a phase in
14 functioning. Like in the early morning certain
15 things are low and late in the day they are high or
16 vice versa.

17 It was important to know the magnitude of
18 that type of phenomenon so we could more readily
19 interpret the cholinesterase level as an indicator
20 of toxicity. If, for example, in the late day - as
21 opposed to your baseline, one which was done in the
22 morning and it was very low and you didn't take
23 account for that variability, you would misjudge the
24 implications or significance of it.

25 Q I see. And I ---

1 A And it was significant, but not enough to
2 make a major issue in terms of reading the levels.
3 There was a statistically significant variability in
4 the levels, but not enough to really cause major
5 concerns that way.

6 Q This sort of test like for the
7 cholinesterase levels would fit into a medical
8 monitoring program of pesticide handlers and
9 applicators obviously?

10 A Yes, I think so.

11 Q And it's useful ---

12 A In proper instances, yes.

13 Q Yes, sir. And it would be useful for
14 detecting let's say overdoses or undue exposures
15 fairly soon in time after the exposure; is that ---

16 A Depending on magnitude. There was a
17 threshold beyond - which one had to reach above it
18 would begin to drop; and then it could drop rather
19 precipitously after that point if exposure continued
20 at a significant level.

21 Q Do these changes in this enzyme occur just
22 over the course of a day or ---

23 A Well, that's what my study was about.

24 Q --- two or three?

25 A And it was not significant. There is --

1 There is -- It is a statistically significant
2 variability, but it is not a clinically significant
3 variability. Well, we didn't have to factor that
4 into the test to assess that there was or was not a
5 causal effect of significance clinically.

6 Q But in other words, this - this would be
7 the kind of exposure to these organophosphates that
8 would manifest itself fairly soon - near in time to
9 the exposure itself? In other words ---

10 A I don't quite follow your question.

11 Q And that's because I'm not asking it well.

12 A Yeah. Okay.

13 Q In other words, you could - let's say you
14 could have an exposure to some mineral dust like
15 silica or asbestos, something like that, and the
16 physician really wouldn't be able to detect that in
17 the body the next day or the next week or the next
18 month after the exposure; but with this - these
19 organophosphates, that wouldn't be the case? You
20 would see some change close in time to the exposure?

21 A Of the organophosphates ---

22 Q Yes, sir.

23 A --- concerning the cholinesterase, not the
24 other thing?

25 Q Right.

1 A Well, it could or could not depending on
2 the magnitude of ---

3 Q Okay. You are saying that some things
4 lend themselves to ---

5 A Yeah. This is the only way we had to do
6 it to check to see if there was an effect. It took
7 a certain magnitude to cause change. Lesser amounts
8 don't cause any measurable change.

9 Q Now, other chemicals like maybe benzol,
10 benzene or some lead exposures, those, too, would
11 show up with body changes that you could detect?

12 A Not with cholinesterase however.

13 Q No, just ---

14 A Well, they may or may not, yeah.

15 Q Okay.

16 A By in large I guess "yes" is the answer.

17 Q So, for example, with workers that you
18 suspected of being harmfully exposed to lead, there
19 would be some laboratory-type tests that you could
20 perform to confirm or ---

21 A Yeah.

22 Q --- reject that ---

23 A Yes.

24 Q --- that theory; right? And I guess the
25 same would be true for benzene exposures and - I

1 guess there must be many others?

2 A Yeah, to a degree. They vary.

3 Q All right. But as - as I think we started
4 out this digression, not all of the occupational
5 diseases or the occupational stressors lend
6 themselves to this sort of a rapid detectability, do
7 they - or temporally near - near in time?

8 A They do not, yes.

9 Q And that must present some special
10 problems to the - to the industrial physician in
11 trying to prevent diseases from some of those
12 materials; true?

13 A For those things for which there isn't an
14 easy - or a readily available test to measure it,
15 yes.

16 Q Now, I'm presuming, but these kind of
17 concepts are surely things that you became well
18 acquainted with during your training at Kettering?

19 A Oh, yes.

20 Q And I think you surely must have had
21 either survey courses or specialized courses that
22 covered most if not all of the recognized
23 occupational diseases in 1955?

24 A That is correct.

25 Q Okay. And I wondered, did you - did you

1 retain your textbooks from this two-year stint at
2 Kettering as you did from medical school earlier?

3 A Yes. We didn't use textbooks quite like
4 you did in undergraduate work. But there were
5 certain standard references, and I gathered quite a
6 collection of interesting and useful books during
7 that time. And I still have most of them. A few
8 have disappeared over the years.

9 Q And what do you recollect as being the
10 references that you would have had concerning the
11 occupational dust diseases?

12 A Well, one of the most useful books that we
13 had in the early day was the first edition of the
14 Patty textbook on occupational health, a two volume
15 set at that point. It's now a five volume set. I'm
16 greatly sorry to say that I've lost my first edition
17 book somewhere. It disappeared. Just for
18 historical interest.

19 Q Yes, sir. And in addition to Patty's
20 first edition, do you recall any other?

21 A Well, there were books on statistics,
22 toxicology. There were a variety of them. We used
23 some books for certain aspects of each. You know,
24 Bradford-Hill and some of the other ones on
25 biostatistics.

1 I've got a whole series of them on
2 clinical -- Well, I've got so many that I've
3 purchased through the years since then that I can't
4 hardly remember which ones I got back then and which
5 ones I've gotten more recently. I have two and
6 three editions of some of these books over the
7 years. But back in the '50's or - it's a little
8 hard to remember back exactly. I've got them all on
9 my shelf, but I would have to look at them.

10 Q I know it might be a bit of an imposition,
11 but I wonder if we might persuade you to just kind
12 of make a list of those old texts that you have that
13 would be pertinent to industrial medicine,
14 occupational ---

15 A They are the standard ones that everybody
16 knows, but I suppose I could do that somehow.

17 Q Well, if ---

18 A I can't verify - vouch for the fact that I
19 will be able to give you all of the ones that I have
20 because I have many books that are actually in
21 storage. I have some of the key ones out on the
22 shelf from the old time. It's a fair number I
23 suppose. Many of them are very specialized things,
24 too, that -- Well, I can make a listing of the major
25 ones.

1 Q Well, if you would be ---

2 THE WITNESS: If that's
3 permissible.

4 MR. HUTCHINS: Well, we can talk
5 about it at the next break.

6 THE WITNESS: Okay.

7 Q I would invite you to just provide that to
8 the reporter.

9 A I will not be able at this point to get
10 any except for the ones that are out on my shelves.

11 Q I appreciate the practicalities of that.

12 And ---

13 A I've got a lot of materials and stuff
14 that's - I can't very well get to.

15 Q Do you recollect, Doctor, what if any
16 texts on industrial hygiene you might have had at
17 Kettering?

18 A Well, the main one was in this Patty.
19 That's really an industrial hygiene book.

20 Q Uh-huh.

21 A It covers both subjects. That was one of
22 the key books that we used. Industrial hygiene was
23 still a pretty new subject at that time, and there
24 probably weren't very many books about it as such.
25 We had a marvelous teaching staff who had very

1 excellent expertise in industrial hygiene. And they
2 certainly did a fine job of teaching us and
3 demonstrating it and so forth.

4 Q I suppose, though, you gentlemen were
5 physicians - all five of the men in your class?

6 A In the class -- This was a class of the
7 medical people. All physicians, yes.

8 Q Oh, well, did the -- Did the class include
9 nonphysicians as well?

10 A No.

11 Q Okay.

12 A All - this was strictly physicians.

13 Q Okay.

14 A And, in fact - and throughout time they
15 had the physicians' course for a number of years
16 before they then later opened up for toxicology,
17 environmental engineering, industrial hygiene and so
18 forth. They were all separate and distinct. There
19 was a lot of overlap, and some of them will share
20 courses and so forth; but it's - it was distinct
21 entities.

22 Q But would I be right in thinking you also
23 would have gotten at least an introduction to some
24 ventilation engineering concepts and ---

25 A Very much so.

1 Q I mean not to where you might necessarily
2 be able to go design a system, but at least you ---

3 A You learned the principles.

4 Q --- knew the principles and would know
5 what to look for?

6 A And demonstrations and seeing them in the
7 industry and even in the university, good and bad.

8 Q Okay. And did you get some training in
9 what we call epidemiology nowadays?

10 A Very much so. Very much so. That was a
11 major course.

12 Q And who was teaching that, do you
13 remember?

14 A Well, Malcolm Turner was the principal
15 teacher at the time that I was there. He was a
16 fairly eminent and younger epidemiology -
17 epidemiologist and a marvelous teacher. I was
18 deeply involved with him because my cholinesterase
19 variation thing required a major statistical
20 analysis called a Forier Series. I had never
21 heard of it before, and I've rarely heard of it
22 since.

23 Q And, of course, you had a handy desktop
24 computer there to do all of the ---

25 A Yes.

1 Q --- statistical work?

2 A And I spent approximately 400 hours. And
3 if I would have had my present computer, I could
4 have done it in 20 minutes.

5 Q They did actually have some kind of a
6 computing machine, though?

7 A No. They had calculators.

8 Q Okay.

9 A The scientific calculators, those big
10 jobs.

11 Q Yes, sir.

12 A 400 hours roughly.

13 Q How things have changed.

14 A Yeah.

15 Q During your time there did you - did you
16 work as a student on any other epidemiology project
17 that might have been under way at Kettering?

18 A Well, any project you were involved with
19 had an epidemiological angle to it. You don't do
20 any research without some sort of epidemiology. It
21 might be poor. But that's what research is,
22 analysis of variability and data and so forth. And
23 that's epidemiology really - or biostatistics or
24 statistics. So that every study you did -- And this
25 was at a time when statistical analysis was

1 beginning to be recognized as an essential.

2 In the days prior to that people would
3 publish a result and say, "We had three cases, and
4 two of them didn't do something and one did. So,
5 that's a 33 percent incidence; and, therefore, it's
6 significant." Well, you know, that's not valid
7 anymore. And - so that biostatistics in the '50's
8 was really becoming recognized and thought to be
9 very essential. And it's grown more and more so.

10 Q Uh-huh. And I guess that's the way you
11 make progress in medicine and science?

12 A Yes. In fact without it many false
13 assumptions are accepted as fact and so forth.

14 Q Were there projects that - that the
15 institute was doing as its - as part of its
16 consulting for industry which you as a student came
17 in contact with that you remember?

18 A What category? What was the category?

19 Q Well, I was thinking ---

20 A Generally?

21 Q Just generally, yes, sir.

22 A For epidemiology or otherwise?

23 Q Well, epidemiology generally.

24 A Well, every test - everything we got
25 involved with had an epidemiologic component. So,

1 all the research projects that we assisted on or
2 whatnot did that. We weren't the principal
3 investigators on any of them except our own thesis
4 or dissertation studies. But we were participants
5 in quite a few studies.

6 Q Well, that's what I was thinking ---

7 A Yeah.

8 Q --- without knowing that - that they must
9 have used you teaching fellows as assistants
10 wherever possible. And in particular I was
11 wondering if your work there brought you in contact
12 with any studies being done for the American
13 Petroleum Institute by Kettering?

14 A Yes. In fact - although I personally
15 don't recall my being involved with the API - there
16 were numerous studies going on there, particularly
17 animal studies at Kettering. They were sponsored
18 and run for the API, and I couldn't tell you what
19 the subjects were at this point. But the API was a
20 significant player.

21 Q What kind of animal studies were they ---

22 A I can't tell you.

23 Q --- able ---

24 A I presume rat and mouse and that sort of
25 thing, but I don't honestly recall.

1 Q No. I'm sorry.

2 A I'm sorry.

3 Q Maybe you can answer this. I was
4 wondering what type of animal studies they were
5 capable of doing there at the lab. In other words,
6 was it just skin ---

7 A No, they had a full capability of
8 everything from - from complex respiratory mix -
9 mixtures, dermal, oral, intravenous, every kind
10 of -- It was a full service type - quite elaborate,
11 well supported. By "support" I mean with other
12 disciplinary aspects of equipment and so forth.

13 Q That's - that's what I was wondering
14 about. Do you -- Let me see if I can jog your
15 memory to one of these API studies. I believe there
16 was one done for the incidence of basically cancers
17 or tumors in refinery workers. That would have been
18 ongoing while you were there as a student.

19 A I -- The subject rings a bell, and I'm
20 quite confident there were studies. I don't recall
21 the details.

22 Q Well, I actually phrased it pretty well.
23 It ended up being titled "An Epidemiological Study
24 of Cancer Among Employees in the American Petroleum
25 Industry."

1 A But that was an epidemiologic study of
2 humans, not an animal study. I thought we had
3 referred back to animals.

4 Q Oh, I beg your pardon.

5 A Your prior questions had related to animal
6 studies by in large.

7 Q I'm sorry. I didn't mean to try and
8 mislead you.

9 A And I was not involved with that. I was
10 aware that they were doing that type of work, but I
11 was not involved in it.

12 Q Did you become aware while a student at
13 Kettering in the mid-1950's that Kettering was
14 developing or building a tumor registry from reports
15 of malignancies in - in petroleum industry workers?

16 A I don't recall it as such, but it sounds
17 reasonable.

18 Q I think this is something that began
19 around 1950 and was still under way perhaps when
20 you - you left there. That would have been - what,
21 19 ---

22 A It could well be.

23 Q Your last year would have been ---

24 A Well ...

25 Q --- '55?

1 A '56.

2 Q '56. Okay.

3 A I was still associated through '57 - until
4 '57.

5 Q Okay. Did you meet Dr. Bingham there at
6 Kettering?

7 A Yes.

8 Q I couldn't remember when - exactly when
9 she got there but ---

10 A I didn't know her well, but I did meet her
11 there, yeah. She was one of those people off in the
12 dungeons of the laboratory. I rarely ever saw her.
13 But I did know who she was.

14 Q Okay.

15 A I have known her better since.

16 Q Yes, sir. Do you recollect attending any
17 API meetings or committee meetings as a student at
18 Kettering?

19 A Not as a student at Kettering, no.

20 Q After you left Kettering I take it you did
21 attend some API meetings?

22 A At later times in my career I was involved
23 with some API - I don't want to say projects; but I
24 was involved with some of the people in API on some
25 issues. And I can't right off the top of my head

1 remember what they were specifically. I knew the
2 heads of the API medical section. In fact, my
3 former boss Harold Golz had been medical director
4 for a long time. And then -- He's one of my close
5 friends right here in McLean now.

6 Q Oh, Dr. Weaver.

7 A Yeah, Weaver.

8 Q It's a small world up here.

9 A Yeah. Yeah.

10 Q I didn't know we had so many friends in
11 common.

12 A Yeah.

13 Q Okay. Well, did you have some ---

14 A He came out of Shell by the way. So -- Or
15 Exxon.

16 Q Exxon, yes, sir.

17 A Yeah.

18 Q Yes, sir.

19 A In Houston.

20 Q And previously Baton Rouge.

21 A Yeah.

22 Q I think he also had an interest in
23 cardiology as yourself.

24 A He was an internist originally.

25 Q Uh-huh.

1 A As many of the doctors in our field were.

2 Q They seem to make the best occupational
3 physicians.

4 A It's an excellent background for it.

5 Q I would think so. I was going to ask you
6 if you - your American Cyanamid years had you
7 involved at all with the American Petroleum
8 Institute.

9 A No, not to my recollection.

10 Q Okay.

11 A No.

12 Q And how about your Celanese years?

13 A I was involved sometimes with them. I
14 don't recall that it specifically involved any
15 relationship to Celanese as such. It was -- I
16 belonged to a great variety of the trade and medical
17 components of the trade associations and
18 professional associations. And I recall there were
19 projects that did involve the API, and I got
20 involved with maybe just auditing them. I never was
21 to my recollection involved in pursuing one or
22 facilitating or performing in it. But I knew many
23 of the people there. And, in fact, when I was
24 consulting early after coming down here, there was
25 several projects that we looked at as possible items

1 we could bid on; but we never did.

2 Q I think you - you have lost me on the time
3 line with that last answer and ---

4 A Well, I was talking about the period since
5 '81 - since I've been consulting.

6 Q What I'm not clear about - and you may
7 have answered, but I'm still not clear about, was do
8 you recall during your years at Celanese having any
9 API contact?

10 A No, I do not. I can't say that I didn't,
11 but I don't at this moment associate it with API
12 during my Celanese time; but I can't say for sure
13 that there wasn't.

14 Q Was there ever a time you were a member of
15 the Medical Advisory Committee of the API that you
16 can recall?

17 A As I recall I never was a member or on the
18 advisory group for the API. Now, somebody might
19 quarrel with that; but I don't recall it.

20 Q Okay. Well, I would think that would -
21 would stick in your mind.

22 A Well, there is so many of them. That's
23 the big problem.

24 Q All right, sir.

25 A And you would be sometimes involved just

1 for a brief process or something. And I don't,
2 however, recall any concerning the API specifically.

3 Q What - what industries did you visit as a
4 Kettering student working on your doctorate?

5 A Oh, a tremendous variety of them over the
6 two-year period, and subsequently even during that
7 third year.

8 Q Can you -- Can you kind of give us an
9 overview of them?

10 A Well, there were a lot of industries in
11 Cincinnati, of course: Proctor & Gamble, General
12 Electric - jet engines. There was so many different
13 companies there. Cincinnati Milling & Machine
14 Company. There were a variety of them that usually
15 had pretty good medical programs. And their medical
16 directors were active in coming to Kettering
17 meetings and whatnot. And they had pretty good
18 programs.

19 So, we spent time in - oh, probably a
20 dozen or so different industries there. Sometimes
21 it was just a single visit, sometimes repeated where
22 we were actually working on projects even with them.
23 The health departments -- Because the health
24 departments - I guess they were mostly Cincinnati
25 health departments - were involved in studying

1 environmental issues, particularly lead. Cincinnati
2 was a heavy lead city with old homes in the ---

3 Q With what, sir?

4 A Cincinnati was a heavily leaded city with
5 old homes - down in the basement with paint and so
6 forth ---

7 Q Oh, yes.

8 A --- and childhood forms and others -- I
9 have forgotten where I was going.

10 Q We were talking about the industries you
11 visited as a student.

12 A Yeah. We visited -- Then we visited many
13 places away from there. We went to the coal mines
14 because disease of the coal workers - coal dust
15 disease was one of the major industrial or research
16 thrusts of the laboratory during that period of
17 time. We visited the coal mines and the processing
18 of coal and a variety of different types of mines
19 and all the activities relating to coal handling,
20 et cetera.

21 We visited pharmaceutical companies like
22 Eli Lilly in Indianapolis. During the course of the
23 annual meeting of the American Medical Association -
24 in those days as it was called - we would always -
25 we were sent to these meetings - expenses paid - and

1 we always went to industries in the area that we -
2 we passed through on the way or in the area of the
3 towns where the meetings were. I remember visiting
4 automotive industries: Ford, General Motors,
5 Chrysler. Steel mills: U. S. Steel, Jones &
6 Lockland, U. S. Wire, ALCOA. Sometimes it would be
7 one of the chemical companies that had a plant or
8 a -- We visited several du Pont plants in the course
9 of that type of endeavor. We had field trips, too.
10 That's sort of the area. I'm sure I haven't named
11 many of the places, but that's sort of a ...

12 Q That's a pretty good overview.

13 A It gives an overview, yes.

14 Q And I suppose these visits would be
15 coupled with interviews or visits with the doctor at
16 the facility ---

17 A Yes.

18 Q --- or at the corporate office?

19 A Usually the plant management people, the
20 medical - industrial hygiene if they had it; and
21 other ancillary groups that would be of relative
22 interest.

23 Q Well ---

24 A And sometimes they were multiple day
25 visits. Usually it was a single day, but -- And

1 some of them we would revisit from time to time.

2 Q Is that to say that most of these
3 different industries that you have described
4 visiting actually had an in-house medical
5 department?

6 A Most of them did. We went to some that
7 didn't so we could see the bad side of it or the
8 nonmedically ---

9 Q Yes, sir.

10 A --- oriented side of industry, too.
11 Dr. Kehoe had worked out some nice arrangements with
12 people with lesser degrees of what we could call a
13 modern approach to the thing so we could see some of
14 these.

15 Q That's interesting.

16 A They were in the minority. Occasionally
17 we would do that.

18 Q And did you find that most of these
19 industries you have described that you visited also
20 had something in the way of an industrial hygiene
21 program by ---

22 A Well ...

23 Q --- '55 or so?

24 A ... not all of them. Those that had
25 exposures of a type - chemical or other that was

1 suitable for industrial hygiene -- But many of them
2 weren't. Many of them had noise or radiation.
3 Well, radiation can be an industrial hygiene thing.

4 Q Yes, sir.

5 A But they did not have a need for it, for
6 example. But the bulk of them did.

7 Q And by this time in the mid-'50's, I mean
8 industrial hygiene was certainly beginning to come
9 into its own, wasn't it? I mean you had the
10 hygienists - the industrial hygiene section of the
11 Public Health Service had been around for a while.

12 A You have mentioned that before. And
13 that's sort of fuzzy in my recollection. The AIHA
14 or the American Industrial Hygiene Association was
15 already in existence.

16 Q And that would go back ---

17 A And they were very closely parallel with
18 the doctors. In fact, our annual meetings were
19 joint for many years.

20 Q I didn't realize that.

21 A Yeah.

22 Q I guess -- How far back does the AIHA go
23 into the ---

24 A 1946.

25 Q '46. That's what I ---

1 A '46 or '47.

2 Q Okay. And what -- By what name did the
3 industrial physicians association go?

4 A Well, in the early days that I was joined
5 it was the Industrial Medical Association. It had
6 formally been the Association of Railway and
7 Industry Physicians or some such name, and then it
8 went through a series of name changes during the
9 years to the American Occupational Medical
10 Association or something. It ultimately ended up
11 being the American Occupational and Environmental
12 Medical Association.

13 Q But when you joined it was the Industrial
14 Medical Association?

15 A IMA - Industrial Medical Association.

16 Q And when did you join, Doctor?

17 A In 1955. I believe that was the year - my
18 first year attending the annual meeting at
19 Kettering. And I'm pretty certain that was the year
20 of my beginning.

21 Q And when do you recall joining the
22 American Industrial Hygiene Association?

23 A Probably my first year in industry. I
24 don't think I joined while I was at Kettering, but
25 very shortly thereafter.

1 Q Okay. Roughly '57 or '58 maybe?

2 A I would think so. I can look at my
3 certificate and see, but I can't remember.

4 Q I guess the point I was working toward
5 when we were talking about the - these industries
6 that you had visited such as du Pont and chemical
7 companies - ALCOA, U. S. Steel, the big automotive
8 plants, Lilly, G. E., was that - that many of those
9 did by 1955 have at least a corporate industrial
10 hygienist ---

11 A Yes.

12 Q --- in the business?

13 A They were -- They were getting that way,
14 yes.

15 Q And indeed by that time there was ---

16 A Or somebody designated to perform that
17 function, yeah.

18 Q Yes, sir.

19 A Whatever they were calling that function.

20 Q And by 1955 - well, certainly even earlier
21 there was a journal for the Industrial Hygiene
22 Association?

23 A Yes.

24 Q And there had been for some - I don't want
25 to say many years - but certainly back before the

1 war, a journal of industrial hygiene and toxicology,
2 which I'm sure you ---

3 A Before World War II?

4 Q Yes, sir. I know it was published during
5 the war at least.

6 A I'm not acquainted with it. At least I
7 don't recall it.

8 Q Well, you were a young pup before the war.

9 A Yeah. It might have been. But the
10 associations didn't - weren't in operation. So, I
11 don't know who published it.

12 Q I'm thinking that it got published out of
13 Harvard and perhaps Professor Drinker was the editor
14 in those earlier years ---

15 A It's possible. I just ...

16 Q --- in the '30's.

17 A ... don't recall that.

18 Q And I regret I don't have a -- I just
19 didn't bring a copy with me.

20 A Yeah. I don't have any recollection of
21 that. I may have known of it at some point, but I
22 don't now.

23 Q Uh-huh.

24 A I know they have published things, but I
25 don't know the history of it.

1 Q While you were at Kettering did you make
2 any field trips down to the Air Hygiene Foundation
3 in Pittsburgh?

4 A No, not to my recollection.

5 Q I guess you would have ---

6 A You mean the -- You said the Air ---

7 Q Well, that's how it started.

8 A The Industrial Hygiene Foundation is what
9 I guess you are referring to?

10 Q I was. And I apologize.

11 A Yeah. I'm sorry.

12 Q Because I think -- I think ---

13 A It did have that name earlier.

14 Q That's how it began.

15 A Is that right?

16 Q Yes, sir.

17 A I knew Dr. Braun was director of it at an
18 early point, and then he came back later. But I
19 didn't notice it was a different name.

20 Q That's how they started, and then it
21 become the Industrial Hygiene Foundation. And that
22 must have happened before the war that the name
23 changed to IHF. But ---

24 A It could be.

25 Q Dr. Braun ---

1 A Because the people on the - concerning the
2 silica were all out of there - the Gauley Bridge and
3 all of that.

4 Q Yes, sir.

5 A I have a mental block. I can't think of
6 the name of -- At any rate, okay, you are right.
7 So, that may be the thing you were referring to
8 earlier.

9 Q Uh-huh. Yeah, I think that -- I think
10 Union Carbide had - was active ---

11 A Yeah.

12 Q --- in the organization of it and ---

13 A That could well be. But I just wasn't
14 acquainted with the ---

15 Q Okay. Now, you mentioned a Dr. Braun.
16 And that name is familiar, but not - not enough
17 familiar to me to recall who or ---

18 A He published an article -- Excuse me. Do
19 you want me to ---

20 Q Please, if you could.

21 A He published an article with Truan - I
22 think it was Truan and Braun on Canadian asbestos
23 workers. He previously, though, as I understand it
24 had been medical director of the IHF and had left.
25 And after that assignment he went to U. S. Steel.

1 of the corporations. And, so, it was certainly
2 after I left Celanese -- I mean Cyanamid. Cyanamid.

3 Q Okay. Yeah. Because you mentioned
4 Celanese in the midst of that answer, and I ---

5 A Yeah, I meant ...

6 Q I thought we were passing each other.

7 A All these C's get me confused.

8 Q Dr. de Treville - I recall his name from
9 some IHF publications. Why was it that he had to
10 leave?

11 A That's sort of semi-confidential stuff.
12 It's so old. He had some ideas of taking the
13 Industrial Hygiene Foundation in a certain direction
14 that the Board of Directors did not approve of. We
15 had numerous meetings with him, tried to convince
16 him otherwise. And we thought sometimes that he was
17 going to agree.

18 I met with him the morning of the board
19 meeting in which he was terminated and told him in
20 no uncertain terms -- He was a friend of mine. He
21 was a Kettering graduate - a class ahead of me. But
22 he very hardheaded. And he came into the meeting
23 after I had met with him, and the board had a
24 consensus view already; and he proceeded to outline
25 what he was going to do. It was totally counter to

1 And he came back as medical director of industrial
2 hygiene when we had to terminate Dr. de Treville.
3 I was on the board. And I dropped out of it very
4 soon after that.

5 Q Okay. And where is all of this happening
6 in - in time?

7 A Well, let me think. Probably in the early
8 '60's, earlier - possibly mid - probably mid-'60's
9 I guess.

10 Q Uh-huh.

11 A A wild guess the mid-'60's, but it's
12 strictly a guess.

13 Q And ---

14 A I was involved for a long time.

15 Q And your involvement I gather would have -
16 at least in the early part - would have been while
17 you were at American Cyanamid?

18 A I don't think so.

19 Q Was that ---

20 A I didn't get involved in many of these
21 things until at least when I was with the Bell
22 System because I was not a corporate medical
23 official of Celanese. I was a plant official. And
24 plant officials didn't have the same stature as
25 medical directors of divisions or medical divisions

1 what we had told him he could not do. And we had a
2 quick vote, and he was terminated.

3 So - and shortly thereafter Dan Braun was
4 brought back in because he familiarity with it. And
5 he was getting along in years, but he's still -- He
6 was there for quite a few years. I don't know
7 what's happened to him subsequently, but ...

8 Q And do you know where Dr. de Treville went
9 after ---

10 A He was an Air Force officer who - a
11 physician officer who came to Kettering on an Air
12 Force-sponsored fellowship. And I don't remember
13 where he took his third year. But he went to IHF
14 fairly soon at an early part in his career after
15 leaving Kettering. And when he was terminated, he
16 ended up going back to the Air Force. And I think
17 he remained there the rest of his career.

18 Q And what direction was it that
19 Dr. de Treville wanted to go in?

20 A I can't recall the details of it now. It
21 was policy matters and how we wanted to operate it
22 and so forth, the direction of research. And it
23 seemed to have been agreed upon by a few of the full
24 board that that was wrong. And the President is
25 always at the beck and call of the board. And he

1 chose not to follow the course that we felt was
2 essential, and that's what happened.

3 Q Okay. Well ---

4 A It was a very painful episode as you can
5 imagine.

6 Q Yes, sir. Now, the Industrial Hygiene
7 Foundation had been in fact organized by industry as
8 a - as a - what, an organization to do hygiene work
9 I guess?

10 A Yes, and research in the field. They were
11 organized by the people I guess primarily at the
12 Carnegie Melon Carbide group and the people involved
13 with the early studies of the silica problems,
14 particularly the ones they encountered in West
15 Virginia. I have a mental block. I can't think of
16 their names. But anyway -- But it involved large
17 components of industry, primarily
18 chemically-oriented industry. Well, I take that
19 back. Because they were interested in other things,
20 too, particularly some of the inhalation or dust
21 disease or - well, primarily silica. I don't recall
22 of any others.

23 Q Well, I'm thinking that - I remember a
24 photo with ---

25 A Hatch - Ted Hatch was one. And then I

1 A The history was of interest.

2 Q I'm recollecting that Dr. Lanza - once of
3 Metropolitan Life Insurance Company - was active on
4 that board.

5 A He may have been. That was before my
6 time.

7 Q And some of the folks from Johns-Manville
8 were involved in the early years of ---

9 A I'm not aware of that.

10 Q --- the foundation.

11 A Yeah. But I'm not surprised.

12 Q As an industry controlled organization was
13 the IHF focused on do you think defending industry
14 from - from outsiders and claims by workers and so
15 forth? Is that what this ---

16 A Oh, no, I don't think that had anything to
17 do with that. It was a research and practical
18 dissemination of information organization. And it
19 had no political or other thrusts toward any group.
20 It was about the field and information relating to
21 it and studies about it and so forth. I don't --
22 I'm not aware of any thrust of that sort, at least
23 not during any time. So ...

24 Q Okay. And that -- Nothing like that had
25 anything to do with Dr. de Treville's departure?

1 can't think of his counterpart in the textbook on
2 that.

3 Q Drinker.

4 A Huh?

5 Q Drinker.

6 A No.

7 Q Wasn't it Drinker and Hatch?

8 A Well, Drinker was out of Harvard; and
9 Hatch was out of Pittsburgh. They did ---

10 Q They collaborated.

11 A Yeah. But then there was another -- Who
12 was the main researcher then?

13 Q Brandt?

14 A Huh?

15 Q Brandt - Allen Brandt?

16 A No. No. No. Allen Brandt was over at
17 Bethlehem Steel.

18 Q Right.

19 A I can't recall. But anyway -- I've
20 forgotten where we were.

21 Q Well, we were talking about the origins of
22 the Industrial Hygiene Foundation.

23 A Yeah. That was prior to my time in any
24 event.

25 Q Yes, sir.

1 A No. It had to do with some operating
2 directions and administrative matters. He was
3 getting kind of luxurious and motivated and doing
4 some things that we just didn't think were very
5 appropriate.

6 Q Okay. Well, I don't -- I don't mean to
7 belabor that.

8 A I don't want to get into it too much
9 anyway. Some of it is literally suppressed in my
10 memory because it was so painful.

11 Q All right, sir. You do remember, however,
12 the industrial hygiene Digest from that
13 organization?

14 A Yes. I had forgotten about it. It's been
15 so long since I've seen one.

16 Q And I don't know when - when it ceased to
17 be published ---

18 A I don't either.

19 Q --- if it has.

20 A Yeah.

21 Q But that would have been one of the
22 reasons ---

23 A That was the predecessor thing you were
24 talking about - the journal?

25 Q No, sir. This - this was ---

1 A Okay.

2 Q --- separate.

3 A Okay.

4 Q Yeah. This was I think called the
5 industrial hygiene - it may have been the IHF
6 Digest.

7 A Digest I believe as I recall it. And it
8 was in existence during my early time I'm sure.

9 Q Oh, yes.

10 A Yeah. But I don't recall its demise or
11 whatnot.

12 Q I really don't know, but I was thinking
13 that this - this Digest of medical- and
14 industrial-hygiene-related articles would have been
15 a resource at hand in the '40's, '50's, perhaps
16 beyond, for occupational physicians and industry
17 hygienists?

18 A Well, I remember it back in the - after
19 the '50's, perhaps even early '60's; but I can't
20 recall. It was in existence I'm fairly sure when I
21 was on the board.

22 Q And at least in its earlier ---

23 A Huh?

24 Q At least in its earlier form this Digest
25 provided the service of abstracting articles of

1 interest ---

2 A Yes.

3 Q --- to health professionals and ---

4 A And that was part of the information
5 dissemination project as well as at meetings and so
6 forth.

7 Q And the Digest would - would review
8 articles published in foreign countries as well as
9 in the U. S. ---

10 A Possibly.

11 Q --- for inclusion there?

12 A Yeah, it's quite likely. Although there
13 wasn't a great deal of foreign article use in the
14 United States in general. I'm sure there was some
15 of it, but I don't recall very much of that. And
16 maybe a Digest might have picked up some of that
17 more readily than regular journals would. But I
18 just can't recall.

19 Q Okay. And we spoke of the Journal of
20 Industrial Hygiene and Toxicology.

21 A That's what I don't recall.

22 Q I'm not sure but what - that that wasn't
23 ultimately taken over by your ---

24 A AIHA?

25 Q --- your Industrial Medical

1 Association ---

2 A No.

3 Q --- and incorporated into ---

4 A I don't think so because I ---

5 Q What - what is the journal of the ---

6 A Our association?

7 Q The JOM, ain't it?

8 A The JOM, yeah. The JOEM now, yeah.

9 Q Well ---

10 A I had all of the copies of that way back.

11 But it must have started -- It had a predecessor
12 journal, but I don't recall what it was. I think it
13 started about 1950. And I had all of those copies
14 way back. I got an extra copy of that out of the
15 laboratory in the early days.

16 Q I invite you to answer that trivia
17 question then when you come across your early
18 journals, because I'm faintly recollecting that the
19 Journal of Industrial Hygiene and Toxicology ended
20 up being the - the predecessor of JOM, but ---

21 A I'm quite sure that's not correct, but ---

22 Q Okay.

23 A --- I can't vouch for it.

24 Q Okay.

25 A It might have been a forerunner of the

1 AIHA journal, which as I recall was a quarterly in
2 the early days ---

3 Q Quarterly, yes.

4 A --- AIHA quarterly.

5 Q That's - that part is correct.

6 A But that didn't start until '46 - after
7 '46.

8 Q And that Industrial Hygiene Quarterly and
9 then later I guess the monthly journal ---

10 A Yeah, the journal of the AIHA.

11 Q --- is - is a book or a periodical that
12 you would have been receiving once you became a
13 member ---

14 A Yes.

15 Q --- around 1958?

16 A Yes.

17 Q Okay.

18 A And I had -- I had access to it before
19 that, of course.

20 Q I had hoped per chance you might have a
21 C.V. to bring with you today, but ---

22 A I didn't bring anything to the - relative
23 to the thing today.

24 Q Do you have a current ---

25 A I do.

1 Q --- C.V.?

2 A I do.

3 Q I would request if we could that we - we
4 obtain a copy from you through Mr. Hutchins to
5 provide to the reporter that we might attach as an
6 exhibit.

7 A Okay.

8 Q Which I will pre-identify somewhere back
9 here ---

10 THE WITNESS: Is that
11 acceptable?

12 Q --- as Exhibit 240111 DIX ERN M. Thank
13 you. Okay. Now, let me see if I can fumble forward
14 here. I'm afraid I'm boring you again. We are
15 getting into the afternoon slump, and I have got to
16 refer back to my cheat sheet.

17 Okay. You did your third year as you told
18 us as a practicum - and perhaps that's the right
19 word - associated with the American Cyanamid
20 Company.

21 A Yes, sir.

22 Q This would have been around 1957, '56?

23 A '56 to '57.

24 Q And did that time with Cyanamid as a
25 student - as a Kettering student last for

1 approximately a calendar year ---

2 A No, it was ...

3 Q --- 12 months?

4 A ... a half year. Medical school training
5 years are July to July. That's universally in the
6 United States.

7 Q Well, I'm sorry. Were you there with
8 Cyanamid as a student for 12 months or 6 months?

9 A 12 months.

10 Q 12 months. Okay.

11 A A year.

12 Q Very good. And it was in this
13 assignment - I guess you started out at the
14 headquarters in New York; but not too long
15 thereafter I think you said you got sent out to one
16 of the plants, the one in New Orleans?

17 A Yes, sir. That's correct.

18 Q Okay. As - at the beginning of this
19 12-month term with American Cyanamid in 1956, were
20 you a Cyanamid employee or still a teaching fellow
21 at Kettering or ---

22 A Well, nominally an employee. We were on
23 their payroll. And I think I got credit for that as
24 a year of service later, but it was under special
25 circumstances.

1 Q And you were working for then - what, the
2 corporate medical director under his supervision?

3 A Well, as a matter of fact that's right.
4 Yes, in the beginning.

5 Q Yes, sir.

6 A Yeah. When I moved to the plant, I
7 reported to the Plant Manager on a straight line
8 basis and a dotted line basis back to Dr. Hamlin.
9 Although it was a much more nearly straight dotted
10 line than a dotted line because he was very
11 concerned with his responsibility in training.

12 Q And how long did you work actually in New
13 York under - directly under the doctor?

14 A About a month.

15 Q And that was Dr. Hamlin?

16 A Hamlin - H-a-m-l-i-n.

17 Q Where was the -- Where was the Cyanamid
18 headquarters located in 1956 when you ---

19 A In New York at Rockefeller Center.

20 Q Okay.

21 A 30 Rockefeller Center. It's a famous
22 address.

23 Q Did you -- Did you get a chance during
24 this all too brief time in New York to get involved
25 in the local section of the AIHA or the medical

1 association or ---

2 A No, it was too brief. And it was the
3 summertime anyhow.

4 Q Okay.

5 A It was the summertime, and they don't
6 operate in the Summer. And I did not ---

7 Q And then the next thing you know you are
8 shipped off to Louisiana?

9 A That's right.

10 Q And how long did you remain at the New
11 Orleans plant for ---

12 A For just a little over a year. I guess it
13 was a year and three months.

14 Q What did you -- What, if anything, did you
15 get to observe about the Cyanamid medical program
16 during this - this first month in New York?

17 A Well, I got to know the details of how the
18 corporate program worked and got to know the key
19 people in both - in each of - in occupational
20 medicine, the doctors, the industrial hygienists -
21 Bill Bradley and his staff. At that point not too
22 many of the plants or divisions had their own
23 industrial hygienists. So, they had a group of four
24 or five industrial hygienists on a corporate staff
25 that went to the operations by in large.

1 Q Uh-huh.

2 A Some of the plants did - like my plant at
3 Bound Brook did later. But -- And then the
4 toxicology department -- Boyd Shaffer - the chairman
5 was there - or the head of it was in New York. And
6 it gave him a wonderful time to have meetings with
7 each of them and learn the full gamut of their
8 program and interests and so forth. And then I
9 toured around a number of the plants. I went to
10 each of the plants in the immediate New York
11 vicinity. There were five or six major plants
12 including the Bound Brook, the corporate research,
13 Lederle Laboratories - the drug pharmaceutical
14 division. Well, there were a number of others in
15 the industrial chemicals and so forth. Agricultural
16 chemicals at Princeton and at the corporate research
17 center at Stamford, New York - Stamford,
18 Connecticut.

19 Q How large a facility in terms of
20 professional staff do you recollect the corporate
21 research place being in Connecticut?

22 A Of the total facility?

23 Q (Nodding affirmatively)

24 A I would estimate - and this is strictly a
25 guess - because it's been so long ago now. 1,000

1 people.

2 Q Huh.

3 A It may not be that much, or it might be
4 more. I just ---

5 Q A pretty respectable operation?

6 A Oh, it was a very respectable operation.
7 It was a big facility.

8 Q Can you tell us anything about
9 Dr. Hamlin's background?

10 A Yes. He married a girl named Mary Jane
11 Jeffcott whose father was President, Chief Executive
12 of Calco Chemical Company. And Cyanamid bought
13 Calco Chemical, and that was the - at the Bound
14 Brook facility, which was the biggest plant of
15 Cyanamid and the head of organic chemicals division.
16 And they were counting too many dead bodies, and
17 Jeffcott said, "We need a medical guy."

18 And Mary Jane said, "Well, hire my
19 husband," who had just graduated from the University
20 of Virginia Medical School. So, that's how he got
21 in there with no training. And he was strictly a
22 medical school graduate, and he had an internship I
23 guess and maybe a little other training but not much
24 else.

25 So, he came in and had to teach himself

1 how to do this. Of course, that was many years
2 ago. They both had very excellent schooling at the
3 University of Virginia. It was an excellent
4 school. And, in fact, she was Dean of Women; and he
5 was a medical student. That's how it happened.

6 Q How many years ahead of you was
7 Dr. Hamlin, do you remember approximately?

8 A 25 - 20 or 25, 30 years.

9 Q Okay.

10 A He was in his probably late 50's when I
11 joined the company. I'm guessing, but it's in that
12 range.

13 Q So, he had -- He'd been there for
14 about ---

15 A Most of his career.

16 Q Okay.

17 A First as medical director at - or plant
18 physician at what was then called Calco but it
19 became the organic chemicals division of Bound
20 Brook, New Jersey. And then when the company
21 decided they needed a corporate medical presence,
22 they promoted him to be the corporate medical
23 director some years later. And I don't know the
24 date of that.

25 Q And we are talking about when Cyanamid

1 promoted ---

2 A That's right.

3 Q --- Dr. Hamlin ---

4 A Yes.

5 Q --- to be the corporate medical director?

6 A Right.

7 Q Do you place that in the '40's, or can
8 you - can you even get within a decade?

9 A I honestly have no idea. I don't recall
10 what year he started there. I just don't know those
11 facts. I may have known them at some point.

12 Q All right.

13 A But it's not in my recollection now.

14 Q Can you outline for us what the Cyanamid
15 medical program consisted of as it was shown to you
16 in 1956?

17 A It was a very excellent program. They had
18 had many hazardous materials, a lot of serious
19 health problems, deaths and whatnot in not only the
20 Calco division but at other parts of the company
21 because they manufactured a lot of materials that
22 had a lot of hazards.

23 And they had implemented a complete
24 medical surveillance program for its day. All the
25 workers in every plant had a pre-employment exam, a

1 complete and full pre-employment exam and annual
2 examinations. They were not mandatory, but the
3 participation rate was very, very high. Virtually
4 everybody took advantage of it. And it was a
5 complete and comprehensive medical examination,
6 history, physical exam, all of the laboratory tests
7 that are conventional - blood, urines, some
8 chemistries, chest X rays above a certain area, a
9 cardiograph and so forth.

10 And then in addition, of course, they had
11 the exposure data as best we knew it at that point.
12 There was very little analytical testing done in the
13 period prior to the mid to late '60's, but there was
14 some specific things like lead and some things that
15 were -- But testing was very crude and costly,
16 time-consuming and not very accurate by in large.

17 They did special tests, though, where
18 workers had some particular exposure that -- There
19 was a testing that would be appropriate for it if it
20 was a serious enough condition and so forth. So, it
21 was a very comprehensive thing. And they had an
22 excellent information source - a great laboratory
23 and people who learned to keep us posted up to date
24 as best that could be done in those days of hazards
25 of materials.

1 Plants were notified and kept their own
2 libraries up to date on that. And there was an
3 effort meant to do some epidemiologic work. But
4 without computers and -- Efforts at epidemiology was
5 pretty crude in those days.

6 Q Yes, sir.

7 A If they saw six cases of something in one
8 operation, that would trigger somebody to look into
9 it. Or if they had some serious problems - even
10 with a single case sometimes it would cause this.
11 So, it was a very, very excellent program. I don't
12 think any company in the country had a better
13 program as far as I know at that point.

14 Q Huh. Okay. I guess as you said without
15 the computers to make the epidemiology work easier,
16 you doctors had to rely more than you might today on
17 case reports and anecdotal ---

18 A Yeah, we used standard forms, for example,
19 and similar protocols for each of the plants. I can
20 recall in the later years trying to go back and do
21 some studies on prior years' records and whatnot.
22 It was a nightmare going through all of that
23 handwritten stuff. And it was just -- It ended up
24 feeling like it was garbage in and garbage out
25 because of the variabilities and the difficulties of

1 trying to coordinate something like that. You would
2 make big tab tables and -- It was just very, very
3 difficult to do.

4 Q Well, plus the usual problems of whether
5 something was consistently coded or ---

6 A Absolutely.

7 Q --- described ---

8 A Different observers did different things,
9 and they used different terminologies at times. And
10 there were so many factors that mitigated against it
11 being something that could practically be done in a
12 valid epidemiologic sense as we think of it today.
13 It was a hell of a lot better than nothing, but --
14 It was good at the time, but not very good to go
15 back on to get - see what the experience had been.

16 Q I suppose at the same time if we transport
17 ourselves back to the mid-'50's when you began
18 practicing, you still had - you had the dilemma of
19 having to try and prevent the diseases?

20 A That's right. Our effort was
21 theoretically and by intent 100 percent
22 preventive ---

23 Q And ...

24 A --- in its thrust.

25 Q And the best information you had to go

1 with is what you had to ---

2 A That's right.

3 Q --- to use; right? And if that was a
4 series of case reports ---

5 A Yeah.

6 Q --- then you applied your best judgment
7 and ---

8 A Yeah. It was past the day of body counts,
9 but not yet to the day of exquisite, accurate
10 testing medically, industrial hygiene or
11 toxicologically. So ...

12 Q But I guess regardless - as a
13 conscientious physician then ---

14 A I say that in retrospect.

15 Q Yes, sir. But I mean at the time if case
16 reports were what you had to rely on, then you would
17 take heed of ---

18 A Absolutely.

19 Q --- what had been reported in the
20 literature and try to apply that?

21 A And the company was very good about
22 supplying each of the facilities with an adequate
23 library and to notify them of developments that were
24 important for them to know about that they might
25 miss without seeing all of the literature and so

1 forth in the country.

2 Q May I suggest we let you stretch your legs
3 for a moment.

4 A I feel quite good right at the moment.

5 MR. HUTCHINS: Yeah, let's take
6 a stretch.

7 THE WITNESS: Okay.

8 THE VIDEOGRAPHER: We are off
9 the record at 2:49.

10
11 (AT THIS TIME A BRIEF RECESS WAS
12 TAKEN, AND THE PROCEEDINGS THEREAFTER
13 RESUMED AS FOLLOWS:)

14
15 THE VIDEOGRAPHER: We are on the
16 record at 3:17.

17
18 (By Mr. Blanks)

19 Q When I was talking to Herschel, he
20 mentioned a couple of names. Did we speak of
21 Dr. Horton in connection with Kettering earlier?

22 A We did not. That is a name, of course,
23 that I'm well acquainted with.

24 Q Okay. And what was his ---

25 A As a matter of fact, I identified him in

1 my ...

2 Q You identified him in your dissertation?

3 A No. He didn't do much of the teaching.

4 He was in the research unit more. He did some

5 teaching, but not -- As I recall he was more

6 involved with the laboratory testing and so forth.

7 But we didn't have as much to do with him as most of
8 the faculty.

9 Q And was Mitch Zavon there ---

10 A Oh, yeah.

11 Q --- at the time?

12 A Yeah, Mitch was there.

13 Q And what was his area?

14 A Well, Mitch had been an instructor in the
15 Public Health Service's facility out on Columbia
16 Pike. They did some laboratory work there. They --
17 He was an instructor in radiation health safety.
18 And we had radiation safety and problems associated
19 with radiation and whatnot back in the early days of
20 being at Kettering. That was one of the first
21 courses we had. He was one of the instructors. He
22 came along and started to come into classes in
23 Kettering after many years. He somehow got a degree
24 and later said he was our professor. Anyway, I know
25 Mitch very well.

1 Q What -- Was there like a Bureau of Mines
2 or a related school in Cincinnati back then in
3 the '50's?

4 A I don't know. I wasn't acquainted with
5 it.

6 Q Didn't NIOSH ultimately have its - a
7 training ---

8 A Well ...

9 Q --- center there?

10 A ... they have their mining headquarters
11 down in - I guess it's Morgantown, West Virginia,
12 now.

13 Q All right.

14 A I don't know where it was before.

15 Q Okay.

16 A It's wherever the University of West
17 Virginia is. I think it's Morgantown.

18 Q Okay. I had ---

19 A They moved there, though; and I don't
20 remember where they were before. I never had any
21 particular dealings with them. I didn't. I'm sure
22 some of the people did on the coal dust work and
23 all.

24 Q For some reason I was recollecting NIOSH
25 having a school there in Cincinnati. And I may just

1 be absolutely wrong.

2 A They may have more recently.

3 Q Okay.

4 A Because there was no NIOSH until after

5 '72.

6 Q Right.

7 A There were Public Health Service people

8 like Mark Key, who was the first director.

9 Q And I guess -- I was thinking maybe the
10 public health school had started there with some
11 program but -- Okay. It doesn't matter.

12 A I'm fuzzy about it.

13 Q I can't remember. Well, you were
14 describing for us when we took a break the - the
15 outlines of the American Cyanamid medical program as
16 you found it in the ---

17 A What? From what?

18 Q I said when we - when we took our
19 break ---

20 A Yeah.

21 Q --- you were describing the outlines of
22 the ---

23 A Oh, the outlines.

24 Q --- or you were outlining for us ---

25 A Yeah.

1 Q --- the Cyanamid medical program ---

2 A Yeah.

3 Q --- as you found it in 1956.

4 A (Nodding affirmatively)

5 Q And I think you have pretty well covered
6 that. Did you get a chance other than just meeting
7 Mr. Bradley and the handful of hygienists that
8 worked for him - did you get a chance to learn much
9 about Cyanamid's industrial hygiene program ---

10 A Oh, yes.

11 Q --- in 1956 when you started there?

12 A Very much so.

13 Q And could you do ---

14 A That was part of the responsibility of
15 them in teaching me as a preceptor.

16 Q Could you then recount for us what you
17 remember about the scope of the Cyanamid industrial
18 hygiene program as you found it in 1956.

19 A Well, it was as comprehensive a program as
20 more or less occurred in the industries. I should
21 say that the Cyanamid total program was excellent
22 like du Pont and a couple of the big companies
23 because they had so many hazards. And they had had
24 such a horrible experience in years past that they
25 had to devote major efforts and major resources to

1 coping and getting ahead of all that, which they
2 succeeded at remarkably, more so than the other
3 companies in the chemical industry. And a lot of it
4 was the industrial hygiene under Bill Bradley. And
5 he had three or four corporate industrial hygienists
6 on his staff in New York. And then there were a
7 number in the major operations out in the field -
8 the biggest plants and whatnot who reported - the
9 field people reported to him on a dotted line basis
10 locally to their plant management.

11 But they did a marvelous job in those
12 days. There wasn't much sampling done in the early
13 industrial hygiene period except for certain
14 well-established things. Lead being one of the most
15 notable. And we didn't have much lead concerns.
16 But the main thing was to constantly keep
17 surveillance on the operation. Was the equipment
18 performing correctly? Was it leaking? Was it
19 exuding vapors or dusts or whatnot? Were the
20 practices safe? Did the people know the hazards
21 that were involved? It was all of these routine
22 questions.

23 Q And, of course, each of these half a dozen
24 or so things you have just named off for us is a
25 critical part of a - of any occupational health and

1 hygiene program?

2 A Still is.

3 Q Those principles haven't changed ---

4 A No.

5 Q --- even though the instruments have and
6 some of the standards have?

7 A Exactly.

8 Q I think the last one you mentioned was
9 that one would want to make sure that his folks or
10 employees out there knew the hazards that they were
11 facing. Why - why is that important, Doctor?

12 A Well, if one is aware of the hazards in a
13 given occupation or to a given exposure, if it's
14 significant, the best way to get their support in
15 doing the right thing for themselves as well as the
16 company is to tell them what they might have to
17 contend with and to warn them and tell them what the
18 safe practices are, et cetera.

19 Q And, of course, a fundamental - before you
20 can really know what hazards to warn the employees
21 of is to I guess acquaint yourself with the
22 potential hazards in the - the plant?

23 A Yes, sir.

24 Q And how in the 1950's did an industrial
25 physician and the industrial hygienist with whom he

1 would be working go about doing that?

2 A Well, as I told you earlier, they each had
3 a good library in their own facility. And the
4 corporate medical department sent them bulletins
5 about new developments, things they might not catch
6 otherwise, and - to keep them constantly apprised.
7 And they were all supplied with any bulletins that
8 were prepared that indicated hazards, et cetera.

9 Q And the - the other part I suppose would
10 be to know which of the - the toxic materials
11 mentioned in the bulletins were to be found or might
12 be found in the plants or the worksites that were
13 your responsibility?

14 A Yes, sir, of course.

15 Q So, any good hygiene and industrial
16 medical program would entail a pretty accurate
17 inventory of the - the potential sources of exposure
18 in - in a plant?

19 A I guess that's a good way to express it,
20 yeah.

21 Q I'm trying to ---

22 A They had to know what they were dealing
23 with.

24 Q And in order to do that, I would imagine
25 that you the doctor would - would have to make - to

1 inquire of other specialists, maybe the chemical
2 engineer at the plant or the plant manager - I mean
3 you tell me - but you weren't expected at the get-go
4 to - to know everything that might be in, say, the
5 New Orleans plant of American Cyanamid, were you?

6 A Well, no. Management was given the
7 responsibility to be sure we were aware of the
8 things, but we did our own reviews of them and
9 verified them and so forth.

10 Q Okay. Mr. Bradley as I recall had come
11 from - from the Detroit municipal health department
12 industrial hygiene section by way of a major
13 insurance company on his way to Cyanamid. Do you --
14 Did you get acquainted with him well enough to ---

15 A I don't recall what his background had
16 been. He was noted as a well-experienced and
17 superior industrial hygiene manager. And I don't
18 recall what his previous background was.

19 Q I believe I'm stating it accurately for
20 you. But you found him in your later years of
21 working with him to be extremely competent and
22 knowledgeable I would imagine?

23 A Oh, yes.

24 Q And like - like Dr. Hine in the field of
25 toxicology, you found Bill Bradley to be a leader in

1 his field of industrial hygiene ---

2 A Yes.

3 Q --- back at a time when there weren't tens
4 of thousands of industrial hygienists?

5 A Yes.

6 Q Okay. You were actually pretty privileged
7 to come in contact with some first class people in
8 your early years and in your years of education, at
9 least it seems so to me.

10 A Yeah.

11 Q It would be hard to do that nowadays. At
12 least you ---

13 A Do what?

14 Q I said it would be hard to do that
15 nowadays, to match that experience I would ---

16 A It probably would, yes.

17 Q What was your mission when you were sent
18 from the big city lights of New York down to the
19 plant in New Orleans? What was the reason for going
20 there?

21 A It was a big new plant that manufactured
22 acrylonitrile, which is a raw material for Orlon and
23 other related acrylic fibers. And the process
24 involved the use of natural gas, oxygen, hydrogen
25 and whatnot to create hydrogen cyanide, about 200

1 tons a day. And one whiff will kill you. Which was
2 then chemically combined with acetylene to make
3 acrylonitrile. And then there were offshoot
4 products and side products.

5 But the potential of harm from the basic
6 processes that I mentioned all were fraught with
7 substantial potential for hazard. And we had a very
8 elaborate medical program with around the clock
9 nursing and safety people and doctors on call. And
10 I was responsible for seeing that it all ran
11 successfully and to - to keep track of it and so
12 forth.

13 Q Well, what did you find when you went
14 there? I mean was the program already up and
15 running?

16 A It was. And it was running very well by
17 in large. It had a good medical director - or a
18 medical plant physician they called it - who left --
19 I don't recall. I think he got another job or
20 something. And they were without anybody that they
21 could find with competence in that area of complex
22 toxicological needs and so forth. And, so, they got
23 authorization from Kettering for me to go down on
24 that assignment, still having time to do the other
25 things for the educational purpose and broad

1 experience.

2 Q So, you got shoved right into being the
3 plant physician then?

4 A Yes.

5 Q Okay. That must have been a pretty
6 significant opportunity, too ---

7 A It was.

8 Q --- at that point?

9 A Yes.

10 Q And how big a plant was this?

11 A The population in the beginning was
12 about - between 700 and 800 people. And it was
13 being doubled in size during the time that I was
14 there. And the population was already on the
15 increase up towards 1,600 or 1,800 in training and
16 various stages of getting ready for the expansion.

17 Q And you had I guess a clinic at the plant;
18 you worked there full time at the plant?

19 A A small hospital, yes.

20 Q Did you have nursing staff?

21 A Around the clock there were numbers of
22 people.

23 Q Did you have any assistant physician, or
24 were you the ---

25 A Not initially. At a later point we did.

1 We had a number of physicians in the community who
2 we had trained and whatnot who were on call to be of
3 assistance should it become necessary, and to fill
4 it for me if I wasn't there and so forth.

5 Q Now, you described for us earlier that -
6 how the American Cyanamid medical program in 1956
7 included pre-employment physicals and periodic
8 physical examinations for the employees who wanted
9 to have them with exams and X rays and blood work
10 and so forth. Is this the program that existed at
11 the New Orleans plant when you arrived as well?

12 A Yes, sir.

13 Q Okay. So, that was to your understanding
14 a universal feature of the Cyanamid medical
15 program? I mean it was ---

16 A Yes, it was a standardized program that
17 was in all of the plants.

18 Q And it fell on your shoulders to perform
19 these periodic re-examinations of employees?

20 A Yes, some of them.

21 Q And to examine the would-be employees, the
22 new hires as well?

23 A Yes.

24 Q Did - did you find that there was already
25 a set of forms for these pre-employment exams and

1 the periodic exams when you got there to Cyanamid?

2 A Yes. As I said, they were standardized
3 programs that were adopted for use throughout the
4 company.

5 Q Okay. I'm sorry. I didn't ---

6 A Okay.

7 Q --- follow that to mean - to include that.
8 And this basically allowed for each doctor at the
9 different Cyanamid plants, even making different
10 things, to report on the same form and ...

11 A (Nodding affirmatively)

12 Q How much of this fairly vast amount of
13 information about plant workers made its way up to
14 Dr. Hamlin for a review of any sort? I mean what
15 would - would be worth his attention?

16 A Well, it was the medical -- It was the
17 plant physician's responsibility to prepare a
18 monthly report which told them how many of each
19 category of job work he performed of all types, how
20 many exams, et cetera, and to list any items that
21 were of noteworthiness, adverse occurrences, if any,
22 trends, special problems, that sort of thing.

23 And he summarized information that might
24 have been developed during that time. Essentially
25 it was supposed to be a report that gave Dr. Hamlin

1 a reasonable picture of the activity and the special
2 concerns that were going on at that plant each
3 month.

4 Q And then did ---

5 A It had to be there on the day it was
6 prescribed.

7 Q Okay.

8 A It wasn't a casual thing.

9 Q Would Dr. Hamlin then during the year make
10 a visit to the plant medical department?

11 A He usually had done so. He was then
12 getting involved in a lot of special projects and
13 whatnot. And more often it would be one of the
14 assistant medical directors like Dr. Golz or - in
15 particular he or Dr. Manglesdorph or both tended to
16 be the ones who did more of the visiting at least to
17 the facilities I was in. Occasionally he did. And
18 he went to -- He went to a lot of meetings. He was
19 always the host for the Occupational Medical
20 Association for the doctors attending and that sort
21 of thing, too.

22 Q Did Dr. Hamlin ever get certified in
23 occupational medicine?

24 A Yes, he was grandfathered.

25 Q You, however, sat for examination?

1 A I beg your pardon?

2 Q You were certified, though, by virtue of
3 an exam I gather?

4 A Yes.

5 Q And besides the acrylonitrile and the raw
6 ingredients that went to make it up, did you have
7 any other particular problems of interest in the New
8 Orleans plant of American Cyanamid in '57?

9 A Well, there were a number of other things
10 that were just as much a concern to me really as the
11 nitriles or the cyanide components. We made a lot
12 of agricultural chemicals, particularly
13 ammonia-based products - fertilizer and so forth -
14 as by-product usage. And we had a newly developed
15 monomethyl styrene plant, which was a real pain in
16 the ...

17 Q It was a real what, sir?

18 A It was a real pain in the neck plant. It
19 was constantly having problems. They ultimately
20 abandoned it. But there were a lot of hazards
21 there. And we had to keep pretty close watch on it
22 as it was being developed in a period of adversity.

23 Oh, there were a number of other things.
24 It was a huge plant and a magnificently beautiful
25 petrochemical plant. You would fly into New

1 Orleans, and it was right across from the airport.
2 And you'd see it and -- "Boy, what in the world is
3 that magnificent thing?" It was really a jewel.

4 Q Did - during your time at American
5 Cyanamid did you have maintenance workers that were
6 Cyanamid employees who were under your program as
7 well?

8 A Yes, sir, they were Cyanamid employees by
9 in large. They were contract people that were in on
10 special projects, but by in large they were our own
11 staff.

12 Q So, we had both ---

13 A I say "our own staff." They were supplied
14 by a subsidiary corporation called Ebasco. They
15 were a construction and maintenance firm owned by
16 Cyanamid. And as I recall, most of those people
17 were at least under the direction of the Ebasco
18 people. They worked right along with the other
19 employees, but they -- I might have that a little
20 mixed up, but essentially that's right. We oversaw
21 them just like we did our own employees.

22 Q Oh, okay.

23 A Yeah.

24 Q And in your medical program at the New
25 Orleans plant, would the - the medical monitoring

1 part of the exams be targeted at the kind of - at
2 exposures that you would expect from the work the
3 man was doing?

4 A They would be if there were something
5 that - for which that was appropriate. But my
6 recollection is that we didn't have - had virtually
7 nothing in that category except some lead workers
8 who worked in some storage facilities that had the
9 potential for lead exposure. And I don't recall any
10 other -- I could be wrong, but I don't recall any
11 others at this point.

12 Q And what ---

13 A It was a general surveillance and ...

14 Q What - what special tests did you do with
15 the people that were potentially exposed to lead?

16 A Well, we did blood leads, for example, or
17 urinary lead exposure. There weren't very many of
18 them.

19 Q And is that one of those tests where you
20 can detect in the blood or the urine the exposures
21 pretty soon after the exposures have occurred?

22 A Well, relatively. Lead tends to
23 accumulate, of course. But you could do lead
24 studies, and they would demonstrate the actual lead
25 levels themselves, not some indicator ---

1 Q Uh-huh.

2 A --- if they were elevated and would know
3 whether or not exposure had been excessive or
4 whatnot.

5 Q And would the health effects of the lead
6 exposures - in other words, where it would be
7 harmful to somebody - you could detect the exposures
8 in the blood work or the chemical work before a man
9 might show symptoms otherwise that would let you
10 know you had a problem. Am I right?

11 A Yes, that's possible.

12 Q It's not put very well, but ---

13 A That was -- The answer is yes.

14 Q And I guess it follows that you much
15 preferred to be able to detect the onset of an
16 occupational disease or a health consequence in the
17 laboratory much better - much more than you would
18 like to find it showing up in sickness or illness in
19 the man?

20 A Always, yes.

21 Q Because then you still had a chance to do
22 something about it?

23 A That's correct.

24 Q Okay. At this - at this New Orleans plant
25 of Cyanamid, did the processes there involve any

1 high temperatures where they had to use thermal
2 insulation in the plant?

3 A Some, yes. Actually more extensive cold
4 insulation, but there was some high temperature
5 stuff.

6 Q More of the -- More of that plant was a
7 cold process?

8 A Well, for the largest amount of insulating
9 material because they had some huge like -- What do
10 you call the subfreezing temperatures of -- Liquid
11 Oxygen, for example.

12 Q Cryogenics?

13 A They had large facilities of that sort.
14 Most of the other insulation was pretty well bound
15 in and outer jacket wrapped. It was rarely touched.
16 It had an aluminum or some other metal external
17 surface. And they were big distillation columns
18 which you don't very often have to fool with.

19 Q I take it that at this Cyanamid plant in
20 New Orleans in '56, '57 there was not a program to
21 monitor workers potentially exposed to asbestos?

22 A No.

23 Q Now, the year - the last year of your
24 Kettering program ended and found you still down
25 there in New Orleans I suppose?

1 A Yes, sir.

2 Q What happened then? Did you -- Did you
3 stay there or move back north or what?

4 A We wanted to move back north. And they
5 were getting ready to set up a medical program of
6 more intensity than they had at the central research
7 laboratory. So, as soon as we were able to get my
8 replacement down there, I moved up to Stamford,
9 Connecticut.

10 Q And went to work at the medical - I'm
11 sorry - I mean at the central research facility of
12 Cyanamid?

13 A Yes.

14 Q And this was the one you described earlier
15 as maybe having as many as 1,000 ---

16 A Yes.

17 Q --- professionals working there? And what
18 was your job there, Dr. Dixon?

19 A Well, I was plant physician originally;
20 and then they later turned - changed the title to
21 director of medical services. They adopted that
22 term for all of the plant physicians in the
23 company.

24 Q And even though this research facility
25 wasn't actually a factory, they - the company

1 referred to it as a plant? It was one of the
2 plants?

3 A No, it was a laboratory - a central
4 research laboratory. It had a lot of plant-type
5 operations - pilot plant operations, for example, of
6 various stages and then routine bench-top chemistry
7 and other laboratory -- It was quite an advanced
8 laboratory that had many amazing facilities
9 including a Van de Graaff generator.

10 Q I think Mr. Bradley told us that Cyanamid
11 had maybe the first or second mass spectrometer in
12 the country, too, way back when.

13 A That's quite likely.

14 Q So, your job there was being doctor for
15 the approximately 1,000 Cyanamid employees that
16 worked at the research facility?

17 A That's right. And we had some outlier
18 places. Like we had a partial operation down in
19 Princeton that later became - that's New Jersey -
20 that later became the agricultural research
21 headquarters. And I had responsibility overseeing
22 that. We had a doctor there, but -- And I believe
23 that was the full extent of it.

24 Q And am I right that this program of ---

25 A I take that back. I was mistaken. The

1 agricultural thing originated out of my Bound Brook
2 experience later, not from the research
3 headquarters. It was a research program, but it
4 was -- It was at a different time.

5 Q Okay. But the Princeton facility was
6 among your ---

7 A Later.

8 Q Oh, okay.

9 A Not from -- Not from Stamford. From Bound
10 Brook. That was my next assignment. I got the two
11 mixed up.

12 Q And the people that worked at the American
13 Cyanamid laboratories in Stamford, Connecticut -
14 these - these folks also had the periodic physical
15 examinations ---

16 A Yes, sir.

17 Q --- just like the other Cyanamid
18 employees?

19 A Exactly.

20 Q I suppose that the workers in this
21 laboratory or facility had the potential for
22 exposures to troublesome chemicals just as folks in
23 a plant might?

24 A Yes. Yes, sir.

25 Q And there must have been an industrial

1 hygiene program then at this laboratory just as was
2 available in the plants; is that true?

3 A Well, it had been from New York
4 originally. And then I hired - as I told you I
5 hired Warren Virchow as our own industrial
6 hygienist. And, so, we had our own program overseen
7 by the New York group, of course.

8 Q Okay. So, before you got there New York
9 was providing the industrial hygiene services for
10 the research lab?

11 A That is correct.

12 Q And then you went there in about '57?

13 A Yes.

14 Q And how long was it before you hired
15 Mr. Virchow?

16 A Fairly soon. Within the first six months
17 I would hazard a guess. As soon as I could line up
18 somebody good.

19 Q And where did Mr. Virchow come from,
20 Doctor?

21 A God, I was afraid you would ask me that.
22 He came out of training in Ann Arbor. I believe he
23 had a job up in Detroit or somewhere, but I -- It
24 escapes me right at the moment. He was well trained
25 and a very good industrial hygienist.

1 Q Do you have some sense of how - how long
2 Cyanamid had had a research laboratory?

3 A Well, they had had various research
4 facilities since the inception of the corporation.
5 You don't have a chemical company without that. I
6 don't know that - the long early history of it. At
7 least I don't recall it now. I probably heard it at
8 some point, but I don't remember. Calco, for
9 example, must have had one for quite a few years.
10 But I don't recall the details. And I don't
11 remember when they moved to Stamford.

12 Q What kind of business was Calco in? What
13 was their major ---

14 A That was the Bound Brook - became the
15 Bound Brook plant. Do you remember I told you about
16 the Jeffcotts?

17 Q Yes, sir.

18 A Yes.

19 Q And what was their line - the Calco
20 Company?

21 A About 900 different chemicals, specialty
22 chemicals, commodity chemicals, highly toxic
23 materials, anilines, aromatic hydrocarbons. It was
24 a huge facility with all types of highly hazardous
25 materials. They used to have frequent deaths and

1 horrible occupational health problems before
2 Cyanamid bought it. That's why they hired
3 Dr. Hamlin.

4 Q How long did you remain at the Stamford
5 laboratories of ---

6 A Until 1962.

7 Q --- Cyanamid? So, the duration of your
8 Cyanamid time was spent there - the balance of it?

9 A The rest of it, yes. First New York and
10 then New Orleans and then Stamford and then Bound
11 Brook. That was in '58 that I went down there.

12 Q I'm sorry?

13 A I was there until '58 when I went down -
14 or '59 I guess it was when I went down to Bound
15 Brook.

16 Q Okay. Let me -- I apologize. My mind
17 must have wandered. You spent the first year in New
18 Orleans and then went to the Stamford
19 laboratories ---

20 A That's correct.

21 Q --- of Cyanamid?

22 A A little over a year each.

23 Q A year each. So, in 1958 you left the
24 research laboratory and went to the Bound Brook
25 plant?

1 A Right. '58 or early '59. I was -- I'm a
2 little fuzzy on the date. I overlapped actually.
3 So, it's kind of hard for me to remember which date
4 was ---

5 Q Well, it's close enough. And this was
6 in - down in New Jersey?

7 A Yes.

8 Q And then where in Cyanamid did you work
9 after Bound Brook?

10 A I was there the remainder of my career
11 with them. I was the head of the organic chemicals
12 division. So, that was the headquarters of the
13 organic chemicals division, and I headed the medical
14 operation in the organic chemicals division, which
15 consisted of a number of other smaller plants.

16 Q Okay. Bound Brook was far and away the
17 biggest one. That was the former Calco plant?

18 A Exactly.

19 Q And then there were some Cyanamid plants,
20 smaller ones, that were part of the organic ---

21 A Yes.

22 Q --- chemicals division?

23 A Right.

24 Q And did you have at the Bound Brook plant
25 of Cyanamid in 1958 a plant industrial hygienist?

1 A Yes. I told that you earlier. It was
2 Russ Hunt.

3 Q Okay. And what kind of particular
4 problems do you associate with the challenging Bound
5 Brook plant, Doctor?

6 A Well, I mentioned a bunch of them just a
7 moment ago.

8 Q Okay.

9 A It was a plant that had around 900
10 chemicals - from pharmaceuticals to commodity
11 chemicals to highly hazardous - amino, organic
12 compounds, anilines, all sorts of plants - all sorts
13 of materials that were very highly potentially
14 hazardous.

15 In fact, we had to have help from a New
16 York industrial hygiene group to keep track of that
17 it was such a big vast plant. At one point it had
18 6,000 employees. After World War II it dropped down
19 to about 3,000 when I was there.

20 Q Now, how far away from New York City was
21 the Bound Brook plant?

22 A 30 miles. 30, 35 miles, something like
23 that.

24 Q Down there when we speak of another state
25 we think it could be several hundred miles away.

1 A I'm sorry. I heard a noise. I couldn't
2 hear you.

3 Q I said down in Texas when we speak of
4 something being in a neighboring state, and it could
5 be 1,000 miles away. But ---

6 A Right.

7 Q --- you were practically a suburb of New
8 York City?

9 A You could get to the neighboring state
10 quicker than we could get to New York.

11 Q And your office, though, was actually out
12 there in New Jersey ---

13 A In Bound Brook, yes.

14 Q --- at the plant? And, so, your contact
15 with the headquarters in New York City was - well,
16 occasional? Just pick up the phone and ---

17 A We visited frequently actually.

18 Q Where did you tend to have your
19 professional activities? Was it in New York or out
20 there in Jersey or some combination?

21 A In the early time it was in New Jersey.

22 Q And was ---

23 A For - for locals.

24 Q For the local section?

25 A Yeah.

1 Q Okay. Were there not also combined like
2 multi-section meetings that ---

3 A There were, yes.

4 Q And ---

5 A We were free to go from one to another
6 easily if we needed to if it was something of
7 interest.

8 Q Okay. Now, how - how active was the
9 industrial hygiene section up there in the New York,
10 New Jersey area back ---

11 A Very, very active always, yeah. It was a
12 big one. And it was quite active. At one point I
13 think they called it a tri-state group, and then
14 they went back more to the -- And that was New York,
15 New Jersey and Connecticut, which included, of
16 course, Long Island and so forth. But by in large
17 New Jersey had its own - was a separate entity.

18 Q I don't think of New Jersey as being that
19 big.

20 A I'm a little fuzzy about how it evolved
21 during that time, but that's essentially the essence
22 of it.

23 Q Yeah. I think Mr. Laubly had described it
24 as a tri-state ---

25 A Yes.

1 Q --- group.

2 A For a good part of the time it was. But
3 then New Jersey had its own subsection meetings and
4 so forth because it was more convenient for people
5 to do that.

6 Q Do you -- Do you recall having occasion
7 while at Cyanamid to call on any outside consultants
8 in either medicine or industrial hygiene or
9 toxicology?

10 A Toxicology, yes. Although it was not my
11 responsibility, I was involved with it. I had
12 become very close to the toxicology group, which had
13 its testing facilities up at Stamford when I was
14 there earlier. But much of the major work we did
15 was farmed out to outside consulting toxicologists,
16 particularly the Hazleton Laboratories.

17 Q Which I think you mentioned earlier. And
18 where was the Hazleton Laboratories?

19 A Right up Route 7 here about 2 miles.

20 Q Okay.

21 MR. HUTCHINS: Two miles?

22 THE WITNESS: Three roughly.

23 Q Did your meetings - your attendance at the
24 medical association or the Industrial Hygiene
25 Association bring you in contact with folks in New

1 York like Tony Lanza at NYU?

2 A I don't know what year Tony died. I had
3 met him and had corresponded with him when I was
4 looking at Columbia as one of the training
5 facilities. But my recollection about him
6 thereafter is somewhat fuzzy. I can't recall
7 whether he ever came out to Kettering or not. Do
8 you know what -- Do you recall what year he died?

9 Q I'm straining to recall that, but ---

10 A He had retired from Metropolitan Life and
11 went over to New York University to establish
12 that ---

13 Q Yes, sir.

14 A --- school of industrial medicine.

15 Q And that - that was clearly after the
16 war.

17 A Oh, yes, it was well after the war. This
18 was in '54 that I'm talking about when I had contact
19 with him - '53 and '54. I did not visit there. I
20 talked with him on the phone several times. I
21 corresponded with him. I know I met him, but I
22 don't recall -- I never became familiar with him. I
23 have a recollection that he died somewhere along in
24 there or retired or - a second time or something of
25 the sort; but I'm very fuzzy about that.

1 Q Yeah.

2 A I knew about him and all that.

3 Q Okay. Well, now, as we said earlier,
4 Dr. Lanza had formerly been with Metropolitan Life
5 Insurance Coverage.

6 A Metropolitan Life. He retired from
7 Metropolitan and then went to establish the school.

8 Q And he had been active as a physician with
9 the U. S. Public Health Service for some many years
10 as well, do you recall?

11 A I believe that's right. I couldn't recall
12 that earlier, but I believe that is right. I didn't
13 know him, however, during any earlier period.

14 Q I am thinking ---

15 A I didn't know anybody in the field really
16 to speak of prior to '54. There were very few
17 people I had met; just a few people in the course of
18 my work with Cyanamid on pesticides.

19 Q But you were - I suppose you came to be
20 acquainted with Dr. Lanza's reputation as an
21 industrial physician once you came into the ---

22 A More or less, not with a lot of the
23 particulars. But he was notable as a very early and
24 important leader in the field. But I wasn't
25 intimately connected with - aware of all the work he

1 had done; but I knew some of it.

2 Q I wasn't going to grill you on the
3 particulars of his - of his writings, but would you
4 say when you began to practice occupational medicine
5 that Dr. Lanza had a very good reputation in the
6 field of industrial medicine?

7 A My recollection was that he was. He was
8 one of the leaders as I just said. He was respected
9 and he - he had a big name out there.

10 Q And would I be right in thinking that back
11 in the '50's then that he would have been considered
12 fairly authoritative on - on the medical areas that
13 he worked on and had written on?

14 A I have to assume that. I wasn't involved
15 in any of it, but he had certainly a wonderful
16 reputation that way, and as a teacher, too.

17 Q Did your work at - up to the time you were
18 at Cyanamid bring you in contact with any doctors or
19 hygienists from any insurance companies?

20 A Oh, I'm sure it did in that time through
21 the association because I was in the
22 industrial/medical association by then. And, of
23 course, we met with the industrial hygienists. So,
24 I think the answer has to be yes. I don't recall
25 offhand just who or where, but ---

1 Q Am I right in thinking, Dr. Dixon, that
2 back at this - during this era of the mid-'50's that
3 some of the larger insurance companies like some of
4 the larger chemical companies, automotive companies
5 and so on had industrial physicians on staff like we
6 mentioned Dr. Lanza, for example?

7 A Oh, well, the insurance companies, of
8 course, have always had physicians, largely for
9 actuarial-type work. And some of them I presume --
10 I later learned that insurance companies - I don't
11 know about life insurance companies - but casualty
12 and other types of insurance companies often had
13 industrial hygiene and even provided services to
14 corporations.

15 Q And what I was wondering about was in
16 terms of the resources that would have been
17 available back in the mid-'50's to a company.

18 A Well, think of this. I was a very junior
19 young pup at the time. I was just out of training.
20 I had met a lot of the key people when I was at
21 Kettering, but I was just a plant physician. I
22 wasn't a leader in the field at that point. And my
23 contacts were as they occurred, not as we had them
24 developed at Kettering, for example. So, I wouldn't
25 have met very many high-level sorts of people in

1 that job certainly in the early period.

2 Q Okay. I appreciate that. And my -- Maybe
3 we were talking past each other. I was -- I was
4 just asking you whether you could confirm that -
5 that there were at the casualty companies and the
6 different insurance companies - some of them, not
7 all of them - professionals that were available to
8 consult with their insureds ---

9 A I only knew of it with respect to the
10 casualty or nonlife insurance carriers. But I
11 don't -- That certainly was not something with which
12 I was familiar ---

13 Q Okay.

14 A --- at that time.

15 Q Now, you later came to find out that that
16 was the case?

17 A Later?

18 Q Later.

19 A Well, more - more surely, yes.

20 Q Did you make - make friends with any
21 industrial hygienists or doctors from any of the oil
22 companies while you were up in the New York, New
23 Jersey area?

24 A Yes.

25 Q Who - who do you recall from there?

1 A Well, one of my particular favorites was
2 Norm Roberts who was medical - who became medical
3 director after Dr. Wade of Exxon and -- Then it was
4 Esso - Standard Oil. Oil companies - I knew several
5 of the Mobil medical directors. And his name
6 escapes me right at the moment.

7 Q Me, too.

8 A I can see his face. He lives in Florida
9 still. He's retired. I can't think of his first
10 name. I knew the subsequent people there very well
11 like Joe Canella and so forth. But off the top of
12 my head I can't recall any of the others. I'm sure
13 there might have been.

14 Q You think the Mobil medical director is
15 still living in Florida?

16 A Yes. As a matter of fact, I saw his name
17 in a recent directory.

18 Q What city? Do you recall the city?

19 A No.

20 Q I'm embarrassed. I can't come up with a
21 name either.

22 A Oh, I can see him so clearly. And it may
23 come to me in a moment. I knew him quite well - I
24 mean relatively well.

25 Q I think his ---

1 A It was in a social sense really.

2 Q I'm beginning to think this memory lapse
3 is a communicable ailment.

4 A Yeah, particularly when you get in your
5 70's. Although I've been noted for that for years.

6 Q Do you remember the medical directors from
7 Texaco - Dr. Baylor maybe ---

8 A No.

9 Q --- Curtis Baylor? Who preceded him? You
10 would know him, or maybe you wouldn't.

11 A No, I don't recall. I think I knew
12 somebody later, but I can't recall.

13 Q Do you remember meeting Texaco's
14 industrial hygienist - Allan Dooley?

15 A Oh, yes, I knew Allan very well.

16 Q And did you find Mr. Dooley also to be a
17 pretty knowledgeable and competent industrial
18 hygienist?

19 A To the best of my recollection he was
20 outstanding by reputation. I never had any personal
21 experience with him, but he had a reputation of
22 excellence.

23 Q I think he had come out of the
24 Pennsylvania health department.

25 A He might well have, as many did.

1 Q And did you ever met Arthur Pabst from
2 Mobil?

3 A The name doesn't ring a bell.

4 Q He was their first industrial hygienist at
5 New York.

6 A Yeah.

7 Q I thought you might have run into him
8 there.

9 A I don't remember his name.

10 Q How about ---

11 A I don't recall it at this point.

12 Q How about Nathan Van Hendricks from Exxon?

13 A Oh, I knew Van Hendricks very well.

14 Q And what was ---

15 A He was ...

16 Q --- his reputation?

17 A Well, he was in New York.

18 Q Yes, sir.

19 A He was with Exxon; right - Esso - Standard
20 Oil?

21 Q Right. And what was his reputation?

22 A Very excellent. I got to know him quite
23 well.

24 Q How about Bob Eckard?

25 A Oh, I mentioned him initially.

1 Q Well, I ---

2 A I'm sorry. I did not. I mentioned Norm
3 Roberts.

4 Q Norm Roberts.

5 A Bob Eckard and I became very, very close
6 friends over the years.

7 Q Were you ever a member of the U. S. Public
8 Health - I'm sorry - The American Public Health
9 Association?

10 A Was I?

11 Q Yes, sir.

12 A Yes.

13 Q What - what period were you a member
14 roughly speaking?

15 A Oh, my. From I guess the mid-'60's to the
16 mid-'70's. I gave up on it and dropped out finally
17 when Tony Robbins became President of it. It sort
18 of degenerated for a time, and I gave up on it. So,
19 I was a fellow actually.

20 Q And you don't think you joined it until
21 the mid-'60's? Why so late?

22 A I - I don't recall. I may be wrong about
23 that. I can look at my certificate and tell you
24 tomorrow, but I just don't recall. It never loomed
25 highly important. I went to one of their national

1 meetings, and the most I got out of it was a good
2 private lecture by a podiatrist.

3 Q Okay. I don't guess you made the ---

4 A The journal was sick back in the old days
5 by in large, although I published an article in it
6 in the '50's.

7 Q You said it was thick or sick?

8 A Stinks - or sick.

9 Q It could have been both I suppose.

10 A Public health reports. I don't know if it
11 still exists even.

12 Q I don't either.

13 A I presume it does.

14 Q I don't guess you made it to the 1948
15 meeting in - in Boston?

16 A No, I wasn't in the field then. I was an
17 intern. I didn't get into any of this until '54 as
18 you recall.

19 Q Okay.

20 A Well, a little bit before that when I was
21 at the Public Health Service.

22 Q If you do happen to recall the name of
23 that Mobil medical director ---

24 A No.

25 Q --- throw it out there.

1 A Wait a minute. It just almost hit me. I
2 can check it, I think. And you want my Public
3 Health Service date. I remember him so well because
4 I was due to go down there the day they had the big
5 explosion in the lobby of the Mobil offices in New
6 York; and I was late, thank God. It was a horrible
7 disaster. If you try to go into a Mobil facility
8 now anywhere, and you've got to - it's worse than
9 getting on an airplane.

10 Q Okay. We talked about some of the oil
11 company folks that you - that you met. You never I
12 don't suppose ever met a Roy Bonsib with Standard
13 Oil or Esso, did you?

14 A What was the name again?

15 Q Bonsib - B-o-n-s-i-b.

16 A I don't remember that name.

17 Q He was a safety engineer - that was his
18 title; I guess a precursor to being an industrial
19 hygienist.

20 A I don't recall him.

21 Q Dr. Denno - did you ever ---

22 A Who?

23 Q Denno - D-e-n-n-o.

24 A No.

25 Q And I think you said you were well

1 acquainted with the folks from du Pont at some
2 point. When did you become acquainted with Dr. Zapp
3 and his colleagues there at Haskell laboratories?

4 A Probably - well, through the trade - some
5 of the associations a little bit earlier; but mainly
6 after I joined -- Well, I guess while I was with the
7 Bell System; but mostly after I joined Celanese.
8 And that was '65.

9 Q Okay.

10 A I'm sure I knew a number of them previous
11 to that, but it was really after '65 when I really
12 got to know them particularly. I met some of the
13 higher-ups when I was at Kettering, the medical
14 director and people like that. But -- And the
15 safety director and so forth. But ...

16 Q I was thinking because they had at least a
17 couple of plants in New Jersey that you might have
18 met somebody at the local section meetings, but ---

19 A I did, but I don't recall the names of the
20 people in the plants. I recall going to one of the
21 plants down off the turnpike. I can't think of
22 which one it was at this point. It was back in that
23 period.

24 Q Uh-huh.

25 A I've been to plants subsequently. And we

1 did some when I was at Kettering, but not in the New
2 Jersey area.

3 Q Did Bill Andresen work at Cyanamid ---

4 A Yes, he did.

5 Q --- while you were there?

6 A He was one of the key New York industrial
7 hygienists - he and Jim Rook, John Pendergrass and
8 two or three others. John McHenry -- Well, McHenry
9 is the last name. There must have been five or six
10 of them at various points during my time there.

11 Q Did any of these fellows work under your
12 supervision?

13 A No.

14 Q Was there a time, Dr. Dixon, when you did
15 any work in connection with Cyanamid's project down
16 in Texas - the Jefferson Chemical Company?

17 A No, I didn't.

18 Q Do you know ---

19 A I do.

20 Q --- what I'm talking about?

21 A Jefferson Chemical Company; right?

22 Q And ---

23 A I was aware of it, but I never had any
24 involvement with it as such.

25 Q We had the idea that you may have provided

1 the - the American Cyanamid standard medical form
2 package for use by the ---

3 A I wouldn't -- That wouldn't have been my
4 responsibility. That would have come out of New
5 York. I had nothing to do with them whatsoever.

6 Q Okay.

7 A I don't even recall if I ever knew anybody
8 there. I probably did, but ---

9 Q You never visited that plant?

10 A I don't think so. Not to my recollection.

11 Q Okay.

12 A Where was the plant?

13 Q It's - it's down in Jefferson County -
14 Nederland.

15 A Jefferson County? What state?

16 Q Texas.

17 A Oh, Texas. Yeah. I was thinking of the
18 parishes in New Orleans - I mean in Louisiana. No,
19 I never did.

20 Q And there is a second plant in Conroe,
21 which is north - north of Houston.

22 A No, I didn't have any dealings with that.

23 Q I know Bill Bradley had actually gone down
24 there to make an initial survey before they built
25 the plant.

1 A Yeah, that was a practice in industry by
2 in large for the industrial hygiene people to review
3 a plant prior to its purchase. That was done by
4 most of the companies.

5 THE VIDEOGRAPHER: Joe, can we
6 go off the record to change tapes?

7 MR. BLANKS: Sure.

8 THE VIDEOGRAPHER: We are off
9 the record at 4:11.

10
11 (AT THIS TIME A BRIEF RECESS WAS
12 TAKEN, AND THE PROCEEDINGS THEREAFTER
13 RESUMED AS FOLLOWS:)

14
15 THE VIDEOGRAPHER: We are back
16 on the record at 4:12 p.m.

17
18 (By Mr. Blanks)

19 Q To your knowledge did Cyanamid have any
20 responsibility for providing health or safety
21 services to the Jefferson Chemical joint venture?

22 A I don't know. It strikes me that they
23 were somewhat of an odd duck in the whole mix of -
24 maybe a subsidiary of some sort. But I didn't think
25 they were integrated into the corporation quite as

1 well as the operating divisions, but I don't know
2 this for a fact.

3 Q Well, my - my understanding is that Texaco
4 and Cyanamid partnered up on these two or three
5 plants. And I suppose ---

6 A Of Jefferson -- I'm -- I just really have
7 no knowledge of the history.

8 Q Okay.

9 A I shouldn't have even answered that.

10 Q I was just going to say that Texaco and
11 Jefferson Chemical both - I'm sorry - Texaco and
12 Cyanamid both owned Jefferson Chemical 50/50.

13 A I didn't even know that, no.

14 Q And we - we think that Texaco had provided
15 some of these industrial hygiene services or medical
16 services, and Cyanamid had some of - some other
17 part. But ---

18 A I have no idea.

19 Q --- you had no contact with it?

20 A No.

21 Q Okay. Were there any of the - the plants
22 of Cyanamid that you were acquainted with where
23 there was specifically surveying or monitoring done
24 for asbestos exposures?

25 A I wasn't aware of any. I can't say there

1 was or wasn't, but I wasn't aware of it.

2 Q It would follow I suppose that you didn't
3 have any particular part of your medical program
4 that focused on asbestos exposures?

5 A Not to my recollection, no, except a chest
6 X ray would look at any kind of a respiratory
7 problem. But that would be all there was, and that
8 never was an issue.

9 Q Okay. Certainly you were trained to be on
10 the lookout for signs of dust diseases of the lungs?

11 A Yes. Although when you don't expect it,
12 you aren't looking as much as you would if you did
13 expect it. And we did have any expectation of it
14 that I recall.

15 Q Okay. And then ---

16 A That's a somewhat misleading answer. You
17 know what I mean happens. An index of suspicions
18 always makes you more attentive, but we didn't have
19 that. So, my recollection of it was nil.

20 Q Do you have any recollection of asbestos
21 being used in the laboratories at Cyanamid?

22 A I don't recall it, no.

23 Q Did you ever yourself make or use a gooch
24 filter?

25 A I have heard the term, but I can't even

1 recall what it is.

2 Q Okay. Well, we are up to about 1962 now.
3 And you told us this morning that you left to join
4 the Bell System in '62.

5 A That's right.

6 Q What - what caused you to make this big
7 change from the chemical industry to the Bell
8 System?

9 A They made me a very good offer, and it was
10 a very attractive opportunity; so, I accepted it.
11 It was advancement.

12 Q And where did this job take you?

13 A New York City.

14 Q And I think you have told me you were
15 first at the headquarters and then ---

16 A The Western Electric headquarters. And I
17 was the headquarters medical director.

18 Q Of Western Electric?

19 A Of Western electric, yes.

20 Q And as I remember, Western Electric was
21 the manufacturing arm of the ---

22 A Yes.

23 Q --- phone company.

24 A And co-owner with AT&T of Bell
25 Laboratories and a few other teletype and some other

1 organizations.

2 Q And what - what sort of problems unique to
3 the Western Electric business did you encounter
4 there?

5 A Well, Western Electric was primarily an
6 electronics-type manufacturing facility, largely
7 telephone equipment and telephone transmission
8 equipment, cables, wiring, switching, switch gears,
9 all of the things that are normally used in a
10 communications operation. And it also had a very
11 large civil defense - not civil defense - defense
12 operating unit. And I was responsible for all of
13 that, which included the White Alice, the Dew Line,
14 the Project Mercury communications, all of those
15 things that were all around the world that were
16 extremely fascinating.

17 And even though the Bell System didn't
18 have the challenge of - quite the - quite the
19 challenge of the chemical problems that we did in
20 the chemical industry, it had every other amazing
21 problem in the world, including very remote and
22 peculiar locations and all sorts of odd
23 circumstances. And it was very fascinating.

24 Q And then after a year at Western Electric
25 you moved to the - what, the international

1 operations did you say?

2 A Of AT&T, yes. Just a sideways upgrade.

3 Q And what - what did that entail?

4 A Very similar. Less exotic and less
5 interesting sorts of things, but it was a very fine
6 job. The Bell System was a wonderful organization.
7 And - but it helped to make going back to the
8 chemical industry when the offer came more
9 attractive than it might have been otherwise.

10 Q And this - this assignment with AT&T was
11 also in New York?

12 A Yes, it's a different location; but at the
13 headquarters of the -- It was nicknamed the Long
14 Lines Operations Department.

15 Q And through this - these years at Bell and
16 Western Electric you were still active in your
17 Industrial Medical Association and in the Industrial
18 Hygiene Association?

19 A Much more so. That's when I really became
20 active and a national figure and so forth.

21 Q You mean you had a little more time?

22 A No.

23 Q Or just located better for it or what?

24 A Well, yes. And I had mentors at that
25 point who kicked me along pretty hard.

1 Q Was there any point along the way, Doctor,
2 that you were an adjunct instructor or a professor
3 at any of the medical schools?

4 A Not in that period of time, no.

5 Q When do we find you doing that - after
6 Celanese?

7 A While I was - a little bit while I was
8 with Celanese, but more since I've been back down
9 here in '81.

10 Q Well, be sure when we get to the Celanese
11 part to mention that if - in case I forget.

12 A Celanese? It wasn't during Celanese --
13 There was not much of it during Celanese. It
14 was ---

15 Q The last few ...

16 A --- during my consulting period since I've
17 been down here.

18 Q Oh, okay.

19 A I had some involvement up there. I was a
20 director of the university's occupational resources
21 center, which was a coalition of the five schools:
22 Mt. Sinai, New York University, Rutgers, one of the
23 other schools in New York, and the Hunter's School
24 of Nursing program on occupational health under
25 Dr. Selikoff, who was chairman of it at that point.

1 Q And what time period are we talking about?

2 A That was in the period from '75 until '81
3 roughly. I'm not sure of the beginning year,
4 but ...

5 Q Do you remember, sir, a textbook or a
6 reference book by Hueper called Occupational Tumors
7 and Allied Diseases?

8 A Yes, I do.

9 Q Is that -- Is that one that you had at
10 Kettering?

11 A I had it -- No, I don't think I had it at
12 Kettering. It may have been there. I had one of my
13 own when I was in New York, and I must have left it
14 up there because I was looking for it the other day
15 just out of curiosity about something.

16 Q Is that -- I guess you wouldn't have had
17 it if - if you hadn't been looking for it ---

18 A I'm sorry. What?

19 Q Excuse me. I need to look at you ---

20 A Yeah.

21 Q --- when I - when I speak. I said like
22 the Patty's and some of the other texts you have
23 mentioned, this - Hueper's book would have been one
24 of the reference books that you would have relied on
25 in your practice?

1 A Oh, no, it wasn't a reference book in the
2 usual sense. It was a compendium of chemicals. In
3 fact, as I recall, there were two or three volumes
4 of it at different times, in which he enumerated
5 chemicals and alluded to some of them as being
6 carcinogenic or potentially carcinogenic and gave
7 some limited data. It would be a book that you
8 would go to just to look up something like that.
9 And it wasn't considered highly authoritative.

10 Q Which one are you speaking of now?

11 A The one you just ---

12 Q Oh, Hueper's ---

13 A Hueper's books, yeah.

14 Q Okay.

15 A I rarely ever looked at it unless somebody
16 threw something up about it, which was most unusual.

17 Q Had you met Mr. Hueper along the way?

18 A I don't know. I have mixed recollections.
19 I don't think I actually met him. I certainly
20 didn't know him. So ...

21 Q Okay. He had been for sometime at du Pont
22 I think.

23 A For a time ---

24 Q Uh-huh.

25 A --- unhappily.

1 Q What was it that led you then to leave the
2 AT&T job and join Celanese?

3 A Well, I told you that just a few moments
4 ago. They had a more attractive offer. We went
5 over that just ---

6 Q Well, I'm sorry. I don't mean to repeat
7 that.

8 A Yeah.

9 Q I gathered that certainly you didn't leave
10 to take a cut in pay.

11 A No.

12 Q How did that come about?

13 A It was an opportunity for advancement
14 and - in a little different area.

15 Q Who was ---

16 A It gave me a corporate medical
17 directorship status, for example. I was blocked at
18 AT&T - not at AT&T - at American Cyanamid because
19 there were two - three assistant medical directors,
20 one of which was very little older than me. And my
21 chances for advancement there was pretty stymied,
22 assuming they used the usual ladder of progression
23 scheme.

24 And I wasn't unhappy, but an exciting, new
25 opportunity came along with improved pay and

1 beautiful new facilities and whatnot instead of the
2 old plant. It was kind of getting crummy. And it
3 just was very attractive. So ---

4 Q Well, you are describing the move to the
5 Bell companies?

6 A Yes.

7 Q Okay.

8 A To Western Electric.

9 Q Right. And then after staying there
10 through - '62 through early '65, you decided to
11 leave and go to Cyanamid?

12 A No, Celanese.

13 Q I'm sorry. Back with those C's again.

14 A I went from Cyanamid to Bell System first
15 and Western Electric, then in - that was in long
16 lines or long distance international, and then to
17 Celanese Corporation.

18 Q Who was it that recruited you to join
19 Celanese in 1965?

20 A Well, one of the men who had been a former
21 personnel director of one of the divisions in
22 Celanese - in the Celanese Corporation and who
23 reported to the Vice-chairman of special projects
24 there, when they were looking for a new medical
25 director he remembered me from my time in Cyanamid

1 where we had had some experiences together. And he
2 thought well of me. And, so, he recommended me to
3 the Vice-chairman of the corporation, and I ended up
4 being employed.

5 Q And what was the name of the doctor that -
6 that preceded you at Celanese?

7 A John Osteritter - O-s-t-e-r-r-i-t-t-e-r,
8 I believe. I think it's got two t's and two r's.
9 I never could remember that.

10 Q And what was Dr. Osteritter's background
11 as you came to understand it?

12 A He was very well trained. He came out of
13 the Pittsburgh - University of Pittsburgh program.
14 And he had been recruited by a consulting medical
15 director that was - had worked for a number of years
16 at Celanese. A former medical -- He was a former --
17 He was a retired former medical director of Union
18 Carbide; a man with a very high reputation named
19 A. G. Cranch.

20 Q Now, Dr. Cranch retired from Union
21 Carbide ---

22 A That's right.

23 Q --- and served as a consulting medical ---

24 A He was a medical - consulting medical
25 director.

1 Q To Celanese?

2 A To Celanese Corporation.

3 Q And you say Dr. Osteritter who had his
4 schooling at the University of Pittsburgh was
5 trained then by Dr. Cranch while Dr. Cranch was ---

6 A No. No. Dr. Cranch was medical director
7 of Carbide in New York. He was trained by Dolph
8 Kammer and the people at Pittsburgh. They are a
9 different corporation. Carbide wasn't in
10 Pittsburgh.

11 Q I'm sorry. I thought Dr. Osteritter got
12 some experience through Dr. Cranch.

13 A No. He was employed by - or recommended
14 by Dr. Cranch ---

15 Q Oh, I see.

16 A --- to the Celanese Corporation. And the
17 two worked together there at Celanese for a number
18 of years. And when Jack Osteritter left Celanese,
19 Dr. Cranch was still there and was going to be my
20 sort of consulting assistant medical director, but
21 he became ill and died shortly after I joined. So,
22 Jack Osteritter stayed on for a little while. I
23 know that was confusing, but Jack was a Pitt
24 trainee.

25 Q I got that.

1 A Okay.

2 Q I just didn't choose my words carefully.

3 A A very similar program to Kettering; not

4 as good, but it was adequate.

5 Q Not as good but it had to do?

6 A Huh?

7 Q I said, "Not as good but it had to do?"

8 A Yeah. Well, I just said that sort of

9 surreptitiously.

10 Q Dr. Cranch I remember from articles

11 and ---

12 A Yes. He was ...

13 Q --- meetings for some good time ago?

14 A Yeah. He and Dr. Hamlin were very much

15 alike in that respect. They were early timers who

16 were self-trained who became very expert in the

17 field and were - both of them were authors in the

18 Patty textbook as a matter of fact. Very highly

19 regarded. He actually selected me for the job. He

20 was asked to ---

21 Q And ...

22 A --- make the assessment to the

23 Vice-chairman.

24 Q And you had met Dr. Cranch earlier through

25 your professional associations?

1 A You know, I don't think I had because he
2 had gotten out of the loop in a sense ten years
3 earlier. This was in 1964 when we were looking at
4 it. And that was the year I started. Ten years
5 earlier was the year I started at Kettering. And I
6 had heard his name and knew it from seeing it in
7 books and from some articles. But I had -- I
8 don't -- I never knew that I had met him. And when
9 I saw him, he didn't look familiar. But we became
10 very friendly for the brief period that we worked
11 together. He knew more about me than I knew about
12 him just by chance I guess - or he probably made it
13 a project to find out.

14 Q Now, would you describe for us the scope
15 of the Celanese medical program when you arrived on
16 the scene in March of 1965, please.

17 A It was very interesting. Celanese was a
18 diversified, very large company, very much in the
19 size range of Cyanamid's sales, the same number of
20 people and so forth; and it was a totally different
21 company. It had largely well-known commodity
22 chemicals. If you think of how it began as a
23 supplier of raw materials for the fibers operations
24 at a lower cost to make it a - at the - in the open
25 market.

1 They build the Bishop plant first for that
2 purpose, and then the other plants expanded because
3 you get raw materials and an excess of this and that
4 and others, and the first thing you know you are
5 into other chemicals. But surprisingly it had very
6 few chemicals or products that were considered
7 highly hazardous. And they were nearly all
8 self-contained processes in very elaborate
9 self-contained distillery-type equipment where raw
10 materials were fed in automatically, the process
11 ran, it came out at the end and were automatically
12 offloaded into holding tanks, railway cars,
13 transport trucks; and the employee exposures were
14 extraordinarily low.

15 And through their history, which was close
16 to 50 years since the beginning of Celanese
17 Corporation - not the chemical company, but the
18 corporation - they had had very few problems. And
19 all of a sudden one time back in the -- I guess it
20 must have been -- When did I say Dr. Cranch
21 started? Ten years, '55 -- It must have been in the
22 early '50's they suddenly ran into a problem with
23 one of their fiber products manufactured into
24 clothing causing skin reactions in people who wore
25 them.

1 And they hired the -- I have a mental
2 block. I always have trouble with his name, and I
3 can't think of it now. He's a leading dermatologist
4 that came out of the Public Health Service years
5 ago. He was a dermatologist who had done some of
6 the early skin testing work and who then was a
7 consultant. They hired him to come in and help them
8 resolve the problem. But he had a broader picture
9 of occupational health than most doctors did.

10 And he insisted on reviewing the whole
11 plants' - there were several plants involved in this
12 possibly. They weren't even sure where this thing
13 was coming from. And he then worked on the problem,
14 got it resolved very quickly. But his
15 recommendations to the corporation was that they
16 really needed to join the modern world and have a
17 medical department.

18 They had pieces of a medical department.
19 The fibers company had nurses in all the plants.
20 They had doctors assigned to it. The chemical
21 company had a different program. They had doctors
22 locally and medical services provided on an
23 as-needed basis. And that was true - or a variance
24 of that - for all of the other divisions of the
25 company at that point.

1 None of them had an ongoing periodic exam
2 program as such. They did do special exams where
3 there might be a reason to. And they usually -
4 usually utilized local physicians by in large
5 selected by or approved by the corporate medical
6 director. And we had general medical practices.
7 But never through my whole time did we ever get all
8 of the divisions of the company on track to have a
9 uniform policy. And this was due to the fact that
10 we didn't have much urgency associated with the
11 need - like these other companies with all these
12 hazardous chemicals, and the fact that every time we
13 just about got it approved, there was a downturn in
14 the economy or one thing or another.

15 Finally as I was leaving we did develop
16 all of that in the last few years I was there. But
17 our experience - and diligence and experience and
18 all was exceptionally fine. We did have industrial
19 hygiene services provided outside. We contracted
20 out toxicology. I was steward of product safety as
21 well as occupational health. In essential that's
22 the nature of the program. It was typical of a
23 nonhazardous industry company in the chemical or
24 chemical-related industry at that time.

25 Q Now, again, you were describing for us

1 what you found when you arrived in 1965?

2 A Yes.

3 Q Okay.

4 MR. HUTCHINS: Joe, can we go
5 off the record?

6 MR. BLANKS: Sure.

7 THE VIDEOGRAPHER: We are off
8 the record at 4:33.

9
10 (AT THIS TIME A BRIEF RECESS WAS
11 TAKEN, AND THE PROCEEDINGS THEREAFTER
12 RESUMED AS FOLLOWS:)

13
14 THE VIDEOGRAPHER: We are on the
15 record at 4:58 p.m.

16
17 (By Mr. Blanks)

18 Q Okay. I think you had just -- We had --
19 When we stopped you had just described for us the
20 shape of the Celanese medical program as you
21 inherited it so to speak in 1965. And is it
22 reasonable for us to infer that Dr. Cranch, formally
23 of Union Carbide, had played a perhaps large role in
24 shaping this program during the prior decade or - or
25 not?

1 A I think that's true, he had.

2 Q I remember his name from maybe as far back
3 as the '30's ---

4 A Yeah.

5 Q --- in association with Union Carbide.

6 A That's correct.

7 Q So, he must have had a long tenure there.

8 A I'm sure he did. I don't recall, but ---

9 Q And I suppose you would tell us that
10 Carbide, because of the nature of its business and
11 its products, likely had more potential for
12 hazardous exposures in its chemical plants than
13 Celanese did again because of its product mix?

14 A Yes, sir.

15 Q So that I guess Celanese would have had
16 the benefit then of Dr. Cranch's experience at Union
17 Carbide?

18 A Yes.

19 Q And we know that Union Carbide had
20 industrial hygienists on its payroll back at least
21 to - well, during the war?

22 A I think that's correct.

23 Q You will recall perhaps that Carbide was
24 one of the contractors at the TBA projects, and I
25 suppose they were making weapons material.

1 A (Nodding affirmatively)

2 Q And there was a pretty sophisticated
3 industrial hygiene program associated with the - the
4 nuclear weapons projects around the country?

5 A That's my recollection.

6 Q Even though it might not have been well
7 publicized at the time, it was there?

8 A (Nodding affirmatively)

9 Q Okay.

10 A I wasn't there; but I became aware of it,
11 yeah.

12 Q Doctor - let me get his name in my mind
13 here - your predecessor - Dr. Osterritter?

14 A Yeah. Osterritter, yeah.

15 Q Osterritter. Had he just reached
16 retirement age or had he moved on to another
17 opportunity? I mean what led to his leaving in
18 1965?

19 A Well, I'm trying to think how to answer
20 this. He opted to leave.

21 Q And where did he go after Celanese?

22 A Well, he did some consulting for a time
23 and then ended up with the Federal Reserve System in
24 New York as a medical director until he retired a
25 few years ago.

1 Q Well, I have to say that's one of your
2 more cryptic answers for the day. But ---

3 A Well ...

4 Q --- I understand you are attempting to be
5 judicious and diplomatic.

6 A Yes. It wouldn't be helpful.

7 Q All right, sir. Then I will not intrude
8 upon his privacy or yours in that regard. Okay.
9 So, you joined Celanese in 1965 to take the place of
10 the prior doctor?

11 A (Nodding affirmatively)

12 Q And you are looking forward I suppose to
13 continuing to work with Dr. Cranch and get some
14 benefit from his experience; unfortunately that
15 relationship doesn't last very long; correct?

16 A That's correct.

17 Q Did - did you have some charter or
18 directive from the - the superior at Celanese about
19 what they - the company - wanted you to do with the
20 program at Celanese in 1965?

21 A More or less, yes.

22 Q Would you -- Would you share that with us?

23 A It wasn't a written contract, but it was
24 that I would continue to oversee the medical
25 operation, keep them advised of needs and expansion

1 or whatever else was required, and staffing -
2 because I had a very limited staff at that point.
3 And they assured me they would give me as much
4 support as possible.

5 They obviously didn't want to build an
6 elaborate program like du Pont or Carbide or some of
7 the others because they didn't feel there was a need
8 for that. And - but they wanted me to make my own
9 judgment of that and come back to them with
10 recommendations early on so that we could agree -
11 agree or disagree. So, that was essentially it. It
12 was open-ended to a degree. It was cooperative,
13 but ...

14 Q Well, I'm not getting a clear feel here.
15 I mean I guess -- You have told us you think that
16 Celanese had an adequate medical program when you
17 arrived. Am I right or wrong?

18 A It had been adequate up until that time.
19 But looking down the road you could see that it
20 wasn't geared to cope with the coming era as well as
21 it might be. It didn't have any urgent things at
22 that instant. But in the big chemical companies
23 there was a move afoot to expand and develop more
24 elaborate programs. And we knew OSHA would be
25 coming in a few years and other regulations were

1 coming down the pike, and that we wouldn't be geared
2 to operate as well as we should without some change.

3 Q So, part of your charter then was to
4 improve the program to deal with these things that
5 everyone ---

6 A Yes, sir.

7 Q --- expected?

8 A Yeah.

9 Q Okay. And as you said, it was somewhat
10 open-ended.

11 A Well, I use that term to say that there
12 was no contractual or stated position as to exactly
13 what this would constitute. But whatever we needed,
14 it was negotiable.

15 Q Well, that was the word I was going to
16 use.

17 A Yeah.

18 Q But basically you had to ---

19 A I would have to sell it, of course.

20 Q --- go out and assess the needs as you ---

21 A That's right.

22 Q --- saw them and then go back and sell it
23 to management?

24 A That is right.

25 Q And I guess in the best of situations

1 that's difficult anyway.

2 A (Nodding affirmatively)

3 Q And it's hard to ask you how to - how to
4 assess your experience there. I mean you kept
5 trying to sell to management for a number of years
6 anyway.

7 A (Nodding affirmatively)

8 Q You stayed there until when, sir?

9 A And we succeeded to a degree, yes.

10 Q You stayed until ---

11 A Until '81.

12 Q --- '81, some 16 years. So, you must have
13 had some success?

14 A Yes, sir.

15 Q I don't think you would have stayed if you
16 couldn't have accomplished ---

17 A Right.

18 Q --- at least the minimum of what you felt
19 was needed?

20 A Yeah.

21 Q What - what changes did you -- Let me back
22 up. What did you do, Dr. Dixon, in 1965 to sort of
23 assess the situation? How did you approach that?

24 A First of all I made a concerted effort to
25 visit all of the plants - the major plant locations

1 certainly in the early days. And I had a very
2 excellent guide, the corporate safety director who
3 was very knowledgeable in occupational health and
4 industrial hygiene. He was very supportive, very
5 helpful. And the first thing we did within a few
6 months really was screen down on the industrial
7 hygiene needs, and as a consequence we hired Chuck
8 Laubly in that following year.

9 Q Who was the safety director that was your
10 guide?

11 A Glenn Fleming, now deceased.

12 Q And do you have a sense of how long
13 Mr. Fleming had been with Celanese?

14 A I believe about 15 to 20 years at that
15 time when I went there. He worked again for another
16 five or six years and then stayed on as a chief
17 consultant for two or three years.

18 Q Could you share with us anything you
19 recall about Mr. Fleming's background in terms of
20 his training and credentials?

21 A He had had very good past experience, some
22 training. I don't recall the details of his
23 training. There was no safety training program as
24 such, but he had had I believe chemical engineering
25 training in college and had worked in the safety

1 field by default as so many did in the early days.
2 He had a broad experience. And I don't recall just
3 what that was at this point. He was widely known
4 throughout the country; very highly regarded. He
5 was a wonderful person to work with.

6 Q Was Mr. Fleming a degreed ---

7 A Yes. I believe he was a chemical
8 engineer.

9 Q That - that was the impression I was
10 getting. And you indicated that Mr. Fleming was
11 knowledgeable about industrial hygiene matters ---

12 A Yes, sir.

13 Q --- more than you would expect from I
14 guess just a plain, old safety man?

15 A Absolutely.

16 Q Do you have any recollection of where
17 Mr. Fleming had gotten his degree?

18 A I don't.

19 Q And ---

20 A I may have known, but I don't recall.

21 Q --- did he ever tell you or had you ever
22 heard where he may have worked before coming to
23 Celanese?

24 A I'm sure I did know it, but at this moment
25 it escapes me. I think it may have - some of it had

1 been with the national underwriters or something of
2 the sort, but I don't know for sure.

3 Q Were you -- Do you have a sense for how
4 long Mr. Fleming - approximately how long he had
5 been the safety director for Celanese?

6 A I said about 15 to 20 years at the time I
7 went there.

8 Q Oh, okay.

9 A And he stayed on another six to seven
10 years before ---

11 Q I'm sorry. I - I thought I had asked you
12 how long he had just been with the company.

13 A Well, he was the safety director the whole
14 time.

15 Q Okay. And I suppose that throughout this
16 time as a safety director he would been a member of
17 the National Safety Council?

18 A All of the main organizations.

19 Q And Celanese, of course, would have been
20 an industrial member of the National Safety Council
21 as well?

22 A Yes.

23 Q You said you focused early on on the need
24 to hire an industrial hygienist for Celanese.

25 A For our own ---

1 Q Before ...

2 A Huh?

3 Q Excuse me.

4 A Go ahead.

5 Q Before 1965 had Celanese had its own
6 industrial hygienist employed?

7 A No, we didn't.

8 Q Had Celanese used outside consultants to
9 do industrial hygiene work prior?

10 A Yes, sir.

11 Q And who would have provided those
12 services?

13 A Kemper, which was the American - Liberty
14 Mutual - not Liberty Mutual.

15 Q Lumberman's?

16 A Lumberman's Mutual, yeah, and casualty had
17 provided it for most of the operations for many
18 years.

19 Q You visited all of the plants in that
20 first year or so. That must have had you traveling
21 almost every week.

22 A Well, I traveled extensively throughout my
23 career there. I visited virtually every plant every
24 year. Sometimes I might miss a plant for part of
25 the year or something, but that was part of my

1 mission.

2 Q What did you do to check out the Celanese
3 Company and the people that you might be working
4 with when you first were recruited to - to come
5 there and before you made the decision to join them?

6 A Well, I talked to some of the other
7 leaders in the field who -- I talked to Jack
8 Osteritter at some length because he and I were
9 friendly, and to Dr. Cranch even for that matter.
10 And I learned about its reputation in the field and
11 its marketing and its corporate excellence. And I
12 had a very favorable view of it, and I made the
13 decision.

14 Q At the time you began there in '65 at
15 Celanese the company had - what, maybe 30 or 40
16 plants around the world?

17 A Something of that order. 35,000 or
18 40,000, you know, around the world.

19 Q I said 30 or 40 plants.

20 A Yes.

21 Q And I thought you said ---

22 A Yeah. I'm sorry. I meant plants, yeah.
23 We had about that many employees.

24 Q Okay.

25 A Forgive me.

1 Q I didn't - didn't want to ---

2 A That's my fault.

3 Q --- leave us confused. And these plants
4 stretched from Canada to Mexico and on into South
5 America and over to Europe as well?

6 A That is right.

7 Q Okay.

8 A A major concentration in North America -
9 of course, Mexico, Canada, U. S., and then less in
10 other parts of the world.

11 Q I know Celanese had some plants in the
12 south over on the Atlantic Seaboard - South
13 Carolina, North Carolina, as well as plants in Texas
14 and up in New Jersey and elsewhere. Did - did your
15 Cyanamid work ever bring you in contact with
16 Cyanamid plants down in the south? We have already
17 talked about Jefferson Chemical and such in Texas,
18 but ...

19 A To a minimal degree. I visited some of
20 them as part of that preceptor year in training.
21 And occasionally we would have meetings - corporate
22 medical meetings at one of the plants or otherwise
23 or if some project came up or a medical director at
24 one plant invited you to come down and visit him or
25 whatnot. And you could do that. But there was no

1 systematic ---

2 Q Uh-huh.

3 A --- visitation.

4 Q When you hired on with Celanese, you were
5 again back in New York City?

6 A I stayed in New York.

7 Q And stayed there the whole 16 years?

8 A Yes, sir.

9 Q Commuting in from New Jersey?

10 A Yes.

11 Q Okay. And the offices of Celanese in New
12 York were located where?

13 A Originally on 5th Avenue at 44th and 45th
14 Street in the Morgan Guaranty Trust Building. And
15 then subsequently we had our own building in the new
16 Rockefeller Center on 6th Avenue - the expansion of
17 Rockefeller Center which had Exxon, McGraw-Hill,
18 Stevens and so forth - J. P. Stevens Company. There
19 were five new buildings on the west of - the east
20 side of 6th Avenue.

21 Q And Celanese had its own building there?

22 A It's own building, yeah.

23 Q I suppose your early survey of plants also
24 took you to the Celanese research facility?

25 A Well, there were a number of Celanese

1 research facilities. There was the corporate
2 research facility -- The answer is yes.

3 Q And the corporate research facility was
4 somewhat like the one that Cyanamid had?

5 A Yes.

6 Q That is, it was the main one for the
7 company and had a large ---

8 A The corporation, yes.

9 Q --- had a large number of professionals
10 employed there?

11 A Yes.

12 Q And I suppose like the Cyanamid Chemical
13 Company, Celanese's research arm stretched - or
14 dated back to the early days of the Celanese
15 Company, too?

16 A Yes. By in large, yes.

17 Q Do you know much about the history of
18 Celanese, its origins and such?

19 A Basically, yes.

20 Q Could - could you share that with us?

21 A Celanese was started by two Swiss brothers
22 named Dreyfus who had developed a new process for
23 developing a cellulosic material that they felt
24 could be extruded into fiber. And World War - this
25 was prior to World War I. The first plant was built

1 in Cumberland, Maryland, 50 years before I went
2 there. So, that would have been 1915, wouldn't it?
3 Yeah, '15 - roughly '15. It was early wartime.

4 And very quickly it became evident that
5 this cellulosic dope that they manufactured and
6 extruded into fiber was the best thing they could
7 use for aircraft wing coatings, which in the early
8 period of the war were fabric coated airplane wings
9 and fuselages that then were heavily impregnated
10 with an impervious - water impervious and weather
11 impervious coating that was light in weight.

12 And, so, the production basically
13 throughout the war was of the dope; and then
14 immediately after the war converted over to actual
15 fiber. In fact, the facilities were already
16 complete. And then they built other plants because
17 they were successful with their acetate fibers -
18 cellulose acetate fiber, which was wood products
19 digested in solvents and whatnot and extruded in an
20 acetone base.

21 And then there are four other plants in
22 the Celanese coatings company. And by I would say
23 the late '40's it was evident that it would be
24 prudent for them to build a chemical facility to
25 make their own raw materials for the fibers rather

1 than purchasing them at a much higher cost from
2 other manufacturers. And that's how the Bishop
3 plant came into being. Then the other ones are
4 expansions from that nucleus. The rest of Celanese
5 grew largely by acquisitions and so forth.

6 Q Now, you have mentioned -- I thought I
7 heard that there were four other plants in the
8 Celanese ---

9 A Fibers company.

10 Q Besides Cumberland, Maryland ---

11 A There was the Amcel plant at Cumberland,
12 Maryland. I believe the second one was about 1939
13 at the Celco plant in Western Virginia. Probably
14 the -- Well, there were two other plants. One of
15 them was at Rome, Georgia. And actually that was an
16 old Viscose plant. And they purchased that as I
17 recall. And then the final one was the Celriver
18 plant at - right across the river from Charlotte. I
19 can't think of the town. Well, they called the
20 plant Celriver. They were all basically acetate
21 plants and triacetate, which was a new development
22 Celanese pioneered.

23 Q And then did you mention Celanese
24 coatings?

25 A Yes. That was paints and coatings and

1 industrial finishes and so forth.

2 Q And what ---

3 A And that was all purchased. Dabney Jones
4 and ---

5 Q Devoe?

6 A Huh?

7 Q Devoe?

8 A Yeah, Devoe paints and a number of other
9 companies. Some were all purchased initially, and
10 then others were added on to it later.

11 Q Oh, okay. So, Celanese got into the paint
12 or coatings business by acquiring ---

13 A Yes. Yes.

14 Q Okay.

15 A I believe that was the origin of all of
16 it. They purchased -- Devoe I'm sure was the first.
17 Some of the others made specialty products and
18 industrial coatings.

19 Q I was thinking for a minute there the
20 coatings business grew out of the dope for the
21 airplanes?

22 A No, that was totally unrelated.

23 Q Okay.

24 A That was a unique experience, and they
25 never went back to that. That market disappeared

1 with aluminum and so forth.

2 Q Right. There's not even a market left for
3 that in model airplanes.

4 A I don't guess so.

5 Q Those nifty shrink films that you ---

6 A Yeah, I guess that's right.

7 Q --- put on with an iron. They really are
8 quite strong. And the Dreyfus brothers from
9 Switzerland came to America then and built this
10 first plant in 1915?

11 A That's right, 1915. It must have been
12 around '15. It was prior to World War II - World
13 War I - II. And ...

14 Q Well, it sounds like prior to our
15 involvement in World War I.

16 A Well, I think it was prior to our
17 involvement. And at some point -- Because they had
18 the 50th anniversary shortly after I joined the
19 company of the corporation being founded.

20 Q Had the Celanese company -- Oh, okay. So,
21 the beginnings of it were then with this Cumberland
22 plant?

23 A That's right. Amcel it was called.

24 Q There was not a predecessor that - or a
25 Celanese company that existed in Switzerland before

1 this ---

2 A I don't think so. They might have had
3 some -- I was cogitating about that issue. They - I
4 don't know exactly what they were doing over there
5 or why they came here even at that point. Celanese
6 had a lot of European connections at various times
7 with the British later. And I just don't recall -
8 remember the sequence of that. They were Swiss as I
9 recall.

10 Q They may have come here for capital.

11 A I beg your pardon?

12 Q They may have just come here because the
13 capital was ---

14 A I can't -- I probably did know, but I
15 don't recall it. I have a book on the history of
16 the company, but I don't remember now what it was.

17 Q Okay. Now, I believe we learned -
18 although correct me, please, if I'm wrong - that
19 Celanese had plants in Germany, Italy, England?

20 A I don't remember Italy or Germany. We did
21 in -- You said England?

22 Q That's what I was thinking.

23 A Yeah. Well, now, of course, they might
24 have occurred in the early days before I was on
25 board. But I don't recall any in Italy. We had one

1 A That must have been very late because we
2 didn't get into nylon until after I joined the
3 company.

4 Q And I - I ---

5 A And polyester, that was in ventures with
6 ICI.

7 Q And I fabricated the - the Italy plant.

8 A Yeah.

9 Q I just invented it. In fact, he mentioned
10 Belgium ---

11 A Belgium, yes.

12 Q --- a fibers plant, and Switzerland - an
13 agricultural chemicals plants in Switzerland.

14 A Maybe.

15 Q And Columbia and Mexico and Canada.

16 A Yeah. There were others.

17 Q Okay. All right. I'm sorry. I did not
18 mean to mislead you.

19 A That's okay.

20 Q And you didn't - apparently didn't have
21 any experience with the German plant?

22 A I never heard of it, no. I don't recall
23 it even. It may have been -- I don't think it was
24 there later. I just don't remember it at all.

25 Q Can you recall any ---

1 in - not Sicily. What's the island out there? But
2 that was after I joined the company.

3 Q Sardinia?

4 A No.

5 Q Malta, Crete?

6 A No. Crete is not Italian.

7 Q It all depends on who you ask. It's like
8 when you ask for a German beer, and they offer you
9 Heineken. And you say, "Well, maybe it was in
10 '43" ---

11 A Yeah.

12 Q --- "but not now."

13 A I don't recall that early history that
14 well. But there was one plant on one of the islands
15 that was a grand fiasco. That was after I joined
16 the corporation.

17 Q No. My notes - and correct me -- I didn't
18 make any note of England.

19 A There were ---

20 Q Germany -- I think Mr. Laubly mentioned a
21 joint venture in Kelsterbach.

22 A Never heard of it.

23 Q Okay.

24 A At least I don't recall it.

25 Q A nylon plant I think.

1 A I remember the Belgium plant very well.

2 Q That was -- That was existing when you
3 joined the company ---

4 A Yes, it was.

5 Q --- in '65?

6 A It was -- It was a cellulose acetate plant
7 in - in Ghent.

8 Q Ghent - Ghent did you say?

9 A Yes. I visited it.

10 Q More than once I hope?

11 A No, just one time actually.

12 Q Alas.

13 A I had to go through -- To go into
14 Brussel's I had to go through a corner of Germany to
15 get to it because it was way up in the ---

16 Q Uh-huh.

17 A But I was never aware of anything in
18 Germany there. And then, of course, not Italy
19 either.

20 Q All right.

21 A There was an English/British Celanese
22 Company as you probably know, and their relations
23 with Courtaulds. But I don't remember. They all
24 proceeded me.

25 Q You are saying an English/American

1 Celanese Company?

2 A No. It was called British Celanese. And
3 I don't know what its role -- I don't know that they
4 were part of our corporation. I visited over
5 there - well, particularly with the Courtaulds
6 people on occasion because we had some parallel
7 program interests healthwise. I met with their
8 medical people. But I can't remember what
9 relationships there were there. They were like
10 second cousins or some such ---

11 Q Now, who is this Courtaulds that you are
12 speaking of?

13 A They are a very big corporation in Great
14 Britain - fibers manufacturing primarily. I don't
15 know whether we shared technology or what. There
16 was a close bond of affection at least. And I don't
17 remember now just what the - the bonding might have
18 been otherwise.

19 Q And I guess we ---

20 A And I think the British Celanese was a
21 totally independent company. And I don't think it
22 ever had any real focus - focus in the U. S.
23 Celanese; and I believe Courtaulds took it over at
24 some point. But that's been a long time ago, and I
25 can't remember. I haven't heard of it in recent

1 years. Courtaulds is still quite a big name.

2 Q Well, it may have started as a joint
3 venture back some time ago between Courtaulds and
4 Celanese. And I guess we can answer that from some
5 other - other source. But you did at least make one
6 tour over there, huh, perhaps more?

7 A I made more than one. But as far as that
8 plant in Ghent, I only went once.

9 Q Okay.

10 A But I was doing it for other reasons and
11 whatnot, too.

12 Q But the British Celanese plant you visited
13 you say several times?

14 A No. No, I never visited it.

15 Q Oh, I beg your pardon. I'm sorry.

16 A No. I visited the headquarters of
17 Courtaulds. I met with their medical staff. I
18 don't think I ever visited one of their facilities.
19 I met with them several times in London, and they
20 met with me over here. I can't even remember what
21 the project was. There was some health issue that
22 we were all concerned with as we were - many of us
23 were in the early '70's and so forth with impending
24 OSHA and so forth. But I can't remember just what
25 they were now. I can't even remember the names of

1 their medical people. I should, but I don't right
2 now.

3 Q I don't guess your Cyanamid job took you
4 overseas on any occasion, did it?

5 A No, I was a local plant-level physician,
6 not a corporate -- I take that back. I was assigned
7 a time or two to do some outside work like in Mexico
8 once and visited some plants out in the western
9 U. S. that were not ours. But that was the extent
10 of it.

11 THE REPORTER: That was the
12 extent?

13 THE WITNESS: Huh?

14 THE REPORTER: Speak up a little
15 bit, please.

16 THE WITNESS: I'm sorry.

17 A I visited one Mexican facility and visited
18 several southwestern United States facilities of
19 other companies, too, at the behest of the corporate
20 program.

21 Q I think you told us earlier when I was
22 asking you about any teaching that you had done that
23 at some point you became affiliated with the
24 Mt. Sinai group or ---

25 A I was not teaching there. I was on the

1 board of their occupational health resource center.
2 The Federal Government, OSHA and NIOSH set up with
3 universities around the country - there was about
4 eight or ten centers for environmental or
5 occupational health research and resources. And the
6 one in New York was a combine of five universities.
7 I think I told you all of that. And I was --
8 Dr. Selikoff who was the head of it from Mt. Sinai
9 appointed me to the board I would think around 1975
10 or '76, somewhere in there.

11 Q How did you make that connection to begin
12 with that led to this appointment?

13 A What?

14 Q With Dr. Selikoff or any of the other
15 folks there?

16 A Well, he knew me and I knew him. And I
17 guess he decided I would be a good one, and he
18 picked me. So ...

19 Q Was this an acquaintance that went back a
20 number of years before your appointment?

21 A Yes.

22 Q Do you recollect around when you became
23 acquainted with him?

24 A Exactly. It was in the Fall of 1964. I
25 was the medical section chairman at the AIHA annual

1 point. I've tried to dig it out, and I can't figure
2 it out because he didn't list who the session
3 chairmen were in the publications of the book. You
4 know, it was published as a ---

5 Q Yes, sir.

6 A And he didn't list who the session
7 chairmen were. I haven't pursued it in any depth,
8 but I don't remember which session I chaired at this
9 point.

10 Q And so we are clear here, you are talking
11 about the end of the year 1964 symposium on asbestos
12 and the biological effects of asbestos ---

13 A Yes. That is correct.

14 Q --- that was put on by the New York
15 Academy of Sciences?

16 A Under their auspices, yes.

17 Q And published the following year?

18 A As a proceeding of the academy, of which I
19 was a fellow. That may have been one of the reasons
20 he picked me. I don't know.

21 Q How long had you been - been in that
22 organization, Doctor?

23 A I joined it while I was with Cyanamid.

24 A Vice-president - one of the Vice-presidents of
25 Cyanamid wanted me to join. And, so, I did. I went

1 convention which was in Philadelphia. And he
2 presented a paper in my section on asbestos,
3 asbestosis and made some preliminary remarks about
4 the carcinogenic potential. It was not long before
5 the New York Academy of Sciences meeting, which he
6 asked me to chair one of the sections. He asked
7 many people to chair sections because there were
8 many, many sections to that meeting.

9 Q And did you accept that ---

10 A Yes.

11 Q --- request? So, this was the first time
12 you met him then in ---

13 A In '64.

14 Q '64. And - well, you must have made an
15 impression on him, either that or ---

16 A And vice versa.

17 Q --- he was desperate - desperate for help
18 with the conference, maybe both.

19 A Perhaps.

20 Q What - what role did you play in the -
21 that 1964 conference?

22 A I chaired one of the many, many sections.
23 There must have been -- Sessions. And there must
24 have been 40 or 50 sessions - or 30 or 40 anyhow.
25 And I can't even recall which one I chaired at this

1 with him to the very first meeting and -- I'm sorry.
2 He was a Cyanamid Vice-president. And I was a
3 member ever since. Not very active in recent years,
4 however, in it.

5 Q Now, what did these - these resource
6 boards or whatever it was that ---

7 A Resource center.

8 Q Resource center?

9 A Yeah.

10 Q How did that function? What was the
11 purpose of ---

12 A Well, it was set up regionally around the
13 country. I know in Minnesota, for example, they had
14 the Mayo and the University of Michigan - Minnesota;
15 and out in California two or three of the schools;
16 and down in Carolina, the same thing. I have
17 forgotten where all they were. There were eight or
18 ten of them at that point set up to be regional
19 points for people to home on for getting help with
20 occupational research - occupational health research
21 or information. They were developing strategy as
22 time went on to serve. And they still exist. And
23 they have many courses in training for people in the
24 field periodically through the year. And I have not
25 been active in it since I retired and came down

1 here. I had to retire because I was no longer a
2 resident up there.

3 Q Now, this - these resource centers that
4 OSHA organized were ---

5 A There was another one in Chicago. That
6 was a big one. And I ended up on their board for a
7 time, too. Forgive me. I'm sorry.

8 Q That's all right. These resource centers
9 you say made - made available to industry and I
10 suppose businesses a place where you could go for
11 occupational medicine information, consulting ---

12 A That was essentially part of its mission.
13 And it was to actually develop the mission more
14 fully. And I haven't followed exactly how they
15 evolved. But I know they have a lot of training
16 programs now.

17 Q Was this -- Although OSHA was new in 1972,
18 this sort of a service was not really new then, was
19 it?

20 A Yes, it was. And it was -- It was
21 actually fostered by either NIOSH and/or OSHA. I
22 think it was a combine of the two that they
23 initiated the concept of it and presented it to the
24 universities and they adopted it; and that's what
25 followed.

1 Q I guess what I was - was thinking of and
2 didn't ask you about very well was the kind of
3 services that were provided routinely by the New
4 York Department of Labor, for example, in prior
5 years. Surely you must have come in contact with
6 that while working in New York.

7 A Well, I was aware of them and knew some of
8 the people. But that had nothing to do with ERC's.

9 Q With the what, sir?

10 A I said I'm sure I knew some of the people
11 like Morris Kleinfeld. But that had nothing to do
12 with the ERC's. These were organized at the - in
13 response to OSHA and/or NIOSH. I believe it was
14 both of them. They set up a method where the
15 universities in those areas would be able to be
16 useful to people interested in the field in those
17 regions ---

18 Q Okay.

19 A --- essentially. I don't recall now -- I
20 haven't kept track of how they - what they have
21 evolved into really. I get the notices of all their
22 training missions, but I don't -- I haven't had any
23 dealings with them whatsoever since.

24 Q I'm sorry. I didn't mean to equate the
25 ERC's with these - these ---

1 A They were totally unrelated entities.

2 Q --- earlier efforts.

3 A Yeah.

4 Q But what I did want to ask you about was
5 the kind of - the activities and the services that
6 were available from the New York Department of
7 Labor, for example ---

8 A Yeah.

9 Q --- back when you first went up to New
10 York. I'm aware of it, but I never had much
11 occasion to require it. As corporate medical
12 director of companies headquartered in New York,
13 there was no reason to particularly. And neither
14 during my time at the Bell System or at Celanese do
15 I recall having any particular operations,
16 manufacturing or otherwise, in the regions that they
17 were involved in. So, I don't -- My contact was
18 nominal. I was aware of some of them in the trade -
19 not in trade - but in professional associations. I
20 believe Morris Kleinfeld was the head of it for a
21 long time.

22 Q Do you remember Dr. Greenburg - Leonard
23 Greenburg?

24 A I do. He - he had been very active in it;
25 but he died about the time I - or retired or

1 whatnot. He disappeared along about the time I got
2 into the New York area. He was a well-known
3 industrial hygiene giant. He did much of the early
4 work on testing, sampling and so forth. We met him
5 at Kettering.

6 Q Okay. I'm ---

7 A Yeah.

8 Q I think you are certainly correct. He was
9 there at the Department of Labor back into the '30's
10 and maybe even earlier.

11 A Possibly. It was a long time.

12 Q But do you recollect the Industrial
13 Hygiene Bulletin and other publications from the
14 Department of Labor that would have been coming to
15 industry back then?

16 A That sort of twinkled my recollection.
17 But I don't remember very specifically. I'm sure it
18 was there, but I read it if it was present.

19 Q At various times I think they called it
20 the Industrial Bulletin and then the Industrial
21 Hygiene Bulletin, then finally ---

22 A Do you have one there?

23 Q I've got one from the '70's.

24 A Let me just see the front of it.

25 Q It's nothing but a cover. The Industrial

1 Hvgiene Review is somewhat later. Oh, you are
2 right. Here is -- Here is Morris Kleinfeld just by
3 happenstance here on the - on the cover of this one.
4 There you go. (Tendering)

5 A (Reviewing) Yeah, he was the director. I
6 knew him quite well. I didn't know the other people
7 listed, but -- And I didn't know Nelson Rockefeller.
8 God, you've brought back a lot of recollection
9 today. You have rambled all over the place.

10 Q You say I've been rambling all over the
11 place?

12 A Yeah.

13 Q I know. It's - it's a fault of mine.
14 Well, you know, the - just sort of as an aside - it
15 seems like every generation thinks they start, you
16 know, everything new and made all of the discoveries
17 and ---

18 A That's right.

19 Q --- I'm sure you would concede that the
20 people that went before you sure set a big stage to
21 walk on and did a lot of important work; and you
22 tend to forget that.

23 A That's right.

24 Q I just happened to have those with me. I
25 didn't get a chance to even look at them until the

1 flight up here. But again, though, at American
2 Cyanamid ---

3 A Cyanamid?

4 Q At American Cyanamid and I suppose perhaps
5 at Celanese, though, this - you would have had this
6 kind of expertise in-house; that is ---

7 A Industrial hygiene?

8 Q --- occupational physicians, industrial
9 hygienists and so on ---

10 A Yes.

11 Q --- by the 1950's when you got there?

12 A (Nodding affirmatively)

13 Q Nonetheless, the State of New York at
14 least was providing this sort of professional help
15 on a consulting basis to industry when requested?

16 A That's my understanding.

17 Q Okay. So, if you didn't have your own
18 industrial hygienist on the payroll, you could at
19 least call the Department of Labor and ---

20 A I presume that's how it worked. We didn't
21 have any operations needing that service ---

22 Q Yeah.

23 A --- in that area of jurisdiction. So, I
24 wouldn't have any experience in ---

25 Q You might be interested - and I guess I

1 could tell you after we quit - but I read in one of
2 these - I don't remember if it was back in the '30's
3 or the '40's - they - they actually had an
4 occupational health clinic organized in New York
5 City with certain hours when they were available for
6 consulting and so on.

7 A Under the Department of Labor?

8 Q Affiliated with it, yes, sir.

9 A I'm not aware of that.

10 Q Okay. As we plow on toward 6:00 p.m., and
11 I keep getting disorganized here as we digress.

12 Before we leave this issue of the ERC's -
13 the resource centers - you have got to tell me
14 again, please, what the "E" stands for.

15 A I have forgotten. I guess it's
16 environmental. But I - I have a mental block. I'm
17 sorry. I was thinking you would probably ask me
18 that, but I couldn't ...

19 Q Okay.

20 A Education resource center. Education
21 resource center.

22 Q Okay. And what specifically did you do in
23 connection with - with that program over the years?

24 A Well, I was on the board of directors. We
25 went to meetings several times a year to discuss how

1 it was evolving and the evolution of who was
2 involved in it and so forth within our local thing,
3 and some of the ways in which it was going to
4 proceed. It hadn't evolved to that great of a
5 degree by that time I left up there that I can
6 recall; just what they ended up doing ultimately.

7 But I do know they did achieve the status
8 of having what are well-regarded training programs
9 for people who were interested in occupational
10 health, short of full-time training and so forth;
11 courses on all sorts of things periodically.

12 Q Okay. So, this was a way among other
13 things of offering short courses ---

14 A Yes, mostly short courses.

15 Q --- all around the country to where it
16 was ---

17 A All around the country at each of the
18 centers.

19 Q --- to where the folks could get there
20 without great expense ---

21 A Exactly.

22 Q --- and at least get a good introduction?

23 A Yes, that's essentially right.

24 Q Okay. When you -- When you joined
25 Celanese in 1965, Doctor, what if any kind of a

1 program did you find in existence there to - to
2 medically monitor workers potentially exposed to
3 asbestos?

4 A Asbestos?

5 Q Yes, sir.

6 A None.

7 Q And when you joined Celanese in the Spring
8 of 1965 what if any kind of an industrial hygiene
9 monitoring program did you find there for workers
10 potentially exposed to asbestos?

11 A None.

12 Q Was there any industrial hygiene program
13 for monitoring workers potentially exposed to other
14 dusts at Celanese in 1965?

15 A I don't recall that there were any dust
16 problems. There were mist problems and solvent
17 vapor problems; but, no, I don't recall any dust
18 problems.

19 Q Did there ---

20 A I say problems. I mean potential
21 problems.

22 Q Yes, sir. Did there -- Did there come a
23 time when you developed a medical monitoring program
24 for workers potentially exposed to asbestos at
25 Celanese?

1 A Yes.

2 Q And when was that, sir?

3 A At some point shortly after the OSHA
4 regulation - the first standard was on asbestos; and
5 it required monitoring if one was using and could
6 expose workers to - had the potential exposure of -
7 to asbestos. And we had a very limited operation at
8 that time in one facility. And it was
9 extraordinarily limited, but nevertheless it did
10 exist.

11 Q Are you -- Are you referring to that
12 Celanex product line?

13 A Yes.

14 Q And that was down in the Bishop plant, I
15 believe?

16 A In the Bishop plant, yes.

17 Q Can you tell us what that Celanex product
18 was and what it was used for?

19 A Well, it was essentially a specialty
20 polyester resin with certain high-quality
21 characteristics that lended it well to become an
22 engineering plastic. And small amounts of asbestos
23 were added to it because of its capability to add
24 strength, durability, heat resistance, et cetera.

25 Q And what sort of uses were made of this

1 product? Could you give me some examples?

2 A Well, various parts of automotive bodies,
3 for example, like extensions on fenders and molded
4 parts; not machine - not motor parts, but body parts
5 internally and externally on cars and other devices
6 of that sort. It was a very strong material, and
7 essentially it mimicked the qualities of metal in
8 its strength and whatnot.

9 Q And was this Celanex product still being
10 made when you retired from Celanese?

11 A Yes. It had not only -- Well, yes. As
12 far as I recall it was, yeah.

13 Q And was it still using the asbestos as an
14 ingredient ---

15 A I ...

16 Q --- when you retired?

17 A I believe so.

18 Q Was the Celanex production line then the
19 focus of your medical monitoring program for
20 asbestos?

21 A What do you mean by "the focus"?

22 Q Well, I inferred from the way you answered
23 earlier about setting up a medical monitoring
24 program for workers potentially exposed to asbestos
25 that it was limited to the Celanex line.

1 A Okay.

2 Q So, let me ---

3 A Yes. That is correct, it was limited.

4 Q I guess I should make my inferences ---

5 A Yeah. The word "focus" threw me off.

6 Q --- clear. I'm sorry.

7 A That's okay.

8 Q Did the program for medically monitoring
9 workers potentially exposed to asbestos at Celanese
10 ever get expanded beyond the Celanex workers; that
11 is, the workers on the Celanex manufacturing line?

12 A Well, I don't know this firsthand, but I
13 understand that there was limited experience in
14 sampling around where some asbestos insulation spot
15 jobs were being done for a time. And I don't
16 recall the -- But the levels were extraordinarily
17 low. And I don't think -- I don't know whether it
18 was continued or -- There didn't seem to be any
19 reason to.

20 Q When was it, Dr. Dixon, that the medical
21 monitoring program for workers potentially exposed
22 to asbestos at ---

23 A Well ...

24 Q --- Celanese began?

25 A ... it was required under the OSHA first

1 standard, which was issued in 1970 - it was either
2 late '71 or '72. I guess in '72 sometime. It was
3 an emergency temporary standard, and then you had
4 the permanent standard.

5 Q So, you are remembering the program would
6 have begun around '72, '73?

7 A Yes, soon after the enactment - that
8 standard being put into effect. There is always a
9 date associated with its beginning.

10 Q Yes, sir.

11 A I don't remember what the date was, but
12 probably sometime in late '72 or possibly even '73.

13 Q Was - was there ever time in your career
14 at a chemical company - that is, was there ever a
15 time before you retired from Celanese that - that
16 you observed asbestos thermal insulation being
17 installed or removed out in a plant environment?

18 A I don't recall it. It's possible that I
19 did, but I don't recall any time specifically.

20 Q Do you recall whether any of the
21 manufacturing processes or operations at Cyanamid
22 involved the - the use of asbestos?

23 A I'm not aware of it. Of course, I can't
24 speak for the whole corporation. But for the
25 facilities in which I had responsibility, I was

1 never aware of it.

2 Q Did ---

3 A It didn't surface as an issue.

4 Q Okay. And I suppose this wasn't
5 particularly an issue at Western Electric?

6 A No.

7 Q In '62 when you were at Western Electric,
8 where were the telephones manufactured?

9 A Oh, a variety of places. Kearny, New
10 Jersey, was a big plant. Chicago - right outside of
11 Chicago - Skokie, and various points around the
12 country. The two big ones were the Hawthorn plant
13 and the Kearny plant - outside of Chicago and right
14 outside of Newark for the telephones and a lot of
15 related equipment. Then they had a variety of
16 plants scattered all around. The cable factory was
17 in Baltimore. Teletype was outside of Chicago and
18 different facilities. They were scattered about
19 quite extensively. It was a big corporation -
20 250,000 employees. And, you know, it was a big part
21 of the Bell System actually - almost a quarter of
22 the Bell System.

23 Q And Western Electric employees actually
24 manufactured the telephones and ---

25 A Absolutely.

1 Q Do you -- Do you recollect that Western
2 Electric was still using Bakelite in its phones back
3 in '62 when you ---

4 A I don't recall what plastic was actually
5 used. '62 did you say?

6 Q Yes, sir. Well, when you were there.

7 A I'm not surprised. I didn't even know
8 they used Bakelite.

9 Q Well, I don't know that they did still
10 then. But I remember the old phones being Bakelite
11 I think.

12 A That kind of surprises me, but it's
13 possible because that was one of the first plastic
14 materials.

15 Q Yes, sir. And did you ever learn that
16 asbestos was an ingredient in the Bakelite?

17 A No, I didn't.

18 Q Okay. I think that was - if I remember
19 correctly was an early Union Carbide product.

20 A That is correct.

21 Q Okay. Do you have any idea what kind of
22 asbestos Celanese used in the Celanex product?

23 A Yes, it was a chrysotile, short fiber. It
24 was purchased by somebody out in California. So, it
25 was essentially a nonrespirable fiber of the best

1 type. And I didn't -- I'm not aware that I even was
2 aware of that at the time. But ---

3 Q How did ...

4 A --- that's probably how it was.

5 Q How did you -- I mean you - you remember
6 the California source very ---

7 A I can't think of the name of it. It was a
8 California source as I remember.

9 Q Does Caligula ring a bell?

10 A That sounds right, but I'm not positive.

11 Q There was a Caligula mine in California.

12 A I believe that is correct, but I won't
13 attest to it. It sounds right.

14 Q Also owned by Carbide.

15 A Oh.

16 Q Does that ring a bell? Maybe, maybe not.

17 A Interesting.

18 Q Before you retired in 1981 had Celanese
19 developed a medical monitoring program for workers
20 potentially exposed to asbestos who might be
21 boilermakers or pipefitters or maintenance workers?

22 A I don't think there was any that involved
23 those people. It involved the people who were
24 actually operating the Celanex operation as -- And I
25 think that was the extent of it.

1 Q All right. And to your understanding
2 would the same be true about an industrial hygiene
3 program for monitoring boilermakers and pipefitters
4 and maintenance workers for potential exposures to
5 asbestos?

6 A I don't understand. That sounds like the
7 same question.

8 Q I was just changing it from a medical
9 monitoring program to industrial hygiene.

10 A Oh, I'm sorry. I don't believe we felt
11 that it qualified to require that under the act, but
12 I could be wrong.

13 Q Okay.

14 A We didn't institute it while I was there
15 for sure.

16 Q All right, sir.

17 A I don't think - I don't recall any. An
18 exposure had to reach certain proportions and
19 whatnot, and we didn't ---

20 Q I'm sorry. It had to reach certain what?

21 A Forget it. Scratch that, please.

22 MR. BLANKS: Michael, it's
23 within a few minutes of 6:00; and
24 this is as good a stopping point as I
25 can find.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

MR. HUTCHINS: What's that?

MR. BLANKS: I was just saying
this is as good a point to stop as
any, if you don't mind.

MR. HUTCHINS: That's fine.

THE VIDEOGRAPHER: We are off
the record at 5:53.

(WHEREUPON THE DEPOSITION WAS RECESSED
AT 5:53 ON THE 13TH DAY OF OCTOBER,
1998, TO BE RESUMED AT 9:00 A.M. ON THE
14TH DAY OF OCTOBER, 1998.)