

COPY

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
BEAUMONT DIVISION

*
CECIL SCOTT, ET AL *
*
VS. * CIVIL ACTION
* NO. B-84-1103-CA
*
MONSANTO COMPANY *
*

VOLUME I

VIDEO DEPOSITION OF

ELMER P WHEELER

9:37 a.m. to 4:45 p.m.
May 7, 1987
Holiday Inn - Camden
Lugoff, South Carolina

Reported by:

Linda C. Baker
Texas CSR No. 505/Notary Public
Nell McCallum & Associates
2900 Smith, Suite 104
Houston, Texas 77006
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Taxable Cost: \$ _____

Charged to: DAVID M. LACEY, ESQ.

State Bar No:

Attorney for: Plaintiffs

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11 James Heironimus
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13

14 *****

15
16 Deposition of ELMER P. WHEELER, taken on
17 May 7, 1987, at Holiday Inn - Camden, Lugoff,
18 South Carolina, between the hours of 9:37 a.m.
19 and 4:45 p.m., before Linda C. Baker, CSR No. 505
20 and Notary Public in and for the State of Texas,
21 at the instance of the Plaintiffs, pursuant to
22 Notice and the Federal Rules of Civil Procedure.
23

24 *****
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*** VOLUME I ***

May 7, 1987

PROCEEDINGS

THE VIDEOTECHNICIAN: Okay. This video deposition is being taken in Cause No. B-84-1103-CA and is filed in the United States District Court for the Eastern Division of Texas, Beaumont Division. The style of the case is Cecil Scott, et al versus Monsanto Company.

For identification purposes, the videotechnician is James Heironimus of the firm Executive Service Groups. The Certified Court Reporter present today is Linda Baker of the firm Nell McCallum & Associates.

The date today is May 7th, 1987. The time is approximately 9:37 a.m.

We are here today to take the oral and video deposition of the witness, Mr. Elmer P. Wheeler.

At this time, will Counsel please

1 state their appearances for the record.

2 MR. LACEY: David Lacey, for the
3 plaintiffs.

4 MR. SHOEBOTHAM: Jon Shoebotham,
5 representing Monsanto Company.

6 THE VIDEOTECHNICIAN: Would the court
7 reporter please swear in the witness.

8
9 *****

10
11 ELMER P. WHEELER,
12 having been first duly sworn, testified as follows:

13
14 EXAMINATION

15
16 QUESTIONS BY MR. LACEY:

17 Q Will you state your full name for the record,
18 please?

19 A My name is Elmer P. Wheeler.

20 Q Where do you live, Mr. Wheeler?

21 A I live at 110 Cool Springs Drive, Camden, South
22 Carolina.

23 Q We're here today at a spot very close to your
24 home, then. Is that correct?

25 A Yes, sir; about seven miles.

1 Q Okay. Have you been deposed before?

2 A Yes, sir.

3 Q Okay. You are familiar, then, with the process
4 of taking a deposition.

5 A Through one experience, sir.

6 Q Okay. If at any point you feel like you need
7 to stop and take a break, just let us know, and we'll do
8 that. Okay?

9 A Thank you.

10 Q Can you tell me about your employment history?

11 A Yes, sir.

12 I graduated from college in 1936 with a degree
13 in chemistry in the College of Technology at the
14 University of New Hampshire.

15 That fall I was nired by the City of Concord,
16 New Hampshire, Health Department as a sanitarian. The
17 principal job was to ensure the hygienic conditions in
18 food-handling establishments, meaning restaurants,
19 milk-pasteurization plants, working with the public on
20 complaints of nuisances.

21 In the fall of 1937, the doctor who had been
22 the Health Officer for the City had become head of the
23 State Department of Health. And he arranged for me to
24 take courses in -- originally, in biology and Public
25 Health at the Massachusetts Institute of Tecnology.

1 I was there until January of 1937 -- although
2 the intention was that I be there for the full year --
3 working toward a degree, which in the case of MIT was
4 called a Certificate, rather than a Master's Degree; a
5 Certificate in Public Health.

6 I was called back in -- at the end of the first
7 term to work for the State Health Department in the
8 initiation and establishment of an industrial hygiene
9 program for the state.

10 From then until the beginning of the school
11 year in September of '38, I visited -- I don't recall
12 the number -- perhaps 200 industrial plants in the
13 state, with two other part-time employees and with the
14 head of the unit.

15 We covered every employer -- every -- every
16 employer's establishment in the state that employed over
17 five people. This was my indoctrination into the
18 industrial world.

19 New Hampshire had a wide variety of types of
20 industry, I think, representing almost every type, other
21 than skilled production, refining, and pharmaceutical
22 industry. The biggest industries were manufacture of
23 shoes, woolen and cotton mills, the mining of granite --
24 we were the Granite State -- many woodworking
25 establishments, furniture-making, et cetera.

1 At the end of the summer, when we had completed
2 this survey, which covered, I think, 93,000 employees, I
3 went back to school at MIT. But by that time my
4 interests had turned more to the specialty of industrial
5 hygiene, rather than the field of Public Health.

6 The courses that I took at MIT were essentially
7 what might be considered premed courses that included
8 biology, physiology, communicable diseases, sanitary
9 engineering, statistics, public health administration;
10 whereas, the industrial hygiene courses were offered by
11 the Harvard School of Public Health. So I spent that
12 year taking courses at both institutions.

13 With the switch in emphasis from general public
14 health to industrial hygiene, I ended up without the
15 opportunity to do a thesis at either school that would
16 have led to a graduate degree.

17 I returned to New Hampshire at the end of that
18 school year, which would be June of 1938.

19 In 1940 the -- during the period from then
20 until I was called to active duty on April 17th, I
21 believe, 1941, I carried out detailed industrial hygiene
22 surveys of many of the plants in the state where such
23 work had been indicated by the previous walk-through
24 studies. This included foundries, the quarrying --
25 granite quarries, shoe manufacturing, paper

1 manufacturing.

2 Perhaps I didn't mention earlier that
3 Monsanto -- that -- that New Hampshire had a number of
4 large paper-production plants.

5 In 1941, in April, I went on active duty with
6 an anti-aircraft unit, because I'd -- to help put me
7 through college, I'd taken ROTC. And I went on duty as
8 a First Lieutenant with an outfit that eventually went
9 overseas and was in the African Theatre from Casablanca,
10 crossing all of the northern area of that part of
11 Africa, ending up in Tunisia; and then going to Sicily,
12 in October of '43 to Italy, to Anzio; and the unit
13 returned home from Anzio April of '44.

14 The need for officers in anti-aircraft, perhaps
15 somewhat surprising, was not as great as it had been;
16 because even that early, the Luftwaffe was somewhat
17 on --on its decline.

18 There was a demand for industrial hygienists to
19 serve in a laboratory under the direction of the Surgeon
20 General of the Army. And I was transferred from
21 anti- -- from coast artillery anti-aircraft to the
22 Sanitary Corps and assigned to the Army Industrial
23 Hygiene Laboratory -- excuse me -- which was based at
24 the Johns Hopkins School of Hygiene and Public Health at
25 Baltimore.

1 We were quartered there until, I believe, just
2 after V-J Day, when the laboratory was moved to an
3 installation that was within the Chemical Corps of the
4 Army near Aberdeen, Maryland.

5 I had decided and had indicated that I thought
6 that that type of service, which provided industrial
7 hygiene services for Army-owned, Army-operated
8 installations -- and there's a distinction here;
9 because, of course, during the War there were many, many
10 contract companies making tanks and ammunition, what
11 have you, within the Ordnance Department of the Army,
12 and they had their own industrial hygiene unit. So we
13 were concerned with the Army-owned, Army-operated
14 installations, which I think at that time had perhaps as
15 many as a million and a half civilian employees.

16 I had thought from experience with one Naval
17 installation when I was working with the State Health
18 Department -- I had experienced some difficulty in
19 trying to provide a service for that installation --
20 that the military should continue with a cadre, at
21 least, of people in peacetime in the event of any
22 further mobilization of -- of people. And I decided to
23 stay with the lab, with the laboratory as a civilian
24 employee.

25 And I did so until July of 1947, when I left

1 the Army laboratory and joined Monsanto as an industrial
2 hygienist.

3 And I was with Monsanto for 29 years, retiring
4 at age 60, 11 years ago.

5 Q Well, that -- what year was that that you
6 actually retired? That would have been 1976?

7 A Yes, sir; June 30th, I believe.

8 Q You retired prior to I guess what I'm thinking
9 of as the normal retirement age at 65?

10 A Yes, sir. We had retirement programs where
11 people could retire after -- I guess in my case the
12 provision was with 25 years' service, and being over age
13 55 -- without a too-significant loss of pension.

14 Q So you chose to take an early retirement from
15 Monsanto.

16 A Yes, sir.

17 Q What job did you take when you joined Monsanto
18 in 1947?

19 A I joined Dr. Kelly, who was the Medical
20 Director for the company, as the first industrial
21 hygienist the company employed.

22 Q Where was that employment located?

23 A At the company's headquarters in St. Louis.

24 Q When you were serving as a civilian employee in
25 the Army after World War II up to '47, where were you

1 stationed?

2 A Excuse me. At -- at the time I became a
3 civilian employee, we were not at Johns Hopkins. We had
4 moved to -- I'm ashamed I can't remember the -- the name
5 of the installation, but it was a chemical -- Army
6 Chemical Corps operation with an adjacent ordnance
7 installation called Aberdeen not far away, but --

8 Q What's --

9 A -- it was on the outskirts of Baltimore.

10 Q Okay. In the Baltimore area?

11 A Yes, sir.

12 Q Now, if I understand what you've told me
13 correctly, you -- your Bachelor's Degree was a straight
14 chemistry- --

15 A Yes, sir.

16 Q -- type degree?

17 A Yes, sir.

18 Q And then --

19 A But in the College of Engineering, not in Arts.

20 Q And then you have done work at both MIT and at
21 Harvard in areas that have scientific relevance, but
22 neither one of those led to an actual certificate or a
23 degree.

24 A That's right, sir. I was sweating out air
25 raids, if you will, in -- in Algiers when I received

1 correspondence that if I didn't finish a -- a thesis in
2 the next three months, I was losing my opportunity to
3 get a graduate degree.

4 Q Had you completed all of the course work by
5 1938 to -- that was required for a graduate degree?

6 A I think so, sir.

7 Q Okay. And did you ever start any work on a
8 thesis --

9 A No, sir.

10 Q Okay. That -- that would have led to a degree
11 in -- a Master's Degree in Public Health?

12 A I'm not certain now, sir. I think, as I
13 indicated, MIT issued what they -- somewhat the
14 equivalent of a Master's Degree, but what they called a
15 Certificate in Public Health; whereas, Harvard granted a
16 Master's Degree, a Master of Science Degree. And I'm
17 not sure, frankly, which university would have given me
18 the degree.

19 Q I see.

20 A I would have hoped it would have been Harvard;
21 because by that time my emphasis was on industrial
22 hygiene, and that was their forte.

23 Q What generally does an industrial hygienist do?

24 A An industrial hygienist is concerned with the
25 work environment as it relates to many factors that

1 could have an effect on health.

2 This includes working with chemicals. It
3 includes the harmful effects of excessive noise, the
4 effects of excessive radiation, poor lighting.

5 And these various aspects have led to
6 specialties within the field of industrial hygiene as
7 subareas of specialties, if you will.

8 The control -- the engineering control of
9 exposures is -- requires expertise that an analytical
10 chemist might not have to analyze samples that the field
11 industrial hygienist would take. By the same token, the
12 analytical chemist would not necessarily be prepared to
13 design an industrial exhaust ventilation system. The
14 chemist nor the engineer would not be an expert in the
15 field of toxicology.

16 The general practitioner, if you will, in the
17 industrial hygiene field or, as our Certification Board
18 designates it, the comprehensive practice of industrial
19 hygiene, has some background and knowledge in all of
20 these areas, but not -- may not necessarily be an expert
21 in any one of the component aspects of the practice.

22 Q Is the field of industrial hygiene basically
23 concerned with trying to protect the health and safety
24 of the worker in the work environment?

25 A I should have answered your question with a

1 definition of "industrial hygiene." And I don't know
2 that I recall the exact definition any more, but it
3 is -- it has been defined as the art and science of
4 protecting workers, and, more recently, the total
5 environment, and promoting the health of people.

6 Q I guess what my question is directed to, for
7 example, is whether an industrial hygienist is primarily
8 concerned with protecting -- and let's just take an
9 industrial hygienist who works for Company X -- his
10 primary obligation is to see that the workers at that
11 company have a safe place to work and protect their
12 health, as opposed to, for example, being primarily
13 responsible for protecting the health of people who may
14 buy the products of Company X.

15 A I believe the -- a -- an industrial hygienist
16 working for a company does have some responsibility to
17 see that the company's products are not only
18 manufactured safely, but are transported and used
19 safely.

20 And I'd like to make a distinction. You've
21 mentioned the word "safe," and perhaps the definition of
22 "industrial hygiene" doesn't necessarily point this out;
23 but the industrial hygienist is concerned with the
24 environment, which on the surface may appear to be
25 harmless. And the working conditions are something that

1 prevail 40 hours a week -- eight hours a day, 40 hours a
2 week.

3 Safety engineering, on the other hand, is
4 concerned with preventing an accident. Most accidents
5 are preventable. They're more concerned with the
6 mechanical environment of the worker. They're
7 snort-time, acute instances.

8 So there is that distinction between a safe
9 environment and a healthful environment, for purposes of
10 the definition.

11 Q Let me see if I understand what you're saying.

12 First, as you see the -- the job of industrial
13 hygienist, it's not just for the workers of the company
14 ne's working for, but also for people who may use the
15 products of the company. Correct?

16 A By my definition, yes, sir.

17 Q Okay. And then if we look at the particular
18 hazards that may exist in the workplace, the problem of
19 an improperly stowed piece of equipment that could fall
20 on somebody's head, while that wouldn't be outside the
21 role of industrial hygienist, would be primarily
22 something the safety engineer would look at; whereas,
23 the problem of the cumulative effect of daily exposure
24 to something like noise or chemicals or poor lighting
25 that might acculamate over time would be more the

1 province of the industrial hygienist. Correct?

2 A I believe that's correct, but I may mis- --
3 may -- may have misunderstood whether you said the
4 falling of a heavy object would or would not be within
5 the province of an industrial hygienist.

6 Q Well, as I understand it, it would be within
7 it; but it would be more something that a safety
8 engineer would look at than an industrial hygienist.

9 A Definitely.

10 Q Okay. And maybe if we -- if we separated those
11 two things out -- you used the word "acute." The safety
12 engineer's more concerned about the acute sort of
13 instantaneous-type problems; whereas, the industrial
14 hygienist is more concerned about the long-term
15 chronic-type problems.

16 A That's right.

17 Q Okay.

18 Is there a board or a group or association of
19 people who practice industrial hygiene?

20 A There is the American Industrial Hygiene
21 Association, which I joined in 1948. I was on the Board
22 of Directors for eight years. I was president in 1958
23 to '59.

24 There's a second group entitled the American
25 Conference of Governmental Industrial Hygienists, whose

1 membership or the membership of which is limited to
2 Government employees and those in universities and
3 research institutes. I -- I can't say that
4 industrial -- industry-employed peoples are barred, but
5 I don't know of any that are members. I think their
6 charter probably specifies that it's an independent
7 group.

8 The two work very, very closely together. They
9 are -- most of the ACGIH members are also AIHA members.

10 The AIHA membership when I was president was
11 probably 1300 to 1500 people. Today it's nearer 8,000.

12 The two organizations sponsor an annual meeting
13 attended by not only people in the United States, but
14 from abroad.

15 The American Industrial Hygiene Association now
16 has, I think, 50 local section groups, including several
17 in Canada, Great Britain, Italy, and I believe Spain and
18 France, Japan.

19 In addition to the AIHA, I belong to the Air
20 Pollution Control Association and was first
21 vice-president of that group at one time.

22 I'm a member of the -- or an emeritus member of
23 the American Chemical Society.

24 I was a Fellow of the American Association for
25 the Advancement of Science.

1 I've been a member of the American Public
2 Health Association, the Research Society of America, the
3 British Occupational Hygiene Society.

4 I served on an advisory committee of the
5 Environmental Protection Administration for four years,
6 and for a similar period I was on an industrial liaison
7 panel for the Food Protection Committee of the National
8 Academy of Sciences.

9 Q Wood protection?

10 A Food.

11 Q Food protection. I'm sorry.

12 Going back to the American Industrial Hygiene
13 Association, that's one of these two general bodies for
14 industrial hygienists?

15 A Yes, sir.

16 Q And the only one for which you would have been
17 qualified for membership, because you weren't at a
18 Government institution or whatever. Correct?

19 A Yes, sir.

20 Q What criteria exists for becoming a member of
21 the American Industrial Hygiene Association?

22 A A -- one of the requirements was three years of
23 practice in the field -- I believe it was three years --
24 plus academic -- an appropriate academic background.

25 Q Were any tests required?

1 A For membership?

2 Q Uh-huh.

3 A No, sir.

4 There is the American Board of Industrial
5 Hygiene, which certifies members in the comprehensive
6 practice of industrial hygiene as well as its several
7 subdivisions, including air pollution, toxicology,
8 analytical chemistry, et cetera.

9 And I am certified by that Board, but I was
10 grandfathered in when the Board was established by the
11 American Academy of Industrial Hygiene. Subsequent to
12 that, the new -- the new people that have been certified
13 have had to take examinations.

14 Q And when you say you were "grandfathered in,"
15 you mean you didn't have to take that examination?

16 A That's right, sir.

17 Q What -- what's the relationship between the
18 practice of industrial hygiene and occupational
19 medicine? I've heard those terms sometimes used
20 together or generally associated. How do those things
21 relate to each other?

22 A Occupational medicine, of course, requires a --
23 a medical degree to practice occupational medicine.

24 The term also is sometimes used as
25 "occupational hygiene," which would include the

1 industrial hygienist and nonmedical personnel. A --
2 many of the full-time occupational physicians belong to
3 the American Industrial Hygiene Association.

4 The -- on the other hand, the industrial
5 hygienists, being nonphysicians, are not eligible for
6 membership in the Occupational Medical Society.

7 Q Are people who practice occupational medicine
8 concerned about the same things that industrial
9 hygienists are concerned about? In other words, is this
10 two disciplines working toward the same goal of
11 protecting workmen in the workplace?

12 A I -- I would say the objective in both cases is
13 the protection and promotion of the health of workers.

14 A lot -- the big difference in the occupational
15 health field is that there are many physicians who are
16 part-time and who are responsible for the care and
17 health of department store clerks and insurance company
18 employees; nonmanufacturing types of employment.

19 On the other hand, those who are employed with
20 manufacturing companies are not only aware of but
21 consider the industrial hygienist their right hand;
22 because in their case, they again are not familiar with
23 the engineering techniques of devising control
24 equipment, although they can well recognize a need for
25 it, nor are they prepared to do analytical chemistry.

1 Q I note that you indicated that Harvard, which
2 is where you did some of your studies after your -- you
3 attained your Bachelor's Degree was interested in this
4 field of industrial hygiene?

5 A Yes, sir. At that time, it was one of perhaps
6 only five universities that taught industrial hygiene
7 and awarded Bachelor of Science Degrees as well as
8 Doctor of Science -- Doctor of Philosophy Degrees in
9 Industrial Hygiene.

10 Q What other institutions were early leaders in
11 areas like industrial hygiene, occupational medicine,
12 and concern for workers in the workplace?

13 A I believe the University of California --

14 Q Do you know which campus?

15 A No, sir.

16 -- Johns Hopkins; I believe Wayne University in
17 Detroit was early in the field. I -- I'm sorry. I
18 can't -- I can't recall the names of all of them. But
19 there were not more than four or five, I believe.

20 Q Was the University of Cincinnati involved in
21 that?

22 A I should have mentioned that. Yes, sir.

23 Q And I take it the fact that when the Army
24 brought you back to a facility and it came to Johns
25 Hopkins, that was related in part to their involvement

1 in that field?

2 A Yes, sir. The head of their program was a
3 world-renowned lady, Dr. Anna Baetjer, who was the Dean
4 or the Director of the school.

5 May I have a drink of coffee?

6 Q Certainly. You can feel free to -- to go ahead
7 and drink coffee while we're doing this, if you want.
8 This is informal; and any time you want to stop, take a
9 break, do anything, you tell us, and -- we're at your
10 pleasure.

11 A Thank you, sir.

12 Q What program was this lady the head of? What
13 was her name?

14 A Dr. Anna -- middle initial B, I believe -- the
15 last name was Baetjer, B-a-e-t-j-e-r.

16 Q And she headed up what sort of program there
17 at --

18 A She headed up the -- I think the whole -- I
19 think the exact name was the School of Hygiene and
20 Public Health.

21 Q Okay. And you said she was world-renowned for
22 her work?

23 A I beg your pardon?

24 Q She was, you say, world-renowned for her work?

25 A Yes, sir.

1 She was also an advisor to the Army Industrial
2 Hygiene Lab. In fact, our laboratories were across from
3 her office.

4 Q Is that located at -- on the main campus there
5 of the Johns Hopkins?

6 A No, sir. This was 615 South Wolfe Street,
7 across the street from the Johns Hopkins Hospital.

8 Q I see. A little bit north of downtown
9 Baltimore there?

10 A I would say west, sir.

11 Q West? Okay.

12 Now, let me try to understand what the
13 situation was there at Monsanto when you came on board.
14 You mentioned that there was a Medical Department -- is
15 that correct? -- when you arrived at Monsanto in 1947?

16 A Yes, sir.

17 Q And what groups were in existence in the
18 Medical Department, or what specialties were already
19 represented there?

20 A Dr. Kelly became Medical Director for the
21 company, I believe, soon after he got out of the
22 service, which may have been '45 or '46.

23 When I joined him, the department had in
24 addition two part-time physicians, a medical technician,
25 and a secretary.

1 Q These part-time physicians: Did they have any
2 particular specialties or roles in the department?

3 A The -- their chief function was to -- in the --
4 in the case of one gentleman, to perform pre-employment
5 and periodic physical -- physical examination of the
6 people in the main office facility.

7 Q When you say "the main office," are you talking
8 about the people like the -- the executives at the
9 company, or -- or you mean people --

10 A No, sir. I'm differentiating from the
11 manufacturing plant, which was next door.

12 Q And they -- he did or did not work in the
13 manufacturing plant? When you said "main office," does
14 that mean the manufacturing plant?

15 A No, sir.

16 Q Oh, okay. Okay. Okay. So one person worked
17 in the nonmanufacturing -- worked with the
18 nonmanufacturing employees in the main office?

19 A Performing pre-employment, periodic physical
20 examinations --

21 Q All right.

22 A -- and handling paper cuts on the part of
23 secretaries, perhaps, and this --

24 Q Heavy-duty duty?

25 A The second gentleman Dr. Kelly, I think,

1 designated as Assistant Director was a Professor at
2 Washington University Medical School in St. Louis. And
3 his function was pretty much the same, except he was an
4 older man than the younger one that I've mentioned and
5 was teaching preventive medicine at Washington
6 University Medical School.

7 And as a matter of fact, for one or two years,
8 I guess, I lectured to his juniors in medical school on
9 the importance and the -- the -- the fundamentals of the
10 practice of industrial hygiene.

11 Q Do you recall the name of this individual who
12 performed the medical exams for the --

13 A I --

14 Q -- the office people?

15 A I remember both their names, sir. The senior
16 man was Dr. George Saunders.

17 Q And this was the one who did the examinations?

18 A He was -- he also did examinations, but he had
19 a -- a broader background in the field of preventive
20 medicine. He did not have his own practice of medicine.
21 He left Monsanto and became the Medical Director for
22 Mobil Chemical -- Mobil Oil Company.

23 The other fellow, who was younger, was Dr. Ray
24 Mezera, who's deceased. Well, I -- I'm sure
25 Dr. Saunders must be deceased, too, at this point. But

1 Dr. Mezera suffered a stroke -- oh, I would say sometime
2 in the early '70's, before I retired. But he -- he
3 still worked part-time for Monsanto, although his chief
4 activity was running his own practice of internal
5 medicine.

6 Q It was Dr. Saunders who was the assistant -- or
7 the Professor at the Washington University and also the
8 Assistant Director?

9 A Yes, sir.

10 Q Okay. And he eventually went on to Mobil Oil?

11 A Yes, sir.

12 Q Now, were there any people in the Medical
13 Department who actually performed examinations for --
14 for people who worked in the manufacturing facilities?

15 A No, sir, although the group did include the
16 Research -- Organic Division Research people, which may
17 have numbered 100 people or so.

18 Q You're talking about the group that Dr. Mezera
19 looked after?

20 A Yes, sir. The plant next door had its own
21 physician, sir.

22 Q And was he a part of the Corporate Medical
23 Department or not?

24 A No, sir. He was an employee of the plant.

25 Q Okay. And was that true for each of the plants

1 that Monsanto --

2 A Yes, sir.

3 Q -- had?

4 A Yes, sir.

5 Q What duties did Dr. Saunders basically carry
6 out at the time you arrived at the Monsanto Medical
7 Department?

8 A Again, he was primarily concerned with the
9 periodic -- excuse me -- periodic physical examinations
10 of employees. I believe it was the more senior
11 employers (sic). I -- I believe he was with us one
12 morning a week and one afternoon a week, something of
13 that sort; whereas, I believe Dr. Mezera was there every
14 forenoon.

15 Q Did -- were there a lot of -- other than
16 routine physical exams, were there a lot of accidents or
17 things like that that needed treatment?

18 A No, sir.

19 Q Okay.

20 A I don't recall a single accident that caused
21 any lost time. I -- I was not trying to be jocular,
22 particularly, when you mentioned the paper cuts, because
23 those are not infrequent.

24 Q And they hurt.

25 A I've had a few myself.

1 Q I have, too. Painful.

2 Dr. Kelly was, then, the only person who was
3 working full-time with a medical background or even a --
4 a particular academic training background when you
5 arrived at the Medical Department?

6 A Yes, sir.

7 Q And you became the second full-time trained
8 person in the department?

9 A Yes, sir.

10 Q Prior to your arrival, I -- I take it that
11 the -- to the extent that the obligations or the
12 functions of an industrial hygienist or somebody
13 involved in occupational medicine was carried out, that
14 fell on Dr. Kelly's shoulders?

15 A Yes, in that he routinely visited the Monsanto
16 plants and supervised the -- or reviewed the activities
17 of the local plant physicians, who, again, for the
18 smaller plants, which were the largest number that we
19 had, were part-time physicians; and with management, of
20 course, of the plant, as well as the safety engineers at
21 the plant.

22 Q How many plants did Monsanto have at that time?

23 A I believe about 20.

24 Q Were they all located in the United States?

25 A No, sir -- no, sir. I'm sure that at that time

1 we had one plant in North Wales through a wholly-owned
2 subsidiary in Great Britain. And I believe there were
3 two in Australia. There were two, I believe, in Canada
4 that were Monsanto Canada, which I do not think was
5 wholly owned by Monsanto at that time.

6 Q Monsanto had an interest in it, but not 100
7 percent ownership?

8 A I believe that's right, sir.

9 Q The Medical Department was stationed in
10 St. Louis, Missouri?

11 A The Corporate Medical Department; yes, sir.

12 Q Which is where you and Dr. Kelly were?

13 A Yes, sir.

14 Q And did the Corporate Medical Department have
15 responsibility for all the Monsanto facilities
16 worldwide?

17 A Yes, sir.

18 Q So -- well, let me ask it this way: Were --
19 were the other -- not just the Medical Department, but
20 was -- was the group of people there in St. Louis
21 generally, the other departments, also responsible
22 ultimately for what was happening around the world? I
23 mean, was that the world headquarters of Monsanto, I
24 guess is the way I'd put it.

25 A I can't answer that, sir. I don't know how

1 much autonomy units other than the Medical Department
2 may have been given.

3 Q So all you can be sure of, as far as the
4 Corporate Medical Department went, you were the world
5 headquarters?

6 A Yes, sir.

7 Q Was the president of the company located there
8 in St. Louis?

9 A Yes, sir.

10 Q So most -- were most of the chief officers of
11 Monsanto there in St. Louis working with you all?

12 A Yes, sir.

13 Q Did your -- the extent of your supervision or
14 responsibility for Monsanto facilities include going
15 overseas from time to time to see other facilities
16 overseas?

17 A I believe Dr. -- excuse me; I believe
18 Dr. Kelly's first trip to the plants in Great Britain
19 was in -- I think in 1954.

20 Our part-time Medical Director for Monsanto in
21 Great Britain visited us in St. Louis in '55.

22 And in 1956 I went to Europe for the first
23 time.

24 Q How many times did you travel overseas for
25 Monsanto while you were with the Medical Department?

1 A As I just indicated, the first trip was in
2 1956. The next trip was in 1969; again in 1970; and
3 pernaps thnee or four more trips, with the last one, I
4 think, in December of 1975, six montns before I retired.

5 Q When you arrived at the Medical Department, did
6 you and Dr. Kelly make a division of the overall
7 responsibilities that the Medical Department would have
8 between the two of you?

9 A No, sir.

10 Q Well, how -- what -- after you arrived at
11 Monsanto and got your feet on the ground, what job
12 responsibilities fell to you?

13 A My principal job was to visit all of the
14 Monsanto locations at intervals; review the operations,
15 in terms of looking for exposures that were
16 satisfactorily controlled or which needed further
17 control; making recommendations for any improvements
18 that I felt were necessary.

19 I might add that Dr. Kelly also visited every
20 plant, I think, at least once a year to review the
21 medical records of our employees and to review with the
22 physicians and, again, with safety engineers and with
23 plant management any circumstances that might need his
24 attention.

25 Q How frequently were you in Monsanto facilities?

1 A How frequently was I in Monsanto facilities?

2 Q Yes. I'm talking about plants now.

3 A Yes. I understand. I -- I don't have the best
4 of hearing.

5 Q I'll try to speak up.

6 A Again, I was pretty much scheduled to visit all
7 the plants at least once a year, and the larger plants
8 at least twice a year, and at any other time that they
9 asked for my services or it appeared that a visit would
10 be profitable.

11 Q Would you make surprise visits to see what was
12 really going on, or did they always know you were coming
13 and have a chance to kind of get things in order in case
14 that seemed appropriate?

15 A I never arrived at a plant unannounced. I also
16 have -- there's no question in my mind that the plants
17 took special measures to prepare them -- to prepare
18 the -- excuse me; to prepare the plant for my visit.

19 Q Sure. I mean, that's just like cleaning the
20 house when you've got company coming.

21 A I don't think they did that for my -- for me,
22 sir.

23 Q They didn't?

24 A No, sir.

25 Q Okay. Well, what sort of special precautions

1 did they take, or what did they do to prepare for your
2 visits?

3 A Well, they probably made hotel reservations;
4 arranged to have me picked up --

5 Q Uh-huh.

6 A -- arranged that the safety engineer, the
7 physician, the manufacturing superintendents would be
8 available to go through the plant with me.

9 They might entertain me the first night, if it
10 was a -- more than a one-night visit. I was probably
11 alone the second, third, and fourth nights. I spent
12 many, many nights having dinner alone in hotels and
13 motels in 29 years.

14 Q Not a very pleasant experience.

15 A Certainly not at the end. I -- I used to
16 enjoy -- if I was in New York for a committee meeting, I
17 used to enjoy walking the city, and the same in
18 Washington. But I think that became imposs- --
19 impossible sometime in the '60's.

20 Q Your -- your expectation was when you went to a
21 Monsanto plant, even though they knew you were coming,
22 that -- that they didn't take any effort -- didn't make
23 any effort at all to -- to get things in order; you
24 anticipated that it was business as usual.

25 A I don't know quite how you phrased the

1 question.

2 Q Well, let me see if I can -- I can try to --

3 A I think I told you, sir, that I feel sure that
4 there were never any special housecleaning efforts --

5 Q Okay.

6 A -- precautions taken because I was coming to
7 visit the plant.

8 Q Okay. How much advance notice would people
9 have of your visits?

10 A Normally, from one to maybe three weeks.

11 Q Certainly, from your standpoint as an
12 industrial hygienist, it would not be desirable to have
13 special precautions taken in preparation for your visit,
14 because you would want to see the things the way they
15 really were. Correct?

16 A Not only that, I think the plant management
17 wanted me to see the things the way they were.

18 Q Okay. Now, when you went to individual plants,
19 would you look at each department or each manufacturing
20 operation within that plant?

21 A Normally, yes, sir.

22 Q So if a plant made, say, a half a dozen
23 chemicals, you would look at each of the half a dozen
24 chemical operations individually?

25 A Yes, sir.

1 Q Was it your custom to prepare reports of what
2 you found?

3 A Yes, sir.

4 Q And would those reports describe the
5 precautions that were being taken in each of those
6 areas?

7 A Yes, sir.

8 Q Describe any problems that you saw as potential
9 problems?

10 A Yes, sir.

11 Q Recommend a way to correct those problems?

12 A If there were problems, I would recommend
13 corrections; yes, sir.

14 Q Did you ever find situations where you thought
15 too many precautions were taken and recommend doing away
16 with some precautions?

17 A No, sir.

18 Q Typically, from the industrial hygienist's
19 point of view, it's better to be overly safe than
20 underly safe. Correct?

21 A I think it's -- from an industrial hygienist's
22 standpoint, one wants to certainly control exposures to
23 the degree necessary -- to the degree necessary to
24 prevent ill effects.

25 At the same time, I don't think it's the

1 responsibility of the industrial hygienist to suggest
2 that -- a plant doing something more than was necessary
3 to provide adequate protection.

4 If I may digress just a moment --

5 Q Surely. Feel free to digress.

6 A I recall being on an annual inspection trip.
7 The company had a program of annual housekeeping
8 inspection of all the plants by people in the
9 middle-management group, perhaps.

10 I remember -- remember being in one plant where
11 we took off our shoes when we walked into the power
12 plant, because the operator was so proud of the -- his
13 housekeeping that he didn't want us to mar the paint on
14 the floor. Now, I think it would be the last thing in
15 the world that any reasonable person would suggest that
16 maybe this wasn't necessary, even though I'm sure it
17 wasn't.

18 Q Okay.

19 A But he was a worker who was proud of his
20 workplace and took special care to keep it as clean as a
21 food-handling establishment.

22 Q Okay. And you didn't reprimand the worker for
23 that type of care?

24 A Not for that.

25 Q The sort of safety maxims that I think of are

1 things like, you know, "An ounce of prevention is worth
2 a pound of cure," and, "Better safe than sorry." Are
3 those the sorts of things that industrial hygienists
4 think about? That if there's a question about whether
5 to exercise a safety precaution or not, you exercise it?

6 A I think that's only reasonable; yes, sir.

7 Q Now, you've mentioned these -- the
8 housekeeping. You described this fellow who kept his
9 floor so clean that he really didn't want your shoes to
10 scuff it up.

11 When you talk about housekeeping in the
12 chemical business, you are talking about keeping things
13 in place and keeping them clean, and keeping spills off
14 the floors, and things like that. Is that correct?

15 A Yes, sir.

16 Q And -- and those sorts of precautions and that
17 type of thing, housekeeping, is something you would
18 expect from every -- maybe not to the degree you
19 described from this one fellow, but something you would
20 expect in every plant that you went to. Correct?

21 A Yes, sir.

22 Q And while it may be more of a safety engineer's
23 job than an industrial hygienist's job, you don't want
24 liquid spilled on the floor that you can come by and
25 slip in and fall down on; you don't want parts that are

1 covered with liquid so they're slippery, and those sorts
2 of things. Is that a fair statement, even from an
3 industrial hygienist's standpoint?

4 A I would think so; yes, sir.

5 Q And so housekeeping was important for
6 everybody. Is that correct?

7 A Yes, sir.

8 Q And that, I suppose, may mean from time to time
9 polishing the floor, but not -- that's not the sort of
10 housekeeping you're normally talking about when you talk
11 about housekeeping in a chemical plant, is it?

12 A No, sir.

13 Q You're talking about keeping things picked up
14 and put away and in place.

15 A Yes, sir.

16 Q In the various plants that you visited, were
17 there different precautions taken in different areas of
18 the plants in some cases, depending on what they
19 produced; what chemicals they made?

20 A I'm sure there were, as long as the results
21 were effective in preventing illness or injury.

22 Q Well, it was -- if I understand what you're
23 saying, whatever precautions were necessary in any
24 particular area of the plant to prevent illness or
25 injury is what you would want as an industrial

1 hygienist. Correct?

2 A I don't understand that.

3 Q You would want to make sure that every worker
4 in any particular plant working with any particular
5 chemical has whatever precautions are necessary to
6 prevent illness or injury.

7 A Yes, sir.

8 Q And I guess my question is: Depending on the
9 chemicals that they worked with, would those precautions
10 differ from one plant to another or even within a plant,
11 one section of a plant to another, depending on the
12 chemicals they were working with?

13 A I believe they could differ; yes, sir.

14 Q And you certainly were not in the business
15 of -- of recommending the same level of precautions for
16 every worker in every plant, regardless of what they
17 worked on, were you?

18 A Was I responsible?

19 Q Well, did you do that?

20 A My purpose was to ensure to the best -- best of
21 my -- my ability that the work practices were such as to
22 avoid problems with health.

23 Q Let -- let me see if I can -- I can ask the
24 question in a way that'll make clear what I'm asking
25 you.

1 Let me just assume that there's a particular
2 plant that makes a particular chemical where it's
3 appropriate for that process that the workmen have
4 special protective clothing, and that's what you as the
5 industrial hygienist think is -- is appropriate for that
6 worker working with those chemicals. And then there's
7 another section of the plant where you as the industrial
8 hygienist don't think that a worker working with these
9 other chemicals needs special protective clothes.

10 Do you follow what I'm saying there?

11 A Yes, sir.

12 Q You wouldn't automatically recommend that every
13 worker have special protective clothing just because
14 some workers need it, would you?

15 A That's right, sir.

16 Q And you would look at each particular worker
17 and what chemicals he was producing to determine what
18 was needed in that area. Correct?

19 A Yes, sir.

20 Q Okay.

21 Were there certain areas of plants that were
22 identified as toxic areas, where people were working
23 with dangerous chemicals?

24 A Excuse me. Yes, sir.

25 Q Was that something that every department in

1 every plant was identified as a toxic area, or just some
2 departments in certain plants?

3 A My recollection is that the use of the word
4 "toxic" varied from plant to plant and did not
5 necessarily reflect the general industrial usage of the
6 word "toxic," and the plant might designate a department
7 toxic which I would not designate as being toxic.

8 The question of toxic, sir, is, as I'm sure you
9 must know, is a -- is a relative degree. And for
10 whatever reason, either because of inexperience with the
11 normal parameters of calling material "toxic," one plant
12 or one department would be designated as having toxic
13 materials or being a toxic department and another not.

14 Q Were you ever involved in identifying any
15 departments as toxic?

16 A I can't recall being involved in the
17 designation of a department as being toxic.

18 Q Did you see any benefit to having a department
19 designated as toxic?

20 A I was concerned with operations, particularly
21 where the operation was new to a plant, where the hazard
22 was such that the operation for that particular chemical
23 that was being manufactured -- I don't know that I would
24 say it should be designated as a toxic department,
25 because of the differentiation or the definition of the

1 word "toxic"; but the use of the raw material in the
2 product itself was such that it required extreme caution
3 in handling the materials.

4 Q Was it your view that by designating a
5 department as toxic, that communicated to the workmen
6 that that was a department where you really needed to be
7 careful with what you were working with?

8 A I believe so; yes, sir.

9 Q And if it involved a chemical that that was
10 something workmen did need to be careful with, then that
11 was a beneficial development?

12 A Not necessarily, sir. I think there's a danger
13 of overuse of, say, the word "toxic" and -- and to use
14 your definition of it, toxic department or nontoxic
15 department. And the danger is that if the department
16 that really doesn't deserve that categorization makes it
17 difficult to ensure that in the department that should
18 have that designation follow the proper precautions,
19 particularly if the history is that there haven't been
20 any toxicity effects manifested.

21 Q Well, what I hear you saying is you don't want
22 to overuse the term.

23 A That's right, sir.

24 Q But properly used, it can be beneficial in
25 conveying to workmen the need to exercise special

1 precautions.

2 A Yes, sir.

3 MR. SHOEBOTHAM: David, why don't we
4 give Mr. Wheeler a break at some point in
5 here?

6 MR. LACEY: Yeah. Let me -- I've
7 just got a couple more questions, and
8 we'll try to do just that.

9 BY MR. LACEY:

10 Q "Toxic" is a word that -- that we see used in
11 the context of people who deal with occupational
12 medicine and industrial hygiene and the like. What are
13 some synonyms or laymen's words for the word "toxic"?

14 A Rather than synonyms, I -- I'm --

15 Q Or other words.

16 A -- I'd rather -- I'd rather describe a little
17 bit the procedures that we in industry use to -- to
18 define "toxic" or -- yeah, "toxic." Let's stick with
19 that word.

20 Q Well, let me -- let me ask you: What I'm
21 interested in doing is finding out, if you can tell me,
22 what are other words that are used in the same sense
23 "toxic" is used. I'll be happy to get you to define
24 that -- your definition of that for me later, but I'm
25 trying to find out what, if you know, are other words

1 that are used as synonyms for "toxic."

2 MR. SHOEBOOTHAM: Mr. Wheeler, I
3 think you started to answer that question.
4 Feel free to --

5 MR. LACEY: -- go on ahead and answer
6 it however you feel it was appropriate.

7 MR. LACEY: No, I'm going to object
8 to any answer that says, "I'm not going to
9 tell you what the synonyms are. I'm going
10 to define it for you instead."

11 I didn't ask for a definition. The
12 answer would be nonresponsive.

13 A I -- I'm sorry. I didn't mean to be
14 nonresponsive. I guess a general word, sir, would be
15 "harmful."

16 BY MR. LACEY:

17 Q Okay.

18 MR. LACEY: Why don't we just take a
19 break right there.

20 THE VIDEOTECHNICIAN: Okay. We're
21 off the record.

22
23 (Recess)

24
25 THE VIDEOTECHNICIAN: Okay. We've

1 been off the record for a short break.

2 We're now back on the record. The time is

3 11:10 a.m.

4 BY MR. LACEY:

5 Q Before our break, you indicated that a common
6 term that we might use for "toxic" would be "harmful" as
7 a word that we would understand, ordinary people?
8 Correct?

9 A Yes, sir.

10 Q Okay. You indicated that you have some
11 definitions or -- or information you would supply in
12 terms of understanding "toxic." Can you tell me what
13 your standards or definitions would be for "toxic"?

14 A I remember some of the numbers, sir. I don't
15 know that I remember all of them.

16 But there was a requirement by one of the
17 Government agencies -- and I'm not sure whether it
18 originated with the Bureau of Explosives or what
19 Government agency -- but they established numbers to
20 interpret data from acute animal toxicity studies as to
21 the degree of potential human hazard.

22 For example, if a compound killed 50 percent of
23 a dozen rats at a given number, the material had to be
24 classified as a poison. And the label requirement then
25 was the inclusion a skull and crossbones.

1 Similarly, if the lethal dose when the sample
2 was applied to the skin of shaved rabbits and held in
3 intimate contact with the skin by a rubber sleeve or a
4 rubber dam, I believe it was called -- I think the
5 number there was that if, because of absorption through
6 the skin, the lethal dose was less than 200 milligrams
7 per kilogram -- I -- I have to say I'm not positive
8 that that's the number, but that's my recollection --
9 regardless of oral toxicity, the material had to be
10 called "poison" and bear the skull and crossbones.

11 Three other studies, two of them using rabbits,
12 was to drop the undiluted material in the eyes of
13 rabbits and see the degree of irritation and/or loss of
14 sight if that -- if the material was that corrosive.
15 And a -- another test with rabbits was to try to get a
16 numerical number as to the degree of primary irritation.

17 And then for liquids or gases, rats were
18 exposed to a saturated vapor in a suitable chamber to
19 see if they survived a saturated atmosphere of the
20 material.

21 And there were -- there was nomenclature
22 related to these numbers or to these data that were
23 obtained in those acute studies.

24 I've mentioned the word "poison." There was
25 another classification. I'm sorry, sir; I don't

1 remember the ranges, but materials would be classified
2 as moderately toxic, slightly toxic -- I don't recall
3 that the word "innocuous" was used for those that failed
4 to kill any animals at a tremendous dosage, but I --
5 I -- I -- I recall there was a poison classif- --
6 classification, a moderately toxic classification, a
7 slightly toxic classification.

8 And these were -- these studies then led to --
9 they were -- well, they obviously were adopted for legal
10 reasons.

11 But, in addition, the Manufacturing Chemists
12 Association, which is now the Chemical Manufacturers
13 Association -- used to be MCA; now it's CMA --

14 Q Same people?

15 A Same people. I think it has maybe 180 members
16 from the chemical manufacturing industry.

17 Q These are companies that manufacture chemicals?

18 A Yes. I don't know that there was any exclusion
19 that said "manufacturers," but the name was
20 "Manufacturers." Pharmaceutical people have their
21 association.

22 But the MCA established a Labeling Committee.
23 I don't know on what date, but I certainly was aware of
24 their existence and their manual in the early 50's. And
25 the MCA group, I think, extended some of the thoughts

1 about appropriate labeling, using most importantly the
2 results of the data that I just mentioned for
3 classification and -- and warning label wording.

4 Q Let me try to understand some of the things
5 you've said.

6 You mentioned a couple of times, as you were
7 describing this determination of toxicity, the word
8 "acute." What do you mean when you talk about "acute"?

9 A An acute -- excuse me -- an acute study is a
10 one-term -- a one-time application or exposure of the
11 animals to a particular material, as compared to chronic
12 studies, which can extend to any -- anywhere from a
13 90-day feeding study to a two-year feeding study and
14 which would be included in chronic. I think the 90-day
15 studies were called subacute studies.

16 Q These labeling terminologies that you
17 describe -- so much per so many milligrams, or whatever
18 per kilogram, et cetera -- those were all based on acute
19 studies. Correct?

20 A When we referred to acute toxicity data, yes,
21 sir.

22 Q Okay. And -- and the -- the various things
23 that you have just told me about, the classifications,
24 were based on acute data. Correct?

25 A Yes, sir. The -- our -- our definition of a

1 toxic material would be related to those data;
2 whereas -- people not necessarily familiar with trying
3 to make a differentiation as to degrees of toxicity
4 would call something "toxic"; whereas, by any definition
5 that we were familiar with, it would not be classified
6 as toxic.

7 Q And what I'm getting at is that the Chemical
8 Manufacturers Association definition of "toxic" was
9 based on acute data, not on chronic data. Correct?

10 A No, sir. If --

11 Q How is that incorrect?

12 A It's correct in that if there were only acute
13 data available, and which was the norm for snipping and
14 handling, and where other type of exposure would not be
15 expected, then the data would apply.

16 Q Acute data would apply?

17 A The acute data would apply. If there were --
18 if -- in all cases, obviously, if there were human
19 experience reported that would indicate that the acute
20 data should be expanded in animals to find a better
21 correlation between the effect on animals and -- and
22 translation to humans, then that would -- would take
23 precedence.

24 Q Let me try to understand how this works. Let's
25 say you have a chemical that, using an acute standard,

1 would be considered nontoxic, single application, no
2 observed effect; but that in a chronic study or in a
3 chronic application may cause significant effects.

4 How did the Chemical Manufacturers Association
5 grade the toxicity of that chemical? Was it graded in
6 accordance with the acute studies? Was it graded in
7 accordance with the chronic studies? And if so, what
8 criteria were used to try to determine the toxicity
9 rating for a chronic problem?

10 A The chronic effect was more important than the
11 acute data. At the same time, it was not the practice
12 to label the material, other than -- in terms of a
13 definition, other than what the acute data indicated,
14 with the additional warning or -- or cautionary
15 statement that prolonged and repeated exposure should be
16 avoided.

17 Q But in terms of identifying the toxicity of the
18 material, saying, "This is highly toxic" or "moderately
19 toxic" or "slightly toxic" or "innocuous," the Chemical
20 Manufacturers Association would look to the acute data?

21 A For labeling purposes, yes, sir.

22 Q Okay.

23 MR. SHOEBOOTHAM: Plus, I believe --

24 A Plus, as I just indicated, the -- the warning
25 that there were other considerations that were important

1 and the proper precautions should be taken.

2 BY MR. LACEY:

3 Q Well, I'm not trying to find out about the
4 warnings at this point. We'll talk about warnings
5 later. But I'm just talking about whether you would
6 call the chemical toxic, moderately toxic, slightly
7 toxic, or innocuous. That definition, that word you
8 would select, would be based on acute data.

9 MR. SHOEBOTHAM: Mr. Wheeler also
10 told you about the input of human
11 experience into that process, as well.

12 BY MR. LACEY:

13 Q I just want to make sure I'm clear, though,
14 that the actual selection of the level of toxicity would
15 be based on acute data; how many milligrams or whatever
16 it is per kilogram of animal weight results in killing
17 the animals, or whatever you're looking for in the
18 animals. Is that correct?

19 A It's correct, but with the -- with the addition
20 of the fact that this was acute data and applied to an
21 acute exposure.

22 Q And that's true for the toxicity ratings that
23 we find in this Chemical Manufacturers Association
24 rating of chemicals. Correct?

25 A To my knowledge, that was the case for labeling

1 purposes.

2 Q Okay. Now, did the Chemical Manufacturers
3 Association actually come up with proposed language for
4 different types of labels for different types of
5 materials?

6 A They had examples for many common basic
7 chemicals, yes.

8 Q And did they have recommended types of warnings
9 for chemicals in a particular acute-toxicity
10 classification?

11 A I believe so; yes, sir.

12 Q Are you aware of any groups that ever voiced
13 any objection to the appropriateness of the Chemical
14 Manufacturers Association labeling?

15 A No, sir.

16 Q You're not aware of any group that ever
17 indicated any dissatisfaction with those labeling
18 criteria?

19 A I don't recall any, sir.

20 Q Okay. Was that something that would have been
21 significant to you in your job at Monsanto; that you
22 would have been looking for people who were critical of
23 that type of labeling?

24 MR. SHOEBOOTHAM: Well, which people,
25 and for what reason?

1 MR. LACEY: Anybody who objected to
2 the labeling proposed by the Chemical
3 Manufacturers Association.

4 BY MR. LACEY:

5 Q In other words, was it important to you -- and
6 I don't know whether it was or wasn't -- but was it
7 important to you, in terms of your job responsibilities
8 at Monsanto, to keep up with any criticisms of the
9 Chemical Manufacturing Association's labeling proposals?

10 A I feel quite sure that our labeling group would
11 have called it to my attention, had there been any.

12 Q Okay. And would that have been of interest to
13 you, though, in your particular job, or would it just
14 have been passing information, of no importance to you?

15 A It would have been of interest to me.

16 Q Okay.

17 Now, there certainly are chemicals that have
18 very little acute effect but that can have significant
19 chronic effects, are there not?

20 A Was your question, if there are very few?

21 Q No. There are chemicals which can have very
22 few, if any, acute effects, but can -- which can have
23 very significant chronic effects.

24 A I'm trying to think of examples, sir.

25 One that comes to mind is mercury. Mercury

1 is -- is very toxic. I don't -- I'm not sure if it's
2 classified as a poison, but it is toxic from the
3 standpoint of inhalation. I don't know that it is from
4 skin absorption.

5 On the other hand, if you break a thermometer
6 in your mouth and swallow that mercury, it's going to go
7 through your system pretty much unchanged.

8 Q So we have there an example of a chemical that
9 the acute effects are not nearly as significant as the
10 long-term chronic effects. Correct?

11 A I think the acute effect from ingestion of the
12 mercury is insignificant.

13 Q Uh-huh. Okay. And, certainly, mercury is not
14 the only chemical for which that's true, is it?

15 A No, sir. Perhaps you've seen in the paper
16 recently some references to selenium. Selenium occurs
17 naturally in the environment and is essential to proper
18 nutrition; and yet selenium, I -- I would think, would
19 be classified as quite toxic. I don't know if I would
20 use the word "highly toxic," but it is certainly not an
21 innocuous chemical.

22 Q In a chronic long-term use?

23 A That's right, sir; at levels that the body --
24 that the body cannot digest or metabolize and eliminate.

25 Q The -- we could probably create a rather

1 lengthy list of chemicals like that and substances like
2 that if we sat down to -- to go through it, couldn't we;
3 that is, that have rather limited acute effects, but
4 significant chronic effects?

5 A I believe 11 years ago I could probably think
6 of a number of examples.

7 Q Okay.

8 A Today I can't.

9 Q That's fine, and I just wanted to establish
10 that -- that point with you.

11 Now, you also mentioned, as you discussed this
12 business of -- of looking at chemicals, different types
13 of studies. You can study the -- what happens -- what
14 the toxicity is if you eat it? Correct?

15 A Yes, sir.

16 Q You can study what the toxicity is if it gets
17 on your skin and stays there?

18 A Yes, sir.

19 Q You can study what the toxicity is if it's in
20 the air you're breathing?

21 A Yes, sir.

22 Q Are there other routes of exposure that are
23 significant besides ingestion, inhalation, and skin
24 contact?

25 A Other than eye irritation, I can't think of

1 any.

2 Q That's a form of skin contact, though, I guess.

3 A Well, it might be considered that. To me, it
4 would not be.

5 Q Okay. So that's a fourth area would be eye --

6 A Yes --

7 Q -- whether it gets in your eyes?

8 A Yes, I -- because I think some of the deadly
9 nerve gases were -- a drop in the eye could perhaps be
10 fatal.

11 Q Now, from the industrial hygienist's
12 standpoint, in looking at exposure and looking at the
13 toxicity of a chemical, one would be concerned about any
14 of those routes of exposure if they could cause problem.
15 Correct?

16 A Yes, sir.

17 Q And some chemicals may cause relatively little
18 problem through one route of exposure, but more through
19 another. Is that correct? Or is it generally if a
20 chemical is a problem through one route of exposure,
21 it's a problem each of the routes of exposure?

22 A I believe it depends on the chemical. Analine,
23 for example, is seriously toxic if it's absorbed through
24 the skin. I think the hazard from innalation is -- may
25 be a magnitude of no difference in terms of hazard.

1 Q And in each situation the real question is how
2 much of the chemical actually gets into the body through
3 that route of exposure, isn't it?

4 A Through some route of exposure; yes, sir.

5 Q My point is: For example, if you ingest it,
6 the real question is not your ingestion, but how much of
7 it -- and I don't know if "digested" is the right word,
8 but how much of it gets from going through your
9 digestive tract actually into your body. Correct?

10 A I believe the body burden can differ as to the
11 metabolic pathway, for want of another word; what
12 happens to it in the system. It may differ where the
13 material gets into the bloodstream through the lungs or
14 from the digestive tract or through the -- the skin.

15 Q The skin. But when we analyze what the
16 chemical does to the body, if it has a systemic effect,
17 the question of what happens on a particular route of
18 exposure or what the danger of that route of exposure is
19 really determined by how effective is that route of
20 exposure in getting the chemical into the body.
21 Correct?

22 Do you understand what I'm asking?

23 A No, sir, not completely.

24 Q Okay. Let me try to make it clear.

25 Let me -- let me try to see if I can set up a

1 hypothetical, and -- and I don't know if this applies to
2 any particular chemical, but let's say that if you've
3 got -- I'm not sure I can set the right criteria.

4 If a chemical is of significance from a health
5 standpoint, if you have 500 parts per billion in the
6 blood, let's say, the question that may be very
7 important from the industrial hygienist's standpoint
8 about how much you worry about ingestion versus how much
9 you worry about inhalation versus how much you worry
10 about skin absorption is: How much contact with the
11 skin will produce 500 parts per billion in the blood,
12 how much in the air will result in getting 500 parts per
13 billion in the blood, or how much can you eat to get 500
14 parts per billion in the blood.

15 Do you follow what I'm saying now?

16 A Yes, sir.

17 Q And the point is: If we're looking at systemic
18 effects of a chemical, one of the things that's
19 important is how much of that chemical gets into the
20 body system, like the blood, through either eating it or
21 having it on the skin or breathing it in, the air.

22 Correct?

23 A I'm not sure about that, sir. I -- I mentioned
24 the analine as an example; and I'm not enough of a
25 toxicologist to say, as a general proposition, that the

1 amount in the blood is a -- a good example of what
2 you're -- what you're asking me.

3 Q I'm not trying to establish the amount of any
4 particular chemical in the blood. What I'm trying to
5 understand is that you may get more into your body
6 through one route of exposure than the other.

7 For example, in the analine case, it's more
8 easily absorbed through the skin by direct skin contact,
9 as I understand it, than it is absorbed by the lungs
10 because it's in the air.

11 A I believe that's correct.

12 Q Okay. That's what I'm trying to establish. In
13 different chemicals, one or another of those routes of
14 exposure -- eating it, breathing it, skin contact -- may
15 result in a higher concentration of the chemical in the
16 body, and therefore more potential for harm. Correct?

17 MR. SHOEBOTHAM: Well, Mr. Wheeler
18 has just told you he can't answer the part
19 about more potential for harm, if -- if
20 that's included within your question.
21 He's told you that he's not enough of a
22 toxicologist to address that portion of
23 the question.

24 BY MR. LACEY:

25 Q Well, if -- can you answer the question?

1 A I can't answer it. I --

2 Q Okay. That's fine. Who at Monsanto -- it
3 seems to me that's a key question to an industrial
4 hygienist who needs to be concerned about how much may
5 be ingested versus how much may be breathed versus how
6 much may come into contact with the skin. Who at
7 Monsanto was responsible for those sorts of functions
8 and making those sorts of decisions?

9 A Dr. Kelly.

10 Q I see. Anybody else?

11 A No, sir.

12 Q Now, did you have data on the toxicology of all
13 the chemicals that were produced by Monsanto, giving the
14 relative toxicology for each route of exposure: How
15 much of a problem it is by skin, how much of a problem
16 it is by ingestion, how much of a problem it is by
17 inhalation?

18 A On all Monsanto products?

19 Q Uh-huh.

20 A I don't believe so.

21 Q Well, how, when you went into a department to
22 analyze the problems that might occur to workers then,
23 could you analyze what safety precautions were needed
24 for each of those routes of exposure for the chemical in
25 that department?

1 A The chemical -- the human experience of
2 manufacturing the material and handling the raw
3 materials, which in any case would take precedence over
4 the animal data.

5 Q Okay. So, in part, if you hadn't -- if you
6 weren't having a problem with it, you would assume that
7 there wouldn't be any problems in the future. Correct?

8 A We assumed that getting the toxicity data would
9 not be necessary to continue safe handling --

10 Q Now, what --

11 A -- in manufacture.

12 Q What if you had a chemical that didn't have a
13 very significant acute toxic problem, but had a
14 significant chronic problem? Then that analysis of
15 just -- of saying, "Well, nobody's having a problem, so
16 there must not be any," could be an improper analysis,
17 couldn't it?

18 A No, sir.

19 Q It wouldn't be?

20 A No, sir; because in all of our plants, we had
21 medical supervision, including periodic physical
22 examinations, that would have disclosed if there were a
23 chronic effect that wasn't readily recognized.

24 Q Well, if the chronic effect took ten years to
25 show up, was somebody monitoring the workers who had

1 been there for ten years in that same section of the
2 plant and had ten years of exposure, to be able to
3 determine what the problem was?

4 A To my knowledge, no specific group was singled
5 out, but were included in the physical examinations that
6 were done on all the employees.

7 Q There's a specific discipline that deals with
8 looking at the human exposure experience and any
9 problems that arise from it, is there not?

10 A I beg your pardon?

11 Q There's a specific discipline that deals with
12 looking at exposure of human populations to chemicals
13 and determining what the consequences of that are.
14 Isn't that correct?

15 A If you are referring to epidemiological
16 studies, yes.

17 Q Okay. That -- well, that -- that's the
18 discipline that deals with that science, is it not?

19 A Yes, sir.

20 Q Was Monsanto conducting any epidemiological
21 studies of its workers when you arrived in 1947?

22 A No, sir.

23 Q Did Monsanto conduct any epidemiological
24 studies of its workers at any time while you were
25 employed by Monsanto?

1 A I don't recall that we did, for the reason that
2 an epidemiological study, to be statistically
3 significant, has to have a larger number of people
4 exposed than we would have had in our instances.

5 Q Did you have an epidemiologist even on the
6 staff in the Medical Department?

7 A No, sir.

8 Q So when you talk about people monitoring the
9 health of Monsanto employees over time to look for
10 chronic effects, you weren't monitoring it in accordance
11 with the discipline of epidemiology, nor did you have
12 anybody who was an epidemiologist doing that for you.
13 Correct?

14 A That's correct.

15 Q Okay. You were relying on just these plant
16 doctors to report something to you if they saw anything.
17 Correct?

18 A As a result of specific visits to them and
19 asking those -- asking specific questions, yes, sir, on
20 the part of either Dr. Kelly or when I went to plants, I
21 usually met with the physician; and this would be kind
22 of an interim visit, if you will.

23 Q And if you don't know what you're looking for,
24 it may be hard to see the link between the exposure and
25 any problem. Correct?

1 A I believe our physical examinations were
2 complete enough to indicate if there were any
3 abnormal -- abnormalities or organ damage, any kind of
4 effect --

5 Q Well --

6 A if that were -- if that were occurring.

7 Q No. I'm sorry. That wasn't my question.
8 I said: The problem is, it's often difficult, without
9 looking at it in great detail, to observe the
10 relationship between any health problem and a particular
11 chemical exposure.

12 MR. SHOEBOTHAM: I'm going to object
13 to the question to the extent it assumes
14 that these things weren't looked at in
15 great detail.

16 Mr. Wheeler's told you that the plant
17 doctors examined these people and that he
18 feels the physical diagnoses were -- were
19 adequate, and I'm not sure what you mean
20 by that.

21 MR. LACEY: Well, let me -- let me
22 try to go at it a different way.

23 BY MR. LACEY:

24 Q If a plant doctor observed in his physical
25 examinations that three people at the plant this year

1 had a particular specific health problem, it would take
2 a significant amount of careful study of what those
3 people had been doing, how those health problems might
4 be related to the population generally, and similar
5 matters that epidemiologists look at, in order to
6 determine whether any health problems might be related
7 to a particular chemical they had been exposed to.
8 Isn't that correct?

9 A I think that's a hypothetical question, sir,
10 because I don't recall of any instance where such an
11 event occurred.

12 Q I understand. My real question is: That's not
13 something that the ordinary physician would necessarily
14 be experienced enough by training -- I mean formal
15 training -- or by his own clinical experience to pick up
16 and observe. Isn't that correct?

17 A I don't think I agree with that, sir.

18 Q Okay. So, in your opinion, there was really no
19 need for any epidemiologist at Monsanto to review things
20 like that. Correct?

21 A That's correct.

22 Q And there was no need for any epidemiological
23 studies. Correct?

24 A That's right, sir.

25 Q You had sufficient information, based on plant

1 doctor examinations of your workmen, to rule out any
2 possibility of chronic effects from the chemicals that
3 Monsanto people work with. Correct?

4 A I feel that there were no uncovered effects
5 that -- that occurred.

6 Q And there was no need for epidemiologists to
7 search for any more. Correct?

8 A I think, sir -- I -- I'm not an
9 epidemiologist --

10 Q I understand.

11 A -- but it is my understanding that an
12 epidemiological study, to be statistically significant,
13 involves large numbers of people who are being
14 investigated, as well as a -- an equally large, if not
15 larger, number of people not possibly exposed.

16 And I don't think in any of our cases a true
17 and -- a true -- an epidemiological study in that -- in
18 the typical sense would have been helpful.

19 Q Okay. Did you ever recommend to anybody in the
20 Medical Department in your employment at Monsanto the
21 hiring of an epidemiologist --

22 A No, sir.

23 Q -- or the retention of an outside
24 epidemiologist to consult with Monsanto on a part-time
25 basis?

1 A It's only my recollection that at about the
2 time toward the end of my career with Monsanto, there
3 were discussions about employing outside epidemiologists
4 to investigate certain plants and I believe to examine
5 that particular operation that might employ only 20
6 people; but to compare the health records of the total
7 population of the plant over a number of years, and to
8 compare with a suitable number of controls.

9 Q Do you recall what plants those were?

10 A My recollection is that the Anniston --
11 Anniston; I'm sorry -- the Nitro, West Virginia, was one
12 that was under consideration.

13 Q Do you recall any other plants?

14 A No, sir.

15 Q Do you recall what chemicals were involved that
16 gave rise to the selection of a particular plant?

17 A It did not concern polychlorinated biphenyls.

18 Q Do you recall what chemical it was that gave
19 rise to the concern?

20 A I believe it may have been related to the
21 2,4,5-T and dioxin material that had been manufactured
22 at that plant -- not the dioxin manufactured there, but
23 the 2,4,5-T that was manufactured there.

24 Q Let me go back to the Medical Department for a
25 moment.

1 You come on board in 1947 as the second
2 full-time professional; and your primary function
3 involves industrial hygiene and, in particular, review
4 of Monsanto plants on a regular basis.

5 What other professionals joined the Medical
6 Department?

7 A Mr. Jack Garrett joined me in, I believe, 1951;
8 maybe '40- -- 1952.

9 Q And what was Mr. Garrett's job?

10 A By the early 50's, the question of control of
11 air and water pollution had become of interest; and we
12 were given some responsibility for including in our
13 industrial hygiene visits to the plants a review of
14 their potential problems with air and water pollution.

15 And Jack's -- Garrett -- Jack Garrett's job, in
16 addition to helping me with the industrial hygiene
17 program, was to work more -- work specifically with the
18 plants on water pollution; whereas, I pretty much
19 handled the air pollution part of the responsibility.

20 And, as a matter of fact, I think it was 1951 I
21 was assigned to the Manufacturing Chemists Association
22 Air Quality Committee and was on that committee for 25
23 years.

24 I was on the Water Committee for just a few
25 months until Jack joined us, and -- and he represented

1 Monsanto on that committee.

2 Q When you say you were "assigned," who assigned
3 you?

4 A I -- I believe it was the Vice-President for
5 Manufacturing that we reported to at that time.

6 Q Okay. So somebody at Monsanto assigned you to
7 the task of being on the Chemical Manufacturers
8 Association Committee on Air.

9 A Yes, sir.

10 Q And did that person also assign Mr. Garrett to
11 be on the Committee on Water?

12 A Yes, sir.

13 Q That was a part of your job duties for
14 Monsanto?

15 A Yes, sir.

16 Q And you were compensated for it in the ordinary
17 course of your business?

18 A It was just part of my job, sir, at my regular
19 compensation.

20 Q All right.

21 Now, was Mr. Garrett also an industrial
22 hygienist?

23 A He became one, sir. He was not -- he was a --
24 he had, I believe, a Master's Degree in Chemistry from
25 the University of Kentucky or Tennessee.

1 Q Did he become an industrial hygienist by
2 on-the-job training?

3 A Yes, sir; after being employed in the Research
4 Department at our Texas City plant and getting very
5 deeply involved in what was going to be required to
6 handle aqueous waste from some new operations that were
7 going -- that were being constructed at that point.

8 Jack, I think, is brilliant. He has a
9 photographic memory. He became certified in industrial
10 hygiene by taking the exams and scoring well. He was
11 well-respected.

12 Q Do you know where Mr. Garrett is now?

13 A He's in St. Louis. I believe he retired two
14 years ago.

15 Q As far as you know, he's still alive and well?

16 A The last I heard, yes, sir.

17 Q How do you spell Mr. Garrett's name?

18 A G-a-double-r-e-double-t.

19 Q And it's Jack?

20 A Yes, sir.

21 Q J. Garrett? Do you know what his middle
22 initial was, perchance?

23 A I want to say "T," but I'm not positive.

24 I don't know why you're smiling.

25 Q Well, I'm smiling at Mr. Shoebottom, because

1 I've tried to find Mr. Garrett before; and apparently I
2 didn't spell his name correctly, and he seemed to be
3 unknown.

4 MR. LACEY: And I renew my request to
5 see if we can't locate Mr. Garrett with
6 this correct spelling -- hopefully
7 correct -- first name and middle initial.

8 MR. SHOEBOTHAN: I'd be pleased to
9 see what I can do for you in that regard.

10 MR. LACEY: Especially a fellow with
11 a photographic memory. I think that's
12 always helpful.

13 BY MR. LACEY:

14 Q Now, did you continue to go visit Monsanto
15 facilities after Mr. Garrett came on board?

16 A Yes, sir.

17 Q Did you continue to visit Monsanto facilities
18 up until your retirement as part of your role as an
19 industrial hygienist?

20 A On a much limited schedule after we added other
21 industrial hygienists, as my involvement in other
22 activities of the department developed.

23 Q Well, let's go on with departmental growth.
24 We -- we have first, on a full-time professional basis,
25 Dr. Kelly. Then you come on board in 1947. Mr. Garrett

1 arrives in the very early 50's.

2 Who is the next professional employee who joins
3 the Medical Department --

4 A I believe --

5 Q -- on a full-time basis?

6 A I believe Dr. William Hunt, who was a
7 toxicologist.

8 Q Do you recall approximately when he joined the
9 department?

10 A I believe it was 1960 or 1961.

11 Q So throughout the '50's we have a maximum of
12 three people who are professional employees full-time in
13 the Medical Department. Correct?

14 A Yes, sir. I -- I can't recall when Dr. Kelly
15 hired an Assistant Medical Director.

16 Q Who was the first Assistant Medical Director?

17 A Dr. William -- William; oh, my. Morris;
18 Dr. Morris -- Morrie Johnson, who had been our full-time
19 plant physician at Pensacola and then had moved to
20 Research Triangle Park in North Carolina as Medical
21 Director for the Chemstrand Corporation, which was
22 50 percent owned by Monsanto and 50 percent by American
23 Viscose and was in the business of making nylon and
24 acrylic fibers, and who had established their major
25 research facilities in North Carolina.

1 Q Did Dr. Johnson have a specialty that he
2 pursued as the Assistant Medical Director? And I mean
3 by that like toxicology, or in occupational medicine, or
4 anything of that sort.

5 A At some point in his career, he'd been
6 particularly interested in respiratory physiology; but
7 his service with us was as assistant to Dr. Kelly in the
8 whole general field of industrial health or occupational
9 health.

10 Q Did he have a fair amount of administrative
11 duties?

12 A In Dr. Kelly's absence, yes, sir.

13 Q And in Dr. Kelly's presence, what sort of
14 things did he handle?

15 A Again, I think he shared with Dr. Kelly some of
16 the correspondence.

17 He also shared physical examinations and -- for
18 pre-employments, periodic physicals, which Dr. Kelly
19 did, incidentally, through most of his history with
20 Monsanto; because Dr. Kelly loved the practice of
21 medicine and was an expert.

22 And -- the -- the question of the -- doing the
23 physical examinations, again, for the older employees,
24 where the exams were a little more complete, were
25 handled by Dr. Kelly and Dr. Johnson; whereas,

1 Dr. Mezera, the one -- the gentleman who joined us in
2 '47, did the morning exams, principally.

3 Q All right. So Dr. Kelly and Dr. Johnson would
4 be giving examinations to people there at the
5 headquarters building on through the '60's and '70's or
6 whatever?

7 A Yes, sir.

8 Q Who else joined the department after Dr. Hunt?

9 A I don't remember the time schedule, but I
10 believe the next person was another industrial
11 hygienist. If you'll give me a moment, I'll try to
12 think of his name.

13 Oh. Kyle Bohl, who was working on his Doctor
14 of Science Degree at Kettering Laboratories in
15 Cincinnati, and finally got his degree.

16 Q Okay. Kyle Bohl. Who -- who came next, as
17 best you can recall the sequence?

18 A Another industrial hygienist. It's horrible to
19 have old-timers' disease and not remember things.

20 Bruce Ely.

21 Q When did Mr. Bohl and Mr. Ely come? Were they
22 in the 1960's?

23 A I believe so.

24 Q And who -- who comes along next?

25 A Dr. George Levinskas, a toxicologist.

1 Q When does Dr. Levinskas come on, approximately?
2 Was he in the 1970's, or --

3 A No. I -- I would -- I would say the late
4 '60's. And I'm trying to recall whether -- I can't
5 recall whether he came before -- before Bill Hunt died
6 of a heart attack on the way to the airport. I think
7 George was with us while Bill Hunt was still alive, but
8 I can't be sure of that.

9 Q But, in any event, there wasn't a great deal of
10 overlap between Dr. Hunt and Dr. Levinskas in the
11 toxicology area?

12 A Overlap, no, sir.

13 Q Okay. Who came next, as best you can recall,
14 in this professional group in the Medical Department?

15 A I believe it was Paul Wright, another
16 toxicologist.

17 Q Okay. And about when did he come? Early
18 '70's, late '60's?

19 A I believe early '70's.

20 Q Okay. Who came next?

21 A Another industrial hygienist, and I'm -- I'm
22 sorry; I don't know his name.

23 Q Who came next after that? And when we get up
24 to the point where you don't know, that's fine. You can
25 just tell me that they're after you left, if we're

1 getting close to that point.

2 A Well, I recall now that there was a third
3 toxicologist hired, Fred Johannsen. And I'm not sure
4 that he didn't join us before the fourth industrial
5 hygienist.

6 Q Okay. So the order of the fourth hygienist and
7 the third toxicologist is not sure.

8 Well, let's stop right here so the tape can be
9 changed, and then we'll get through the rest of these
10 people in the department.

11 A All right, sir.

12
13 (Recess)

14
15 THE VIDEOTECHNICIAN: Okay. We've
16 been off the record to make a tape change.
17 We're back on the record now. The time is
18 12:05 p.m.

19 BY MR. LACEY:

20 Q Before we changed the tape, we were mentioning
21 Mr. Fred Johannsen, who was another toxicologist; and he
22 may have come immediately preceding the industrial
23 hygienist whose name you cannot remember.

24 Who would be next in the development of the
25 professional staff of the Medical Department?

1 A I think there was another industrial hygienist
2 hired before I retired.

3 Also, by that time there were -- there was
4 another full-time -- at least another -- at least one
5 other full-time physician.

6 Q Who was that?

7 A I believe it was Ernest Tillman, I think his
8 name was.

9 Q Did your retirement precede or succeed that of
10 Dr. Kelly?

11 A Dr. Kelly retired, I believe, the 1st of
12 December, 1974, at age 65. And I retired in June 30th,
13 1976, at age 60.

14 Q Who replaced Dr. Kelly at the Medical
15 Department?

16 A Dr. George Roush.

17 Q And did he come in some period of time before
18 Dr. Kelly's retirement, or did he just come in right at
19 the time of the retirement to replace him?

20 A I believe he was there for two years before
21 Dr. Kelly's retirement.

22 Q And did he have a title or a position?

23 A His -- his title was Assistant Director of the
24 Department.

25 Q Did he have --

1 A Oh, excuse me. I'm sorry. It may have been
2 Assistant Medical Director. I -- I -- I make that point
3 because at one point in time I had the title of
4 Assistant Director of the Department; but, obviously, I
5 couldn't become a Director. So it was Assistant
6 Director of the Department, not Assistant Medical
7 Director.

8 Q I see.

9 A And the physicians that were there would have
10 the Assistant Medical Director designation.

11 Q Did Dr. Roush -- is it Roush? Is the -- how do
12 you pronounce it?

13 A Roush. I think it's R-o-u-s-h.

14 Q Okay. Did Dr. Roush have any particular
15 specialty that he practiced in?

16 A Dr. Roush had been at -- I believe at the
17 Kettering Laboratories, and worked on tetraethyl lead
18 problems for the Ethyl Corporation; and then moved to, I
19 think, Baton Rouge full-time with Ethyl Corporation.

20 I believe he also was doing some teaching maybe
21 at Baylor at the time he joined Monsanto.

22 Q At Baylor? You're talking about the Baylor
23 Medical School?

24 A Yes, sir.

25 Q In Houston?

1 A Yes, sir. And his specialty, if anything, I
2 would say, was toxicology.

3 Q Okay. Does that, as best you can recall, get
4 us through the development of the professional staff at
5 the Medical Department up until the time you left in
6 1976?

7 A Yes, sir.

8 Q Let me go back and just get a little background
9 information on these people who joined the department.
10 You've told me about yourself.

11 What about Jack Garrett? Had he had any
12 previous medical service experience, or just the
13 scientific experience before he joined the Medical
14 Department?

15 A No medical experience.

16 Q No medical-department-type experience or
17 anything?

18 A No, sir.

19 Q And had his laboratory experience been with
20 Monsanto before he came to the Medical Department?

21 A Yes, sir.

22 Q Okay. So his -- basically, his employment
23 history was a lifelong Monsanto employee.

24 A Yes, sir.

25 Q What about Dr. Hunt? What experience had he

1 had before joining the Monsanto Medical Department?

2 A He had been a toxicologist with some
3 pharmaceutical company, I believe, in New Jersey; and I
4 don't recall the name of it.

5 Q That's all you know about that?

6 A Yes, sir.

7 Q What age man was Dr. Hunt at his untimely
8 death?

9 A I would think in his early '60's, perhaps.

10 Q Okay.

11 A He was a Ph.D. in some of -- one of the
12 biological sciences. I don't know if it was
13 biochemistry or what it was.

14 Q What had Dr. Morris Johnson done before he
15 became Assistant Medical Director?

16 A I believe I indicated he'd been our full-time
17 physician at the Pensacola plant. And I don't recall
18 what he did before then, but he did indicate that he'd
19 had a special interest in respiratory physiology.

20 Q Was he a man of such an age that he had had
21 some other practice before he'd been the plant physician
22 for Monsanto at Pensacola, or --

23 A I -- I didn't understand that question.

24 Q Well, I'm trying to find out if he started his
25 medical practice as the plant physician at Pensacola or

1 whether you know.

2 A I don't know whether he'd had a medical
3 practice before that or not.

4 Q Okay. What about Kyle Bohl, the industrial
5 hygienist? What was his prior experience before joining
6 Monsanto?

7 A I don't think Kyle had had any industrial
8 experience. He'd been working on his Doctorate Degree
9 at Kettering Laboratories.

10 Q Okay. So he was a -- his first regular
11 employment, then, was Monsanto?

12 A Yes, except that he was not as young as one
13 might be with just graduated from college, and then
14 proceeded to get a graduate doctorate, although there
15 may have been a period of employment that I don't
16 recall.

17 Q At least as a professional in the field of
18 industrial hygiene, his first employment was with
19 Monsanto?

20 A I believe so.

21 Q What about Bruce -- about Bruce Ely?

22 A Bruce Ely had worked in our Central Research
23 Department there in St. Louis, and I've forgotten what
24 biological area he'd gotten into -- into that indicated
25 he might well be trained and developed into an

1 industrial hygienist.

2 I should have said, sir, earlier, in Jack
3 Garrett's case in particular, we were insured by Liberty
4 Mutual Insurance Company for workmen's comp, product
5 liability, et cetera, et cetera, et cetera. They had
6 one of the best industrial hygiene units in the country
7 with a staff of -- I don't know -- 12 or 15, 20, to
8 provide industrial hygiene services for the people they
9 insured; and they were Monsanto's insurer at that time.

10 So Jack was trained initially -- "trained," in
11 quotes, if you will (indicating) -- at the Liberty
12 Mutual Laboratories for a period of -- I don't know --
13 maybe six weeks, to at least get his feet wet in -- in
14 industrial hygiene.

15 Q So the -- the actual initial on-the-job, so to
16 speak, or preparation for on-the-job training for
17 Mr. Garrett came by going to the insurance company
18 and -- and having some instruction. Correct?

19 A I can't recall any other that had any
20 formality.

21 Q That was it?

22 A Yes, sir.

23 Q Okay.

24 Back to Mr. Ely: He was a -- a Monsanto
25 employee in other fields before he came to the Medical

1 Department?

2 A He was in our Central Research Department; yes,
3 sir.

4 Q Okay. What about Dr. Levinskas?

5 A Dr. Levinskas had -- was either the Chief
6 Toxicologist or Assistant Chief Toxicologist for
7 American Cyanamid Company. His responsibility, I
8 believe, was directing a toxicology laboratory, rather
9 than perhaps being designated as the Corporate Chief
10 Toxicologist.

11 And since American Cyanamid had acquired
12 Lederle, which had its own animal-toxicity facilities
13 for development of drugs, the industrial toxicology --
14 toxicology research effort was cut way back, and we were
15 able to persuade George Levinskas that he might have a
16 better future with us.

17 Q He is still with Monsanto?

18 A To my knowledge, yes, sir.

19 Q What about Paul Wright? What was his
20 background?

21 A Paul Wright was, again, in our Central Research
22 Group at Monsanto there in St. Louis. I don't think I
23 recognized that he had biological science expertise
24 until he went with Industrial Bio-Test. And I've
25 forgotten the number of years he was there, but we

1 induced him to return to Monsanto to work with
2 Levinskas.

3 Q By the time Mr. Wright came -- is it -- is it
4 Dr. Wright?

5 A Yes, sir.

6 Q By the time Dr. Wright came to Monsanto, I
7 guess Dr. Hunt had already died?

8 A Yes, sir.

9 Q Who was -- who reported to whom among the
10 toxicologists? Was Wright over Levinskas, or Levinskas
11 over Wright?

12 A Levinskas was over Wright.

13 Q Okay. Did Dr. Levinskas hold any particular
14 title within the Medical Department?

15 A I think he had -- I -- I've forgotten what his
16 title was, but we had begun a program of more complete
17 scrutiny of new Monsanto production facilities in terms
18 of preventing -- or ensuring that the occupational
19 health or industrial hygiene problems had been
20 considered in the construction of the plant, plus the
21 potential for air or water pollution had been very, very
22 carefully examined and proper controls were incorporated
23 into the design.

24 And his title was -- gave some indication that
25 he was responsible for those aspects of -- of

1 developments, not only for new installations, but major
2 expansion of existing operations.

3 Q What -- what does a toxicologist do, as -- as
4 you understand it from your experience with these
5 toxicologists in the Monsanto Medical Department?

6 A Well, at that time -- which has changed since I
7 left the company -- we had no toxicologists who were
8 actually conducting or supervising, within our own
9 facilities, the actual experiments.

10 Monsanto relied until 1978 on using university
11 and independent consultants to do anything more than the
12 acute toxicity screening studies.

13 But the practice then of the toxicologists
14 within the company was to follow the -- the development
15 of data generated in studies, periodic visits to the
16 laboratories doing the work, analyzing the data when
17 it -- when projects were finished, and interpret that
18 data.

19 Q Did Dr. Wright have any title within the
20 department?

21 A I don't know what it was; probably
22 Toxicologist.

23 Q Okay. Is Dr. Wright still with Monsanto, to
24 your knowledge?

25 A I understand he's not.

1 Q How old a man is he? Is he retired?

2 A I would judge Paul to be maybe in his mid-50's.

3 Q Do you know where he is now; what company he's
4 with?

5 A No, sir.

6 Q Okay. Do you know why he did not stay with
7 Monsanto until reaching retirement age?

8 A Unfortunately, he was drawn into the
9 investigations of the experimental work done at IBT
10 while he was there.

11 Q Well, what investigations are you talking
12 about?

13 A At some point in the -- well, I guess it must
14 have been the late '70's, because I think it was after I
15 had retired -- Industrial Bio-Test Laboratory was
16 alleged to have produced or mismanaged data that they
17 had supplied their clients for presentation to perhaps
18 the FDA or some other Federal agencies.

19 Q And that somehow involved Dr. Wright?

20 A Yes, sir.

21 Q Okay. And that is the reason he then left
22 Monsanto, as you understand it?

23 A Yes, sir.

24 Q Okay. Do you know what the outcome of that
25 investigation was?

1 A My only knowledge is that -- that he and -- and
2 Dr. Keplinger were found guilty of misrepresenting data
3 or mishandling data, scientific data.

4 Q To some --

5 A I don't know the -- I don't know particulars of
6 the case, sir, but --

7 Q Okay. But there was some sort of -- of lawsuit
8 about all that?

9 A Yes, sir.

10 Q Okay.

11 The industrial hygienist whose name you can't
12 remember -- we're not sure if it's before or after Fred
13 Johannsen -- do you know what that industrial
14 hygienist's background was, whether he had -- he or she
15 had had previous experience?

16 A Yes, sir. I -- I wish I could recall his name,
17 but he was -- he had his Master's Degree from either the
18 University of Michigan or Wayne State. I think it was
19 the University of Michigan, because the -- one of the
20 most qualified teachers as -- as one of my peers had
21 been at Wayne, but I think he'd moved over to University
22 of Michigan; and I think that this chap was one of his
23 students, graduates.

24 Q Did he have any employment experience before
25 coming to Monsanto?

1 A I don't know.

2 Q Do you recall what age fellow he was when he
3 joined Monsanto?

4 A Maybe late 20's, mid-20's, something of that
5 sort. He was a young man.

6 Q Okay. What about Fred Johannsen? Do you know
7 what his employment experience was before joining
8 Monsanto?

9 A I think he joined Monsanto fresh out of the
10 University of Missouri.

11 Q And was he a Ph.D. --

12 A Yes, sir.

13 Q -- from Missouri?

14 A Yes, sir.

15 Q Okay. And we've got another industrial
16 hygienist in there, possibly, who may have come before
17 you left. Do you recall anything about that person, or
18 is that just -- you're not sure about that?

19 A I'm not sure about that.

20 Q Okay.

21 A I know the company hired quite a number of
22 industrial hygienists after I retired, and I believe
23 the -- the next one may have been another gentleman from
24 the University of Michigan.

25 Q Okay. Then we have Dr. Tillman. Do you know

1 what his experience was?

2 A Dr. Kilbourn?

3 Q Dr. Tillman, I thought I --

4 A Oh, Dr. Tillman. I'm sorry. Ernie had been a
5 plant physician, I guess, for Olin --

6 Q Olin?

7 A -- up at Alton, Illinois. And he came with us,
8 stayed for a week, and went back to Olin; and then
9 returned to us, and was there when I left.

10 I've heard since that -- that he's now gone
11 back to Olin, so I don't understand the consequences or
12 circumstances here.

13 But his job as long as I was with Monsanto was
14 doing physical examinations and treatment for -- of
15 minor injuries.

16 Q I guess one consequence would be the movers
17 would be busy.

18 I think we've, as best I can tell, covered the
19 people that you can recall that were on the staff of the
20 Medical Department during the time you were there and
21 what their backgrounds were.

22 And am I correct in understanding that as these
23 younger industrial hygienists came on, that is when you
24 began to reduce the number of plant visits you were
25 personally making yourself?

1 A Yes, sir.

2 Q Did you have the responsibility for supervising
3 the work of these younger industrial hygienists?

4 A Indirectly, through Jack Garrett.

5 Q Now, did Jack report to you?

6 A Yes, sir.

7 Q And then they reported to Jack?

8 A Yes, sir.

9 Q But as long as you were at Monsanto, you were
10 the -- the top industrial hygienist?

11 A Yes, sir, although I was given the title of
12 Director of Environmental Health Services, because
13 Dr. Levinskas also reported to me and because of the --
14 the department's involvement in air and water pollution
15 control.

16 Q Okay. And let me --

17 A Dr. Levinskas -- my responsibilities for his
18 activities were almost completely administrative,
19 because I'm not a toxicologist and I was in no position
20 to --

21 Q Grade his paper?

22 A -- interpret his interpretation.

23 Q Yeah. You -- let me see if I can understand
24 this. You had -- as the Director of Environmental
25 Health Services, you had basically two functions that

1 reported to you. One was the industrial hygiene, and
2 the other was the toxicology.

3 A That's right, sir.

4 Q And in the industrial hygiene chain, you had
5 Jack Garrett, who had direct supervisory responsibility
6 over these younger industrial hygienists that were out
7 in the field on a regular basis.

8 A Yes, sir.

9 Q And then on the other side you had
10 Dr. Levinskas reporting to you, and he was an M.D.
11 toxicologist --

12 A No. I beg your pardon. He was a Ph.D.

13 Q Ph.D. Oh, I'm sorry. I'm sorry; a Ph.D.
14 toxicologist. And your supervision there was more of
15 the things that involved salary administration and
16 budget and that type of thing, rather than supervising
17 the correctness of his work.

18 A Exactly.

19 Q On the industrial hygiene side, where Jack
20 Garrett was and the people there, you could supervise
21 the correctness of their work because of your knowledge
22 in the area?

23 A Yes, sir.

24 Q Now, Dr. Levinskas had reporting to him
25 Dr. Wright. Was he a Ph.D. or M.D.?

1 A Ph.D.

2 Q Ph.D. And so indirectly, just as you
3 indirectly supervised these younger toxicologists, you
4 also indirectly supervised Dr. Wright?

5 A And Dr. Johannsen.

6 Q And Dr. Johannsen. Was Dr. Johannsen an M.D.,
7 Ph.D.?

8 A Ph.D.

9 Q Ph.D. Okay.

10 A At no time did I ever supervise doctors,
11 M.D.'s.

12 Q M.D. doctors; okay.

13 A This is beside the point, but crazy Johnny
14 Carson last night was talking about -- you might take
15 this off camera.

16 Q Oh, that's okay. It's easier to leave it on
17 than take it off.

18 MR. SHOEBOTHAM: Why don't -- why
19 don't we get to it during the next break?

20 THE WITNESS: Well, don't you want
21 to --

22 MR. LACEY: Yeah. Let's hear what
23 he's --

24 THE WITNESS: He was talking about
25 somebody who was a Ph.D., and he said,

1 "What does Ph.D. stand for?"

2 And Fred de Cordova, or whoever his
3 producer is, was trying to tell him that,
4 "Well, it's Doctor of Philosophy."

5 He says, "Doctor of Philosophy?"

6 I'm sorry, Camera.

7 MR. LACEY: That's okay. It does --

8 THE WITNESS: And he gets what; \$4
9 million a year?

10 MR. LACEY: Whatever; I don't know.

11 That's -- I guess to -- to complete
12 that little story, theoretically, I guess,
13 we have two Doctors here. But it won't
14 get you very far with J.D.'s, either, will
15 it?

16 THE WITNESS: No, I -- I agree that
17 it's more than an honorary situation in
18 the case of your professions.

19 MR. LACEY: But everybody gets to be
20 a Doctor these days.

21 BY MR. LACEY:

22 Q Well, in any event, your -- your supervision
23 there in the toxicology area was an administrative
24 supervision over these Ph.D. toxicologists?

25 A Yes, sir.

1 Q In terms of hiring responsibility, did you make
2 the hiring decisions on the people that you supervised?

3 A I participated in the interviews of those
4 people, yes --

5 Q Okay.

6 A -- and -- and made recommendations; yes, sir.

7 Q Did that include both on the toxicology side as
8 well as the industrial hygiene side?

9 A Yes, sir, with the recommendation subject, of
10 course, to Dr. Kelly's approval.

11 Q So ultimately you would go ahead and even
12 review with Dr. Kelly, as the Director of the entire
13 Department, recommendations that you were making about
14 hiring individual professionals in the department.

15 A Yes, sir.

16 Q Okay. And this title of Director of
17 Environmental Health Services was there so that it would
18 encompass the fact that you had toxicologists reporting
19 to you for administrative purposes?

20 A Yes, sir.

21 Q But now going back to the question that got us
22 off on this line, you were the top industrial hygienist
23 at Monsanto during the -- the time of your employment
24 there?

25 A Yes, sir.

1 Q Okay.

2 Now, with regard to plant visits, we -- we
3 mentioned earlier that you were, when you started out at
4 least, making plant visits to each plant at least once a
5 year and reviewing the departments in the plants.

6 Mr. Garrett joined in 1951 or '52, and I guess
7 he also did plant visits. Correct?

8 A We shared the -- the experience; yes, sir.

9 Q Was that a -- was that a pleasant experience or
10 an unpleasant experience? The way you said that, I
11 wasn't sure how to take it.

12 A I -- I should have used another word. I'm
13 sorry I am not more articulate. It was never
14 unpleasant.

15 Q Okay. You both took part in that duty?

16 A In that program.

17 Q Exactly. And in addition to that, you branched
18 out into the difference between your working on air
19 problems in particular, and his working on water
20 problems, as pollution went?

21 A Yes, sir.

22 Q And did you continue to make regular plant
23 visits, at least until the point that another industrial
24 hygienist joined Monsanto sometime in the decade of the
25 '60's?

1 A Yes, sir.

2 Q Now, how did you and -- and Mr. Garrett divide
3 up the plants? Did you have a group of plants that were
4 your plants, and he had a group of plants that were his
5 plants, or what -- how was the division made?

6 A There was -- I don't remember if there was any
7 official designation that Plant A would be Mr. Garrett's
8 responsibility and Plant B would be mine. I think we
9 probably rotated. If he went one time, the next time
10 there was a visit scheduled to the plant I went.

11 Q Okay. So that way, the plants got the benefit
12 of both of you seeing them from time to time.

13 A Yes, sir.

14 Q Now, when other industrial hygienists joined
15 Monsanto in the '60's, did you still continue to make
16 plant visits, or at that point did that duty become one
17 that was not a significant part of your work?

18 A I made fewer visits, but I'm sure I made some.

19 Q Okay.

20 A In the meantime, Jack Garrett had a -- had gone
21 the route of assigning plants to the newer people.

22 Q Now, you mentioned that you made reports of
23 your plant visits. Did Mr. Garrett do likewise?

24 A Yes, sir.

25 Q And were those reports done in such a fashion

1 that there were separate sections on each department
2 within the plant you visited?

3 A Normally, yes, sir.

4 Q And did those reports describe, and in -- for a
5 particular department of the plant, how the operations
6 were being -- being carried on, and what potential
7 hazards were there, and what might need to be done in
8 order to protect against the hazards?

9 A Well, we had established -- I think I
10 personally, before Jack joined me, had -- had made a
11 survey, a very detailed walk-through industrial hygiene
12 survey of every plant, where we listed all the raw
13 materials, the products that were made, whether
14 protective clothing was used, whether proper ventilation
15 was used, whether the men were provided with
16 respirators; the -- the normal control measures for
17 industrial exposures.

18 We repeated those at intervals. I don't recall
19 that I did again in such a complete review, because Jack
20 pretty much took over that area.

21 On the other hand, certainly, if there was a
22 new operation that we didn't have basic information on,
23 then either he or I, depending who was there, would add
24 that to the list.

25 Q Did you or Mr. Garrett see to it that your

1 younger industrial hygienists who made plant visits
2 continued to make reports on those visits?

3 A Yes, sir.

4 Q And reporting department by department on what
5 they found and what recommendations might be made?

6 A Yes, sir.

7 Q And did that practice continue until you left
8 Monsanto?

9 A To my knowledge, yes, sir.

10 MR. SHOEBOOTHAM: Have we got a place
11 for a lunch break in here?

12 MR. LACEY: Yean. I'll get to a
13 point we can do that pretty quickly here.

14 MR. SHOEBOOTHAM: Okay.

15 MR. LACEY: You're not getting
16 hungry, are you? If you'd had the buffet,
17 you wouldn't be hungry yet.

18 A You -- you have mentioned, sir, several times,
19 until the time I retired. I think it's pertinent to
20 point out that in February of '75 I -- I was given an
21 assignment to work with -- well, initially, five other
22 people -- peers, if you will, of chemical companies, who
23 were -- who had been designated by 11 vice-presidents of
24 11 companies to investigate the establishment of a -- an
25 industry-supported toxicology research institute.

1 And I served as a member of the work group, as
2 it was called, which was charged with putting together a
3 report that the high-level people that we were dealing
4 with, and yet not absolute top management, could take to
5 their Boards of Directors and recommend the funding by
6 these original 11 companies of establishing the
7 institute.

8 In June of '75 the Chairman of the Board of the
9 institute, which had been agreed to be established in
10 August of '74 -- I'm getting my years mixed up here.

11 MR. SHOEBOOTHAM: You -- you said --

12 A I retired in '76, and from '75 to '76 -- no,
13 that's right. It was --

14 MR. SHOEBOOTHAM: You -- you told

15 us --

16 A -- February of '75.

17 MR. SHOEBOOTHAM: -- February of '75.

18 A In April of '75 this group of 11
19 vice-presidents agreed to go to their managements. I
20 guess by that time they had an agreement of their
21 managements to fund this multi-million-dollar
22 laboratory.

23 And in June of '75 the Chairman of the Board of
24 Directors of this new institute asked if I could be
25 assigned full-time as his -- his administrative

1 assistant to work toward the establishment of that
2 laboratory. So from then until I retired, I was
3 essentially full-time on that activity, although
4 Dr. Roush wanted me around 10 percent of the time.

5 BY MR. LACEY:

6 Q So, basically, from February 1975 on, you were
7 sort of out of the Medical Department circles at
8 Monsanto generally?

9 A Yes, sir, although --

10 Q Okay.

11 A -- I was there for most of the weekly staff
12 meetings that Dr. Roush scheduled.

13 Q What was the name of this new lab that was
14 established?

15 A Chemical Industry Institute of Toxicology.

16 Q And where was it located?

17 A Well, I was Chairman of the Site Selection
18 Committee that recommended the Research Triangle Park in
19 North Carolina, and that's where it is. It was
20 dedicated in --

21 Q And --

22 A -- I think in 1978, perhaps.

23 Q -- who -- who all supports this thing?

24 A Well, the original 11 included Monsanto, Dow,
25 Union Carbide, Shell Chemical, Exxon Chemical, Diamond

1 Shamrock, Eastman Kodak, Celanese; and I -- I don't
2 think I've gotten to 11, but those are representative.

3 By the time I retired, the membership had grown
4 to, I think, 18 or 21. And I expect today it's over 30,
5 but I don't know.

6 Q And what was the purpose of this venture?

7 A The purpose of this lab was to -- excuse me. I
8 had to burp.

9 The purpose was to fund a research organization
10 that would direct its efforts to developing toxicity
11 data on high-volume chemicals that were of common
12 interest to the whole industry.

13 The idea had been proposed as early as 1955,
14 I guess, but there were -- they never could settle the
15 question as to whose products would be worked on, how
16 they would assess the supporting funds, whether it was
17 going to be based on sales volume, or what have you.

18 And this was one of the jobs that we as a work
19 committee had to -- had to settle and work out for the
20 acceptance of the proposition: A laboratory that would
21 beyond -- that would be beyond question in the
22 objectivity of the data, the information would be
23 published, made widely available to everybody, to work
24 as closely as possible with any Government or other
25 university agencies, and become what had occurred in

1 Great Britain as one of the top research facilities in
2 tne -- in the world, actually, as an independent
3 laboratory that did A-1 1 work and was above reproach.

4 Q So when I asked you about your looking over
5 these industrial hygienists, the really stopping date
6 and being able to say that they still made written
7 reports of their plant visits would be February 1975?

8 MR. SHOEBOTHAM: With regard to his
9 supervision?

10 MR. LACEY: Yean. I mean, that's --
11 that's how we got off on this little
12 digression.

13 A I'm sorry. I believe that's correct. I don't
14 recall if that one day a week that I was in St. Louis, I
15 was reviewing that kind of -- those kind of studies.

16 BY MR. LACEY:

17 Q Okay. But those type of studies did exist at
18 least up until February of 1975?

19 A Yes, sir.

20 MR. LACEY: Why don't we just break
21 right there.

22
23 (Luncheon recess)

24
25 *****

AFTERNOON SESSION

THE VIDEOTECHNICIAN: Okay. We've been off the record for a lunch break. We're back on the record now. The time is 1:59 p.m.

CONTINUED EXAMINATION

QUESTIONS BY MR. LACEY:

Q You mentioned right before we took our lunch break that this group of chemical companies created a toxicological study institute in the Research Triangle Park area of North Carolina.

A Yes, sir.

Q And I -- if I understand correctly, this was designed to deal with high-volume chemicals that would be ones that were produced in large quantity by several companies. Is that correct?

A Yes, sir.

Q That type of institute would not have dealt with a chemical like PCBs, would it?

1 A No, sir.

2 Q And the reason it wouldn't is because the sole
3 manufacturer of PCBs was Monsanto. Correct?

4 A That's correct.

5 Q And as a result, a single chemical produced by
6 one company would still be the responsibility of that
7 company for its own study?

8 A Yes, sir.

9 Q When we talk about PCBs, you understand that
10 the lawsuit that -- that's brought us here today is one
11 that involves PCBs, do you not?

12 A Yes, sir.

13 Q And -- and you understand when we talk about
14 PCBs, we're talking about something that's known as
15 polychlorinated biphenyls and sometimes polychlorinated
16 diphenyls?

17 A Yes, sir.

18 Q Those two names, polychlorinated biphenyl and
19 polychlorinated diphenyl, are the same thing?

20 A Are poly- -- are polychlorinated -- I beg your
21 pardon? Which -- what did you say again?

22 Q Polychlorinated biphenyl and polychlorinated
23 diphenyl --

24 A Yes, sir.

25 Q -- are the same thing.

1 A Not phenol. Phenyl.

2 Q Phenyl.

3 A Yes, sir.

4 Q Okay. I'll get my pronunciations correct.

5 A Well, the -- the ending is n-y-l instead of
6 o-l --

7 Q -o-l.

8 A -- which are different compounds.

9 Q Right. And either -- either polychlorinated
10 biphenyl or diphenyl would both be PCBs?

11 A Yes, sir.

12 Q Generally, those products were known at
13 Monsanto by the name Aroclor, were they not?

14 A Yes, sir.

15 Q That was the -- is that -- would that be a
16 trade name that you'd -- what would you call that name,
17 Aroclor?

18 A I believe bulletins for the material had the
19 "R," indicating it was a trade name.

20 Q Okay. But it -- that's what it was known as by
21 Monsanto, anyway?

22 A Yes, sir.

23 Q Also, if I understand correctly, Monsanto sold
24 PCBs for different applications under other names like
25 Askarel?

1 A Yes, sir.

2 Q That was a PCB used for electrical
3 applications?

4 A To my knowledge, yes, sir.

5 Q There were also PCBs sold under the name
6 Pyranol? Are you familiar with that?

7 A Yes, sir, I'm -- I don't recall what it
8 referred to.

9 Q And sold under the name Inerteen?

10 A Yes, sir.

11 Q And that was another PCB product?

12 A Yes, sir.

13 Q Sold under the name Pydraul? Do you recall
14 that?

15 A Yes, sir, but in conjunction with other
16 compounds in the -- in the formulation, I believe; not
17 PCBs only.

18 Q All right. Pydraul --

19 A I could be wrong, but --

20 Q You don't recall Pydrauls being pure PCBs?

21 A No, sir.

22 Q Okay. Also, PCB products were sold under the
23 names Thermanol?

24 A Yes, sir.

25 Q So there were a variety of different names that

1 were used for different products that were sold by
2 Monsanto containing PCBs?

3 A Yes, sir.

4 Q But all of those products were products that to
5 the extent they had PCBs in them, had PCBs that were
6 manufactured by Monsanto?

7 A Yes, sir.

8 Q In fact, Monsanto had a patent on the
9 manufacture of PCBs, did it not?

10 A I don't think so, sir.

11 Q You're not aware of that?

12 A No, sir.

13 Q Do you have any understanding why no other
14 companies manufactured PCBs here in the United States?

15 A No, sir.

16 Q Do you recall which plants manufactured PCBs
17 for Monsanto?

18 A Yes, sir.

19 Q And which ones were they?

20 A There was a plant in Anniston, Alabama, and a
21 unit also in -- John -- not John; the W. K. Krummrich
22 plant in East St. Louis, Illinois.

23 Q Okay. When you say, "East St. Louis,
24 Illinois," I think of St. Louis being in Missouri, but
25 that's across the river on the other side of the

1 Mississippi?

2 A Yes, sir.

3 Q And that's over in Illinois when you cross the
4 river?

5 A Yes, sir.

6 Q Are those the only two plants in the United
7 States that you're aware of where PCBs were produced?

8 A Yes, sir.

9 Q Where else did Monsanto have plants where they
10 manufactured PCBs?

11 A We had one plant in Great Britain. And I'm not
12 sure whether it was at Newport, South Wales, or Ruthin
13 in North Wales. I've -- I've forgotten.

14 Q But it was in Wales?

15 A Well, it was in Great Britain --

16 Q And it --

17 A -- yes, in North or South Wales.

18 Q Yes. Where else did Monsanto manufacture PCBs
19 worldwide?

20 A I don't know of any other place.

21 Q Okay. Were there other people outside the
22 United States who manufactured PCBs?

23 A Yes, sir.

24 Q Who else manufactured PCBs besides Monsanto?

25 A I don't think I can recall the exact names; but

1 Bayer in Germany, I believe, was one.

2 There was a company in France that had a name
3 something like Protolac.

4 There was a company in Italy, and I don't
5 recall the name of that if I ever knew it.

6 And as far as we know, there was manufacturing
7 behind the Iron Curtain either in Russia itself or
8 satellite countries.

9 Q Do you know whether PCBs were manufactured in
10 Japan or not?

11 A They were, yes.

12 Q Do you know who manufactured PCBs in Japan?

13 A No, sir.

14 Q Is it possible that Monsanto was one of the
15 manufacturers in Japan?

16 A It's possible, but I don't recall if that was
17 the case.

18 Q Okay.

19 With regard to the United States PCB market, do
20 you recall what percentage of the actual sales that took
21 place in the United States came from PCBs produced by
22 Monsanto?

23 A I -- I don't understand the way you phrased
24 that question, sir.

25 Q Okay. Well, we know that Monsanto was the only

1 company that manufactured PCBs in the United States.

2 A Yes, sir.

3 Q I guess I'm trying to find out: Were they
4 basically the only company that sold PCBs in the United
5 States?

6 A I can't answer that. I don't know that any
7 other companies did.

8 Q Okay.

9 Let me ask if -- a couple more questions to
10 kind of finish up on this inquiry about the plant
11 inspections. And I'm now particularly going to focus on
12 the plant inspections that involved the plants that
13 produced PCBs, which would be the Anniston, Alabama,
14 plant; the plant -- the Krummrich plant in East
15 St. Louis; and this plant in Wales. Did you personally
16 ever inspect any of those three plants?

17 A The two in this country on several occasions,
18 in conjunction with routine visits to the plants,
19 looking at all departments.

20 Q And did you prepare written reports of those
21 plant inspections?

22 A I'm sure I did.

23 Q And did those reports include sections
24 discussing the portions of the plant where PCBs were
25 made?

1 A If it was a -- an inspection or a review of
2 the -- of the total plant, there would be reference to
3 the PCBs Departments; yes, sir.

4 Q To whom were those reports directed?

5 A I think without exception to the plant manager,
6 with copies to the Safety Engineer and other levels of
7 supervision, and with -- excuse me -- I believe a copy
8 to the plant physician.

9 Q Would there be a copy that was retained by the
10 Medical Department?

11 A I would expect so; yes, sir.

12 Q So those reports would have existed in the
13 files of the plant manager or superintendent; the files
14 of the actual plant physician, whoever was the treating
15 doctor in the plant; and in the files of the Medical
16 Department; and in the files of the Safety Department at
17 the plant?

18 A I would think so, yes, sir.

19 Q What form would those reports take? Was there
20 a special form of document that was filled out?

21 A I mentioned earlier this morning that we made
22 base-line surveys of all the plants, and these -- we did
23 have special forms that indicated the name of the plant;
24 department visited; the name of the supervisor; and then
25 a column listing the raw materials; the -- a column

1 which related to the product manufactured, and I don't
2 know that that was more than by name in this particular
3 column; and then an indication of what precautions were
4 provided to limit exposure.

5 Q Were those base-line reports maintained as a
6 permanent part of the Medical Department files?

7 A I suspect that they were not, as repeat studies
8 were done. The earlier one may well have been
9 destroyed.

10 Q So you didn't keep any ready reference of what
11 improvements had been made by your department in the
12 safety protections for employees at the plant?

13 A Only by comparison with the most immediate
14 previous report.

15 Q To understand how that relates to, for example,
16 the review by plant physicians of worker health, that
17 makes it somewhat difficult to assess the exposure that
18 workers had some years ago, because you don't have any
19 record of what operations were being used at that time.
20 Would that be correct?

21 MR. SHOEBOOTHAM: Now, you're asking
22 him -- if I understand your question,
23 you're directing his attention toward the
24 records in the Medical Department; but I
25 think he also told you that those records

1 would exist in several other locations,
2 including various files at the plants
3 themselves. Did you mean to exclude that
4 from your question?

5 MR. LACEY: Well, if they're
6 permanently kept somewhere in the company,
7 I'd like to know that. And then I'd like
8 to know why I don't have them, but that's
9 an issue we can address later.

10 MR. SHOEBOOTHAM: Do you understand
11 the question, Mr. Wheeler?

12 A I don't --

13 BY MR. LACEY:

14 Q Let me try to clarify.

15 A Please.

16 Q Okay. Earlier you talked to me about the fact
17 that people were examined by plant physicians; and it
18 was your thought that those examinations would turn up
19 any problems that these people had from exposures to
20 chemicals in the plant, and that the plant doctors would
21 be able to relate any problems to the chemicals the
22 workmen had worked with. That was your testimony, was
23 it not?

24 A Yes.

25 Q Okay. Now, in order to relate any health

1 problems that workers might have to a chemical, one
2 would need to know what chemical they were working with
3 first. Correct?

4 A Yes, sir.

5 Q They'd also need to know how and to what extent
6 they were exposed to the chemical. Correct?

7 A Yes, sir.

8 Q And the question of to what extent and how
9 workers were exposed to the chemicals that they work
10 with would depend upon what precautions were provided to
11 them in the workplace to keep them from coming into
12 contact with the chemical. Correct?

13 A I think that's correct; yes, sir.

14 Q And so it would be important to know the
15 history of what protections were provided to workmen
16 throughout their working with the chemical in order for
17 a doctor to assess the exposure they'd had and how that
18 would relate to causing any injury they had. Correct?

19 A Not necessarily. I think more importantly the
20 medical history on each worker, which was retained in
21 the personnel file on each employee, was a better
22 indication of whether there had been any difficulties
23 experienced by the employee in any one department or any
24 of the several departments that he might have worked in
25 during his work history.

1 Q Well, that's not my question. Let me see if I
2 can make my question clear.

3 Let's assume for a moment that Monsanto had a
4 department where the workmen in that department were
5 provided with Monsanto -- fresh, clean, Monsanto-
6 supplied clothing every day. Okay? You understand what
7 I'm saying?

8 A Yes, sir.

9 Q That that clothing included caps for the head,
10 underwear, socks, the outer clothing they wore, shoe
11 covers, gloves; they were provided with creams to put on
12 any exposed skin as a barrier to keep the chemical away
13 from the skin.

14 Now, if a workman were provided with all those
15 protections, it would be relatively difficult for them
16 to come into contact with the chemical they were working
17 with, at least by way of skin exposure, would it not?

18 A Yes, sir.

19 Q And if a workman had all those protections so
20 it was very difficult for them to come into skin contact
21 with the chemical they were working with, the fact that
22 they didn't get sick from skin contact with that
23 chemical doesn't tell you a whole lot, because they were
24 protected from that happening. Do you understand what
25 I'm saying?

1 A I think it would indicate that they were not
2 exposed to the point that they had any difficulty.

3 Q Right. And if a workman had difficulty who
4 had had that type of precautions taken, the doctor
5 looking at him could say, "Well, I don't think it's
6 from this chemical, because here are the precautions
7 that protected him. He wasn't really exposed to it."
8 Correct?

9 A I think that's logical.

10 Q Now, having said that, in order for a doctor to
11 look at a workman at Monsanto who is experiencing a
12 problem and determine whether or not it was caused by
13 the fact he worked in a particular department with a
14 particular chemical for a period of time in his career,
15 the doctor would also need to know what precautions were
16 taken at that time to keep the worker from being exposed
17 to the chemical, wouldn't he?

18 A Yes, sir.

19 Q Okay. And that -- in that sense, it would be
20 important to know the history of the worker precautions
21 over time in individual departments?

22 A Right, sir.

23 Q Okay. And I guess that really comes back to
24 the point of the difficulty, if there are not records
25 maintained on how workmen were protected and

1 improvements you made, knowing what the exposure was in
2 the past.

3 A I think, sir, there -- there were manufacturing
4 operating procedures which were maintained that would
5 indicate any changes.

6 Q Okay. Now, when you talk about manufacturing
7 operating procedures, what are you talking about?

8 A I think for every production department in
9 Monsanto, there was very detailed description of, one,
10 what the raw materials were; any hazard associated with
11 those; how the raw materials were blended, if you will,
12 so they would react properly and safely; any byproducts
13 that might be produced; and then the analysis of the
14 final material to show that it was in -- within
15 specifications; and the packaging, then, of that
16 material to be shipped, whether it be in five-gallon
17 cans, 55-gallon drums, or tank cars.

18 I don't know that I've left anything out there,
19 other than what first-aid equipment was available, what
20 other protection had to be provided in the minds of the
21 people that prepare the operating instructions.

22 Q So it's your belief that these operating
23 instructions, including the precautions sections of
24 them, would help us know what precautions were provided
25 to Monsanto workers in any particular department?

1 A Yes, sir.

2 Q Okay. And if you were, as an industrial
3 hygienist, trying to go back and figure out what it was
4 that Monsanto did to protect its workers and you
5 couldn't find your inspection reports that you did year
6 to year or however often they were done, then you would
7 go and look at these operating procedure manuals.
8 Correct?

9 A No, sir. I don't recall referring to the
10 operating procedure manuals. I understood that they
11 existed, but --

12 Q No, I -- that's not my question.

13 Obviously, you would refer to your plant
14 inspection notes, wouldn't you?

15 A Excuse me. Yes, sir.

16 Q I guess what I'm saying is: If you as an
17 industrial hygienist at Monsanto were attempting to go
18 back and find out what protections had been provided,
19 and for some reason you couldn't find your plant
20 inspection reports, then you would go look at these
21 operating procedure manuals. Correct?

22 A I think so; yes, sir.

23 Q Did you ever actually review any of the
24 operating procedures manuals when you went to the plants
25 to make sure that what the workers were doing the day

1 that you were there was what the operating procedure
2 manuals called for?

3 A No, sir. We relied on observation.

4 Q I see. So you -- you simply assumed that as
5 the ordinary course of business, the plant managers
6 would ensure that the operating procedures manuals were
7 being carried out; and therefore what you saw on your
8 inspection was what they did on a daily basis.

9 A Yes, sir.

10 Q And again, that's the reason you didn't make
11 unannounced visits: You assumed nobody was going to do
12 anything special; that you could show up there any day,
13 having been announced a week in advance, and they would
14 still be doing what they always did.

15 A Yes, sir.

16 Q Okay.

17 Now, do you recall any differences in the way
18 that workmen in the unit that made PCBs in Illinois were
19 protected from exposure to PCBs, as compared to the
20 workers who made PCBs in Alabama?

21 A Am I aware that there were differences?

22 Q Do you recall whether there were any or not?

23 A I don't know that I recalled, until I reviewed
24 certain documents with Mr. Shoebotnam this weekend.

25 Q I see. Mr. Shoebotnam has shown you some

1 documents this past weekend?

2 A Yes, sir; yesterday, I --

3 Q Yesterday; okay. Did he call your attention to
4 the fact that there were differences in the worker
5 protection?

6 A He showed me documents that would indicate
7 that, yes.

8 Q Okay. Did that refresh your recollection that,
9 in fact, there were worker differences in protection at
10 the two plants?

11 A Yes, sir.

12 Q Having had your recollection refreshed, what
13 can you tell me about that?

14 A What can I tell about what, sir?

15 Q About the differences.

16 A There were changes of clothing provided at the
17 Krummrich plant.

18 Q That's the one in Illinois?

19 A That's the one in Illinois.

20 Q Uh-huh.

21 A The employees were authorized to quit early --
22 quit 20 minutes early to take showers.

23 I think these were the principal differences.

24 The plant at Anniston operated for -- well, I
25 guess from 1929 to when they shut down in the '70's

1 without that protection and without any difficulty.

2 Q Is it your understanding that the workers in
3 Anniston never had the benefit of changes of clothing?

4 A My understanding is that they did not get
5 company-provided daily changes of clothing.

6 Q I see.

7 A They may or may not have been given clean
8 coveralls weekly.

9 They were not paid to take a shower, or they
10 did not take a shower on paid time, the eight-hour
11 workday.

12 Q Were there any other differences that you were
13 able to ascertain after reviewing whatever documents
14 Mr. Shoebotham showed you?

15 A Those are the only ones that come to mind.

16 Q How -- how many documents have you reviewed in
17 preparation for your deposition?

18 A Oh, I would say 150, 200, perhaps.

19 Q How many pages, if we stack -- stack them up on
20 the floor here? Would they be a foot tall, or --

21 A They would be about that size.

22 Q Okay.

23 Did you, as an industrial hygienist for
24 Monsanto, direct that the workers in Illinois be treated
25 differently than the workers in Alabama?

1 A No, sir.

2 Q Were you aware, at the time you made plant
3 inspections of those two plants, that the workers were
4 being treated differently?

5 A I believe so; yes, sir.

6 Q Did that cause you any concern at all?

7 A No, sir.

8 Q You didn't think the company was failing to
9 provide protections it should at the plant in Alabama?

10 A Not at all, sir.

11 Q And you didn't think that the plant -- or the
12 company was wasting money by providing too many
13 protections in Illinois?

14 A I don't think it was a question of money, sir.
15 I think that the -- our feeling was that they were given
16 privileges and were provided with clothing when it
17 wasn't necessary.

18 Q And you're telling me that there wasn't any
19 effort on the part of the company to reduce expenses by
20 reducing unnecessary steps or processes?

21 A Not if there was a question in the minds of
22 ourselves or the employees or the production people that
23 there was a -- a situation where they thought the extra
24 precaution was necessary.

25 Q Was there any significant difference between

1 the manufacturing process in Alabama and the
2 manufacturing process in Illinois?

3 MR. SHOEBOTHAM: The manufacturing
4 process specifically for PCBs?

5 MR. LACEY: Yes. Let me rephrase
6 that question.

7 BY MR. LACEY:

8 Q Was there any significant difference between
9 the manufacturing process in Alabama, where PCBs were
10 made at the Anniston plant, and the manufacturing
11 process of PCBs in Illinois, where they were -- PCBs
12 were made at the Krummrich plant?

13 A My recollection is that the operations in
14 Illinois were more exposed to the elements, if you will;
15 whereas, in Anniston they were within an enclosed
16 building that had a lot of openings in it, but they --
17 they were in a manufacturing building; whereas, I think
18 the operation at the Krummrich plant was a unit that --
19 like more -- like would be referred to an operation in a
20 refinery that you'd see as you drive along the highway.

21 Q Was one operation more likely than the other to
22 let PCBs escape from the manufacturing process and come
23 into contact with workmen?

24 A Not to my knowledge.

25 Q Would having the plant out in the open, as it

1 was in Illinois, make it more likely that PCBs that did
2 escape from the manufacturing process, if any did, would
3 be dissipated more quickly?

4 A I would think that would be the case, yes.

5 Q Whereas, the manufacturing process in Alabama
6 in the enclosed building would make it more likely that
7 if any PCBs did escape, that there would be longer
8 periods of time for contact with employees before
9 dissipation. Correct?

10 A I think it's logical to assume that the -- in
11 the case of vapors, they would persist longer within the
12 building that wasn't as well-ventilated as the units
13 were at -- natural ventilation, as they were in
14 Illinois.

15 Q And yet the greater precautions were taken in
16 the plant in Illinois.

17 A That's right, sir.

18 Q Was there any difference in the health and
19 safety laws that were applicable to Monsanto plants in
20 Illinois versus those that were applicable to Monsanto
21 in Alabama that would require or encourage Monsanto to
22 give greater protection to its Illinois workers than it
23 Alabama workers?

24 A Not to my knowledge.

25 Q Was there any difference in the susceptibility

1 of the workers in Alabama versus the workers in Illinois
2 to any problems that might arise from PCBs that would
3 make it logical to provide more protections to the ones
4 in Illinois than the ones in Alabama?

5 A Not that I'm aware of.

6 Q Were there any -- any differences in the
7 workmen's compensation laws, or anything like that, that
8 would make it logical to put more stress on protection
9 in Illinois than Alabama?

10 A Not to my knowledge.

11 Q Was there anything about the workmen's
12 compensation carrier, Liberty Mutual's, industrial
13 hygiene program that directed that people in Illinois be
14 provided more protection than people in Alabama?

15 A No, sir.

16 Q Was there anything about what the intern- --
17 the industrial hygienists employed by Monsanto itself,
18 like yourself, said that suggested a reason why the PCB
19 workers in Illinois got greater precautions than those
20 in Alabama?

21 A I don't recall any discussions. I think our
22 reaction was that the experience in Anniston indicated
23 that the materials could be manufactured and handled
24 safely without the precautions that were being taken in
25 Illinois.

1 Q Well, now, Anniston, Alabama, was the older of
2 the two plants, was it not?

3 A Yes, sir.

4 Q The Krummrich plant was later built and started
5 producing long after Anniston had already been
6 producing?

7 A Sometime after. I don't know the age or the
8 differential in years.

9 Q So if you were going to pattern the new
10 operation on the old operation, as you understand it,
11 there wouldn't be any explanation for why this clothing
12 change and this paid shower ever got started in
13 Illinois. Correct?

14 A To my knowledge, there would be no reason to do
15 it because of the Aroclors; but the two plants were
16 completely different in terms of the other products that
17 were manufactured.

18 The Krummrich plant had a fair number of toxic
19 chemicals that were used as raw materials. This was not
20 true at Anniston.

21 So the provision of clothing changes and these
22 extra precautions were not uncommon at the Krummrich
23 plant; whereas, there had never been any operations at
24 the -- at the Anniston plant that required such
25 protection.

1 Q Is it your testimony that every employee at the
2 Krummrich plant got a change of clothing, fresh change
3 of clothing, every day?

4 A Oh, no, sir.

5 Q That every employee at the Krummrich plant got
6 a paid shower at the end of the shift every day?

7 A No, sir.

8 Q That was only specific departments at
9 Krummrich, was it not?

10 A Oh, no, sir. My comment was -- if I -- if I
11 wasn't articulate, I hope I can be. I said that there
12 were more manufacturing units, No. 1, at the Krummrich
13 plant. I think their work population was maybe 1700 or
14 1800. The Krumm- -- the Anniston plant had maybe a
15 maximum of 300.

16 The materials at the Anniston plant were --
17 until such time as they introduced the production of
18 elemental chlorine down there, were physiologically
19 inert, in -- in -- in my estimation, except for the
20 PCBs, which I would not classify as -- as
21 physiologically inert, but with a degree of risk that
22 was not comparable to the number of operating units on
23 completely unrelated polychlorinated biphenyl at the
24 Illinois plant.

25 So that I would agree that in a number of the

1 units at the Krummrich plant, the changes of clothing
2 and the shower periods and so on were completely
3 justified.

4 Q But my question, just so I'm clear: There were
5 units at the Krummrich unit in Illinois where workmen
6 were not provided with clothing every day. Correct?

7 A That's right, sir.

8 Q And there were a number of units at the
9 Krummrich plant where workmen were not provided with
10 paid showers every day.

11 A That's right, sir.

12 Q The risk to a PCB worker in Illinois was no
13 greater than the risk to a PCB worker in Alabama.
14 Correct?

15 A That's right, sir.

16 Q And, in fact, if anything, the risk to a PCB
17 worker in Illinois was less than that to one in Alabama,
18 because the facilities for manufacture of PCBs in
19 Illinois were not enclosed?

20 A I believe that's right, sir.

21 Q Okay. So, again, in terms of the actual risks
22 to a Monsanto worker manufacturing PCBs, they were
23 certainly no greater in Illinois than in Alabama?

24 A That's right, sir.

25 Q And that cannot explain the difference in the

1 protections provided?

2 A That's right, sir.

3 Q And there was no plantwide policy in Illinois
4 that every workman got all these special precautions; so
5 no plantwide policy can explain the difference, either.
6 Correct?

7 A I -- I can't answer it in terms of policy.
8 Your previous question was that not all employees got
9 clothing or showers. Some employees did.

10 Q Well, what I'm saying is: I mean, I guess a
11 plant would have a policy that everybody gets clothing
12 and a shower, whether they need it or not.

13 A Well, that would be true in a nuclear power
14 plant, certainly.

15 Q Okay. Well, and -- and it -- I mean, Monsanto
16 could have decreed that for any one of its plants, nad
17 it cnosen to, could it not?

18 A Yes.

19 Q It didn't have a policy like that in the
20 Krummrich plant, did it?

21 A No, sir.

22 Q Okay.

23 Now, were plant managers permitted the
24 discretion to exercise less safety precautions than you
25 felt were necessary to protect tne workmen?

1 A No, sir.

2 Q So if you had gone to a Monsanto plant and
3 found that a particular safety precaution were necessary
4 to protect Monsanto workmen and the plant manager
5 refused to institute it, you eventually could go back
6 through the chain of command and force that change?

7 A Yes, sir.

8 Q Were plant managers permitted the discretion to
9 exercise greater safety precautions than you felt were
10 necessary?

11 A They obviously did in the case of the PCB.

12 Q And that was something they were entitled to
13 do?

14 A Obviously.

15 Q And I take it that that's something that
16 reasonable people, the level of precaution necessary --

17

18 (Reporter's Note: At this point, the
19 deposition was interrupted by a telephone
20 call)

21

22 THE VIDEOTECHNICIAN: We're off the
23 record for a moment.

24

25 (Discussion off the record, and

1 recess)

2
3 THE VIDEOTECHNICIAN: Okay. We've
4 been off the record for about 15 minutes.
5 We're back on the record now. The time is
6 2:53 p.m.

7 BY MR. LACEY:

8 Q I -- I think at the time the -- the phone rang
9 and interrupted us, we were talking about the ability of
10 a plant manager to institute more stringent safety
11 precautions for a particular operation within the plant
12 that he was over than was required by the Medical
13 Department.

14 A That's right, sir.

15 Q And -- and that is something a plant manager
16 was free to do.

17 A Yes, sir.

18 Q And I guess that's a -- an indication of the
19 fact that people can disagree about what level of
20 precautions are needed for a particular operation.
21 Correct?

22 A Yes, sir.

23 Q And the way Monsanto arranged the situation
24 was: Whoever had the most stringent precautions, those
25 were the precautions that were used. Correct?

1 A In that plant, yes, sir.

2 Q Well, for example, if there were a plant
3 manager who wanted less stringent precautions than you
4 would require, your precautions would prevail over the
5 less stringent.

6 A Oh, yes, sir.

7 Q And if there were somebody who wanted more
8 stringent precautions than you required, those more
9 stringent precautions would prevail. Correct?

10 A Yes, sir.

11 Q So the net of it is that the most stringent
12 precautions were the ones that were applied in any
13 particular plant. Correct?

14 A It was in the case of the Krummrich plant
15 and -- and the Anniston plant and in terms of PCBs.

16 Q And the fact that you and the plant manager at
17 Anniston agreed on less stringent precautions than you
18 and the plant manager at Krummrich agreed upon just
19 simply indicated that reasonable people could disagree
20 about what level of precautions were required. Correct?

21 A I couldn't express it better myself, sir.

22 Q Okay.

23 A The wording in -- in the -- we referred to the
24 operating document. We get back to the definition of
25 the word "toxic."

1 And for whatever reason -- I don't know -- the
2 plant manager, I think, decided at the Krummrich plant
3 that this was going to be designated a toxic department,
4 and in the other departments justifiably so designated,
5 got the changes of clothing, et cetera, prevailed. We
6 were never asked if we thought that the materials in the
7 PCB operation deserved the designation of -- of "toxic,"
8 as we in industry would in general use it.

9 Q Anything further you want to add?

10 A I don't think so.

11 Q Is -- is that last comment something that you
12 and Mr. Shoebottom discussed while we were on break?

13 A No, sir. No, sir.

14 Q I see.

15 A It -- it's -- it's -- it's something that has
16 bothered me, I think, all my working life. We discussed
17 this morning the difference between safety and
18 industrial hygiene, so the -- the use of the word
19 "toxic" varies.

20 I assume that your wife probably uses chlorine
21 bleach, without using a trade name. Well, chlorine
22 bleach happens to have available chlorine in it to the
23 extent of 5 percent, and that's a poison. Your wife
24 wouldn't buy it if it had the skull and crossbones on
25 it, and practice has indicated that it doesn't have to

1 be designated a chlorine -- it doesn't have to be
2 designated a poison, and yet it's a -- it's a harmful,
3 dangerous material. You get a snootful of it, and you
4 get away from it.

5 The same would be true of the ammonia-
6 containing compounds for cleaning windows. You get a
7 snootful of that, and -- and you kind of turn your head
8 and take a breath of fresh air.

9 So, again, maybe to some people this -- these
10 are, quote, "toxic."

11 Q You're talking about "these." You mean PCBs.

12 A I'm talking about the ammonia and the --

13 Q Oh, okay.

14 A -- and the chlorine --

15 Q I see.

16 A -- situation.

17 Q Okay.

18 A And -- and yet if they were overlabeled, the
19 products which are very, very useful, if not necessary,
20 would -- would never be used.

21 Q Of course, we read from time to time about
22 tragic incidents involving things like household ammonia
23 and household bleach, don't we?

24 A I don't think so much household bleach. But
25 just recently there have been some injuries from an -- a

1 refrigerating system, a refrigerator system containing
2 ammonia that ruptured and caused injuries, if not death.

3 Q And while, quote, "overlabeling," close quote,
4 as you used the word, might deter some people from
5 buying the product, it also tends to reduce the
6 likelihood of those tragic incidents, doesn't it?

7 A Well, I would assume that the ammonia as used
8 in a refrigeration unit was probably classified as a
9 poison, because it was full strength; whereas, the usage
10 that you and I are accustomed to, it is not.

11 So it's the concentration leading to the
12 exposure that's important, as well as the -- the -- the
13 chemical and physiological characteristics of the active
14 ingredient.

15 Q Well, let me come back, and we'll just follow
16 up a little bit on what you had to say, though.

17 Let's talk about household bleach and household
18 ammonia. You've told me those things don't have warning
19 labels of the type that could appropriately be applied
20 to them saying they're toxic. Correct?

21 A I don't know that, again, the word "toxic" is
22 correct. The fact is that they do have a physiologic
23 effect that -- that's -- is possible. A chlorine bleach
24 solution can -- can cause a pretty severe skin rash.

25 Q Okay.

1 A And if you get it in the eye -- and the same
2 with the -- the ammonia solution -- you've got a pretty
3 painful, but not a sight-destroying, injury, as you
4 would with the chemical itself.

5 Q And what you indicated to me was if you had on
6 these types of products warning signs that they're
7 toxic, you think people would be less likely to buy
8 them. Correct?

9 A I believe that's true.

10 Q Yes. And what I'm asking you is whether, by
11 the same token, if you had those types of warnings on
12 them, people who did nevertheless buy them would be more
13 likely to handle them more carefully.

14 A I'm not sure that's correct; because, again, we
15 get to the human experience where, in general, there
16 aren't that many problems that arise in the general use
17 by millions of people in the two products we've just
18 mentioned.

19 Q Even setting aside whether there are problems
20 or not, can't you agree with me if those products
21 carried labels saying that they were toxic, while there
22 might be fewer people buying them, those who bought them
23 would be more careful with them?

24 A I'm not sure that's true.

25 Q You don't think a -- a label warning about the

1 toxicity of a product is likely to be effective, then.
2 Is that correct?

3 MR. SHOEBOTHAM: Well, for the --
4 to begin with, that's not what Mr. Wheeler
5 said. Mr. Wheeler said they don't carry
6 the skull and crossbones. He didn't say
7 there was no warning on the product.

8 BY MR. LACEY:

9 Q Well, let's -- let's go back.

10 And what I thought you first told me was,
11 Mr. Wheeler, that household ammonia and household bleach
12 contain chemicals that could certainly be called toxic.

13 A In their full strength, that's right, sir.

14 Q And you told me that those products don't
15 contain on them labels saying that the chemicals are
16 toxic.

17 A I do not believe the labels use the word
18 "toxic."

19 Q Yes.

20 A I may be wrong on that, sir.

21 Q Okay. But let's just assume for the moment
22 you're right, for the purpose of our discussion.

23 You also told me that you thought if the labels
24 said on them that the products were toxic, fewer people
25 would buy those products. Correct?

1 A There would be some that would not buy them.

2 Q Okay. And my question to you is: Don't you
3 also think that if the labels said that they were toxic,
4 that those people who did buy them would be more careful
5 with them?

6 A Not necessarily.

7 Q Okay. So you do not believe that labeling a
8 product "toxic" has any effect on the caution that
9 people use around it?

10 A In the public area. We are talking now about
11 home consumer items.

12 Q And you don't believe that consumers, when
13 faced with a label saying that this is a toxic product,
14 will be any more careful with it than if it doesn't say
15 that. Is that your opinion?

16 A I think that's quite likely.

17 Q Okay.

18 By the way, can you recall the names of the
19 people who were the plant managers of the Anniston,
20 Alabama, plant while you were an industrial hygienist at
21 Monsanto?

22 A I remember Des Hosman was plant manager at one
23 time at Anniston. Bill Papageorge.

24 I guess Joe Crease was at Krummrich.

25 Q Well, I'm just doing Anniston right now. Let

1 me just get Anniston first.

2 Now I'm asking you: Who were the plant
3 managers that you recall being at Anniston when you were
4 with Monsanto?

5 A I have to say the two most recent ones, because
6 those are the ones I recall. I -- I believe that was
7 Papageorge, preceded by Des Hosman.

8 Q When was Mr. Papageorge last the plant manager
9 at the Anniston, Alabama, plant?

10 A I think at the end of December of '69.

11 Q His tenure was from roughly 1965 through 1969?

12 A I can't recall when he was assigned plant
13 manager.

14 Q During the time that Mr. Papageorge was the
15 plant manager at the Anniston, Alabama, plant, did he
16 ever indicate to you in any way that he would like to
17 upgrade the protection for Monsanto's PCB workers at
18 that plant to be equal to that provided at the Illinois
19 plant?

20 A Not to my recollection.

21 Q Had he recommended that, would you have kept
22 him from doing that?

23 A I would not have kept him from doing it. I
24 would not have recommended that he do it.

25 Q Okay. But he would have been free to, had he

1 chosen to --

2 A Yes, sir.

3 Q -- have provided the same protections to the
4 PCB workers in Anniston, Alabama, as were provided to
5 the PCB workers --

6 A Yes, sir.

7 Q -- in Illinois?

8 A Yes, sir.

9 Q Okay.

10 Now, can you tell me the names of the plant
11 managers of the Krummrich plant in Illinois?

12 A I'm -- I'm ashamed to say I -- I draw a blank.
13 I believe Des Hosman may have -- may have gone there
14 from Anniston, or perhaps not.

15 A gentleman named Joe Crease, who would have
16 been at the Nitro, West Virginia, plant, was plant
17 manager.

18 Q Mr. Crease was -- what about Nitro, West
19 Virginia?

20 A He had been the plant manager at Nitro, West
21 Virginia, and moved up to the plant manager of
22 Krummrich --

23 Q Okay.

24 A -- the Nitro plant being a smaller plant, and
25 his being, I assume, promoted to plant manager of a

1 larger plant.

2 Q Was it normally the situation where managing a
3 larger plant was more prestigious and a promotion over
4 managing a smaller plant?

5 A I don't know about prestigious.

6 Q Well, was it a promotion within the company?

7 A I would expect that it would have been a
8 promotion within the company; yes, sir.

9 Q Was that generally your experience and what you
10 saw while you were going out to plants; that people
11 moved from the smaller ones to the bigger ones?

12 A Yes, sir.

13 Q How did the Krummrich plant compare in size to
14 plants within the Monsanto system?

15 A Well, it varied over the history of my being
16 there.

17 Until we built the nylon plant in Pensacola,
18 Florida, I think our largest plant was in Springfield,
19 Massachusetts.

20 The second-largest was at South 2nd Street in
21 St. Louis, the Queeney plant.

22 I think the Krummrich plant was probably third.

23 Q Is it fair to say that during your tenure at
24 Monsanto, the Krummrich plant was always one of the five
25 largest plants Monsanto had?

1 A I believe that's correct.

2 Q And as such, it would have always had one of
3 the more experienced plant managers in charge of it?

4 A I think so.

5 Q Okay. Typically, a plant like the Krummrich
6 plant would have a more experienced plant manager than a
7 plant like the Anniston, Alabama, plant?

8 A I believe that's correct.

9 Q And a more experienced plant manager might be
10 more perceptive to the health hazards to his workers
11 than a less experienced plant manager. Wouldn't you
12 agree?

13 A No, sir.

14 Q You don't think so?

15 A No, sir.

16 Q I see. Experience with regard to managing a
17 plant doesn't have much impact on a person's ability to
18 perceive health hazards?

19 A I didn't say that, sir.

20 Q Well --

21 A I don't think it's necessarily true that the
22 plant manager at the smaller plant isn't just as
23 perceptive, interested, involved, responsible for the
24 well-being of his workers as the manager at a large
25 plant.

1 Q Well, is it typically true that the manager of
2 a large plant is more experienced in plant management
3 and more experienced, at least, in looking for those
4 sort of problems?

5 A I didn't hear the last part of your --

6 Q That -- is it true that the manager of a large
7 plant is typically more experienced in plant management
8 and more experienced in looking for problems that could
9 adversely affect the workers at the plant?

10 A I would agree with the first part of your
11 question.

12 Q What about the second part?

13 A Would you rephrase it?

14 Q Yes. Would you agree with me that typically,
15 the plant manager at a larger plant would have more
16 experience in looking for problems that might adversely
17 affect the workers at his plant than the plant manager
18 of a smaller plant?

19 A Only because he had more operating units and
20 more diverse chemical operations.

21 Q Well, wouldn't he typically also have more
22 experience in plant management because he's moved up
23 through the ranks?

24 A Soon after he became the plant manager of the
25 larger plant, I would say yes.

1 Q Okay. And the plant manager certainly did have
2 a responsibility to look out for the health and safety
3 of the workmen at the plant, did he not?

4 A Again, I'm sorry. Did you say, "to look out
5 for"?

6 Q Yes.

7 A Absolutely. I feel quite sure that his -- the
8 evaluation of his performance was based in part on the
9 safe and health -- safety and health records of the
10 people that were under his supervision.

11 Q Let me go back and talk a little bit about this
12 business of what one says about a product; whether one
13 calls it toxic, and so on and so forth.

14 To what extent were you involved in making
15 decisions for Monsanto or making recommendations at
16 Monsanto about what to say to customers about the
17 products that Monsanto produced?

18 A Eventually, I corresponded with many, many
19 customers about the -- in -- in response to inquiries
20 about the safe handling and use of Monsanto products,
21 normally -- I think perhaps without exception -- not
22 unless I was convinced that I was expressing Dr. Kelly's
23 views on the toxicity data and what he agreed were the
24 recommendations for -- that should be forwarded.

25 Q Do I understand that while you -- you

1 corresponded, you were always trying to correspond not
2 what you necessarily thought, but what Dr. Kelly
3 thought?

4 A No, sir; what we agreed should be the response.

5 As you've indicated, we were a small office;
6 and for many, many years we each reviewed the other's
7 correspondence, unless it was personal. And if there
8 were questions that I felt I couldn't answer because of
9 previous discussions with Dr. Kelly and answers to
10 previous questions that he'd answered, then I discussed
11 with him what the appropriate answer would be.

12 Q Let me try to understand the various ways in
13 which Monsanto got information to its customers about
14 the products that Monsanto manufactured and sold.

15 I take it one way would be through personal
16 correspondence.

17 A Yes, sir.

18 Q Was that typically true when the customer
19 called you, or did you also go out and actually make
20 calls on customers for the purpose of conveying to them
21 information about the products that you sold?

22 A Of -- of conveying to them? Is that --

23 Q Information about the products that Monsanto
24 sold. In other words, I guess I'm asking -- I
25 understand that sometimes a customer would call and

1 be directed to you and ask for information on a product,
2 and you would answer it.

3 A That's correct.

4 Q My question is: Would you ever just, without
5 the customer calling, call a customer and talk to them
6 about the safe handling of a product?

7 A I can't recall of it in the absence of an
8 inquiry.

9 Q Okay. So one way that information would be
10 communicated to a customer of Monsanto about the safe
11 handling and hazards of a Monsanto product would be if
12 the customer called Monsanto and asked for information.

13 A That was one way, sir.

14 Q Okay. And if they called Monsanto and asked
15 for information, they would be directed to the Medical
16 Department. Correct?

17 A In most cases, yes, sir.

18 Q Well, was that what the directions were; that
19 they were to be directed to the Medical Department?

20 A I believe, without exception.

21 Q In -- in fact, isn't that a requirement that
22 Dr. Kelly had sought and was successful in getting, a
23 directive from the company that questions about the safe
24 handling and hazards of products had to be directed to
25 the Medical Department?

1 A I believe that's right.

2 Q Okay. It was not the desire of Dr. Kelly that
3 people be asking for information about safe handling
4 from people like plant managers, for example?

5 A That's correct.

6 Q Okay. I guess one reason that that would be
7 important is because one might get conflicting
8 information from plant managers.

9 A Excuse me. Again -- I've got the burps today.
10 Excuse me.

11 Again, because of differences in definitions,
12 it -- it appeared logical and necessary to have one
13 department using the terminology that was common in the
14 field of -- of toxicology and medical practice where
15 the -- there was a common understanding of what was
16 being said.

17 Q Well, it was also important that there only be
18 one answer from Monsanto, wasn't there?

19 A Yes, sir.

20 Q I mean, it would be a bit embarrassing,
21 wouldn't it, if the customer could go to the plant
22 managers that made the product and the customer called
23 up and said, "What precautions are necessary for our
24 workers working with PCBs?"

25 And one customer was rung through to the

1 Anniston, Alabama, plant manager; and he said, "Not too
2 many precautions. Don't worry about it."

3 "Do you need special clothes?"

4 "No."

5 "Do you need to provide baths at the end of the
6 shift?"

7 "No."

8 And another customer called and was directed to
9 the Krummrich plant and was told, "Do you need special
10 clothing?"

11 He said, "Yes."

12 "Do you need to provide showers at the end of
13 the shift?"

14 "Yes."

15 I mean, that would create a little bit of a
16 problem, wouldn't it?

17 A Well, yes.

18 Q And you wanted to have a situation where at
19 least every customer got the same information?

20 A Yes.

21 Q And the net result of that is that customers
22 weren't told, in the case of PCBs, for example, that one
23 of Monsanto's plants gave special clothing to the
24 workers in that department. Isn't that right?

25 A I believe that's right.

1 Q Customers weren't told that in one of the
2 Monsanto plants producing PCBs, that workers were given
3 20 minutes of paid time to take a shower at the end of
4 each shift. Isn't that correct?

5 A I believe so.

6 Q In fact, customers weren't told anything about
7 the precautions taken at the Krummrich plant to protect
8 workmen from the hazards of PCBs. Isn't that correct?

9 A I don't agree.

10 Q What were customers told about the steps taken
11 at Krummrich to protect Monsanto workers from the
12 hazards of PCBs?

13 A They were told the Medical Department
14 recommendations for the handling, which was typical of
15 Anniston; also typical at the Krummrich plant, but, as
16 you've indicated, was supplemented at the Krummrich
17 plant.

18 Q So a customer who called the Medical Department
19 and asked about the safe-handling procedures for PCBs
20 would be told about the procedures that were applied at
21 Anniston, but not told about the supplements to those
22 procedures applied at Krummrich. Correct?

23 A That's right.

24 Q Okay.

25 If a customer had called and asked for the

1 right to tour a plant where PCBs were produced in order
2 to learn more about their hazards and how they were
3 handled by Monsanto, which plant would they be sent to
4 for a tour?

5 A That's a hypothetical question. I -- I --
6 I don't know.

7 Q Well, would it be logical they would be sent to
8 the plant closest to them?

9 A I can't answer that.

10 Q Were there ever any situations that you're
11 aware of where customers called and asked to tour a
12 Monsanto plant so they could learn more about toxicology
13 and safe handling?

14 A Not that I'm aware of.

15 Q I see.

16 Would you think it appropriate, if a customer
17 did contact Monsanto and ask for information about how
18 Monsanto handled the products, that they be told that
19 there was a difference of opinion within Monsanto about
20 what was needed for safe handling?

21 MR. SHOEBOTHAM: Let me object to the
22 form of the question to the extent it
23 assumes that there was some difference of
24 opinion within Monsanto as to the proper
25 and safe handling of PCBs. I don't

1 believe that has been Mr. Wheeler's
2 testimony.

3 BY MR. LACEY:

4 Q Well, let me just ask that.

5 The very fact that there were more precautions
6 in Krummrich for PCB workers than there were in
7 Anniston, Alabama, is a witness to the fact that there
8 was a difference of opinion in -- among people in
9 Monsanto about the precautions required around PCBs.
10 Isn't that correct?

11 A Yes.

12 Q Okay. Now, having established that, if a
13 customer called and asked for information from Monsanto
14 about the safe handling of PCBs and the precautions
15 workers should take around them, would they be told
16 about the difference of opinion within Monsanto
17 concerning the safe handling of PCBs?

18 A Not as it related to the differences and the
19 practices at Krummrich and -- and Anniston.

20 Q And the practices they would be told about were
21 the practices at Anniston, Alabama, and not the
22 practices at Krummrich?

23 A They were the practices that we thought were
24 adequate to protect the user.

25 Q And by "we," you mean you and Dr. Kelly?

1 A And the history of operation at both the plants
2 with no difficulties; essentially no difficulties.

3 Q Well, but the "we" that made the decision on
4 what to tell them was you and Dr. Kelly?

5 A Yes, sir.

6 Q And what you decided to tell them about was
7 what was applied in Anniston, Alabama, not what was
8 applied in Krummrich?

9 A That's right.

10 Q Okay.

11 Now, the first area, then, of communication
12 with a customer could be if a customer called, he was
13 directed to the Medical Department, and you or Dr. Kelly
14 answered his questions. Correct?

15 A I don't think so, sir.

16 Q Well --

17 A I think the first information that went to the
18 customer was in the Technical Bulletins.

19 Q Okay. I'm sorry. I didn't mean to indicate
20 that was the first information. I -- that was one route
21 of inquiry, and that's the first one we've discussed.

22 A Yes. Well, you didn't discuss it, I don't
23 think, sir. We hadn't mentioned that -- the Technical
24 Bulletins contained information that was sent to all
25 customers.

1 Q Yes. Let me -- let me go back.

2 There are several ways in which information can
3 get between Monsanto and the customer about the safe
4 handling of a product.

5 A Yes, sir.

6 Q One way is for the customer to call Monsanto
7 and communicate with the Medical Department.

8 A Yes, sir.

9 Q And we've talked about that way?

10 A Yes, sir.

11 Q Okay. There are other ways?

12 A You said "call." It could be a call or
13 letters.

14 Q Okay.

15 A Yes. The contact was there.

16 Q The contact. And it could be through a phone
17 call or through a letter.

18 A To the Medical Department.

19 Q And the response might either be by a return
20 phone call, or a phone call in response to a letter; or
21 it might be a written response, a letter in response.
22 Correct?

23 A Possibly. In most cases, a telephone call and
24 followed by a letter.

25 Q Okay. Now, having discussed that means of

1 communication, I want to talk about the other means of
2 communication by which customers could get from Monsanto
3 information about the hazards and safe handling of
4 Monsanto products.

5 You mentioned Technical Bulletins. What do you
6 mean by a Technical Bulletin?

7 A Well, for -- I don't know what exceptions there
8 might have been. But, certainly, for most of the
9 Monsanto products and certainly the PCBs, there were
10 Technical Bulletins that described their physical and
11 chemical characteristics; proposed applications; I think
12 in all cases a -- a paragraph or some information
13 including precautionary warnings for safe handling;
14 container sizes.

15 If it were for one application, it would have
16 the engineering data for that application, as compared
17 to another. A bulletin for the use of plastic -- for
18 PCBs in plasticizers would be quite different than a
19 bulletin for dielectric uses.

20 Q Okay. And what was done with those bulletins?
21 How was the information then conveyed to customers?

22 A Through two general methods, I believe.

23 Q How was that?

24 A One would be by our development personnel; and
25 secondly, more on a continuing basis, by the sales

1 personnel.

2 Q Okay. Let's go back and try to understand each
3 one of those.

4 And first, let me start with the development
5 personnel. What do you mean when you say "development
6 personnel"?

7 A We had essentially three groups within a
8 product line.

9 One was engaged in research, developing new
10 materials, developing new uses for materials.

11 If the product looked like it had promise, then
12 it was turned over; and, in conjunction with marketing
13 development people or product development people, the
14 potential customers were contacted, and this new product
15 or new formulation was discussed.

16 And eventually it ended up in the hands of the
17 marketing personnel.

18 Q And when you say "marketing," is -- those are
19 the same as saying "sales personnel"?

20 A Yes.

21 Q Okay. So it's -- if I understand correctly,
22 then, when you have a new product or a new use for an
23 existing product, people who were in the development
24 area would go out and talk to potential customers to try
25 to get them interested in the product.

1 A Yes, sir.

2 Q And these development personnel would have the
3 initial technical materials on that proposed use or on
4 that new product?

5 A Yes, sir.

6 Q And those technical materials would include
7 something about toxicology and safe handling?

8 A That's correct.

9 Q Then, assuming that development area was
10 successful and you -- you -- you, in fact, got a
11 customer, the salespeople would periodically call on
12 that customer?

13 A Yes, and the bulletins were updated to include
14 any additional information. And I -- I -- any new
15 information or any revision of the data or comments,
16 these were used by the sales force for a number of
17 reasons, one of which might well be to just maintain the
18 contact with the engineering-manufacturing people at the
19 customer's office, and get beyond the purchasing agent
20 to someone that could understand the potential uses and
21 problems with the product.

22 Q Are you saying that basically the Technical
23 Bulletin gave -- gave an excuse to get beyond the
24 purchasing agent to somebody that they could more easily
25 communicate with?

1 A That would more -- more easily understand the
2 projected use of the material or the problems associated
3 with the use of the material.

4 Q Well, what other reasons were there that these
5 sales people used these Technical Bulletins?

6 A Well, I -- I find it hard to -- find it hard to
7 say.

8 Q Well, if you're not aware of any, that's fine.
9 I --

10 A I -- I don't know. You've -- you've left out
11 one line of communication that was an important one,
12 though. And that was, not infrequently, if the customer
13 had questions, he'd call the local sales representative,
14 who in turn would refer the person making inquiry to us
15 in the Medical Department if it were related to safety
16 and tox- -- handling -- safety and toxicity -- toxicity
17 and safe-handling information.

18 And that could be -- that suggestion could be
19 acted on by the customer either by phone or, more often,
20 by letter.

21 The response then went back from Monsanto over
22 Dr. Kelly's signature or mine, depending on who composed
23 the letter.

24 And in some instances, the sales representative
25 asked that we would send the reply to him, although it

1 was directed to John Doe, ABC Company; because it again
2 gave him an excuse to -- to make a personal call on the
3 customer.

4 And thank God for the American industrial
5 system. This is one approach to reach your customers.

6 Q The old cartoon of the salesman with his foot
7 in the door is still true in -- in beyond door-to-door
8 sales?

9 A I think so, sir.

10 Q Now, in terms of these Technical Bulletins --
11 and is that the correct thing to call these things? Is
12 that a good way to refer to them when we talk about
13 Technical Bulletins?

14 A I -- that's the way I think I would describe
15 them, yes.

16 Q Okay.

17 A There may have been others that were different.
18 But -- but Technical Bulletin was born, which did pretty
19 much what I've tried to describe for you.

20 Q Okay. Well, we'll -- I'll use the term
21 "Technical Bulletin," then.

22 In these Technical Bulletins, who prepared the
23 information on toxicology and safe handling that went
24 into them?

25 A It was either prepared by us in the Medical

1 Department, or it was -- the ultimate form of it was
2 approved by the Medical Department.

3 Q Okay. So that information, like any response
4 to an inquiry, came from the Medical Department?

5 A Yes, sir.

6 Q And that essentially meant it came from you and
7 Dr. Kelly.

8 A Yes, sir.

9 Q Now, when bulletins were updated, was either
10 the substance or the actual information on toxicology
11 and safe handling from the Medical Department?

12 A The proposed revision was recirculated to us
13 for review of that information; yes, sir.

14 Q So that the way things were designed at
15 Monsanto, nothing went out on toxicology and safe
16 handling in Technical Bulletins without the approval of
17 the Medical Department.

18 A Not to my knowledge.

19 Q Is that correct, to your knowledge?

20 A That's correct, to my knowledge.

21 Q Okay.

22 Now, you mentioned that there might be updates,
23 and sales personnel might provide updated bulletins, and
24 that could be a way to get the foot in the door. To
25 whom did these bulletins go?

1 A When delivered by the sales representatives?

2 Q Yes.

3 A Well, as I indicated, I -- I think there was
4 always an attempt to get beyond the purchasing agent and
5 get to people who understood the potential use of the
6 material.

7 Q Were they designed for -- for what I'll call
8 white-collar employees of the customer?

9 A Professional scientific or engineering
10 personnel, I would say, yes; although in many cases the
11 supervisory people may well have been blue-collar people
12 with years and years of experience.

13 Q I understand. They weren't designed, however,
14 that the salesman would bring enough of those Technical
15 Bulletins to pass out one to each employee in the plant?

16 A No, sir.

17 Q Was there some mechanism by which people got on
18 a mailing list and got each update of the Technical
19 Bulletin?

20 A Not through the Medical Department.

21 Q Okay. And whether the salesmen did that or
22 not, you don't know?

23 A I don't know.

24 Q Okay.

25 Now, having discussed Technical Bulletins,

1 were there other ways in which Monsanto attempted to
2 communicate with customers about the safe handling and
3 the dangers of the products it made?

4 A In response to inquiry. The -- the -- there
5 were no efforts that I recall where we initiated the
6 dissemination of information.

7 Q Well, I guess I'm trying to find out about
8 things like warning labels. Did the Medical Department
9 have anything to do with product labels that went on
10 containers --

11 A Yes, sir.

12 Q -- or anything like that?

13 A Yes, sir.

14 Q What was the Medical Department involvement in
15 product labeling?

16 A Approval of the precautionary statement that
17 was on the label that referred to safe handling.

18 Q And, again, that approval came from either you
19 or Dr. Kelly or the two of you together?

20 A Yes, sir.

21 Q And when we're talking about product labels,
22 we're talking about if the thing went out in a 55-gallon
23 drum, there would be some thing on the outside of the
24 drum that said, "This contains" whatever the product is.
25 Correct?

1 A Yes, sir.

2 Q And then also if the Medical Department had
3 determined there ought to be some statement about safe
4 handling or warning, it would have whatever you had
5 determined should be on there?

6 A Yes, sir.

7 Q Did you have a product label for each type of
8 product and each type of container in which that product
9 was shipped?

10 A Did we have a copy of it?

11 Q No, no, no. Did you -- did you have something
12 designed to tell about safe handling and precautions for
13 each product that Monsanto shipped out and for each type
14 of container in which it was shipped out?

15 A Well, we had -- we -- we had the appropriate
16 wording for each product. And as far as I know, that
17 went on the label for that product, whether it was
18 shipped in a small container or a 55-gallon drum.

19 Q Okay.

20 A Is that your question?

21 Q Yes. That's really what I'm getting at,
22 absolutely.

23 A Yes, sir.

24 Q Some products were shipped out in bulk by
25 Monsanto -- and by "bulk," I mean by railroad car

1 loads -- were they not?

2 A Yes, sir.

3 Q How did Monsanto handle labeling for things
4 shipped out in rail car loads?

5 A I'm not sure what the Government and label
6 requirements were. I am certain, however, that
7 customers that were using the materials in that quantity
8 were as experienced, if not more so in some cases, than
9 we were with handling and using the products.

10 Q Well, I'm not so concerned about that as what,
11 if anything, you know about how Monsanto labeled and put
12 on safety precautions on shipments in rail car loads.

13 A I don't know that answer, sir.

14 Q Do you know whether or not there were any
15 labeling with safety precautions that went out on
16 railroad car quantities of chemicals Monsanto produced?

17 A I'm sure there must have been, because I've
18 mentioned the first thing this morning that we labeled
19 our materials in conjunction with Government
20 requirements as to degree of hazard.

21 And I think every tank car that I've ever seen
22 has a -- a little triangular spot on the -- on --
23 attached to the tank car that -- where warning labels
24 are applied. Certainly, if the product is -- is
25 inflammable or poison, there are provisions for making

1 that well-known.

2 And I believe the same is true for any other
3 kind of warning label that was appropriate for the
4 material in that car for the protection of people -- of
5 cleanup if there were a railroad accident and there was
6 a spill.

7 Q Do you know what labels that you and Dr. Kelly
8 approved for use on railroad cars; what they said?

9 A If we approved any specifically for that
10 purpose, they would have been the same as for 55-gallon
11 drum shipments.

12 Q Okay. You wouldn't have had a label that said,
13 "Flammable"?

14 A No, sir, because they were not flammable.

15 Q You wouldn't have had a label that said,
16 "Corrosive"?

17 A No, sir.

18 Q You wouldn't have had a label that said,
19 "Acidic"?

20 A "Acidic"?

21 Q Yeah.

22 A I wouldn't think so, sir.

23 Q Would you have had a label that said,
24 "Poisonous"?

25 A Not for PCBs, sir.

1 Q Can you think of anything in -- in a one-word
2 caption of a precaution that you would have had on a
3 railroad car label?

4 A Not in one word. It would be the same
5 statement that was on the other labels. If there was a
6 one-word -- if that's what you're referring to, it would
7 be "Caution." It would not have been "Warning" or -- or
8 "Danger."

9 Q Okay.

10 Now, Monsanto, vis-a-vis the people to whom it
11 sold PCBs, was the manufacturer of those PCBs. Correct?
12 You didn't buy PCBs from others and then sell them to
13 someone else; you made them.

14 A Not that I'm aware of, sir.

15 Q Okay. So when Monsanto sold PCBs to customers,
16 they were both the manufacturer and the seller of the
17 those chemicals. Correct?

18 A Monsanto was?

19 Q Yes.

20 A Yes, sir.

21 Q And can you agree with me that the manufacturer
22 of a chemical should provide an appropriate warning to
23 the customer to whom it sells the chemical --

24 A Yes, sir.

25 Q -- about the hazards and the safe handling?

1 A Yes, sir.

2 Q And that doesn't matter whether the customer is
3 the biggest company in the world or the smallest company
4 in the world, does it?

5 A That's right.

6 Q Monsanto ought to provide a good, adequate
7 warning to everybody?

8 A Right.

9 Q And it certainly would not be sufficient to
10 say, "Well, the customer's bigger than we are, so we'll
11 let them figure it out themselves," would it?

12 A Not the wording of the warning, no, sir.

13 Q Okay. That's something that Monsanto would
14 need to deal with. Correct?

15 A The wording in regard to a warning, yes, sir.

16 Q Okay. And, in fact, in the chemical business
17 it's customary for purchasers of chemicals to look to
18 the manufacturer/seller of the chemicals for information
19 about the hazards and safe handling, is it not?

20 A Yes, sir.

21 Q Monsanto itself is a purchaser of chemicals
22 from others, is it not?

23 A Yes, sir.

24 Q And Monsanto expects those who sells chemicals
25 to it to give them appropriate information about the

1 dangers and the safe handling. Correct?

2 A That's correct.

3 Q Even though Monsanto itself is a very large
4 chemical company. Correct?

5 A Yes.

6 Q Okay. And in a similar fashion, Monsanto
7 should provide its customers with appropriate warnings
8 about dangers and safe handling, no matter how big the
9 customer is.

10 MR. SHOEBOOTHAM: Now, when you say,
11 "No matter how big the -- the customer,"
12 do you mean -- are you -- are you -- are
13 you talking about just size, or
14 sophistication of the customer, or --

15 MR. LACEY: Either one, no matter how
16 sophisticated and big the customer is.

17 A Would -- would you rephrase the question?

18 BY MR. LACEY:

19 Q Yes. Can --

20 A Or repeat it, rather?

21 Q Surely. Can you agree with me that Monsanto,
22 as a manufacturer/seller of chemicals, should provide
23 its customers to whom it sells those chemicals, no
24 matter how big, no matter how sophisticated those
25 customers are, with appropriate information on the

1 hazards and safe handling of the chemicals Monsanto is
2 selling them?

3 A You want -- if -- appropriate for Monsanto to
4 do that? Is that --

5 Q Yes.

6 A It was appropriate, and we did.

7 Q Okay.

8 THE VIDEOTECHNICIAN: Let's go off
9 the record.

10
11 (Discussion off the record, and
12 recess)

13
14 THE VIDEOTECHNICIAN: Okay. We've
15 been off the record for a short break.
16 We're now back on the record. The time is
17 4:06 p.m.

18 BY MR. LACEY:

19 Q Just before we broke, Mr. Wheeler, we were
20 talking about the provision by Monsanto to its
21 customers, no matter how sophisticated and no matter how
22 large, information on the products that Monsanto sells
23 to them. In that context, to a certain extent, the more
24 sophisticated the customer, the more information that
25 they can make use of and digest about safe handling and

1 toxicity. Isn't that correct?

2 A Yes, sir.

3 Q For example, if you have a relatively small and
4 unsophisticated customer -- for example, a customer that
5 doesn't have its own group of Medical Department or
6 whatever to provide a great deal of technical
7 information about what studies may have shown about the
8 product -- a bunch of detail about specific air
9 concentrations or specific levels at which problems can
10 be ascertained in technical terms would not be helpful
11 to that customer, because they don't have the technical
12 expertise to digest it. Correct?

13 A Within their companies.

14 Q Yes.

15 A It would be available, perhaps, through their
16 insurance companies and certainly through consultants.

17 Q But internally they wouldn't have that
18 information?

19 A Probably not, no, sir.

20 Q And for that type of company, it may make sense
21 to have instructions that are written more generally in
22 what I'll call plain English will do them more good than
23 more technical information. Correct?

24 A I think if it were conveyed by word of mouth by
25 our field representatives, yes. I don't know that the

1 written correspondence itself would do it alone. A
2 telephone call would be more helpful, or a visit by our
3 salespeople, who are technical -- technically qualified.

4 Q On the other hand, if you have a company that
5 is very sophisticated, they can digest a substantial
6 amount of technical information, and understanding what
7 the hazards of a product may be and what safe handling
8 might be appropriate. Would you agree?

9 A Yes, sir.

10 Q Now, certain products that Monsanto
11 manufactures and sells go to companies that are
12 generally not necessarily particularly large and
13 sophisticated. Isn't that correct?

14 A I -- I don't know what proportion of sales
15 would go to those people, nor what the specific
16 applications might be.

17 Q Well, I understand. I'm not trying to even
18 pick out any particular products. But there are certain
19 lines of Monsanto products that go generally to smaller,
20 less sophisticated companies.

21 A Yes, sir.

22 Q There are other product lines that by their
23 nature tend to go to larger and more sophisticated
24 companies.

25 A Yes, sir.

1 Q In the case of PCBs, they were a product that
2 went to typically larger, more sophisticated companies.
3 Correct?

4 A I believe that's correct.

5 Q The very nature of these chemicals were
6 commercial and industrial-type chemicals.

7 A That's correct.

8 Q They weren't intended -- you wouldn't buy a
9 bottle as a -- to use in waxing the floor at home, for
10 example.

11 A Not to our knowledge.

12 Q Yes. That wasn't the purpose of it.

13 And my question, then, or my -- my real inquiry
14 to you is: Given the fact that the PCBs were sold to
15 the more sophisticated, larger customers generally, that
16 would then suggest the importance of conveying as much
17 technically detailed information as possible to those
18 customers so they could properly evaluate the hazards
19 and safe handling appropriate for PCB. Correct?

20 A They had the access to not only information
21 that we provided, but their people were following the
22 literature appropriate to the safe handling of all of
23 their raw materials, including the polychlorinated
24 biphenyls. And --

25 Q How do you know that?

1 A Well, I think --

2 MR. SHOEBOTHAM: Let's let -- let's
3 let the witness finish his answer before
4 we have follow-up questions.

5 MR. LACEY: I'm sorry.

6 A Well, I had a great deal of respect -- I knew
7 most of those people personally, and I had a great deal
8 of respect for their ability and their integrity and
9 their interests as sincere as mine in promoting the
10 health and welfare of their employees.

11 BY MR. LACEY:

12 Q What --

13 A And --

14 Q I'm sorry.

15 A And then, I think, to continue to answer your
16 question --

17 Q Uh-huh.

18 A -- they were better qualified than we to decide
19 how to prescribe the operating procedures of their
20 plants to accomplish what we recommended.

21 Q That's your answer?

22 A Yes, sir.

23 Q Okay. Let me go back and try to understand
24 some of this.

25 First, I want to ask my question again and get

1 an answer to that, because I don't think your answer was
2 responsive. And my question was: Since PCBs were sold
3 to larger, sophisticated companies, the literature and
4 information supplied by Monsanto for PCBs could be more
5 technically detailed than it could be with products that
6 went to less sophisticated companies. Correct?

7 A Yes, sir.

8 Q Okay; because these companies had the ability
9 to digest and understand technically detailed
10 information. Right?

11 A Yes, sir.

12 Q Now, you believe that the companies to whom
13 PCBs were sold were, on their own, monitoring the
14 literature about PCBs. Correct?

15 A Yes, sir.

16 Q To whom did you talk and confirm that? And I
17 want the names of the companies that you confirmed were
18 following the literature on PCBs, and the names of the
19 people in those companies that you talked to.

20 A Well, the specific one that comes to mind was
21 Mr. Wilbur Spiker, Senior Industrial Hygienist for
22 Westinghouse Electric.

23 Q Who else?

24 A His counterpart, Jack Ferry, at General
25 Electric.

1 Q Who else?

2 A Their counterparts and my counterparts in -- at
3 Ford and General Motors were very, very good friends of
4 mine; and yet I can't assure you, sir, that they were
5 following the literature as closely as we were, or the
6 electrical companies.

7 Q What about the Tennessee Valley Authority?

8 A I would believe the Tennessee Valley Authority,
9 being a -- at least a quasi-Governmental agency, had
10 libraries equivalent to ours.

11 Q You're just guessing about that, aren't you?

12 A I'm guessing. I shouldn't speculate, sir.

13 Q Okay. What I want to know is the companies
14 that you talked to people and inquired of them whether
15 they were following the literature to the same extent
16 that Monsanto was.

17 A On PCBs?

18 Q Yes.

19 A I mentioned that I was sure that Spiker and
20 Ferry were. Not because did I ask them, "Jack," or --
21 or -- or, "Wilbur, are you daily looking for references
22 to PCB?" --

23 Q Uh-huh.

24 A -- but the fact that they made frequent
25 inquiries to me, especially if there had been a

1 publication, or even, in the later years, news stories
2 because of the environmental problem. They would ask me
3 for my opinion and for any data that I had, any new
4 data, and -- and my thoughts as to what I thought or
5 what -- what answer I might have to any questions that
6 they asked.

7 Q So they were still looking to you as an
8 employee of Monsanto for information about PCBs?

9 A Yes, sir.

10 Q Now, was there somebody at Ford with whom you
11 talked on the same way?

12 A Not in that sense, no. I had, I believe, some
13 correspondence from -- from Ford that I responded to;
14 and this one indication in one piece of literature we
15 reviewed this weekend that Vince Castrap, the head
16 hygienist at General Motors, and I think Jack
17 Radcliff -- I can't recall the names of the others, but
18 they were all senior industrial hygienists in our
19 customers' plants -- and it wouldn't have been in the
20 file of -- that I was looking through if it didn't
21 relate to PCBs.

22 Q Well, I'm talking about PCBs now.

23 A Yes, sir.

24 Q I'm talking about following the literature on
25 PCBs.

1 A Yes, sir.

2 Q Did you look at that correspondence back and
3 forth with Ford? Did Mr. Shoebotham show you that
4 correspondence?

5 A Yes, sir.

6 Q One of the things Ford asked about was the
7 chemical composition -- they were asking about Pydraul
8 hydraulic fluid, were they not?

9 A Yes, sir. I believe that's correct, sir.

10 Q And one of the things they wanted to know:
11 What chemicals made it up. Isn't that correct?

12 A I believe so.

13 Q And, of course, that would be relevant
14 information in trying to evaluate the safe handling and
15 toxicity of any product, would it not?

16 A Not necessarily, if there were data on the
17 combined product.

18 Q But if you as a sophisticated company wanted to
19 make your own evaluation about toxicity and safe
20 handling and not rely on what the manufacturer said, one
21 of the things you'd want to know is what made it up.

22 MR. SHOEBOOTHAM: He just answered
23 that question. He told you, not if there
24 was information available as to the final
25 product.

1 MR. LACEY: He did not answer the
2 question.

3 MR. SHOEBOTHAM: Well, he did.

4 BY MR. LACEY:

5 Q You need to answer my last question.

6 A Well, would you repeat it?

7 Q Yes. If you are a sophisticated company,
8 trying to make your own evaluation of the dangers, the
9 toxicity, the safe-handling practices for a chemical
10 that you're buying, one of the pieces of information
11 that you would want to have and, in fact, need to have
12 to make a fully informed decision would be the chemical
13 composition of the product. Isn't that correct?

14 A Not in -- in your total question.

15 Q Okay. You don't agree with that?

16 A May I try to answer it in part --

17 Q Would you --

18 A -- or would you rather rephrase it?

19 Q Well, you can explain why you don't agree with
20 it.

21 A Well, I -- I made the earlier comment that I
22 think that more important is data on the product itself,
23 because then you're getting any indication of
24 synergistic action between the components.

25 I would agree that it would be helpful for my

1 basic knowledge if I knew the exact composition. I
2 recognize, however, as most of the people in the field
3 do, that there are situations where -- where the patents
4 do not allow disclosure -- the complete disclosure of
5 formulations. And as long as I was informed of what --
6 of -- the major component was that might cause problems,
7 that would satisfy me.

8 Q The fact of the matter is, Ford wrote, asking
9 for information; and you or Dr. Kelly responded.
10 Correct?

11 A I am hesitating only because there may be one
12 letter that Mr. Jack -- Mr. Garrett responded to, to
13 Ford.

14 Q Well, let -- let me ask it this way, then:
15 Ford wrote and inquired, and the -- somebody in the
16 Medical Department responded.

17 A Yes. I'm -- I'm trying to be honest with you.

18 Q Sure. Oh, I understand. I understand.

19 And Ford found that response inadequate and
20 wrote back and said, "We want more information." Right?

21 A I believe I saw that memo.

22 Q And one of the things they wanted to know was
23 the chemical composition of the Pydraul fluid. Isn't
24 that correct?

25 A I believe that's so.

1 Q And Monsanto --

2 A Could I -- do you have a copy of the memo I
3 could refer to, to refresh my memory?

4 Q Mr. Shoebbotham apparently has one and showed it
5 to you.

6 MR. LACEY: Do you want to make it
7 available to him, Jon?

8 MR. SHOEBOTHAM: Well, Mr. Lacey, if
9 you want to ask him questions about it,
10 why don't you show it to him?

11 MR. LACEY: I don't have it here.
12 But you obviously do.

13 BY MR. LACEY:

14 Q And if -- if you feel you want to refer to it,
15 you can ask Mr. Shoebbotham for it.

16 A Well, the reason the -- that -- that there's a
17 question is -- to my mind is: Who in Ford was asking
18 the question --

19 Q Okay. Well, my -- my --

20 A -- whether it was a supervisor, whether it was
21 it a safety engineer, or -- or what have you.

22 Q I'm really not asking who. My question is
23 not -- just Ford wanted to know the chemical
24 composition, did they not?

25 A I believe that's correct.

1 Q And Monsanto never provided it to them, did
2 they?

3 A The exact composition?

4 Q Yes.

5 A I believe that's correct.

6 Q All right.

7 Now, when one follows the literature on a
8 product, you're talking about the published literature,
9 are you not?

10 A Primarily.

11 Q Now, that's not all the information that was
12 available on -- to Monsanto on PCBs, was it?

13 A The other information that we had was based on
14 studies where we had generated data that -- some of
15 which was published and some of which was not published.

16 Q My --

17 A Secondly --

18 Q I'm sorry.

19 A -- there are meetings of people in the
20 toxicology field which I used to attend, Gordon Research
21 Conferences, where data would be presented on a --
22 what's the term you use? -- off-the-record-type
23 situation. The results were such that they were
24 preliminary in nature. They were being presented for
25 evaluation by -- by peers, and might or might not ever

1 be published.

2 I saw a reference to something I think we saw
3 yesterday that Dr. Henry Smith, who was one of the
4 grandfathers in the field of toxicology, worked for
5 Carbide and for the Industrial Hygiene Foundation in
6 Pittsburgh. He was awarded the prestigious -- for the
7 American Industrial Hygiene Association, the Cummings
8 Award.

9 And I'd forgotten it, but this memo indicates
10 that he supported the data or agreed with the data that
11 supported the threshold limit values for Aroclor 1254
12 and -- what was it? -- 1242, for example.

13 So there were other than just the straight,
14 formal publications where data might or might not be
15 made available.

16 MR. LACEY: I object to the
17 responsiveness of that answer.

18 BY MR. LACEY:

19 Q Monsanto had available to it dozens to hundreds
20 of studies that it had commissioned on PCBs, did it not?

21 A Not hundreds, sir.

22 Q Dozens?

23 A Dozens in terms of acute toxicity studies; yes,
24 sir.

25 Q And a substantial number of chronic toxicity

1 studies, all of which were started after 1968. Correct?

2 A Yes, sir.

3 Q Those were not available to Westinghouse or
4 Ford or TVA or any other company, were they?

5 A I believe the correspondence I've seen
6 indicates that we sent them summaries of those data and
7 those reports.

8 But let me point out, sir, these were ingestion
9 studies and related to the potential problem from
10 accidental ingestion of PCBs, not the industrial
11 exposure.

12 Q Well, was there some concern that people were
13 going to be eating these PCBs?

14 A There was some circling around the world,
15 particularly in Sweden -- to a lesser degree, perhaps,
16 in Great Britain -- that the PCBs were getting into the
17 ecosystem and were getting into fish, and into fish that
18 might eventually end up on the dinner table.

19 Q So there was concern that people would wind up
20 eating PCBs?

21 A Through unintended -- through the unintended
22 ultimate destination of being in the environment; yes,
23 sir.

24 Q Well, were there any chronic toxicity studies
25 for people who had PCBs exposed to them through their

1 skin?

2 A I think there were; but I can't answer your
3 question "Yes, sir," because I -- I don't recall, and
4 I -- I -- I don't recall the duration of the exposure.

5 Q Were there any chronic toxicity studies for
6 people who were exposed to PCBs through the atmosphere,
7 through the air?

8 A I -- I don't -- would you rephrase that
9 question?

10 Q Yes. Were there studies of the effects of
11 chronic exposure through inhalation of air containing
12 PCBs?

13 A I understood you to say "by people," and -- and
14 certainly not by people.

15 There were chronic inhalation studies done on
16 what? -- 1242, 1254 -- with animals, that work done at
17 the Kettering Laboratories by Dr. Joe Trehan. That was
18 published and was made available in -- in reprint form
19 to anybody that ever asked for toxicity and safe-
20 handling information on -- on those products.

21 Q These were made available by Monsanto to people
22 who asked for them?

23 A Yes, sir.

24 Q And again, back --

25 A As well as being -- excuse me -- again, as well

1 as being in the published literature and in libraries.

2 Q Now, let me go back to the question that I
3 initially asked, which is: Monsanto had dozens of
4 studies on PCBs that it had commissioned itself and paid
5 for, and where the results of the studies were sent to
6 Monsanto. Correct?

7 A I -- I -- I -- again, I can't say "dozens,"
8 sir, unless you're referring to the acute animal
9 studies.

10 Q I'm referring to all studies on PCBs that
11 Monsanto paid for and had done for it. It had dozens of
12 such studies, both acute and chronic. Correct?

13 A Yes, because there were a dozen different
14 compounds, and there were acute data made available on
15 each of those formulations or compounds.

16 Q And Monsanto received, from whomever it
17 commissioned to do those studies, a detailed report of
18 the study, did it not?

19 A Yes, sir.

20 Q Most of those studies were never published,
21 were they?

22 A That's right.

23 Q And Monsanto did not make copies of all or even
24 most of those studies and send it to its customers, did
25 they?

1 A I'm sorry. We did, sir.

2 Q You made copies of each one of those studies
3 and sent them to your customers?

4 A Not to each one, but to most of them, sir.

5 Q I see. So, then, Westinghouse would have
6 gotten a copy of every study commissioned by Monsanto on
7 PCBs. Is that your testimony?

8 A That's not correct.

9 Q Well, that's what I thought we were trying to
10 establish. What --

11 A Because there were PCBs studies that were done
12 on materials that were of no interest to Westinghouse.

13 Q Okay. Westinghouse would have gotten a copy of
14 every private study Monsanto did on any PCB that
15 Monsanto thought was of interest to Westinghouse. Is
16 that correct?

17 A On any product that was -- where there was an
18 attempt to introduce it to Westinghouse as a new
19 product.

20 Q Well, let -- let's back up for just a minute.

21 Monsanto had been selling PCBs to Westinghouse
22 long before Monsanto commissioned its first study of
23 either acute or chronic hazards of PCBs, hadn't it?

24 A That's correct.

25 Q And what you're telling me is Monsanto did not

1 send copies of the studies it did on products it was
2 already selling to Westinghouse. Correct?

3 A No, sir, that's not correct.

4 Q Okay. Well, I want to know what it was that
5 Monsanto did by way of sending copies of the acute and
6 chronic studies it did on PCBs to people like
7 Westinghouse.

8 A To my knowledge, sir, they were sent copies of
9 the actual data provided by the consultant.

10 Q Who sent that?

11 A In most cases, Dr. Kelly and/or I.

12 Q Did you send it with a transmittal letter?

13 A Generally, yes.

14 Q So there would be a record of what was sent to
15 them?

16 A Yes, sir.

17 Q Okay.

18 A Now, if -- if I may continue, sir.

19 Q You've answered my question. If you have some
20 other comment you want to make on the record, go ahead.

21 MR. SHOEBOTHAM: Well, I think

22 Mr. Wheeler's indicated that he hasn't
23 finished his answer, Mr. Lacey.

24 Please proceed, Mr. Wheeler.

25 A Including in the dozens of reports that were

1 made or were available to Monsanto, many of them were
2 for PCB-containing materials that were of no interest.
3 They may have referred to adhesive use or plasticizer
4 use or what have you.

5 And many of these were in the late '60's and
6 early '70's, when Monsanto was trying to find
7 substitutes for the persistent PCBs because of the
8 environmental problem, not because of any occupational
9 health or industrial hygiene problem.

10 BY MR. LACEY:

11 Q Are you through?

12 A Yes, sir.

13 Q Okay. To whom did you and Dr. Kelly or anyone
14 else in the Medical Department send copies of these
15 studies?

16 A The copies went to the person making the
17 inquiry. If the inquiry had come to us direct, copies
18 normally did not go to our sales representative in that
19 area. It -- copies would undoubtedly go to the
20 marketing people for PCBs.

21 In a number of instances, if the -- if the
22 inquiry came from a Westinghouse plant, I would send a
23 copy of the reply to Bill Spiker, either indicating in
24 the letter itself or a postscript that the inquiry had
25 come from Mr. So-and-So of his plant at such-and-such a

1 location, and I thought he'd be interested in the
2 answer.

3 Q Well, let me try to get very clear what I'm
4 asking about. I understood you to tell me that you sent
5 a copy to Westinghouse -- and we'll just use them as the
6 example right now -- of every study that Monsanto
7 commissioned, both acute and chronic, on any PCB product
8 of interest to Westinghouse. Is -- is that your
9 testimony?

10 A I believe that's correct, sir.

11 Q Okay. Now, was that done only after and if
12 Westinghouse requested copies of that, or was that done
13 immediately when you received those studies?

14 A It wasn't done when we received the -- the
15 data, because at that point we would have no -- would
16 not necessarily have any indication that it was of
17 interest to Westinghouse.

18 Q I see. So it's only when and if they come and
19 asked you for your studies that you would give them to
20 them.

21 A That would be the only way we'd know they had
22 an interest.

23 Q I see. Well, I guess I'm -- I'm coming back to
24 the point we started on.

25 If you have a large, sophisticated customer for

1 PCBs, they have the ability to digest and understand
2 technical information, don't they?

3 A I believe I testified to that effect; yes, sir.

4 Q And you've also indicated that you thought
5 Westinghouse and Mr. Spiker were -- were people in a
6 company that was interested in the safety of their
7 workmen.

8 A Yes, sir.

9 Q So wouldn't that automatically tell you that
10 they would be interested in these studies?

11 A No, sir, because I believe I told you, sir,
12 that of these dozens of studies, many of them were on
13 new formulations in the research phase and carried an
14 "OR" designation, if you will; and you may have seen
15 some of those reports.

16 Others may have been a little farther along, to
17 the point where they had a development designation. And
18 subsequently, if the product developed to be a
19 commercial product, it received some other designation.
20 There would be no reason to send the data on a product
21 in research at that stage.

22 Neither would it be of any particular interest
23 to Westinghouse if the product, even though containing
24 PCB, was intended to be used in floor tile. Do you
25 understand my difference, sir?

1 Q Well, I think I understand what you're saying.
2 Let me try to get very specific. Monsanto commissioned
3 in the late 1960's for the first time chronic toxicity
4 studies on Aroclor 1242, did it not?

5 A And three -- and two others; yes, sir.

6 Q But let's just talk about --

7 A All right.

8 Q -- Aroclor 1242.

9 A Yes, sir.

10 Q That was a chemical that Monsanto sold to
11 Westinghouse in railroad carfuls on a regular basis,
12 wasn't it?

13 A Yes, sir.

14 Q Now, my question to you is: When you got the
15 report on the chronic toxicity of Aroclor 1242, did you
16 immediately send a copy of that report to Westinghouse?

17 A I can't say that I did it immediately, no, sir.

18 Q You sent it to them, if ever, only if they
19 asked for it, didn't you?

20 A I'm not sure that's true, either, sir.

21 Q You just don't recall?

22 A I don't recall.

23 Q Certainly, Westinghouse would be interested in
24 the chronic toxicity of Aroclor 1242, wouldn't they?

25 A To some degree, yes, sir.

1 Q That's the product they were buying from you in
2 railroad carfuls for use at their capacitor plant in
3 Bloomington, Indiana.

4 A I -- I didn't know that, but --

5 Q I see.

6 A I -- I didn't know what plant they were using
7 it in, sir.

8 Q You didn't even know what plants of
9 Westinghouse were purchasing the PCB products?

10 A No, sir.

11 Q I see. And --

12 MR. SHOEBOTHAM: You're asking him if
13 he -- if he knows as he sits here today,
14 some --

15 MR. LACEY: Or if he ever knew.

16 MR. SHOEBOTHAM: -- 12 to 15 years
17 later?

18 BY MR. LACEY:

19 Q Did you ever know what plants of Westinghouse
20 were purchasing PCB products from Monsanto?

21 A If I knew, it was only because of an inquiry.
22 Otherwise, my correspondence was with their head
23 industrial hygienist, Wilbur Spiker, who, as far as I
24 was concerned, was responsible for the industrial
25 hygiene problems and safe handling in all of

1 Westinghouse plants.

2 Q Where was Mr. Spiker's office located?

3 A In Pittsburgh.

4 Q Okay.

5 Now, I believe at some point you mentioned
6 earlier today that all of your labels met all the
7 Government requirements. Do you recall saying that?

8 A I believe I said that; yes, sir.

9 Q What Government requirements were there, if
10 any, that applied to labeling up to the time that you
11 left Monsanto?

12 A Well, I think I told you this morning, sir,
13 that there were specific wording for labels, depending
14 on the degree of acute toxicity.

15 There obviously were requirements for
16 flammability, corrosiveness, explosibility, none of
17 which applied to the polychlorinated biphenyls.

18 Q Well, I guess that's what I'm getting at. Were
19 there any Government requirements at all that applied to
20 the information you supplied on PCBs?

21 A Yes, sir. That's what I thought I had just
22 explained. I -- I went on, and I shouldn't have,
23 because I added information that wasn't responsive.

24 There was information relating to the potential
25 toxicity hazard.

1 Q And I guess I'm trying to find out: Did that
2 have anything to do with Government requirements?

3 A Yes, sir. And I -- I said this morning, I --
4 I don't recall what the Government agency was. I -- I
5 think it may have been the Bureau of Explosives, but
6 I -- I'd -- I'd be speculating, sir, so I can't testify
7 to that.

8 Q Okay. Well, let me try to sort this out. Are
9 you telling me that if there were requirements to say if
10 it was explosive, you met that, because it's not
11 explosive and therefore you didn't need to say anything
12 about that?

13 A I think that's correct.

14 Q Okay. Now, what I'm trying to find out is if,
15 during the time you were with Monsanto, there were
16 specific Government labeling requirements on how one was
17 to express information on safe handling and toxicity.

18 A Excuse me. I don't recall if there were --
19 that there had been other requirements developed, other
20 than the one I referred to.

21 Q Okay.

22 A By the time I left, there may have been such
23 requirements because of the Consumer Act or EPA or
24 something else. And, certainly, in the early '70's we
25 added the wording relating to the ecological hazard.

1 Q Now, in terms of providing information on
2 toxicity and safe handling, those of you in the Medical
3 Department who decided what to say had in your mind what
4 should be done by way of safe handling, and then
5 selected wording which you hoped was designed to cause
6 people to act appropriately. That's correct, is it not?

7 A Which we not only hoped, but expected people to
8 use appropriately.

9 Q I understand. But what my point is: You and
10 Dr. Kelly knew what you thought were appropriate
11 safe-handling procedures.

12 A Yes, sir.

13 Q You then wrote information on toxicity and safe
14 handling that you thought would convey what you believe
15 should happen with regard to safe handling. Correct?

16 A Yes, sir.

17 Q And the determination of whether or not what
18 you wrote, in fact, conveyed what you intended it to
19 convey would be to look and see if it had the desired
20 effect, wouldn't it?

21 A If -- if the desired effect was to provide a
22 safe working environment, I -- I think that was proven
23 by the 40 years of very -- very few incidents of any
24 problems, and most of those were skin reaction.

25 Q You'll agree with me, then, that the proof of

1 the pudding in a warning, so to speak, is whether it
2 works or not. Correct?

3 A In the context I just mentioned, I think that's
4 correct, sir.

5 Q Okay. Now, the safe-handling instructions were
6 designed to express the extent to which workmen should
7 come into contact with PCBs, were they not?

8 A No, sir. There was no contact intended. I --
9 I don't think you intended to phrase that as you did.

10 Q Well, no. I --

11 A They -- they were --

12 Q Was it your intention that the -- that the
13 warning labels you wrote communicate that there should
14 be no contact by workmen with PCBs?

15 A There should be limited contact.

16 Q Okay. Now, the way to find out whether or not
17 those who received the warnings understood it correctly
18 would be to determine whether they put into place
19 procedures that resulted in their workmen having no more
20 than the limited type of contact you and Dr. Kelly
21 intended. Isn't that correct?

22 A Did you preface your question with the -- the
23 determination?

24 Q The way -- let me repeat it -- The way to
25 determine or to find out whether the language that you

1 and Dr. Kelly wrote had the intended effect of limiting
2 contact by customers' workmen would be to see whether or
3 not their contact was limited in their workplace. Isn't
4 that correct?

5 A I think the 40 years' experience indicated
6 that -- that the warnings were sufficient and were being
7 carried out.

8 Q Well, we actually don't have to wait 40 years,
9 though, do we? One can go and determine whether or not
10 the customers are limiting their workmen's contact in
11 the way that you and Dr. Kelly intended to be the result
12 of your warnings. Isn't that correct?

13 A I think the supplier of any material can be
14 expected to go only so far as to provide the proper
15 information; not necessarily offer his services for
16 plant inspections, determination of what the procedures
17 are that they adopt to -- to avoid the exposure which
18 you recommended. And yet I -- I judge that that's what
19 your question was getting at.

20 Q No. My question is: The only way to determine
21 whether the words that you and Dr. Kelly chose to
22 express the extent to which a workman's contact with
23 PCBs should be limited is to ascertain whether customers
24 understood that wording the way you intended it.

25 MR. SHOEBOTHAM: I'm going to have to

1 object to the question as being asked and
2 answered several times.

3 MR. LACEY: It has not been answered.

4 MR. SHOEBOTHAM: Mr. Wheeler told you
5 very clearly that one very good way to see
6 that the warnings were effective was the
7 40 or so years of experience with only
8 very, very minimal difficulties with PCBs.

9 MR. LACEY: That's not my question.
10 That's not my question at all.

11 MR. SHOEBOTHAM: Mr. Wheeler, how --
12 how -- how -- we're now past the time that
13 Mr. Lacey said he was going to stop. How
14 are you holding up?

15 THE WITNESS: I'd just as soon call
16 it a day.

17 MR. LACEY: Okay. Well, why don't we
18 pick up tomorrow morning? What time?

19 MR. SHOEBOTHAM: 9:30 again?

20 MR. LACEY: Is that too early for
21 you, or --

22 THE WITNESS: No, sir. I can come.

23 MR. LACEY: All right; 9:30.

24 MR. SHOEBOTHAM: I've got -- I've
25 got -- are we off the camera?

1 MR. LACEY: Well, we will be.

2 THE VIDEOTECHNICIAN: Okay. We're
3 going off the record now. It's 4:45 p.m.

4
5 (The deposition was adjourned at
6 4:45 p.m., to be resumed at 9:30 a.m. on
7 Friday, May 8, 1987, at the same location)

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1 THE STATE OF _____ *

2 *

3 COUNTY OF _____ *

4
5 I, ELMER P. WHEELER, hereby certify that I
6 have read the foregoing transcript of Volume I of my
7 testimony given in the foregoing numbered and styled
8 case, and that same is true and correct to the best of
9 my knowledge and belief.

10 I further certify that any and all
11 corrections have been made on a separate page and
12 attached hereto.

13 SIGNED on this the _____ day of _____,
14 1987.

15
16 _____
17 ELMER P. WHEELER

18 SWORN TO AND SUBSCRIBED BEFORE ME on this
19 the _____ day of _____, 1987.

20
21
22 _____
23 Notary Public
24
25

1 THE STATE OF TEXAS *

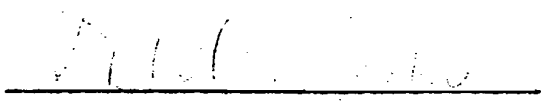
2 COUNTY OF HARRIS *

3
4 I, LINDA C. BAKER, a Certified Shorthand
5 Reporter, hereby certify that the foregoing testimony
6 was given before me after the Witness had been first
7 duly sworn.

8 I certify that I prepared this transcript and
9 that the foregoing 200 pages constitute a complete and
10 correct copy of the transcript of the proceedings
11 (Volume I), and that the original is being given to the
12 attorney taking same, to be filed by him if necessary.

13 I further certify that I am neither attorney
14 for, related to, nor employed by any of the parties to
15 the lawsuit in which this deposition was taken; further,
16 I am neither related to nor employed by any attorney of
17 record in this cause, nor do I have a financial interest
18 in the matter.

19 GIVEN UNDER MY HAND AND SEAL OF OFFICE in
20 Houston, Texas, on this the 16th day of May, 1987.

21
22 
LINDA C. BAKER, CSR, RPR

23 Certification Number: 505
24 Date of Expiration: December 31, 1988
25 Address: 2900 Smith Street, Suite 104
Houston, Texas 77006
Phone: 713/523-3767