

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

CECIL SCOTT, ET AL]
v.] No. B-84-1103-CA
MONSANTO COMPANY]

VOLUME I

VIDEO DEPOSITION OF

WILLIAM PAPAGEORGE

May 19, 1987
1300 Post Oak Boulevard
Houston, Texas

Jerry Kelley, Court Reporter
Nell McCallum & Associates Inc.
2900 Smith, Suite 104
Houston, Texas 77006
(713) 523-3767

APPEARANCES

For the Plaintiffs:

David M. Lacey
Attorneys at Law
Gilpin, Pohl & Bennett
Allied Bank Tower, 23rd Floor
1300 Post Oak Boulevard
Houston, Texas 77056

For the Defendant:

Robert Hall
Attorney at Law
Woodard, Hall & Primm
4700 Texas Commerce Tower
Houston, Texas 77002

Video operators:

Jim Heironimus
Sue Coppage

1 Volume 1 of the Videotape Deposition of
2 William Papageorge, taken on May 19, 1987, at 1300 Post
3 Oak Boulevard, Houston, Texas, between the hours of
4 10 a.m. and 4:30 before Jerry Kelley, CSR No. 2004 and
5 Notary Public in and for the State of Texas.

6
7
8 -----

9
10
11 MR. HALL: Put on the record that he can sign
12 this in front of any notary.

13 MR. LACEY: Same things we've done on all the
14 others: Sign before any notary; we can use a copy in
15 lieu of the original if we don't have the transcript
16 back in seven days before trial; use the last document
17 numbers on each document as opposed to marking exhibits
18 individually.

19 MR. HALL: That isn't what I've done on mine.
20 I'm certainly agreeable to signing before any notary; if
21 it's not back by the time of trial, you can use a copy.
22 I don't care what you do about the exhibits.

23 VIDEO OPERATOR: This video deposition is
24 being taken in Cause No. B-84-1103-CA, and is filed in
25 the United States District Court for the Eastern

1 District of Texas, Beaumont Division. The style of the
2 case is Cecil Scott v. Monsanto Company. For
3 identification purposes, the video technician today is
4 James Heironimus of the firm Executive Services Group,
5 and the certified court reporter present today is
6 Jerry Kelley of the firm Nell McCallum & Associates.
7 Today's date is May 19th, 1987, and the time is
8 approximately 9:53 a.m. We are here today to take the
9 oral and video deposition of the witness Mr. William B.
10 Papageorge, and we're located at the offices of Gilpin,
11 Pohl & Bennett at 1300 Post Oak in Houston, Texas.

12 We're now ready to begin the deposition.

13 Will counsel please state their appearances for the
14 record? Following that, we'll swear the witness.

15 MR. LACEY: David Lacey, representing the
16 plaintiffs.

17 MR. HALL: Bob Hall, representing Monsanto
18 Company.

19 VIDEO OPERATOR: Will the court reporter now
20 please swear in the witness?

21
22
23
24 -----
25

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

WILLIAM PAPAGEORGE,

being duly sworn, testified as follows:

EXAMINATION BY

MR. LACEY:

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

A William B. Papageorge.

Q And where do you live, Mr. Papageorge?

A Do you want the specific home address or just
the area?

Q Well, if you can just give me your address --

A All right.

Q -- that would be fine.

A 321 Pebble Valley Drive, St. Louis, Missouri,
63141.

Q Are you currently employed?

A Self-employed.

Q And what type of business do you have?

A Consulting.

Q And what sort of consulting business do you
do?

A I consult in matters relating to PCBs.

Q Okay. How long have you been so employed?

A Since the first of this year.

1 Q January 1?

2 A January 1, '87.

3 Q Who are the clients for whom you have
4 consulted?

5 A A law firm, Smith, Helms, Mullis & Moore,
6 Greensboro, North Carolina.

7 Q Is that the only person for whom you've
8 consulted?

9 A Thus far.

10 Q Okay. And was that consultation in
11 connection with their representation of any particular--
12 client of theirs?

13 A Yes.

14 Q And who was their client?

15 A Monsanto Company.

16 Q Okay. Was that consultation in connection
17 with any particular lawsuits?

18 A Yes.

19 Q What lawsuits did that consultation relate
20 to?

21 A The case that we're here to discuss today,
22 Scott v. Monsanto. There were -- there are two or three
23 others. I don't know if I'll describe them properly,
24 but I call them the Adams case, the Whitfield case, and
25 the Detroit post office case.

1 Q So since the first of the year you've
2 consulted in connection with four different lawsuits,
3 and Monsanto is a defendant, I take it, in each one of
4 those.

5 A Yes.

6 Q Prior to entering in your consulting business
7 on January 1, 1987, how were you employed?

8 A I was employed by Monsanto Company.

9 Q When did your employment with Monsanto start?

10 A November 1st, 1951.

11 Q And continued through December 31st, 1986? --

12 A Correct.

13 Q And prior to November the 1st, 1951, how were
14 you employed?

15 A I was employed by the Phillips Petroleum
16 Company, Bartlesville, Oklahoma.

17 Q Were you located in Bartlesville?

18 A Yes.

19 Q And what did you do for Phillips?

20 A My initial assignments were in the research
21 department, assigned projects relating to oil field
22 drilling and secondary oil recovery.

23 Q Did you have any other --

24 A The second type of assignment was involved
25 with the design of equipment to distill petroleum

1 products.

2 Q Like in a plant where you would make gasoline
3 and the like?

4 A Correct.

5 Q Did you have any other jobs with Phillips?

6 A No.

7 Q When did you start your employment with
8 Phillips?

9 A August 1947.

10 Q And you continued that up until October 31st,
11 1951?

12 A Correct.

13 Q By whom were you employed prior to August of
14 1947?

15 A I was a student.

16 Q Tell me about your educational background
17 after high school.

18 A I received a bachelor of science degree in
19 chemical engineering from Washington University in St.
20 Louis. That was awarded in 1943. I received a master
21 of science degree in chemical engineering from the same
22 institution, and that was awarded in 1947.

23 Q Were you in the service for a period of time
24 after your bachelor's degree?

25 A Yes.

1 Q What sort of assignment did you have in the
2 military?

3 A Unit commander in antiaircraft, and then
4 infantry, and finally engineering.

5 Q Okay. What sort of things did you do in the
6 engineering assignment?

7 A Initially I was involved with the disposal of
8 chemical warfare supplies and equipment in Japan.

9 Q After the conclusion of the war?

10 A Correct. I then was in charge of a project
11 involving the construction of a military facility for
12 the United States occupational forces.

13 Q Anything else in the engineering aspect of
14 your military service?

15 A No, sir.

16 Q Did you start back to graduate school in
17 1946?

18 A Yes.

19 Q You understand you are here today to give a
20 deposition in connection with the Scott case?

21 A Yes.

22 Q Have you previously been deposed before?

23 A On the Scott case?

24 Q No. Have you given depositions before?

25 A Yes.

1 Q About how many depositions have you given?

2 A Over a dozen.

3 Q And have you previously testified live at
4 trial before?

5 A Yes.

6 Q About how many times?

7 A Three times.

8 Q Let me ask you about your trial testimony
9 first. What cases have you testified before live at
10 trial in?

11 A There was a case in New Hampshire that I will
12 refer to as the Bethlehem Mink case; there was a case in
13 Knoxville, Tennessee, involving a transformer and
14 General Electric Company and some residences in
15 Tennessee, some individuals; and there was a case in Bad
16 Axe, Michigan, involving dairy farms and PCBs.

17 Q Let me go back and ask you about the
18 circumstances of each of those cases generally. The
19 Bethlehem Mink case, as you refer to it, in New
20 Hampshire, what did that involve? What chemical or what
21 product? And what company?

22 A I don't recall the -- the names of all the
23 companies involved. Monsanto was certainly one of them.
24 There was Agway Chemicals Company; there was a company
25 of -- which was really two brothers that raised ducks on

1 Long Island, I've forgotten their names; and there was
2 also a -- a company that collected stale bakery goods
3 and recycled them into animal feed. I've forgotten the
4 name of that company. The chemical alleged to have
5 caused harm were PCBs.

6 Q Okay. Were you employed by Monsanto at the
7 time of that testimony?

8 A Yes.

9 Q Were you called to testify by Monsanto?

10 A Yes.

11 Q And you were testifying about PCBs?

12 A Yes.

13 Q And there was a claim that the PCBs had
14 caused some type of harm?

15 A Yes.

16 Q What type of harm was that?

17 A Two effects were alleged. One is the mink
18 were unable to reproduce, and the other harm alleged was
19 that the pelts were inferior as a result of the
20 exposure.

21 Q Was that case tried to a conclusion?

22 A Yes.

23 Q Did the jury find that the alleged effects
24 took place?

25 A As I recall, yes.

1 Q Okay.

2 Tell me about the Knoxville, Tennessee, case.
3 What chemicals were involved in that case?

4 A There was a transformer fluid involved. One
5 of the ingredients of that fluid were PCBs.

6 Q Do you remember specifically what fluid was
7 involved?

8 A No, I don't.

9 Q Do you remember what percentage of the
10 transformer fluid was PCBs?

11 A No, I don't.

12 Q Was Monsanto a defendant in that case?

13 A Yes.

14 Q Was this while you were employed by Monsanto
15 that you testified?

16 A Yes.

17 Q Were you called to testify by Monsanto?

18 A No.

19 Q Who called you to testify?

20 A The attorneys for General Electric Company.

21 Q Were you represented in that case by Monsanto
22 attorneys? In other words, were they present with you
23 at the deposition as Mr. Hall is today and that sort of
24 thing, and at trial?

25 A No.

1 Q I see. Were you subpoenaed to attend that
2 trial?

3 A No.

4 Q You voluntarily came at their request?

5 A Yes.

6 Q Okay. Did the -- What were the claims in
7 that case?

8 A There was a family that lived on a farm that
9 bordered the roadway on which a transformer was being
10 transferred from the factory to the purchaser and from
11 which the liquid had been allowed to drain on the
12 shoulders of the roadway onto this farmland. This
13 family claimed that their health was affected and their
14 value of their property was lowered and that some of
15 their livestock was also harmed.

16 There was another individual who was
17 traveling on this road in the opposite direction who
18 claimed that with his car window open he was spattered
19 with this liquid and as a result his health was
20 affected.

21 Q Now, Monsanto was a defendant being sued in
22 that case?

23 A Yes.

24 Q Okay. Did the jury reach a verdict in that
25 case?

1 A Yes.

2 Q And what was the verdict?

3 A I don't recall.

4 Q Okay. You don't recall whether Monsanto or
5 anyone else was found liable?

6 A I do know that Monsanto was dismissed.

7 Q Okay. Were they dismissed by the jury or
8 dismissed prior to that point?

9 A The judge dismissed it prior to that.

10 Q I see. And you don't know what the outcome
11 of the remainder of the case was?

12 A That is correct.

13 Q And then the Bad Axe, Michigan, case with the
14 dairy farm, what chemical was involved there?

15 A A PCB.

16 Q Was Monsanto a defendant?

17 A Yes.

18 Q Did you testify at the time you were still
19 employed by Monsanto?

20 A Yes.

21 Q Did you testify at the request of the lawyers
22 representing Monsanto?

23 A Yes.

24 Q What were the claims in that case?

25 A There were health claims to the family that

1 lived on the farm, there were claims of loss in value in
2 property, there were claims that -- loss of income from
3 the inability to sell milk from the dairy herd because
4 of contamination, there were some claims alleging that
5 the cattle weren't reproducing properly, and also that
6 the amount of milk produced was reduced.

7 Q Did the jury reach a verdict in that case?

8 A Yes.

9 Q What was that verdict?

10 A I personally don't know the specifics. I do
11 know they felt that the -- some of the allegations were
12 valid and they awarded something to the family.

13 Q But you don't know the basis or the amounts?

14 A No, I don't.

15 Q With regard to these cases that you actually
16 testified live in trial at, you were employed by
17 Monsanto during the pendency of those cases and in fact
18 up to the time of your testimony?

19 A Yes.

20 Q Were you aware of those cases -- made aware
21 of them by Monsanto, or did you become aware of them at
22 Monsanto shortly after they were filed?

23 A I was informed by Monsanto attorneys, but I
24 don't know if it was shortly after they were filed or --
25 I do not know how much time elapsed between the filing

1 and my being informed.

2 Q Do you know about when you first became aware
3 of a case in Bad Axe, Michigan?

4 A As best as I recall, it was about 1982.

5 Q Do you know about when you first became aware
6 of the case in Knoxville, Tennessee?

7 A My memory isn't really very clear on this. I
8 would -- as best I remember, it was about 1972 or '73.

9 Q And do you recall when you first learned of
10 the case you referred to as the Bethlehem Mink case?

11 A That was about 1972, '73.

12 Q So your recollection is that you knew about
13 two of the cases in the early Seventies, but one of them
14 not until the early Eighties?

15 A That is correct.

16 Q Okay.

17 Now let me ask about the dozen or so times
18 that you have given depositions. Can you tell me as
19 best you can recall the occasions on which you have
20 previously given deposition testimony? You can identify
21 it by the name or the type of case or what's involved,
22 however you can best recall.

23 A I'll try.

24 Q Certainly.

25 A These are -- will not necessarily be in

1 chronological order.

2 Q That's fine.

3 A I recall the case in New York State that I
4 referred to as the New York chicken cases.

5 Q New York chicken cases?

6 A Chicken cases.

7 Q Okay.

8 A There's a -- there was a case in North
9 Carolina, the Holly Farms chicken case.

10 Q Farms chicken case. Okay.

11 A Up in Wisconsin we had the Outboard Marine -
12 case.

13 Q All right.

14 A There was a case in Montana. I believe that
15 was called the Pierce Packing case.

16 Q All right.

17 A There was another case that the deposition
18 was held in St. Louis and it involved a dental
19 laboratory out of Detroit. I have forgotten the -- the
20 terminology we used to describe that particular one.

21 Q That's fine.

22 A There was a case I'm going to call the Esco,
23 E s c o, Company case. Of course, I was deposed in all
24 three of those that eventually ended up in trial.

25 Q Okay. So the Bad Axe case, the Bethlehem --

1 A And the GE Tennessee case. There's a case
2 out of Jacksonville, Florida, involving a -- an office
3 building. I have forgotten the name of the insurance
4 company used to describe that particular office
5 building.

6 Q The name of an occupant of the building?

7 A At least one of the occupants.

8 Q Okay.

9 A It's known by so-and-so insurance company
10 building in Jacksonville, Florida.

11 Q Fine.

12 A There's a case in South Carolina, the
13 Whitfield case.

14 Q Whitfield?

15 A Whitfield.

16 The Westinghouse Bloomington, Indiana, case.
17 The dairy case I'm going to refer to as the Botema,
18 B o t e m a, case in Indiana. I can't recall any more
19 at the moment.

20 Q Okay. That's fine. If you happen to recall
21 others in which you've testified during the course of
22 your deposition, you let me know and we'll go back and
23 pick that up.

24 A All right.

25 Q Let me ask you a few questions about each one

1 of these cases. In the New York State chicken cases,
2 what chemical was involved there?

3 A PCBs.

4 Q Was Monsanto a defendant?

5 A Yes.

6 Q Did your testimony come at the time you were
7 employed by Monsanto?

8 A Yes.

9 Q And what was the claim in the case?

10 A The claim was that the presence of PCBs in
11 food fed to poultry affected their egg-laying abilities,
12 the hatchability of the eggs.

13 Q Anything else?

14 A That's all I can recall on that one.

15 Q Do you know whether or not that case is still
16 pending?

17 A I do not know.

18 Q What about the North Carolina Holly Farms
19 chicken case? What did that involve?

20 A Again it involved PCBs.

21 Q Okay.

22 A And the allegations on how it affected
23 poultry flocks were the same as those that we described
24 for the New York cases.

25 Q All right. Do you know whether or not that

1 case is still pending?

2 A I believe that -- I understand it was
3 settled.

4 Q All right. What about the Wisconsin Outboard
5 Marine case? What chemical was involved? Or chemicals.

6 A PCBs.

7 Q What were the allegations in that case?

8 A A customer of Monsanto's who purchased and
9 used an industrial hydraulic fluid permitted the fluid
10 to enter the sewer system, their drainage systems, the
11 material ended up in the Waukegan harbor, contaminating
12 the sediment in that harbor, which was not acceptable to
13 the regulatory agencies, and they were seeking some
14 corrective action.

15 Q Was Outboard Marine a plaintiff or a
16 defendant in that case?

17 A Both.

18 Q They had been sued by some regulatory
19 authority?

20 A Yes.

21 Q And they also --

22 A And they in turn sued Monsanto.

23 Q Okay. And was your testimony in that case at
24 the time you were employed by Monsanto?

25 A Yes.

1 Q Do you know if that case has been resolved or
2 not?

3 A It's my understanding that Monsanto as a
4 defendant is no longer involved. I do not know where it
5 stands regarding the regulatory agencies and Outboard
6 Marine.

7 Q Do you know the circumstances under which
8 Monsanto got out of the case? Were they dismissed by
9 the court or settled or --

10 A I do not know.

11 Q Okay.

12 By the way, on this North Carolina chicken
13 case, I think I failed to ask you, you were working for
14 Monsanto at the time of your testimony there?

15 A Yes.

16 Q And you were called by Monsanto in that case
17 to testify?

18 A Yes.

19 Q The Montana Pierce Packing case. What was
20 involved there?

21 A As best I recall, there was a transformer on
22 the premises of a packing company that contained PCBs.
23 The PCBs were alleged to have escaped from the
24 transformer and entered the drainage system in that
25 packing company's plant. And the regulatory authorities

1 were seeking corrective action.

2 Q Monsanto was a defendant in that case?

3 A Yes.

4 Q Your testimony was on behalf of Monsanto?

5 A Yes.

6 Q At the time you were employed by Monsanto?

7 A Yes.

8 Q Do you know whether or not -- And it
9 involved a PCB product?

10 A Yes.

11 Q Do you know what the status of that case is?

12 A It's settled, but I don't know the terms of
13 settlement.

14 Q Fine.

15 The dental -- Detroit dental lab case.
16 What's involved there?

17 A This also involved PCBs as an ingredient in a
18 laboratory constant temperature bath. As I recall, it
19 was alleged that the employees of that dental laboratory
20 that used this constant temperature bath in the -- in
21 their -- performing their duties were claiming health
22 effects as a result of that exposure.

23 Q Was your testimony during the time you were
24 employed by Monsanto?

25 A Yes.

1 Q On behalf of Monsanto?

2 A Yes.

3 Q Do you know the status of that case?

4 A I understand it was settled.

5 Q Do you recall what the health effects that
6 were being claimed were?

7 A No. I would be guessing.

8 Q The Esco Company case.

9 A Esco is a customer of Monsanto Company that
10 purchased transformer fluids which contained PCBs, used
11 these fluids in their manufacture of transformers. Any
12 fluids that were not suitable for their use they would
13 dispose of by dumping in their back -- the back part of
14 their property. And the regulatory authorities were
15 seeking corrective action.

16 Q Was Monsanto a defendant?

17 A Yes.

18 Q Did you testify on behalf of Monsanto?

19 A Yes.

20 Q Do you know the status of that case?

21 A I understand it was settled.

22 Q The Bad Axe case we've talked about already.

23 Correct?

24 A Yes.

25 Q The Bethlehem Mink case we've talked about

1 already.

2 A Yes.

3 Q The General Electric case in Tennessee we've
4 talked about already.

5 A Yes.

6 Q The Jacksonville, Florida, office building.
7 What was involved there?

8 A As I understood it, this building had within
9 it transformers installed, and these transformers
10 contained PCB fluids. The management of that building,
11 on advice from someone, decided to replace the PCB
12 transformers with other types of transformers. And they
13 were seeking reimbursement of these costs from the
14 manufacturer of the transformers and Monsanto.

15 Q Monsanto was a defendant?

16 A Yes.

17 Q You testified on their behalf?

18 A Yes.

19 Q At a time that you were employed by Monsanto?

20 A Yes.

21 Q And do you know the status of that case?

22 A I do not know.

23 Q Do you recall about when you gave that
24 testimony in that case?

25 A About a year ago.

1 Q The South Carolina case, the Whitfield case,
2 can you tell me about that case?

3 A As best I remember, Mr. Whitfield claimed
4 health effects as a result of PCBs being present in some
5 local waterways near Pickens, South Carolina.

6 Q Where did these PCBs come from?

7 A It's alleged to have come from a plant
8 operated by a Monsanto customer.

9 Q Who was?

10 A Sangamo, S a n g o m o Electric Company.

11 Q Were you called to testify in that case by
12 Monsanto?

13 A Yes.

14 Q Were you an employee of Monsanto at the time
15 of your testimony?

16 A Yes.

17 Q Do you know what health effects were claimed
18 in that case?

19 A I don't remember.

20 Q Do you know the status of that case?

21 A I do not.

22 Q When did you give that testimony?

23 A About a year, 18 months ago.

24 Q The Westinghouse Bloomington, Indiana, case.
25 What's involved there?

1 A The authorities in the area had found PCBs in
2 a landfill and in some public waterways that were
3 alleged to have come from a Westinghouse plant in
4 Bloomington, Indiana, and they were seeking corrective
5 action.

6 Q Was Monsanto a defendant?

7 A Yes.

8 Q Did you testify in that case at a time you
9 were an employee of Monsanto?

10 A Yes.

11 Q On Monsanto's behalf?

12 A Yes.

13 Q Do you know the status of that case?

14 A I do not.

15 Q When did you give testimony in that case?

16 A About a year ago.

17 Q Do you know whether that Bloomington,
18 Indiana, Westinghouse plant is the same plant at which
19 some of the plaintiffs in this case were employed?

20 A I am told that some of the plaintiffs worked
21 at that site.

22 Q Okay. And who has advised you of that fact?

23 A Mr. Hall.

24 Q Okay. The Botema --

25 A Botema.

1 Q Botema dairy case in Indiana. Tell me about
2 that.

3 A It was alleged that dairy herds were exposed
4 to PCBs which in turn were alleged to have come from a
5 coating used on some silos which contained solids that
6 were eventually fed to these herds.

7 Q There were PCBs in the coating?

8 A Yes.

9 Q What were the claims?

10 A Again it was contaminated milk that was
11 unsalable, the effect on reproduction in the herds, and
12 loss of value of the herd.

13 Q Was Monsanto a defendant?

14 A Yes.

15 Q Were you called to testify by Monsanto?

16 A Yes.

17 Q At a time that you were employed by Monsanto?

18 A Yes.

19 Q Do you know the status of that case?

20 A I understand it was settled.

21 Q Okay.

22 Have we covered all of the occasions under
23 which you recall having given testimony either at trial
24 or in a deposition?

25 A Those that I recall at the moment, yes.

1 Q Okay. And I take it, then, if I understand
2 correctly, all the testimony you've ever given in
3 deposition or at trial has been in PCB cases. Is that
4 correct?

5 A Yes.

6 Q Has there been some particular consistent
7 reason why you were called as a witness over matters
8 about which you were asked to testify in these various
9 cases where you testified on behalf of Monsanto in these
10 PCB cases?

11 MR. HALL: Would you read that question back
12 to me, please, Mr. Kelley?

13 COURT REPORTER: "Has there been some
14 particular consistent reason why you were called as a
15 witness over matters about which you were asked to
16 testify in these various cases where you testified on
17 behalf of Monsanto in these PCB cases?"

18 MR. HALL: Do you understand that question,
19 Mr. Papageorge?

20 THE WITNESS: I believe I do.

21 MR. LACEY: You can go ahead and answer the
22 question.

23 A I have a personal understanding of why I was
24 asked to testify. And I believe personally it's because
25 of my very active participation with PCBs over a five-

1 or six-year period in a very broad sense. As a result
2 of that participation, someone felt that I could
3 contribute by participating in these trials, in these
4 cases.

5 MR. LACEY:

6 Q And this someone would be someone at Monsanto
7 typically who would be calling you to participate?

8 A Monsanto or their representatives, yes.

9 Q By their representatives you mean their
10 lawyers?

11 A Yes.

12 Q This broad period of experience you described
13 over five or six years, is that your experience from
14 roughly 1970 to 1976?

15 A Yes.

16 Q During that period of time did you have a
17 particular position in Monsanto by which you gained this
18 experience?

19 A Yes.

20 Q What position did you hold in Monsanto from
21 approximately 1970 to 1976?

22 A The position was given several titles in that
23 period of time, but the assignment remained the same.
24 And it was primarily one of coordinating Monsanto's
25 activities as they related to the PCB issue that it was

1 facing in that period of time.

2 Q Do you recall any of the titles that that
3 position held through that period of time?

4 A The initial title was manager, environmental
5 control. After about a year or so, it was changed to
6 manager, environmental protection. And a couple of
7 years later it was renamed manager, product
8 acceptability.

9 Q Was that the title it then retained until you
10 left the position?

11 A That is correct.

12 Q What products did you work with while you
13 were a manager of environmental control, manager of
14 environmental protection, and manager of product
15 acceptability?

16 A When I had the title manager, environmental
17 control, it was exclusively PCBs and products containing
18 PCBs.

19 Q All right.

20 A That was also true when the title was
21 manager, environmental protection.

22 Q All right.

23 A When it was retitled to manager of product
24 acceptability, I was assigned additional chemicals,
25 products that Monsanto marketed -- produced and

1 marketed.

2 Q What other chemicals were assigned to you
3 in -- in addition to PCBs after about -- is it 1973 or
4 so?

5 A That's about it, yes. I don't recall all of
6 them. But they included muriatic acid, maleic
7 anhydride, phenol, phthalic anhydride, p h t h a l i c,
8 sulfuric acid. And as time went on I was involved with
9 swimming pool chemicals.

10 Q That developed from the muriatic acid?

11 A Muriatic acid was a by-product of those
12 swimming pool chemicals. We had chlorinated phenol and
13 chlorinated nitrobenzenes, and a group of chemicals
14 called detergent additives. I don't believe that's the
15 complete list, but that's a sample of the kinds of
16 products that were assigned to me.

17 Q What percent of your time from this third
18 assignment or this third title where additional products
19 were added until you got out of that business, what
20 percent of your time was associated with PCBs versus the
21 other chemicals?

22 A I never kept score, but as best I recall it
23 would -- it would peak on me at times about half of my
24 time to a third.

25 Q So from '73 to '76 roughly one-third to one-

1 half of your time was with PCBs on product acceptability
2 and the other one-half to two-thirds was all these other
3 chemicals?

4 A That's a good approximation.

5 Q Were additional chemicals assigned to you in
6 1973 because there was not enough work for you to do
7 with PCBs to keep you fully occupied?

8 A That is not my understanding.

9 Q Okay. Well, how, then, were you able to take
10 on additional chemicals and still do your work with
11 regard to PCBs? Was part of your work given to somebody
12 else in 1973?

13 A Well, I had to review my priorities and I was
14 forced to use other people in Monsanto to assist me.

15 Q Between 1970 and 1973 were you able
16 essentially to do the job that was assigned to you by
17 yourself without having to enlist assistance of other
18 people?

19 A I had to enlist the assistance of other
20 people, not only because of time pressures, but because
21 of expertise that they had. When I was assigned
22 additional chemicals, the type of activity relating to
23 PCBs changed, but I still had to use others to represent
24 me in attending meetings, traveling, writing documents,
25 answering letters, and telephone calls and the like.

1 Q So from 1970 to 1973 you got assistance from
2 others on your PCB assignment, in some cases for
3 technical expertise, in others because there was more
4 work than you could do?

5 A Yes.

6 Q And from 1973 through 1976 you continued to
7 get assistance from others for technical expertise on
8 PCBs?

9 A Of a lower level of activity technically.
10 But still a lot of activity relating to communications.

11 Q And you also got other people to assist you-
12 in the day-to-day affairs, even maybe -- was it to a
13 greater extent than you had before or to roughly the
14 same extent, since the level of activity was declining?

15 A It had been reduced, because the numbers of
16 customers had been dramatically reduced.

17 Q How many customers were there in 1970 that
18 you had to worry with?

19 A I've never had an exact count, but they
20 numbered in the thousands.

21 Q And we're now talking about customers who
22 brought products containing PCBs from Monsanto?

23 A Correct.

24 Q And you said the number had been reduced by
25 1973?

1 A Yes.

2 Q To what level, approximately?

3 A Approximately 20, 25.

4 Q And did that mean that your job had been cut
5 down by an equal percentage to the reduction in the
6 number of customers?

7 A Oh, I don't know that it was proportional,
8 but it did reduce the numbers of telephone calls and
9 individuals I had to communicate with.

10 Q Was it your job to communicate with each
11 customer who was buying PCBs?

12 A That was part of my job.

13 Q What other things were part of your job
14 besides communicating with customers who purchased PCBs?

15 A Staying with communications. I was
16 communicating with regulatory representatives;
17 laboratories that were interested in analyzing for PCBs,
18 studying them; university representatives who were
19 interested in the technical aspects of PCBs; coproducers
20 of PCBs worldwide.

21 Q When you say coproducers --

22 A Competitive producers would be a better word.

23 Q Okay.

24 A Representatives of companies that were
25 attempting to develop alternative materials to replace

1 PCBs; members of the news media; members of various
2 organizations that were interested in wildlife
3 preservation.

4 Q Environmental-type groups?

5 A Environmental-type groups. And many private
6 citizens. I think I've mentioned -- or did I? --
7 regulatory representatives.

8 Q Yes, you said regulatory representatives in
9 laboratories, and universities, and people like that.

10 A All right. At the moment I can't think of
11 any more.

12 Q Okay. This is all in the communication area.
13 What aspects did you have outside of communication?

14 MR. HALL: Is this an inquiry between 1970
15 and 1976?

16 MR. LACEY: Yes. I'm talking about the job
17 he had with regard to PCBs from 1970 to 1976.

18 A I have a little trouble with the word
19 "communications," because the job that I had was based
20 primarily on my communicating with others and obtaining
21 or giving information and then passing on new
22 information to others. So I was part of a
23 communications chain or link in that chain.

24 MR. LACEY:

25 Q The reason I asked the question, when we

1 first talked about it you told me you had a job -- part
2 of your job was to communicate with each customer buying
3 PCBs.

4 A Yes.

5 Q I asked you about what other things you did,
6 and you said staying with communications. You went on
7 to list communication functions. I thought maybe there
8 were some functions that weren't communication
9 functions. But if I'm wrong, that's fine.

10 A I -- I didn't mean to mislead you. The other
11 activities that I found myself involved with was
12 visiting some customer plants, as an example, and making
13 some observations and sharing my reactions with that
14 customer. This also included visits to Monsanto sites
15 involved with PCBs, again sharing my reaction to what I
16 observed and heard. Part of my assignment was to take
17 advantage of what I had learned and saw and heard, and
18 advising the managers within Monsanto regarding what I
19 felt would be appropriate steps in taking action.

20 Q I guess I don't understand exactly what you
21 mean by that.

22 A Let me think of an example. One that comes
23 to mind because it's still vivid is when I approached a
24 managing director of Monsanto in -- I'm trying to recall
25 the date -- I believe it was late 1975 and suggested

1 that Monsanto seriously consider informing its remaining
2 customers that Monsanto was going to terminate the
3 production of PCBs and stop selling them. That that was
4 our objective. As soon as these customers had found an
5 alternative and could introduce that alternative into
6 their manufacturing process.

7 Q And who was it you had that conversation
8 with?

9 A Mr. Fitzgerald, F. J. Fitzgerald.

10 Q And do you know whether or not he acted on
11 that?

12 A Yes, he did.

13 Q Your suggestion, then, ultimately resulted in
14 Monsanto taking such conduct?

15 A Yes.

16 Q Do you know whether or not you were the first
17 person to make that suggestion?

18 A I do not, no.

19 Q Do you know of anyone who made that
20 suggestion prior to you?

21 A I do not know.

22 Q Okay.

23 What else, if there is anything we haven't
24 covered generally about the job that you held from 1970
25 to 1976?

1 A At the moment I can't recall any other unique
2 features of the job.

3 Q Okay. If you happen to remember anything
4 else that's an area of the job we haven't discussed
5 during the deposition, let me know and we'll add that to
6 the list of things.

7 A I will.

8 Q I want to come back and talk with you later
9 in more detail about the job you did from 1970 to '76,
10 but let me go back and try to fill in a little bit about
11 your employment with Monsanto and the various jobs you
12 held from the beginning of your career up till the time
13 of your retirement.

14 You came to Monsanto in 1951, as I recall.
15 Correct?

16 A Yes.

17 Q And what was the first assignment you had
18 with Monsanto?

19 A I was a design engineer at a Monsanto plant
20 located in St. Louis.

21 Q What plant was that?

22 A It's called the John F. Queeny plant.

23 Q u e e n y.

24 Q By the way, what caused you to leave Phillips
25 Petroleum and come to Monsanto?

1 A I was looking for greener pastures, I
2 believe.

3 Q And I take it you stayed with Monsanto long
4 enough to indicate that you found the green pastures.

5 A I suspect I became more realistic.

6 Q Okay.

7 What sort of things did you design there at
8 the Queeny plant?

9 A Because of my design experience at Phillips
10 Petroleum Company, I was assigned to design distillation
11 equipment for Monsanto, the only difference being that I
12 was addressing specific chemicals rather than fractions
13 of petroleum. But the technology is very similar.

14 Q Distillation equipment was used by Monsanto
15 to purify its products?

16 A A product, yes.

17 Q Your design was for a particular product?

18 A Yes.

19 Q What product did you design the distillation
20 equipment for?

21 A Phthalic anhydride.

22 Q Okay. Are there other distillation processes
23 that are used in other chemical companies to purify
24 other chemicals?

25 A Many, yes.

1 Q Okay. How long did you retain that job as a
2 design engineer in the Queeny plant in St. Louis?

3 A As best I recall, about two years.

4 Q So in about 1953 you moved on to something
5 else?

6 A In 1953 I was assigned to work in the plant
7 to place the equipment that I had designed in service.
8 And following that I was assigned to another production
9 unit with different chemicals.

10 Q What was the second unit you were assigned
11 to?

12 A It was the unit that made some of Monsanto's
13 plasticizer chemicals.

14 Q Was that Unit 1 that made the PCB
15 plasticizers?

16 A No.

17 Q How long did you remain in the operation
18 area, so to speak, from '53 until --

19 A Oh, let me -- as best I recall, it was about
20 three years.

21 Q Okay. So from '53 to '56 we've got you in
22 the Queeny plant in these operating functions.

23 A In two different operating units.

24 Q Right. First putting in place the
25 distillation process, and then moving over to operations

1 on the plasticizers. Correct?

2 A And a third one.

3 Q Oh, I see. Okay. What was the third?

4 A There's still another chemical there.

5 Q I'm sorry. What was the third chemical?

6 A Those were chlorinated nitrobenzenes.

7 Q What's a nitrobenzene?

8 A It's a benzene to which nitrogen and oxygen
9 have been added. Nitrated. Don't know how else to
10 describe it.

11 Q Let me get you just to draw it for me. How-
12 about that? I've got that chart over there. That's
13 about the best thing we can do on things like that.

14 A All right.

15 Q You aren't the first person who has ever
16 drawn anything for us in this case. I'm going to try to
17 see if I can use the same -- to the extent we can -- I
18 think we've used red to represent carbon atoms, I think
19 we've used black to represent hydrogen atoms and to draw
20 the lines that represent any bonding that goes on.

21 A All right.

22 Q Let's see. Test of my memory here. I think
23 we've used blue to represent chlorine atoms.

24 A I'll try to remember all this.

25 Q Okay. And green to represent oxygen. If

1 you've got anything else, we're in trouble. I don't
2 have nitrogen. I've got a yellow marker, but I'm afraid
3 it's not going to show up. So you can probably maybe
4 use the black for nitrogen, too. I don't know. You
5 don't have to follow that by any means, it's just what
6 we've done in the past. And there's a sketch pad right
7 there to your right.

8 A Which was carbon, black?

9 Q We actually drew the carbon atoms with the
10 red marker. And used the black for hydrogen to
11 represent the bonding.

12 A All right. Benzene, as you may -- I'm
13 stepping on the cord.

14 Q Let me -- let me get that cord up over the
15 top of this table here so you'll have a little bit more
16 leeway there.

17 A All right.

18 Q I think that will --

19 A Good. Is represented by the -- by the
20 chemist as a -- in this configuration. Six carbons.

21 Q Right.

22 A That are connected in the way that these
23 resonate, as they call it.

24 Q I've seen another -- some of the other people
25 have drawn it with a circle inside in lieu of the double

1 bonds. Is that another way to draw it as well?

2 A That's the more recent way.

3 Q Okay.

4 A To avoid this single and double bond.

5 Because these change.

6 Q Okay.

7 A They keep oscillating. The -- the hydrogen
8 is related to each of the carbons. So that
9 configuration represents to the chemist benzene.

10 Q All right.

11 A To form nitrobenzene, one of these hydrogens
12 is replaced by a nitrogen. And I don't have any color
13 for nitrogen.

14 Q Do you have what -- How many other chemicals
15 do you need? Nitrogen and what?

16 A Just nitrogen. And oxygen, I've got the
17 green.

18 Q You can use the blue for nitrogen if you
19 want.

20 A All right. Let's repeat the hexagon
21 configuration. There's a nitrogen attached to other
22 carbons, and to each of the nitrogens there's an oxygen.

23 Q Okay.

24 A Now, this second configuration is a
25 nitrobenzene.

1 Q All right. And what was that nitrobenzene
2 used for? Any particular products or anything it was
3 used for?

4 A It was the starting chemical for many
5 products, several of which ended up in the -- a --
6 rubber compounds.

7 Q All right. So you actually had some type of
8 operating relationship with nitrobenzene there at the
9 Queeny plant for a period of time, too?

10 A Yes.

11 Q Okay.

12 A And as I mentioned, some of these hydrogens
13 were replaced by a chlorine. So you had a chlorine and
14 a nitrogen.

15 Q Okay. Chlorinated nitrobenzene would have
16 some of those hydrogens then replaced with some
17 chlorine?

18 A That is correct.

19 Q Any particular number that that process used,
20 replacing 1, 2, 3, or did it matter?

21 A We did not use that type of terminology.
22 Primarily single chlorine.

23 Q Okay.

24 A There might have been two or three, but those
25 were not necessarily sought for.

1 Q In 1956 what type of job did you move into?

2 A I became a supervisor in the maintenance
3 department involved with the --

4 Q At the Queeny plant?

5 A Still at the same plant. Involved with the
6 installation of small new projects.

7 Q The term "maintenance," did that indicate
8 that they were new projects for existing operations, or
9 could it be brand-new?

10 A The word "maintenance" covered the -- the
11 group of individuals involved with the hardware in the
12 plant, the pipes, the tanks, the pumps, the trucks, the
13 bulldozers. I happened to be assigned to a small group
14 within that larger group that was able to move into a
15 department and install new equipment, a new tank, a new
16 pump, or a combination, to improve something. So it was
17 related to new facilities.

18 Q Okay.

19 Were there any -- do you recall what
20 different departments you had work in?

21 A It was the entire plant.

22 Q Okay. Did any of that work involve PCBs?

23 A No.

24 Q Okay. So, up through this point in your
25 career, as I understand it, you haven't had anything to

1 do with PCBs yet. Is that correct?

2 A That is correct.

3 MR. HALL: For clarity, up through this
4 point, you are referring to what point?

5 MR. LACEY: The time that he held the job as
6 supervisor in the maintenance department at the Queeny
7 plant.

8 Q That's the time you are answering about, is
9 it not, sir?

10 A Yes.

11 Q Okay.

12 A 1956 or thereabouts.

13 Q Okay. How long did you have that job in the
14 supervision of the maintenance department?

15 A A year or less.

16 Q Okay. What did you move to in about 1957?

17 A I was -- I was then designated to be the
18 superintendent in the maintenance department.

19 Q At the Queeny plant?

20 A At the Queeny plant. To which that former
21 group reported and the remaining maintenance team
22 reported.

23 Q This was an administrative promotion for you?

24 A Yes.

25 Q How long did you hold that job?

1 A Two or three years.

2 Q Up till about 1960?

3 A Close, yes.

4 Q 1959 would be more --

5 A Could be. Could be.

6 Q Either one of those two, I take it, 1959,

7 1960, somewhere in there.

8 A Somewhere in there, yes.

9 Q During the period of time that you were

10 superintendent in the maintenance department at the

11 Queeny plant, did you have anything to do with PCBs?

12 A Indirectly.

13 Q How?

14 A There were members of my group that were

15 involved in the servicing and the repair of equipment

16 that contained PCBs.

17 Q This was at the Queeny plant?

18 A Yes.

19 Q It's my understanding that PCBs were not

20 actually made at the Queeny plant. Is that correct?

21 A That is correct.

22 Q But the Queeny plant did involve itself in

23 some way with the handling of PCBs that were

24 manufactured by other facilities before they were sold.

25 Correct?

1 A Yes.

2 Q And you had some people that worked for you,
3 and that's why you say it was indirect, who worked on
4 the equipment that handled those PCBs at the Queeny
5 plant?

6 A When I was maintenance superintendent, the
7 individuals in my group that were involved with PCBs
8 would be maintaining or servicing heat transfer systems,
9 transformers, capacitors.

10 Q I see.

11 A And compressors.

12 Q I see. So primarily it was not the actual
13 unit of the plant that was blending PCBs as much as
14 PCB-containing products used in the plant as a part of
15 their equipment?

16 A At that time, yes.

17 Q Okay.

18 Did you have any reason to become
19 particularly knowledgeable about PCBs because of this
20 indirect supervision of those workmen?

21 A Just as with all the industrial chemicals we
22 handled, I was expected and did try to keep abreast as
23 to what to look out for in the way of proper handling.
24 And that ranged from the fuming acids to innocuous
25 materials. So the PCBs were just one of thousands of

1 chemicals.

2 Q The first time that you became responsible
3 for proper handling of PCBs was after you became the
4 superintendent of this maintenance department?

5 A Yes.

6 Q What sources of information did you go to to
7 learn about the proper handling of PCBs?

8 A There's, of course, written documentation
9 that's available relating to each of the materials.

10 Q What written documentation?

11 A Examples include operating instructions, as
12 an example, or literature that's published for
13 customers. Then, of course, I had at all times access
14 to our medical department at the plant, which was my
15 preferred source of information.

16 Q When you say operating instructions, what are
17 you talking about there?

18 A These are prepared directions that are shared
19 with individuals who will operate equipment. They are
20 used to train new personnel, new to the operation. They
21 are also used as reference material for anyone who
22 wishes to review any portions of them. It's just a
23 document that says how to run the equipment and what to
24 look out for and make it effective and safe.

25 Q Were these operating instructions prepared by

1 people at Monsanto?

2 A The vast majority, yes. There were some
3 instructions that came with the equipment that we
4 purchased, such as compressors and turbines. Those
5 instructions are written by the supplier of these units.

6 Q If I understand what you are saying
7 correctly, then, to the extent there was a unit that had
8 been put together by Monsanto and built to make a
9 particular product, there would be a Monsanto-prepared
10 operating set of directions or instructions on how to
11 operate that group of equipment?

12 A That is correct.

13 Q And that would include information on safety
14 and chemicals that were involved in the unit?

15 A That is right.

16 Q To the extent Monsanto bought a finished
17 piece of equipment from somebody, like an air compressor
18 or whatever else, I guess, you might buy as a finished
19 product, there the actual manufacturer and seller of
20 that product would provide you with literature about
21 that product?

22 A Yes.

23 Q Including information about the safety of the
24 product?

25 A Yes.

1 Q And on the products that Monsanto bought from
2 others you could look to what the seller supplied to you
3 to tell you about the safety of it?

4 A Certainly. Yes.

5 Q And that was the source of information that
6 you used on products that Monsanto bought from others,
7 the customer supplied -- the seller supplied literature
8 to Monsanto as the customer?

9 A Yes.

10 Q Okay. Now, when you say customer literature,
11 you said first there was operating instructions, then
12 you said customer literature. Are you talking about
13 literature that Monsanto got as a customer in buying a
14 piece of equipment from someone else or are you talking
15 about literature that Monsanto supplied to a customer as
16 seller of something?

17 A I believe in that reference I had in mind the
18 literature that Monsanto prepared for its products.
19 That literature would be forwarded to buyers or
20 potential buyers. And that's the literature I was
21 referring to as customer literature at that point.

22 Q Okay. These are the technical bulletins and
23 the like that Monsanto prepared and provided to
24 customers about its particular products?

25 A Yes.

1 Q So if you had men who were working with a
2 particular product in the Queeny plant, you might go and
3 look at the technical literature that Monsanto supplied
4 to customers about that product to see what it said
5 about the safety of the product. Is that correct?

6 A Yes.

7 Q And then you referenced the medical
8 department at the plant as a third source of
9 information. I believe you said the preferred source.
10 Explain that to me.

11 A I don't quite know what to explain.

12 Q Was there just somebody at -- a doctor at the
13 plant that you would call up and say: "What do we do
14 about this?"

15 A There was a full-time physician available,
16 and you could call him up, but generally just drop by
17 his office.

18 Q Okay.

19 A And sit down and discuss the chemicals in
20 your department, and have any of the employees drop by
21 for any treatments, a general health-type of discussion.

22 Q Okay. And that was normally held between you
23 and the doctor, one on one?

24 A Yes.

25 Q Who was the doctor at the Queeny plant at the

1 time you were superintendent in the maintenance
2 department?

3 A Dr. Bersche.

4 MR. HALL: Would you spell that, please?

5 THE WITNESS: I believe it's B e r s c h e.

6 MR. HALL: Thank you.

7 MR. LACEY:

8 Q With the exception of supervising people who
9 worked on equipment containing PCBs, and your general
10 information about them as other chemicals that your
11 workmen might be exposed to, did you have any other
12 contact with PCBs in the period that you were the
13 superintendent in the maintenance department at the
14 Queeny plant?

15 A No.

16 Q What was your next assignment with Monsanto?

17 A I was appointed a superintendent in the
18 engineering department, which at the plant was referred
19 to as the technical services department.

20 Q Still at the Queeny plant?

21 A Yes.

22 Q And what did that department do?

23 A The department supplied all of the -- or most
24 of the technical expertise required by the plant to
25 correct operating problems or improve operations.

1 Q Can you give me an example of what you're
2 talking about?

3 A Yes. An example might be a situation where
4 we were producing a product that meets certain
5 specifications. The marketplace needs change, the
6 customers are asking for a different set of
7 specifications, the technical services department
8 assigns the appropriate people then to study that
9 process and determine what needs to be done to meet this
10 new specification. Do you add another distillation
11 column or do you put in a filter or do you add an
12 additive? Whatever is appropriate. They provide that
13 kind of service. Some of it involves just a change in
14 the method of operation, some of it involves the
15 installation of new equipment, some of it involves a
16 total change in the approach, a dramatic, completely
17 different approach.

18 Q How long --

19 A That's an example.

20 Q Okay. How long did you hold that position?

21 A Again about a couple of years. These dates
22 are not very specific in my mind. It all has to add up
23 13 years at this plant so --

24 MR. LACEY: Okay.

25 MR. HALL: Let's take about a five-minute

1 recess, if you don't mind.

2 MR. LACEY: Sure.

3 VIDEO OPERATOR: We're off the record.

4 [Recess]

5 [Exhibit 1 marked]

6 VIDEO OPERATOR: We've been off the record
7 for a short break. We're now back on the record. The
8 time is 11:30 a.m.

9 MR. LACEY:

10 Q I think at the point we took the break you
11 were telling me you were with this supervision position
12 in the engineering department for technical services at
13 the Queeny plant until approximately 1962.

14 A That is correct.

15 Q And that gets us, I guess, 11 years through
16 the 13 years we need to cover. What's next at the
17 Queeny plant?

18 A The final assignment at the Queeny plant was
19 the general superintendent of the group that was
20 involved with shipping, receiving, warehousing,
21 utilities distribution, trash pickup, all the services
22 in the plant that didn't fit clearly into manufacturing
23 or maintenance.

24 Q There's manufacturing, there's maintenance,
25 and there's everything else?

1 A Correct.

2 Q And you were everything --

3 A If it didn't fit anywhere else, they gave it
4 to me.

5 Q Okay. And this would have been from roughly
6 1962 until 19 --

7 A 64.

8 Q -- 64. Looks like we came out pretty good as
9 we went along year by year.

10 In that general superintendent position were
11 you reporting directly to the plant manager?

12 A Yes.

13 Q You would be second in line to the plant
14 manager, along with the people over engineering and over
15 operations who would also be second in line in their
16 respective areas?

17 A Yes.

18 Q That particular work as general
19 superintendent, the extent I -- I assume that you were
20 involved with PCBs would be again you had some indirect
21 supervision of people who would be repairing and
22 maintaining facilities that might contain them.

23 A Not the repair or servicing any longer.

24 Q I see. That did not fall under your area?

25 A That is correct.

1 Q Okay.

2 A But this did involve individuals who operated
3 the equipment, primarily in the utilities distribution
4 department with all their transformers and capacitors.
5 In addition to that, I had a small blending operation at
6 which chemicals were blended into final products. And
7 this is the unit that used PCBs to produce and package
8 the industrial hydraulic fluids which Monsanto sold.

9 Q So part of the supervisory responsibility you
10 had was over electricians, for example, responsible for
11 the electrical system in the plant? Correct?

12 A Not at this point.

13 Q I guess I'm -- you indicated you were over
14 individuals operating transformers and capacitors that
15 contained PCBs. They weren't electricians?

16 A That is correct. They were power plant
17 operators.

18 Q I see.

19 Did this plant have its own electrical-
20 generation capability?

21 A Yes.

22 Q And it had PCB-containing capacitors and
23 transformers as part of that power plant?

24 A Yes.

25 Q In the ordinary course of business were those

1 people supposed to ever come into contact with the PCBs
2 inside the equipment?

3 A No.

4 Q Did you ever have an occasion where they did?

5 A Not directly. But they were present when the
6 units were being serviced.

7 Q Okay. And the people who were servicing them
8 would be more likely to come into contact with the PCB
9 materials?

10 A Yes.

11 Q And it was those servicemen that had been
12 reporting to you back when you were the supervisor of
13 the maintenance department?

14 A Yes.

15 Q Okay. You didn't have any failure of a
16 transformer capacitor that resulted in an unexpected
17 release of PCB fluid?

18 A I don't recall any, no.

19 Q All right. Were you then aware of the fact
20 that under some circumstances transformers or capacitors
21 could fail in such a way as to release PCB fluids that
22 they contained?

23 A I was aware of the possibility, yes.

24 Q Okay.

25 Now, tell me about this blending operation.

1 This involved actually taking materials that contained
2 PCBs and mixing them with something else and then
3 sending them out of the plant?

4 A Yes.

5 Q But it was not considered a manufacturing
6 operation?

7 A Not at that time. This was a new unit.

8 Q Okay.

9 A That was assigned by the plant manager to my
10 group. It was his decision. It involved the receipt of
11 PCBs from the two Monsanto plants, the transfer into
12 storage tanks, the blending of these PCBs with other
13 ingredients in processing tanks, and then the transfer
14 either to trucks, rail cars or containers for shipment
15 to the customer.

16 Q You mentioned receipt of PCBs from two
17 Monsanto plants. That would be the plant in East St.
18 Louis, Illinois, and the plant in Anniston, Alabama?

19 A Yes. More correctly, it's Sauget, Illinois.

20 Q Okay. I've heard it also referred to as East
21 St. Louis. Was that another term used?

22 A It was used, but very loosely. They are
23 neighboring cities.

24 Q Okay. Technically, the legal description was
25 Sauget?

1 A That is correct.

2 Q And were those the two Monsanto plants in the
3 United States that made PCBs?

4 A Yes.

5 Q Were there any other facilities that Monsanto
6 had in the United States that made PCBs other than
7 Anniston, Alabama, and the one in Sauget, Illinois, or
8 East St. Louis?

9 A There were no others.

10 Q Okay.

11 How close was the Sauget, Illinois, plant to
12 the Queeny plant?

13 A [No reply]

14 Q Approximately. I don't mean an exact
15 distance.

16 A It's about a three- to five-mile drive.

17 Q And how close was Anniston, Alabama, to the
18 Queeny plant?

19 A About 800 miles.

20 Q Was there any particular reason that the
21 blending operation involved PCBs both from the plant in
22 Sauget -- that was the Krummrich plant?

23 A Yes.

24 Q Any particular reason that the blending
25 operation used PCBs both from the Krummrich plant and

1 from the plant in Anniston, Alabama?

2 A No particular reason. It was a matter of
3 availability of inventory.

4 Q Was it more desirable to use PCBs from the
5 Krummrich plant than the Anniston, Alabama, plant in
6 order to avoid the problem of shipping them or the
7 effort of shipping them?

8 A Everything else being equal, that would be a
9 factor, yes.

10 Q Was there any difference between the PCBs
11 made at the Anniston, Alabama, plant and the PCBs made-
12 at the Krummrich plant?

13 A No.

14 Q Which particular PCBs were used in this
15 blending operation?

16 A The product Monsanto called Aroclor 1242,
17 Aroclor 1248, Aroclor 1254, and on rare occasion Aroclor
18 1232.

19 Q Now, the term "Aroclor" is the trade name
20 that Monsanto had for a PCB?

21 A For a PCB mixture.

22 Q Okay. A mixture of PCBs?

23 A Correct.

24 Q When one talks about Aroclor 1242, one is
25 talking about a product that contains generally PCBs?

1 A Yes.

2 Q Okay. Similarly the same thing would be true
3 for 1248 or any other product denominated an Aroclor?

4 A [No reply]

5 Q That it would be a mixture of generally PCBs.

6 A But it had to be the Aroclor 1200 series.

7 Q Right. When we talk about Aroclor 1200,
8 we're talking about PCBs?

9 A Correct.

10 Q Okay. And the use of the trade name Aroclor
11 was a way you could tell it was a Monsanto PCB.
12 Correct?

13 A Yes.

14 Q I mean you talked about these competitors.
15 They couldn't call their PCBs Aroclor.

16 A That is correct.

17 Q Okay. There were -- By the way, the only
18 company producing PCBs in the United States was
19 Monsanto. Correct?

20 A To my knowledge, yes.

21 Q And Monsanto also produced PCBs in other
22 countries, did it not?

23 A Yes.

24 Q Did you ever import any PCBs from your plants
25 in other countries to be blended at the Queeny plant?

1 A No.

2 Q Any particular reason why?

3 A Economics.

4 Q What -- what was the economics of that?

5 A Shipping material from the United Kingdom to
6 St. Louis area or from Japan to St. Louis was not
7 economically wise.

8 Q Feasible?

9 A Feasible.

10 Q Okay. And Japan -- when you say Japan and
11 did you say England?

12 A I said United Kingdom.

13 Q United Kingdom. Those were the other two
14 places in the world that Monsanto had plants that made
15 PCBs?

16 A That is correct.

17 Q Okay.

18 What was blended with the Aroclor 1242 that
19 came to the Queeny plant?

20 A I don't know at this point if I have the
21 right to divulge a -- what at one time was a -- a secret
22 formulation.

23 MR. HALL: If you are concerned about that,
24 don't do it.

25 THE WITNESS: I don't know that I have the

1 right to.

2 MR. LACEY: I think you've got the right,
3 Bob, to designate this portion of the deposition as
4 confidential and proceed with it. And the reasons that
5 you sought a protective order to do that were just these
6 sorts of considerations. I think we're entitled to know
7 what products went into the hydraulic fluids that they
8 blended.

9 MR. HALL: Why don't you go on to something
10 else and let me think on that.

11 MR. LACEY:

12 Q What was the end product name that was given
13 to whatever was blended with Aroclor 1242?

14 A Pydrauls. P y d r a u l.

15 Q Any particular Pydraul?

16 A There was a particular Pydraul associated
17 with the Aroclor 1242. I don't personally recall at the
18 moment just which one.

19 Q Okay. And 1248 plus some blend resulted in
20 what product?

21 A Another Pydraul with a different number
22 designation.

23 Q 1254 plus some chemical resulted in what
24 material?

25 A Again, Pydraul with some letter designation.

1 Number/letter designation.

2 Q And 1232 which was used, you said, rarely?

3 A Yes.

4 Q Plus some chemical resulted in what?

5 A Again a Pydraul followed by a number and
6 letter designation.

7 Q The name Pydraul, is that a Monsanto trade
8 name for its hydraulic fluids?

9 A It's a Monsanto trade name for its industrial
10 hydraulic fluids.

11 Q What other types of hydraulic fluids are
12 there besides industrial?

13 A Well, there's aviation hydraulic fluids.

14 Q Okay.

15 A And, although Monsanto did not make them,
16 there are automotive hydraulic fluids. And I'm sure
17 there are other classes of hydraulic fluids.

18 Q But the only other hydraulic fluid that
19 Monsanto had besides this industrial hydraulic fluid was
20 an aviation one?

21 A That is correct.

22 Q That one was named Skydrol?

23 A That is correct.

24 Q During the period of time that you were over
25 this department, 1962 to 1964, did all of the Pydraul

1 fluids that this department blended have PCBs in them?

2 A Yes.

3 Q Do you know whether or not your department
4 blended all the hydraulic fluids that Monsanto sold
5 under the name of Pydraul at that time?

6 A I'm not absolutely sure, no.

7 Q Do you know whether or not your department
8 blended at least a portion of each type of hydraulic
9 fluid that Monsanto sold under the name Pydraul at that
10 time?

11 A Yes.

12 Q The only question would be then whether some
13 other plant also did blending of a portion of any
14 particular type of Pydraul that was sold?

15 A That is correct.

16 Q And each of the Pydrauls that your department
17 blended at that time contained some PCBs in it?

18 A Yes.

19 Q And the particular PCB would vary with the
20 particular type of Pydraul that was -- or the number of
21 the Pydraul fluid?

22 A Yes.

23 Q Was there a variation in the percentage of
24 PCBs, not the type of PCB, but the percentage of PCBs,
25 in each of the Pydraul fluids?

1 A In some instances, the amount of PCB would
2 vary.

3 Q Okay.

4 A And the number/letter designation would be
5 changed to reflect that.

6 Q Was there -- strike that.

7 There was a reasoning process behind the
8 numbering of the PCB fluids of the Aroclors. Correct?

9 A Yes.

10 Q Explain to me the numbering scheme for the
11 Aroclors.

12 A Is this the number used for the material that
13 was marketed?

14 Q Yes.

15 A All right. The -- the trademark Aroclor was
16 followed by a four-digit number. The PCBs that were
17 sold were designated by the number -- the first two
18 digits of that four-digit number of the 1 and 2, 1200.
19 The last two digits represented the percent by weight of
20 the amount of chlorine present in that particular
21 mixture. So an Aroclor 1242 would be a PCB that was
22 chlorinated until enough chlorine was attached to the
23 biphenyl such that when it's analyzed the analyst will
24 see that 42 percent by weight was chlorine.

25 A And would the same thing be true for 1248

1 except it's 48 percent, 1254 except it's 54 percent, and
2 so on and so forth?

3 A Yes.

4 Q The "by weight" refers to the fact that the
5 chlorine molecules are heavier per atom than the
6 molecules of carbon or hydrogen?

7 A That is true.

8 Q So to have 42 percent chlorine by weight
9 would not mean you would have 42 percent of the
10 molecules counting the numbers that are chlorine?

11 A No, it would take fewer chlorines to give the
12 weight such that it equates to 42 percent of the total.

13 Q All right.

14 Let me direct your attention now back to our
15 drawing. And first, for the record, identify -- the
16 court reporter has now marked for us as Exhibit 1 the
17 sketch that you have done of a benzene molecule. Is
18 that correct?

19 A Yes.

20 Q And that's on the left-hand side of the
21 document marked as Exhibit 1. Correct?

22 A Yes.

23 Q And then on the right-hand side, if I can
24 find my note, we have the -- actually, we have the
25 nitrobenzene molecule. We don't show the chlorines on

1 it.

2 A That is correct.

3 Q But if we replaced one or more of the
4 hydrogens there we would then have a chlorinated
5 nitrobenzene?

6 A That is correct.

7 Q All right.

8 Let me ask you, if you would, to turn the
9 page for us so we can get a clean page up there. And if
10 you could, just draw me a -- you may have to pick that
11 up to get over those little things there. You've --
12 you've mentioned a PCB and we've talked about that
13 generally. To get a PCB that's Aroclor 1242, 42 percent
14 by weight, what particular molecules of PCB -- how many
15 chlorines would I have to do that, generally?

16 A Roughly three chlorines.

17 Q Okay. Could I get you to just draw me a PCB
18 that has three chlorines, then, on it? And again if we
19 could use carbon, the red C for carbon, we use the black
20 for the hydrogen and the green for chlorine, we can kind
21 of keep our numbering or our color scheme going along.

22 A All right.

23 Q You need one more there, don't you,
24 somewhere?

25 A I've got them -- it's every other unit for --

1 MR. HALL: I'm sorry. I missed what you just
2 said.

3 THE WITNESS: It's every other carbon. I
4 should have shown a double horizontal line connecting
5 the carbons. What I have shown thus far represents
6 biphenyl.

7 MR. LACEY:

8 Q Is that also known as diphenyl in some
9 terminologies?

10 A Yes.

11 Q Biphenyl and diphenyl are the same compound?

12 A Yes.

13 Q Okay.

14 A I will show a three-chlorine biphenyl.

15 Q Okay.

16 A But this is only one of several possible
17 combinations of three chlorines.

18 Q That's fine. Why don't you use the green to
19 show our chlorine, just so we can have it show up
20 better.

21 A I was going to show the hydrogen.

22 Q Okay.

23 A Are we going to need those spaces?

24 Q Yes, that's fine. Go ahead.

25 A I'll just put in the hydrogen while I have

1 the black marker. Too many, too many.

2 Q There's one that's real light down there on
3 the bottom left. Maybe you can just write over that big
4 in the green.

5 A And chlorine was blue?

6 Q Green.

7 A Or green.

8 Q I think green. No, blue. I think you're
9 right. Now I'm confused.

10 A That is one of the three-chloro
11 possibilities.

12 Q Okay. And when you say a three-chloro
13 possibility, you mean it has three chlorine molecules
14 attached to the biphenyl?

15 A Correct.

16 Q And the other possibility, you could just put
17 those chlorines in different places and put hydrogens in
18 place where the chlorines were?

19 A That is correct.

20 Q Okay. And if we had a composition of PCBs
21 that all had three chlorines like that, we would have
22 roughly Aroclor 1242?

23 A That is correct.

24 Q Okay.

25 Now, if I understand correctly, in fact most

1 of the PCBs that Monsanto produced, even a 42 percent or
2 a 48 percent or whatever you chose, didn't actually have
3 every molecule in there with exactly three chlorines on
4 it.

5 A That is correct.

6 Q There would be some, maybe even the majority
7 of 1242, that would have three chlorines, there would be
8 some that would have two, and some that would have four,
9 and maybe some with one and some with five, but where it
10 would all average out to be an average of roughly three,
11 and that's how you got the 42 percent by weight.

12 A That is correct.

13 Q Okay.

14 Now, you mentioned the -- when we talked
15 about the numbering system, you mentioned the products
16 that were sold. Was there some other numbering system
17 used internally within the plant other than the 1200
18 series?

19 A Yes.

20 Q Tell me about the internal plant numbering
21 system.

22 A Well, there was the numbering system used to
23 designate another group of chemicals, the chlorinated
24 terphenyls.

25 Q Okay.

1 A There was also the practice in the plant to
2 refer to the unrefined PCBs by referring to those
3 mixtures with the 1100 designation.

4 Q So that if I had --

5 MR. HALL: Were you through?

6 THE WITNESS: Yes.

7 MR. HALL: Okay.

8 MR. LACEY:

9 Q So that if I had Aroclor 1142 I would be
10 talking about the initial production of what was going
11 to become 1242?

12 A That is correct.

13 Q And I would then run it through distillation
14 or whatever the process was to purify it in order to
15 achieve 1242?

16 A That is correct.

17 Q Was it customary for all Aroclor products to
18 be purified before they were sold?

19 A On a rare occasion some of the 1100 material
20 was sold. But that was very rare.

21 Q Was that rare because customers generally
22 didn't want it in its unrefined state?

23 A Yes.

24 Q Had there been a market for it, Monsanto
25 would have been willing to sell it in an unrefined

1 state, there just wasn't much of a market?

2 A That's my understanding.

3 Q All right.

4 Did every Aroclor series, like 1232, 1242,
5 1248, 1254, 1260, even 1016, begin as an unrefined
6 product and then go through a refining stage to reach
7 its final formulation?

8 A Yes.

9 Q Let's talk about 1016 for a second, because
10 it doesn't quite fit the mold of the numbering scheme,
11 does it?

12 A That is correct.

13 Q Explain Aroclor 1016 to me.

14 A I don't know what you mean by explaining.

15 Q Well --

16 A Do you want it chemically or --

17 Q No, I'm sorry.

18 A -- physically --

19 Q Let me make myself clear. You've explained
20 the numbering system for the Aroclor 1200 series, and
21 you've told me that basically those represent the PCB
22 products that were sold, and that we could look at the
23 12 to represent the refined product and the last two
24 digits to represent the percent of chlorination.
25 Correct?

1 A That is correct.

2 Q We have 1016. It doesn't start with 11, it
3 doesn't start with 12. And I understand that 16 doesn't
4 represent the percent of chlorination either.

5 A That is correct.

6 Q Okay. I guess I'm asking you to explain the
7 numbering system for it more than anything else.

8 A All right. There were studies that indicated
9 that the four chloro, five chloro and higher types of
10 PCBs were more apt to survive in the environment and
11 accumulate. Our research people came up with the idea_
12 that if we removed those from as many of our products as
13 we could and still retained some of the other properties
14 this would be a step in the right direction. In order
15 to conduct research studies on that thought and with
16 material, by practice they had to designate this
17 research chemical by some number. That number then was
18 obtained from a log, a big ledger, and any researcher
19 could step up to that ledger and claim the next number
20 and write across the page a description of his study.
21 Preceding that number is -- are the -- is the acronym
22 MCS, which stood for Monsanto Company sample. The next
23 number at that point in time to be used happened to be
24 1016.

25 Q In this big log of numbers?

1 A In this big log. So the researcher took that
2 number. And when we send out samples to our customers,
3 we say, "Here is a sample, Monsanto sample 1016. Please
4 try it out in your process." With the frequent use of
5 1016, it became a very common term amongst our customers
6 and, of course, within our Monsanto team. When the
7 material was finally acceptable commercially, we
8 initially tried to tag it and label it as Aroclor 1242
9 B, referring to biodegradable. This started much
10 confusion in recordkeeping, because the B would not be
11 included. And we decided that "Since everybody refers_
12 to this material as 1016, let's just call it Aroclor
13 1016." And that's how it evolved.

14 Q Okay. Had it been given the normal numbering
15 scheme, it would have had the 12 to represent a purified
16 product and 42 to represent 42 percent chlorination?

17 A That is correct.

18 Q Okay. But, for the reasons you've explained,
19 it wound up with this nonsequential or nonschematic
20 number?

21 A That is correct.

22 Q Am I correct in understanding that every
23 Monsanto research product draws its sequential number
24 off this one ledger?

25 A Not every.

1 Q Which products get one of these numbers off
2 this ledger sheet and which ones don't?

3 A As I understand it, and I'm not certain of
4 the total picture, but the chemical part of Monsanto
5 uses the MCS designation, at least as of fairly recent
6 years. At one time we also used to use OS, referring to
7 outside sample. The agricultural chemicals part of
8 Monsanto uses, as I remember, CPS. So it's possible
9 that one looks at Monsanto's records and you may see
10 those three designations. There's no hard-and-fast
11 rule, it just depends on which ledger they go to to pick
12 their number.

13 Q Okay. Within the area where PCBs -- or the
14 part of the company that dealt with PCBs, the
15 appropriate number was the ledger that said MCS?

16 A At that point in time, yes.

17 Q Okay.

18 Do you know approximately when work started
19 on this 1016 product?

20 A Approximately before the summer of 1970.
21 Mid-1970.

22 Q When you say before, anytime before or are
23 you saying it happened in that period?

24 A I'm saying that it evolved in the April, May,
25 June period. Some of the preliminary laboratory work

1 was underway.

2 Q In spring of 1970, just to be general?

3 A That is good, yes.

4 Q Was there a designation for the unpurified
5 1016?

6 A It was still 1142.

7 Q Okay. 1142. The base product to make either
8 1016 or 1242 was the same?

9 A Yes.

10 Q You first made 1142, then you either shunt it
11 off to make 1016 or shunt it off to make 1242?

12 A Well, once we started making 1016, we did not
13 make any more 1242.

14 Q Okay. So 1016 became a complete replacement
15 for 1242?

16 A Yes.

17 Q What materials would be in the 1100 PCBs?
18 The unpurified materials.

19 A I don't claim to know them all. I don't know
20 that I've ever seen a total analysis. There is --
21 primarily the difference lies in what remains in the
22 tarry residue after the distillation takes place. And
23 this is a -- a mixture of higher-chlorinated biphenyls
24 and highly-chlorinated terphenyls. Those terphenyls
25 were present in the biphenyl before it was chlorinated.

1 Q So we have primarily terphenyls and highly-
2 chlorinated biphenyls?

3 A Primarily, yes.

4 Q Are there any other materials you are aware
5 of that are in the 1100 series before purification?

6 A I'm not aware of any specifically. I'm aware
7 that it's a complex mixture.

8 Q Is the process of distillation designed to
9 make the product the pure material that you're looking
10 for?

11 A Yes.

12 MR. LACEY: Let's stop and change the tape.

13 Do you want to go for lunch now, or do you
14 want to go for a few minutes? What's your pleasure?

15 MR. HALL: Why don't we just knock off for
16 30, 35 minutes?

17 MR. LACEY: Sounds good to me.

18 VIDEO OPERATOR: We're off the record.

19 [Recess]

20 [Exhibit 2 marked]

21 VIDEO OPERATOR: We've been off the record
22 for a brief lunch break, and now we're back on the
23 record. And the time is 12:50 p.m.

24 MR. LACEY:

25 Q The PCB materials that came to the Queeny

1 plant for blending, were those already purified when
2 they arrived?

3 A Yes.

4 Q So they were 1200 series Aroclors when they
5 arrived?

6 A Yes.

7 Q Do you know whether the Pydraul fluids had a
8 numbering sequence that represented something in terms
9 of increasing numbers like the Aroclor numbering
10 sequence represented the higher chlorinations?

11 A The numbering sequence with the Pydraul
12 system was not related to the composition, to my
13 knowledge, no.

14 Q Okay.

15 Now, you were involved in the general
16 superintendent's position, including the supervision of
17 this blending operation, from 1962 to 1964?

18 A Yes.

19 Q Where did you next go within Monsanto in
20 1964?

21 A I was transferred to the Sauget, Illinois,
22 plant as a general superintendent of manufacturing.

23 Q That's the Krummrich plant?

24 A Yes.

25 Q Which is sometimes referred to by people as

1 East St. Louis?

2 A Right.

3 Q And that was one of the two plants where PCBs
4 were produced?

5 A Yes.

6 Q And your title was --

7 A General superintendent - manufacturing.

8 Q Was that over all manufacturing?

9 A No; it was about a fourth of the plant.

10 Q There were other general superintendents?

11 A Of manufacturing, yes.

12 Q Did your general superintendency include the
13 portion of the plant that manufactured PCBs?

14 A No.

15 Q Did you have anything to do with PCBs at all
16 while you were at the Krummrich facility as the general
17 superintendent for manufacturing?

18 A I was in charge of units that used PCBs and
19 equipment.

20 Q These were used primarily as heat transfer
21 fluids?

22 A Yes. As well as compressors.

23 Q And your relationship to the PCBs in that
24 context would be similar to what you had when you were
25 over people who had in their areas transformers that had

1 PCBs or capacitors that had PCBs, there was nothing
2 different about that assignment vis-a-vis PCBs than you
3 had previously had?

4 A There is much similarity, yes.

5 Q How long did you remain at the Sauget,
6 Illinois, Krummrich plant as the general superintendent
7 for manufacturing?

8 A About a year and a half.

9 Q That brings us up to what, 1965?

10 A Early 1965.

11 Q And what did you do beginning in early 1965?

12 A I was transferred to the Anniston, Alabama,
13 plant as plant manager.

14 Q And that was over the entirety of the
15 operation?

16 A Yes.

17 Q And that was one of the plants that made
18 PCBs?

19 A Yes.

20 Q How long did you remain the plant manager at
21 Anniston, Alabama?

22 A Until the end of 1969.

23 Q And that's when you -- at the end of '69 --
24 took on the new job that we previously discussed in this
25 area of dealing with PCB problems more generally?

1 A Yes.

2 Q You held that job until 1976?

3 A Yes.

4 Q What did you do in 1976?

5 A I kept the title of manager of product

6 acceptability, with responsibility related to specialty

7 chemicals, at least chemicals Monsanto referred to as

8 specialty chemicals, and process chemicals.

9 Q Did that include PCBs?

10 A No.

11 Q What happened to the PCBs?

12 A They were assigned to another Monsanto

13 individual who was also a manager of product

14 acceptability.

15 Q Who was that?

16 A J. C. Weber.

17 Q Why were they transferred away from you since

18 you had had experience in that area and were familiar

19 with the product?

20 A Well, they were in truth a part of another

21 group of chemicals that Mr. Weber was responsible for.

22 Initially the PCBs were not assigned to him, primarily

23 for the reason you just gave, that I had the experience.

24 Q What group did Mr. Weber have?

25 A I believe at that time it was referred to as

1 a functional products group.

2 Q Were any other chemicals assigned away from
3 you in 1976 besides PCBs?

4 A No.

5 Q And what was the next job assignment you had
6 with Monsanto?

7 A In 1977 I was appointed a director -
8 environmental operations for one of Monsanto's operating
9 units.

10 Q Which unit?

11 A Monsanto Chemical Intermediates Company.

12 Q And what sort of chemicals did that company
13 make?

14 A Maleic anhydride, ethylene, styrene, sulfuric
15 acid, muriatic acid, the chloro -- nitro-chlorobenzenes
16 we referred to earlier, phenol. I believe that covers
17 them.

18 Q Were those primarily chemicals that were made
19 by Monsanto to be used as feedstocks for other Monsanto
20 chemical processes that wound up in finished customer
21 goods?

22 A Many of them were used by Monsanto. But they
23 were also sold to other companies.

24 Q The name Intermediates, however, relates to
25 the fact that many of them were intermediate steps to a

1 final Monsanto product, does it not?

2 A That is correct.

3 Q And that's how the chemicals were grouped in
4 that division generally?

5 A Correct.

6 Q Speaking of the various chemical
7 compositions, we now have marked as Exhibit No. 2, do we
8 not, your drawing of a trichlor PCB?

9 A Yes.

10 Q Okay. How long did you retain your position
11 as director of environmental operations for the
12 intermediates company?

13 A The end of 1982.

14 Q Now, what sort of things did you do as the
15 director of environmental operations? What -- what type
16 of tasks were assigned to you?

17 A I had three functions reporting to me: One
18 related to product acceptability, so the manager of
19 product acceptability for chemical intermediates was one
20 of my staff members; and I had two managers of
21 environmental control; and I had a manager of industrial
22 hygiene or occupational health.

23 Q Was this position that you held a relatively
24 new position within Monsanto?

25 A Yes.

1 Q Previously these functions had been somewhat
2 separated. Is that correct?

3 A Yes.

4 Q For example, industrial hygiene, occupational
5 health had reported to the medical department?

6 A I don't wish to mislead you. The -- the
7 overall corporate effort was directed by Monsanto's
8 medical director and his staff in these two areas you
9 just mentioned.

10 Q I see.

11 A Within each operating unit of Monsanto
12 through the years there were individuals assigned the
13 task of being somewhat closer to those operations that
14 related to their products. The formation of the
15 environmental operations function was an attempt to put
16 this under one head rather than have product
17 acceptability reporting to a marketing group,
18 environmental control reporting to a manufacturing
19 group, and industrial hygiene being picked up by whoever
20 was the least busy.

21 Q Okay. Let me see if I understand the three
22 areas. Product acceptability was primarily dealing with
23 any difficulties that might arise with customers about
24 the quality or nature of the product. Correct?

25 A It wasn't only difficulty, it was any issue

1 arising with our product after it left -- left the plant
2 gate in transit, in use and in disposal.

3 Q And it was primarily a customer -- it was
4 related to what the customers did with it?

5 A Primarily, yes.

6 Q Then the environmental control had to do in
7 great measure with the way in which plants functioned
8 and whether or not the plants -- Monsanto plants
9 functioning created environmental problems, wastewater
10 discharges and the like?

11 A That is correct.

12 Q And finally, the industrial hygiene
13 occupational health had to do with whether or not the
14 way in which the chemicals were handled primarily at
15 Monsanto presented any hazards to Monsanto employees?

16 A Yes.

17 Q To the extent that there were questions about
18 problems of potential injury to workers at a customer's
19 plant, would that fall within the industrial hygiene/
20 occupational health function under you or would that
21 fall within the product acceptability function under
22 you?

23 A It would fall under product acceptability as
24 the initial -- no, that isn't correct. Initially the
25 contact would be through the marketing organization.

1 Product acceptability manager would assist. And if it
2 became highly technical in terms of medicine and
3 industrial hygiene, it would be referred to the
4 corporate staff that had the total expertise.

5 Q So your industrial hygiene and occupational
6 health group that reported to you really didn't have
7 anything to do with customer problems of industrial
8 hygiene and occupational medicine. Correct?

9 A That is right.

10 Q To the extent that there were any technical
11 people at Monsanto with specialized training who dealt
12 with customers about industrial hygiene, occupational
13 medicine, they would be located in the medical
14 department?

15 A Correct.

16 Q Okay.

17 Did any of the people who reported to you
18 regularly make visits to customers?

19 A They made visits to customers, but it was
20 primarily on a request basis rather than a routine
21 regular basis.

22 Q At the end of 1982 what position did you
23 take?

24 A I still had the title of director -
25 environmental operations, now assigned to the Monsanto

1 Intermediate -- I'm sorry. Monsanto Industrial
2 Chemicals Company.

3 Q And what sort of chemicals generally -- I'm
4 really not looking for names so much, but what sort of
5 chemicals generally were grouped together there?

6 A Well, this new unit, newly-named unit picked
7 up the chemical intermediates group that I had mentioned
8 previously and included other products which were
9 primarily designed to serve industry, either as starting
10 materials for our customers or as aids in their
11 processes or ingredients in their products.

12 Q So the industrial chemical would represent
13 something other than, for example, consumer products?

14 A That is correct.

15 Q And to -- I guess to find a -- a niche for
16 industrial chemicals PCBs were -- they obviously weren't
17 being produced at this time, but they were a type of
18 industrial chemical sold primarily to customers who used
19 them in some process of their own. Correct?

20 A Correct.

21 Q How long did you retain this same title but
22 with this new unit known as the Industrial Chemical
23 Company?

24 A Till the end of 1985.

25 Q So that brings us up to the last year of your

1 career, 1986?

2 A Yes.

3 Q What did you do then?

4 A The company reorganized again.

5 Q That was a frequent occurrence at Monsanto?

6 A Well, depends where you're sitting, I
7 suppose. Monsanto reorganized and regrouped all of
8 their chemically-oriented processes under Monsanto
9 Chemical Company as distinguished from Monsanto
10 Agricultural Products Company and the other units that
11 make up all of Monsanto. I was assigned then the task
12 of manager of occupational health for Monsanto Chemical
13 Company.

14 Q And was that a task primarily aimed toward
15 protection of Monsanto's own employees in the workplace?

16 A Yes.

17 Q And you held that for one year and then
18 retired?

19 A Correct.

20 Q In this reorganization, did the things that
21 had been in the intermediates company and then in the
22 industrial chemicals company wind up in the chemical
23 company?

24 A Yes.

25 Q Okay. Did you wind up holding a position in

1 the chemical company similar to the job that had been
2 held previously by the manager - industrial hygiene and
3 occupational health under the Intermediate Company and
4 the Industrial Chemical Company?

5 A Similar in types of activities, but the scope
6 had expanded from eight or ten plants to 46 plants. So
7 it was a bigger piece of the pie now.

8 Q It was a more important job?

9 A Yes. Yes. Many more -- many more employees
10 involved, yes.

11 Q And your movement from the director position
12 over environmental operations into a title and a
13 function that was similar to what had previously
14 reported to you was not a demotion, because you had more
15 area to cover. Is that correct?

16 A Yes.

17 Q Okay. Was it a promotion, lateral transfer,
18 how would you characterize it?

19 A Lateral.

20 Q Okay.

21 We talked earlier about your consulting
22 briefly that you started in January 1 of 1987, this
23 year. And you mentioned that you have consulted on four
24 matters. One of them is this case in which you are
25 testifying today.

1 A Yes.

2 Q What consultation have you had on the Adams
3 case? What's that all about?

4 A I want to be sure I get my cases straight. I
5 believe there's an allegation here of harm to the health
6 because of exposures to PCB. I believe I've got this
7 correct. This is an employee who worked in a salvage
8 yard, scrap yard, who claims that while handling scrap
9 he was exposed to PCB liquids. I believe that's the
10 case.

11 Q Do you know what sort of claims he has, what
12 sort of health problems?

13 A I don't remember specifically, no.

14 Q Do you know where that case is pending?

15 A State of Kentucky is all I know.

16 Q And what has your consultation been in regard
17 to?

18 A So far I have been -- had a discussion with
19 attorneys, given me a very brief background, and then I
20 was -- a box of documents was pointed out to me and I
21 was asked to peruse them and I was told those documents
22 had already been submitted in that matter, in that case.

23 Q Were those documents from Monsanto?

24 A Yes.

25 Q What about the Whitfield case? What does

1 that involve?

2 A As I recall, this was an individual in South
3 Carolina who claimed his health was impaired because of
4 PCBs in the local waters.

5 Q Do you know whereabouts in South Carolina?

6 A In the Pickens, South Carolina, area.

7 Q Do you know what his health claims were?

8 A I don't remember them.

9 Q What has your consultation in that case
10 consisted of?

11 A Again I was referred to a box of documents -
12 that I was told had been provided or supplied in this
13 case, and I was asked to review them. That's the extent
14 of my involvement. Recently.

15 Q Were you to offer any opinions based on the
16 review of the documents?

17 A No. I haven't had a subsequent discussion.
18 I just reviewed them.

19 Q Okay. Bedtime reading, so to speak?

20 A Almost.

21 Q Okay.

22 What about the Detroit post office case?

23 MR. HALL: By what about it? Do you mean
24 what does it entail or what work has he done or --

25 MR. LACEY: Yes.

1 MR. HALL: Yes which?

2 MR. LACEY: Both of the above.

3 Q I'm just trying to find a little bit about
4 what your consultation in the Detroit post office case
5 has been and what the case involved.

6 A I had a short discussion with an attorney
7 from Detroit who described for me the -- the case, which
8 involved postal workers in Detroit, and a transformer.
9 And that's the extent of our discussion. And we made
10 dates to meet next week again.

11 Q Okay. You don't even know how the
12 transformer was related to the postal workers in
13 Detroit?

14 A I was told that the postal workers were
15 working in the vicinity of these transformers and they
16 claimed that their health was impaired by the presence
17 of an oily film around and on those units.

18 Q In connection with your consultation in the
19 Scott case, did that begin after you started your
20 consulting career?

21 A Yes.

22 Q Okay. When did you first consult in the
23 Scott case?

24 A I don't recall the exact day. Sometime in
25 April.

1 Q Who contacted you?

2 A I believe the first contact I got was from a
3 paralegal employee of Monsanto's.

4 Q Do you recall who that was?

5 A Mrs. -- Ms. Joy Niblack, N i b l o c k.

6 Q And what did she tell you about your
7 consultation in this case?

8 A As I remember, she asked me to drop by the
9 office, that an affidavit was being prepared for my
10 signature, and they had also collected documents that
11 had been submitted in that case. I believe I have the-
12 right case. Yes. And I was asked to come by and start
13 perusing that box of data or documents.

14 Q Did you go by and get the documents?

15 A I did not get them. They're still there.

16 Q I see. You reviewed them there at Monsanto's
17 offices in St. Louis?

18 A Yes.

19 Q That's within their legal department offices?

20 A Yes.

21 Q How many documents did you review?

22 A I did not count them. It's a box that's
23 about 12 by 18.

24 Q Okay. Did you review all those documents?

25 A Yes.

1 Q Were they numbered in such a fashion you
2 could identify what you were looking at?

3 A They were numbered and they were sequentially
4 in that box, as I remember. I don't know how else to
5 describe them. They were Monsanto documents.

6 Q Well, let me see if I can assist in trying to
7 understand what was involved. We have had produced to
8 us a number of documents by Monsanto that begin with the
9 letters SCM and then followed by six digits for
10 numbering. Do you know whether or not these documents
11 contained that type of numbering scheme?

12 A They did.

13 Q All right. And the box of documents that you
14 looked at was one sequentially-numbered box?

15 A There were gaps in the numbering system.

16 Q I see. Okay.

17 A But the lower numbers at one end and the
18 higher at the other.

19 Q Okay. So you reviewed selected documents out
20 of the documents that were numbered SCM something?

21 A Yes, yes.

22 Q What did the documents that you reviewed
23 pertain to?

24 A PCBs, of course. And most of them were
25 either documents that I originated or documents of which

1 I received carbon copies, and covered areas in the PCB
2 situation that I was personally very active in at that
3 point in time.

4 Q Did you do anything else besides go by and
5 review those documents?

6 A No. That's it.

7 Q Okay.

8 What was the next relationship you had to
9 this lawsuit after visiting with Ms. Niblack and then
10 going by and looking at a box of documents there at
11 Monsanto's legal department?

12 A I met with Mr. Hall.

13 Q When was that?

14 A Yesterday.

15 Q Okay. Do you understand that the testimony
16 you are giving in the case is in various different
17 capacities?

18 A Yes.

19 Q Okay. You are aware of the fact, I take it,
20 then, that a notice was issued for your deposition and
21 you were subpoenaed to appear and give your deposition,
22 a notice issued by the plaintiffs?

23 A Yes.

24 Q And, actually, I guess, that's been reset
25 from the initial date to this date. Correct?

1 A Yes.

2 Q You are aware of the fact, I take it, then,
3 that you have been designated as a 30(b) (6) witness to
4 testify on behalf of Monsanto itself on certain matters?

5 A Yes.

6 Q And you are aware of the fact that you've
7 been designated as an expert witness in the case?

8 A Well, I was aware that discussion was being
9 held in that expert witness bit. I don't know that it's
10 been --

11 Q I see.

12 A -- finalized.

13 MR. LACEY: Would you mark that as the next
14 exhibit, please?

15 [Exhibit 3 marked]

16 MR. LACEY:

17 Q Let me show you what has been marked by the
18 court reporter as Exhibit No. 3 and ask if you recognize
19 that document.

20 A Yes, I do.

21 Q What is Exhibit No. 3?

22 A This is the document that I previously
23 referred to as an affidavit.

24 Q I see.

25 A I was asked to come by and read and -- and

1 sign.

2 Q I see. Had that document already been
3 prepared for you when you came by Monsanto's offices?

4 A There was a draft, and I read it over, then
5 they retyped it in this form and I signed it.

6 Q Okay. So the -- the draft of that document
7 had already been prepared for your signature before you
8 arrived at Monsanto's offices?

9 A That is right.

10 Q And had been prepared before you reviewed a
11 single document in connection with this case?

12 A Correct.

13 Q Did you know who Mr. Hall was when you signed
14 that document?

15 A Yes. I had met Mr. Hall before.

16 Q Oh, I'm sorry. I thought you first met Mr.
17 Hall yesterday.

18 A No, I met Mr. Hall over a year ago.

19 Q I see. Well, under what circumstances?

20 A That reminds me. That's another deposition.

21 Q Okay. Well, tell me about that. When did
22 you meet Mr. Hall over a year ago?

23 A In St. Louis.

24 Q And what was the occasion of that meeting?

25 A Let me think of that. I do remember there

1 was the Wright case, W r i g h t.

2 Q Okay.

3 A The details are fuzzy.

4 Q Where was that case pending?

5 A In Texas.

6 Q Okay.

7 A I don't remember the details. Health
8 effects, PCBs, is all I remember.

9 Q Okay. It did involve health effects of PCBs?

10 A Yes.

11 Q Was Monsanto a defendant?

12 A Yes.

13 Q And you testified on behalf of Monsanto by
14 deposition?

15 A Yes.

16 Q And I take it Mr. Hall was the lawyer that
17 called you to testify.

18 A Yes.

19 Q And that's how you met Mr. Hall before the
20 date that you wrote this report to him that's marked as
21 Exhibit No. 3?

22 A That is correct.

23 Q Do you know the status of that case?

24 A No.

25 Q Do you recall what the nature of your

1 testimony in that case was?

2 A They're all so much alike I can't distinguish
3 one from the other. General PCB discussions.

4 Q Okay.

5 Had you talked with Mr. Hall at all about
6 this case or met with him about this case we're on here
7 today before you signed the report that's marked as
8 Exhibit 3?

9 A No.

10 Q You assumed, I take it, that Mr. Hall was a
11 lawyer representing Monsanto in this case from the fact
12 you signed the report to him?

13 A Yes.

14 Q Did you understand before you signed the
15 document the nature of the expert testimony that you
16 were to give was encompassed by what is contained in the
17 report?

18 A Yes.

19 Q Okay. Have you seen the document we call the
20 Rule 30(b) (6) notice, where we ask the corporation to
21 designate a representative or representatives to testify
22 about certain matters?

23 A I have not seen your document. I don't
24 recall seeing it, no.

25 MR. LACEY: Let me show you a copy of the

1 notice which I'll ask the court reporter to mark before
2 I hand it to you as the next exhibit.

3 [Exhibit 4 marked]

4 MR. LACEY:

5 Q Let me hand to you what the reporter has
6 marked as Exhibit No. 4 and ask if you've got a copy of
7 that.

8 A Yes, I do.

9 Q Okay. Very good.

10 A I didn't recognize it.

11 Q Okay.

12 A Mr. Hall gave me a copy.

13 Q When did you first see a copy of that?

14 A This morning.

15 Q Okay. Do you understand which topics that
16 are set forth in that notice that you are going to
17 testify to on behalf of the corporation?

18 A Yes, I do.

19 Q Which topics are those as they're set out in
20 the notice?

21 A Topic 2.

22 Q Okay.

23 A Topic 5.

24 Q All right.

25 A Topic 6.

1 Q All right.

2 A And Topic 7.

3 MR. LACEY: Okay.

4 Just so I'm clear, Bob, is he the only
5 representative of the company to testify on Topic 7?

6 MR. HALL: Let me see it.

7 MR. LACEY: The letter I've gotten -- we've
8 gotten from you dated April 28 designated people for the
9 first six but I don't think designated anybody for Topic
10 7.

11 MR. HALL: Let me check my notes. I believe
12 he's the only one designated. Yes, he's the only one
13 that we designated on Topic 7.

14 MR. LACEY: Okay. So --

15 Q Have you previously testified as an expert
16 witness in any of the PCB cases that you have given
17 testimony in before?

18 A I'm rather confused on the designation as
19 expert. As a layman, I don't quite understand all of
20 the differences.

21 Q Well, you do understand you've been
22 designated as an expert in witness in this case?

23 A In this case.

24 Q Right. I just -- My question to you is: Do
25 you know if you've ever been designated as an expert

1 witness before in any other case?

2 A Not with this approach. I don't know what
3 happened.

4 Q You've never prepared a written report of
5 this -- of the type that's marked as Exhibit No. 3
6 before in another case. Is that correct?

7 A I don't recall any, no.

8 Q Okay.

9 Do you recall whether you've ever testified
10 before in any other case as a representative of the
11 corporation in response to the sort of notice that has-
12 been marked as Deposition Exhibit No. 4 in your
13 deposition?

14 A Yes. I see a similarity here in the
15 Bloomington, Indiana -- City of Bloomington v. Monsanto,
16 yes.

17 Q Okay. Is that the only case that you can
18 recall where there was some similarity in that type of
19 designation as a corporate representative?

20 A Yes.

21 Q And were you still an employee of the company
22 at the time you were designated the corporate
23 representative in that case?

24 A Yes.

25 Q I've asked you about your testimony in

1 depositions and at trial. Have you ever given sworn
2 testimony on behalf of Monsanto or any other party in
3 any other type of proceeding other than in a trial or a
4 deposition?

5 A I have made appearances in hearings and the
6 like. I don't know if they fit your question.

7 Q Well, have you given testimony in these sorts
8 of hearings?

9 A I recall a General Electric Hudson Falls
10 hearing conducted by a hearing officer who I believe was
11 appointed by the Governor of New York. And I was
12 invited to testify and I did appear and was questioned
13 by the hearing officer.

14 Q When was this? Approximately.

15 A 1972, 1973.

16 Q And what was the hearing about?

17 A About PCBs present in the Hudson River.

18 Q Was there some type of proceeding against
19 General Electric there?

20 A I understood there was, yes. The State was
21 seeking corrective action.

22 Q Was Monsanto a party to that?

23 A No.

24 Q Did you go and testify on your time as a
25 Monsanto employee or on your vacation time, or how was

1 that handled?

2 A I was a Monsanto employee.

3 Q And what was the general nature of your
4 testimony in that proceeding?

5 A Again it was the general overview of PCBs,
6 their characteristics, their uses, Monsanto's program
7 for limiting sales. I can't recall any other specifics.

8 Q Okay.

9 Did you ever determine one way or the other
10 whether or not there were any PCBs in the Hudson River?

11 A I personally?

12 Q Well, you or Monsanto, on whose behalf you
13 were employed.

14 A No.

15 Q Okay. So you never determined whether or
16 not -- I'm talking now about you or Monsanto, the
17 company that you worked for, determine whether or not
18 General Electric might be permitting any PCBs that you
19 sold to it to get into the Hudson River.

20 A We assisted General Electric early in 1970-
21 '71 period analyzing some water samples that they had
22 sent to us. The impression we got is that some of that
23 water could have ended up in the Hudson River. But it
24 was only an impression. We were not positive. And we
25 were able to detect PCBs in some of the samples they

1 sent us. To my knowledge, Monsanto was not involved in
2 any other sampling relating to PCBs in the Hudson River.

3 Q Was GE the only customer to whom Monsanto was
4 selling PCBs in 1970, 1971 that had plants on the Hudson
5 River?

6 A I don't know.

7 Q What you do know is that of the water samples
8 that were sent to you by General Electric at least some
9 of them contained PCBs?

10 A Yes.

11 Q And you were under the impression that at
12 least some of those water samples could be water that
13 got into the Hudson River?

14 A That's an impression I have, yes.

15 Q Okay. But to your knowledge no one at
16 Monsanto conducted any further investigation to
17 determine whether or not the PCBs that you found in that
18 water were in fact representative of PCBs from that
19 plant getting into the Hudson River?

20 A That is correct.

21 Q Do you know if Monsanto did any water
22 sampling or other sampling at any other customer's plant
23 other than the General Electric plant on the Hudson
24 River?

25 A Yes, they did.

1 Q Okay. At what other plants did Monsanto
2 conduct sampling?

3 A I don't wish to mislead you. It wasn't
4 Monsanto conducting sampling, it was Monsanto analyzing
5 samples obtained by others.

6 Q Fine.

7 A And the sampling was -- the sampling method
8 was described by Monsanto. Whether it was followed to
9 the letter we never did know.

10 Q Okay.

11 A Analyses were made for samples received from
12 the Westinghouse Company's plant in Bloomington, there
13 were I believe two customers up in the New Bedford,
14 Massachusetts, area that submitted samples. There were
15 others, but I don't remember them at the moment. They
16 were all part of the electronics association that had a
17 PCB program which included a survey of manufacturing
18 plants' effluents. And Monsanto offered to help them
19 with the analyses.

20 Q When we talk about a manufacturing plant
21 effluent, we're talking about the water that is
22 discharged from the plant into some stream or river or
23 whatever. Correct?

24 A Well, it's either discharged or even surface
25 water from a big heavy storm that washes a parking lot

1 or the driveway or the storage area or what have you,
2 yes.

3 Q Effluent means it leaves the plant?

4 A Leaves the plant, yes.

5 Q Did you find any PCBs in the effluent water
6 provided to Monsanto that was identified as coming from
7 the Westinghouse plant in Bloomington?

8 A I believe so, yes.

9 Q And, of course, you found PCBs in the water
10 that was identified as being effluent from the GE plant
11 on the Hudson River. Correct?

12 A It was water leaving a department. We don't
13 know whether it went into a catch basin or down the city
14 sewer or down a surface drainage of some sort.

15 Q Okay. Did you find PCBs in the effluent from
16 the New Bedford, Massachusetts, plant?

17 A As I recall, yes.

18 Q Did you find PCBs in the effluent water
19 provided to you by the other people who sent in samples?

20 A Most of the others. I believe there were a
21 few that did not have them.

22 Q How long did this testing program remain in
23 place where Monsanto tested this effluent water?

24 A I don't recall the exact -- it was something
25 like about eight months. It was not quite a full year.

1 Q And this was in the early Seventies?

2 A No. The General Electric sampling was early
3 Seventies. This other group asked for sampling I would
4 say in about 1973 or 4.

5 Q And prior to that time Monsanto had not done
6 any sampling of effluent water from any customer
7 facility except for the GE facility on the Hudson
8 Fall -- I mean on the Hudson River?

9 A To the best of my recollection, yes.

10 Q Now, we were talking about your appearances
11 at hearings where you gave testimony. You mentioned the
12 one for General Electric at Hudson Falls. Do you recall
13 any other occasions where you've given testimony of some
14 sort at a hearing or other proceeding that's not a trial
15 or a deposition?

16 A I recall a -- I gave testimony on the broad
17 PCB issue before an EPA effluent committee, advisory
18 committee.

19 Q And what was the general nature of that
20 testimony?

21 A I don't recall all of the particulars, but it
22 addressed the definition of PCBs, it addressed the
23 ability to analyze for PCBs at extremely low levels, the
24 evaluation of PCB toxicity and its application at that
25 time to all PCBs equally, and a request that the EPA and

1 the advisory committee reconsider what at that time was
2 perceived to be an achievable low concentration of PCBs
3 permissible in waterways.

4 Q Is that it?

5 A Yes.

6 Q The definition of PCBs, did you propose that
7 any biphenyl that had as much as one chlorine atom on it
8 should be considered a PCB?

9 A No. We were proposing that the more
10 resistant types be considered for control and
11 measurement and limitations.

12 Q Looking at our Exhibit No. 2, where we have
13 drawn a PCB molecule with three chlorine atoms on it,
14 were you recommending that that PCB be defined as a PCB
15 for control purposes?

16 A No.

17 Q Okay. And what that means is that as we look
18 at that molecule that is definitely a PCB, is it not?

19 A Yes.

20 Q Okay. As we look at that PCB that's shown in
21 Exhibit 2, it was your testimony on behalf of Monsanto,
22 is that correct --

23 A That is correct.

24 Q -- that that molecule ought not to be defined
25 as a PCB for the purposes of the effluent standards that

1 control how much you could put out on the water. Is
2 that correct?

3 A Correct.

4 Q With regard to the question of ability to
5 analyze for PCBs at -- at low levels, was your testimony
6 to the effect that at low levels it was difficult to
7 detect PCBs?

8 A Yes.

9 Q And what was the approximate date of this
10 testimony that you were giving?

11 A 1972, 1973.

12 Q With regard to the evaluation of PCB toxicity
13 and the application to all PCBs equally, were you
14 presenting the position on behalf of Monsanto that the
15 more lowly-chlorinated PCBs should not be considered as
16 toxic as the more highly-chlorinated PCBs?

17 A We didn't address the toxicity in those
18 terms. We were questioning the reference to the
19 sensitivity of shrimp to PCBs as being the proper basis
20 for establishing an unachievably low level of
21 permissible PCBs.

22 Q Was it undisputable that shrimp were
23 sensitive to low levels of PCBs?

24 A Yes.

25 Q And the standards that the EPA proposed were

1 standards that would protect shrimp?

2 A That was our understanding of how they
3 arrived at their numbers, yes.

4 Q And you thought the standards should be
5 higher and should not have to necessarily protect
6 shrimp?

7 A Yes.

8 Q Okay.

9 And finally, if I understand correctly, you
10 requested that the EPA and this advisory group
11 reconsider the standards they were proposing?

12 A Yes.

13 Q And I guess what you wanted them to do upon
14 reconsideration was suggest a standard that was higher,
15 that would allow more PCBs in effluent water and still
16 be permissible.

17 A Yes.

18 Q Was that reconsideration granted?

19 A No.

20 Q The standards that ultimately were proposed
21 and adopted were those that protected the shrimp?

22 A I don't know what was finally adopted. It --
23 Whatever was adopted was in the Eighties, as I recall.

24 Q I see.

25 A I'm not familiar with that.

1 Q You didn't keep up with what happened after
2 you gave the testimony?

3 A That is correct.

4 Q All right. In any event, whatever happened
5 at the time you gave the testimony didn't result in an
6 immediate change of the position to that that Monsanto
7 was seeking?

8 A That is correct.

9 Q What other testimony have you given?

10 A Well, I read a prepared document before a
11 subcommittee of Congress.

12 Q What was that all about?

13 A It was again a very -- a general description
14 of PCBs, their former uses, their current uses at that
15 time, what we knew about their toxicity, and the
16 perceived benefits relating to safety in electrical
17 systems far outweighing the possible harm that they
18 might be creating.

19 Q About when did you read this prepared
20 statement?

21 A '73, '74.

22 Q Was this in connection with any particular
23 matter that might be pending before Congress?

24 A Well, at that time there was considerable
25 interest in Congress for the passage of an act that

1 eventually became the Toxic Substances Control Act.

2 Q Was that a -- I don't know whether the right
3 word is bill or a proposed law that was under
4 consideration at the time of your testimony?

5 A As I recall, there were many bills submitted,
6 both in the House and in the Senate, addressing the need
7 for the EPA, for some statutes that would enable them to
8 pursue specific chemicals that were perceived to be
9 toxic. The PCBs were mentioned as examples of the types
10 of chemicals of interest.

11 Q When, if you know from your work with
12 Monsanto and your position -- let's see if I can get
13 this title correct here -- I guess your position is
14 manager of environmental control in 1970. So you were
15 dealing exclusively with PCBs. When did these bills or
16 proposed laws or whatever you call them first start to
17 appear in Congress?

18 A Well, I'm somewhat confused because there's
19 always a steady stream of environmental laws being
20 introduced. I don't recall any bill that related to
21 toxic substances until '72, '73, '74 period. I do
22 recall Congressman Ryan from New York submitting a
23 specific bill for PCBs.

24 Q When did that happen?

25 A 1970.

1 Q Do you remember where Congressman Ryan of
2 New York -- what district he was in or --

3 A I don't recall it by number. I know the
4 common name is the Silk Stocking District, New York.

5 Q Okay. Is that in the New York City area?

6 A Yes. Manhattan.

7 Q And in 1970 he proposed legislation about
8 PCBs. Correct?

9 A Yes.

10 Q What did his legislation propose?

11 A The final essence of his bill was to ban the
12 manufacture, use, shipment, disposal of PCBs.

13 Q I suppose Monsanto was opposed to that
14 legislation.

15 A Yes.

16 Q Do you know whether or not Congressman
17 Ryan -- strike that.

18 Did Congressman Ryan's bill pass Congress in
19 1970?

20 A No.

21 Q I'm not sure I understand well enough whether
22 it would have been reintroduced in '71. I'm not sure
23 about the sequence. But was his bill before Congress
24 each session of the Congress after 1970?

25 A As best I recall, Congressman Ryan had

1 submitted two bills. He introduced one on PCBs and
2 withdrew it because, as I remember, he didn't think it
3 was stringent enough, he wanted tighter controls, so he
4 submitted a second version, which amounted to a total
5 ban. It was not passed by that session and was not
6 reintroduced.

7 Q I see. Did part of his idea with regard to
8 the banning of PCBs become part of subsequent bills
9 introduced by others?

10 A That I don't know. I don't know how other
11 Congressmen were influenced by Congressman Ryan's
12 initial two bills.

13 Q Well, let me try to see if I can sort out
14 what I -- what I guess I'm trying to figure out. You
15 mentioned that there was some legislation for toxic
16 substance control. Is that correct?

17 A Yes.

18 Q That you believe was introduced in '73 or
19 '74? Correct?

20 A Yes.

21 Q That legislation or some version of it
22 ultimately became the Toxic Substances Control Act of
23 1976?

24 A Yes.

25 Q And that Toxic Substances Control Act, or

1 TSCA, as it's known, gave the EPA the right to regulate
2 chemicals as you mentioned. Is that correct?

3 A I don't know that I mentioned anything
4 specific, but it -- it gave authority to EPA to regulate
5 chemicals under certain conditions. More specifically,
6 it mentioned PCBs as the only mentioned chemical in that
7 act.

8 Q And they were mentioned in connection with
9 specific Congressional decisions that PCBs manufacture
10 should be stopped. Correct?

11 A Yes.

12 Q And their distribution stopped?

13 A I don't recall it -- it was not a ban -- let
14 me think a bit. Yes, you're right. It did refer to
15 that, uh-huh.

16 Q That sounds somewhat similar to me what you
17 are telling me Congressman Ryan's legislation was all
18 about back in 1970.

19 A That is right.

20 Q So that the Toxic Substances Control Act that
21 passed in 1970 -- Congress in 1976 contained as a part
22 of it at least the germ of the idea that Congressman
23 Ryan had introduced in 1970?

24 A Yes.

25 Q And am I correct in understanding that

1 Monsanto had been opposed to Congressman Ryan's original
2 legislation to ban the use of -- the manufacture and use
3 of PCBs? Correct?

4 A Yes.

5 Q And they continued to be opposed to that
6 provision as a part of the Toxic Substances Control Act
7 up till the time it passed Congress. Correct?

8 A No.

9 Q I see. When did Monsanto withdraw its
10 objections to the banning of the manufacture and the
11 sale of PCBs?

12 A That was about 1975, when Mr. Fitzgerald
13 presented Monsanto's position before Russell Train, the
14 EPA administrator at the time.

15 Q And what was that?

16 A Monsanto's position was that we would quickly
17 stop the manufacture and sale of PCBs as soon as the
18 electrical equipment manufacturers found their
19 alternative materials and told us so. We were ready.

20 Q So Monsanto then opposed that legislation
21 until the time it decided it didn't want to make PCBs
22 anymore? Correct?

23 A Well, I don't know if it was -- it didn't
24 really want to make PCBs before that, but the customers
25 insisted on it.

1 Q Well, when did --

2 A So we were --

3 Q When did Monsanto decide that it really
4 didn't want to make PCBs anymore?

5 A Officially 1975. As a company.

6 Q So Monsanto decided in 1975 that it no longer
7 wanted to make PCBs?

8 A Correct.

9 Q And it was at that same time that Monsanto
10 withdrew the opposition it had previously had to the
11 provisions that Congressman Ryan had suggested on the
12 ban of the manufacture and sale of PCBs. Correct?

13 A In essence, it's correct, but the opportunity
14 to -- to stand up and speak out was not present. There
15 was no activity during most of '75 regarding these bills
16 that were in Congress.

17 Q Well, isn't it a fact that there were various
18 agencies of the federal government as well as agencies
19 of state governments in the entire period of the 1970s
20 considering the problem of PCBs and their regulation?

21 A Yes.

22 Q And during the entire period up until the
23 time that Monsanto decided not to continue to make and
24 sell PCBs that Monsanto was presenting its position,
25 which was opposed to a cessation of the manufacture and

1 sale of PCBs to these various groups, whoever would hear
2 and listen?

3 A Yes.

4 Q And, in fact, it was part of your job at
5 Monsanto to make sure that Monsanto's position was
6 presented to these various groups, was it not?

7 A Yes.

8 Q Okay.

9 Now back to this Congressional subcommittee
10 that you testified before in 1973 or 1974.

11 A Yes.

12 Q They were considering legislation affecting
13 PCBs. Correct?

14 A Don't know.

15 Q Well, your testimony was about PCBs.

16 A Yes.

17 Q I take it they didn't keep you from giving
18 your testimony as being irrelevant to the subject
19 matters that they were considering.

20 A I don't know what subject matter they were
21 considering.

22 Q No. My point is: They let you give your
23 testimony about PCBs.

24 A Correct.

25 Q I suppose if it had been totally irrelevant

1 they might have said, you know, "We don't need to hear
2 from you, we're not talking about that subject." But
3 you got to give it?

4 A Yes.

5 Q Were you cross-examined about it?

6 A Yes.

7 Q And your description or your -- your subject
8 matter of your testimony dealt with what PCBs were, how
9 they had been used historically, what they were being
10 used for at that time, in 1973 or '74, what Monsanto
11 knew about their toxicity, and what Monsanto perceived=
12 the benefits of PCBs to be for their then-existing uses
13 over the alternatives. Correct?

14 A Correct.

15 Q Is that the -- anything else that you
16 testified about?

17 A Not that I recall.

18 Q Now let me just get you to give me a very
19 brief description of the former uses of PCBs. Like you
20 told Congress about. What did you tell them about the
21 former uses of PCBs?

22 A By former uses, I'm going to include all uses
23 other than the -- as a dielectric in electrical
24 equipment. So that would include as an ingredient in
25 fire-resistant industrial hydraulic fluids; as a liquid

1 used to transfer heat in heat transfer systems; as an
2 ingredient in synthetic rubbers, to make them pliable,
3 flexible; as an ingredient in adhesives of all kinds,
4 many kinds; as an ingredient in special coatings,
5 coatings in the sense of paint-type coatings, boat hull
6 painting, traffic lane stripes, anything that would be
7 exposed to heavy wear and tear; the use as a solvent
8 along with another solvent in the manufacture or
9 preparation of the coating that goes on carbonless
10 reproduction paper; as an ingredient in floor tile, to
11 make the tile flexible. I can't think of any others at
12 the moment. As a -- as a fluid in gas turbine systems,
13 these big turbines that pump gas in gas transmission
14 lines. And also as a liquid in vacuum pumps where the
15 air is sucked through the liquid to evacuate, and create
16 a vacuum in a tank or in an area. I can't think of any
17 others.

18 Q The use of PCBs in the turbines in these gas
19 transmission lines is a matter that has been in the news
20 recently, has it not?

21 A Yes, sir.

22 Q Where a lot of these PCBs have been found in
23 the ground along these pumping stations?

24 A I've read that, yes.

25 Q What did you describe to Congress in general

1 about the then-current uses of PCBs?

2 A I described their use, their continued use in
3 transformers and capacitors. And our perception that
4 they were needed by the electrical generation and
5 transmission industry to be able to meet the codes in
6 place at the time, fire codes, and the great advantage
7 that we saw was the fact that these materials, when
8 exposed to stress, would not burst into flames and
9 create fire hazards.

10 Q Did you explain that there were other fluids
11 that could be used as dielectrics in transformers?

12 A I don't know that it was so much an
13 explanation other than a reference that, yes, mineral
14 oil could be used, but it can explode and have balls of
15 fire, or you can have air-cooled units, but they become
16 monstrous because you need all that surface to cool the
17 unit. Or if you had to use mineral oil, you had to
18 install the proper vaults with sprinkler and deluge
19 systems in case of fires. I believe we got into that
20 kind of discussion.

21 Q Did you explain to Congress that there were
22 alternative fluids to be used in capacitors?

23 A I don't believe so. Because at that point in
24 time I for one was not aware of an acceptable alternate
25 fluid.

1 Q Did you explain to Congress that at that time
2 Monsanto had already applied to the U. S. Patent Office
3 for a patent on a replacement capacitor fluid?

4 A I'm not aware of that one.

5 Q I see. You think that would have been
6 relevant information to have supplied to Congress in
7 1973 or 1974 about the nature of the need for PCBs?

8 A Well, not knowing what the patent is all
9 about, I can't relate to it.

10 Q Well, if Monsanto had applied to the United
11 States Patent Office as early as 1972 for a patent on a
12 product it had developed to replace PCBs in capacitors,
13 that would certainly have a bearing on the -- whether or
14 not there was a critical need for the use of PCBs in
15 capacitors, would it not?

16 A I don't know.

17 Q I see. Well, that would certainly be
18 something that Congress would be appropriate in checking
19 out in making any decisions about PCBs and their need
20 for electrical uses, in particular for capacitor uses,
21 would it not?

22 A I don't know if we're talking about
23 fire-resistant capacitors or non-fire-resistant. Not
24 knowing the background --

25 Q You just don't know -- Do you know anything

1 about Monsanto's efforts to find a replacement fluid
2 that it could market in lieu of PCBs for capacitor
3 dielectrics?

4 A Yes.

5 Q Are you familiar with the development to the
6 point of seeking patents on those fluids?

7 A I'm not aware as of this moment that Monsanto
8 found a fire-resistant alternative that they sought
9 patents on.

10 Q I see.

11 A Never heard of it.

12 Q I see. Well, let me ask you for a moment to
13 explain to me what you are aware of with regard to the
14 replacement fluids that were used in capacitors and
15 transformers after Monsanto stopped selling PCBs for
16 dielectric purposes.

17 A I'm aware of three. One is they went back to
18 mineral oil. The other is that some of the units were
19 drained and refilled with silicon-based liquids and some
20 new ones were even manufactured using silicon. That
21 takes care of transformers.

22 Now, in capacitors, I'm aware that the
23 industry went primarily to a phthalate ester with a
24 fusing device such that if the current gets more than
25 acceptable levels if the fuse works and fires are

1 inhibited. Those are the only three I'm aware of.

2 Q In the capacitors, the fluid that was used
3 was the fluid known as DOP?

4 A Yes, sir.

5 Q What is that, dioctyl --

6 A Dioctyl phthalate.

7 Q Dioctyl phthalate. That is a commodity-type
8 chemical, is it not?

9 A My understanding, yes.

10 Q When we talk about a commodity-type chemical,
11 we're talking about a chemical that's made by a variety
12 of companies and generally available for various
13 purposes?

14 A That's the general definition of commodity,
15 yes.

16 Q And that is a commodity chemical. I'm
17 talking about the DOP, or dioctyl phthalate, that was
18 used in capacitors that was available before 1970.

19 A Yes.

20 Q With regard to -- And that takes care of --
21 of what you are aware of that goes into capacitors right
22 now that are being manufactured.

23 A That's my understanding.

24 Q Are you aware of any particular problems that
25 have been experienced by the electrical industry with

1 regard to capacitors that are using the DOP, or dioctyl
2 phthalate, fluid?

3 A I'm not in position to know one way or the
4 other.

5 Q Have you heard any you can tell me about?

6 A No.

7 Q With regard to the transformers, transformers
8 are still being manufactured today in some cases using
9 mineral oil. Correct?

10 A That's my understanding.

11 Q That's been available for literally decades,
12 has it not?

13 A Yes.

14 Q Other transformers are being manufactured in
15 such a way as not to need any dielectric fluid at all.
16 Is that correct?

17 A Yes.

18 Q And that's been available for a considerable
19 period of time?

20 A Yes.

21 Q In fact, those are known as dry-type
22 transformers, are they not?

23 A Yes.

24 Q And those have been in competition with PCB
25 transformers for what you've referred to as fire-

1 resistant uses before PCBs were banned. Correct?

2 A Yes.

3 Q And in addition to that some transformer
4 manufacturers have used the silicon fluids that you have
5 talked about. Correct?

6 A Yes.

7 Q And do those silicon fluids have the -- what
8 you referred to as the fire-resistant characteristics?

9 A Yes.

10 Q Okay. And silicon fluids have been known
11 about for a considerable period of time, have they not?

12 A I don't know about considerable. And I don't
13 know how that relates to use as a transformer fluid.

14 Q Well, silicon fluids were commercially
15 available in 1970, were they not?

16 A Yes.

17 Q Now, it was Monsanto's position, if I
18 understand correctly what you've told me, that Monsanto
19 believed the benefits of using PCBs as dielectrics in
20 capacitors and transformers outweighed any possible
21 problems resulting from their toxicity. Is that
22 correct?

23 A From their use.

24 Q From their use. And in particular the
25 problem that people were concerned about PCBs was not if

1 they were locked up in something and stayed there
2 forever but if they got out and were exposed to things
3 that had lived. Correct?

4 A Yes.

5 Q So the concern with regard to use of PCBs was
6 their toxicity? Correct?

7 A Unknown toxicity.

8 MR. HALL: Excuse me a minute. Could we take
9 just a break?

10 MR. LACEY: Sure. That's fine. Why don't we
11 just take about a five-minute, ten-minute, whatever you
12 need.

13 [Recess]

14 VIDEO OPERATOR: We've been off the record
15 for a short break. We're back on the record and the
16 time is 2:35 p.m.

17 MR. LACEY:

18 Q Are you aware of any situations where
19 electrical equipment containing PCBs have been involved
20 in a fire?

21 A Yes.

22 Q Tell me what you know about the involvement
23 of PCB-containing equipment in fires.

24 A I have heard of an incident that occurred in
25 the state of New York.

1 Q Do you know anything more about it than an
2 incident happened in New York?

3 A It's a fire involving transformers in an
4 office building. I believe it was a government office.

5 Q Did those transformers have PCBs in them?

6 A That's what I'm told.

7 Q And nevertheless there was a fire that
8 occurred?

9 A That's my understanding.

10 Q Was this the one in Binghamton, New York?

11 A That's the one, yes.

12 Q Do you know about when that fire occurred?

13 A About 1974.

14 Q Had that fire already occurred when you were
15 testifying before this Congressional subcommittee about
16 the benefits of PCB fluids in transformers?

17 A No.

18 Q As a result of that fire, there were problems
19 with going back into the office building, were there
20 not?

21 A I had heard that the employees were not
22 permitted to go back. I do not know who made that
23 decision and what it was based on.

24 Q Did you understand that after the fire, when
25 tests were made, that it was found that there were PCBs

1 and furans and dioxins spread throughout the building?

2 A I had heard that there were PCBs and
3 chlorodioxins and chlorodibenzofurans found in parts of
4 the building. I don't know about throughout the
5 building.

6 Q I see. But in parts of it?

7 A That's what I heard, yes.

8 Q And did you understand that there was concern
9 about the presence of those PCBs and furans and dioxins
10 in parts of the building that caused them not to occupy
11 it again?

12 A Yes.

13 Q And are you aware of the fact that that
14 building remained unoccupied for a very substantial
15 period of time because of those problems?

16 A Yes.

17 Q Do you know whether the building has been
18 reoccupied to this day?

19 A I do not know.

20 Q When was the last time you determined whether
21 the building had been reoccupied or not?

22 A [No reply]

23 Q Did you ever try to determine that?

24 A I don't know that I sought any information
25 that would lead me to determine whether it was occupied

1 or not.

2 Q I see.

3 A I don't recall any discussion informal or
4 otherwise addressed to that.

5 Q Was the fire in that office building in New
6 York one of the factors that caused Monsanto to decide
7 to stop making and selling PCBs as dielectric fluids?

8 A Not that I know of.

9 Q Did that fire and the effects that resulted
10 from it cause you to reassess your view of the benefits
11 of PCBs as fire-resistant transformer fluids?

12 A I recall the question arising, and I recall
13 talking with representatives of General Electric
14 Company, and the essence of that discussion, at least I
15 was left with an impression that there was much at that
16 time unknown about how did the fire get started and how
17 was it fed so it perpetuated and did not extinguish
18 itself as expected. So I was left with still a question
19 mark as to really what happened and what can we learn
20 from this.

21 Q The net result was, after your discussions
22 with people about it, you didn't necessarily conclude
23 that that would indicate any reason to stop
24 manufacturing or selling PCBs. Is that correct?

25 A That is correct.

1 Q Are you aware of any other fires that have
2 occurred with electrical equipment containing PCB
3 dielectric fluids?

4 A I have heard about third hand or so about an
5 incident that has occurred in the West Coast, in the San
6 Francisco area.

7 Q What do you know about that?

8 A But I don't know much more than that, other
9 than there was a fire and PCBs were there, and
10 transformers or capacitors, one or the other, are
11 involved. And that's all I know.

12 Q Do you know about any other fires involving
13 PCB electrical equipment?

14 A No.

15 Q Do you know anything about fires involving
16 electrical equipment, either capacitors or transformers,
17 that have occurred since replacement products were used
18 in transformers or capacitors after Monsanto decided to
19 stop selling PCBs for dielectric use?

20 A No.

21 Q What did you tell the Congressional
22 subcommittee about what Monsanto knew concerning
23 toxicity of PCBs in 1973, '74?

24 A I reviewed with them the results of the
25 animal studies that were sponsored by Monsanto, and I

1 also reviewed with them our direct experience with our
2 employees and their general health. I believe that was
3 the extent of the toxicity discussion.

4 Q In the discussion of animal studies, did you
5 discuss primarily the studies conducted for Monsanto at
6 Industrial Biotest Laboratories?

7 A I don't know that it was primarily that, but
8 they were certainly a large part of the total studies
9 done.

10 Q Do you appreciate the difference between
11 acute studies and chronic studies in animal tests on
12 toxicity?

13 A Oh, yes.

14 Q The very first chronic studies that Monsanto
15 undertook with regard to PCBs were the tests done for it
16 by Industrial Biotest. Isn't that correct?

17 A That is correct.

18 Q And in terms of information that you supplied
19 to Congress about the chronic effects of exposure to
20 PCBs based on animal data, all of that was based on the
21 studies done by IBT, was it not?

22 A Yes.

23 Q Did you assure Congress of the reliability of
24 the Industrial Biotest studies?

25 A The results were offered as good results from

1 a reputable laboratory. I don't know that we discussed
2 reliability or margin of error or any of the -- anything
3 about the quality of the work.

4 Q Did you have any discussions with anyone in
5 the medical department about those studies before your
6 testimony was presented to Congress?

7 A Yes.

8 Q Those studies are what are known as
9 toxicological studies, are they not?

10 A Yes.

11 Q And toxicology includes the study of the
12 effect of chemicals on animals. Correct?

13 A Yes.

14 Q And am I correct in understanding that the
15 person with whom you had the discussions about the IBT
16 studies before you testified before Congress was Paul
17 Wright?

18 A No.

19 Q Paul Wright was the manager of toxicology at
20 Monsanto, was he not, from January 1972 onward?

21 A Paul Wright was an employee in our medical
22 department. I do not know and did not know his title.
23 I knew he was involved in toxicology work, but at no
24 time did I personally deal with Paul Wright on PCB
25 studies.

1 Q I see. Well, who did you obtain information
2 from in the medical department about the proper
3 understanding of the Industrial Biotest toxicology
4 study?

5 A Elmer Wheeler.

6 Q I see. And do you know from whom he acquired
7 his information on those matters?

8 A I know that he was in frequent contact with
9 Industrial Biotest Laboratory personnel. At one point
10 he was asking one of Monsanto's employees, a Dr. Bill
11 Hunt, to check on these studies periodically. So Dr.
12 Hunt was another source.

13 Q Was Dr. Hunt still alive at the time you
14 presented your testimony to Congress?

15 A No. And later -- at about that time a Dr.
16 George Levinkskas joined the staff, and he was involved
17 in some of the evaluation of the work going on. But in
18 all cases my principal contact -- my -- my contact,
19 really, was Mr. Wheeler.

20 Q So you never talked to Dr. Levinkskas or
21 Dr. Wright about the IBT studies of the chronic toxicity
22 of PCBs. Right?

23 A No, I didn't talk to Dr. Wright. I did talk
24 to Dr. Levinkskas later.

25 Q Before your testimony to Congress?

1 A No.

2 Q Oh. What did you advise Congress that the
3 results of the IBT studies showed about the chronic
4 toxicity of PCBs?

5 A That the higher-chlorinated types of PCB
6 mixtures, when fed to animals for a lifetime -- these
7 animals were rats -- resulted in an increase in liver
8 size, indicating an effect on the liver, which I am told
9 is the organ in the body that is -- that attempts to
10 cope with this kind of exposure.

11 I was also -- I informed them that the
12 reproduction studies with the rats at the higher level
13 of these higher-chlorinated PCBs -- that the
14 reproduction of the rat was affected.

15 And I also told them that if the -- with the
16 chickens the lower-chlorinated mixture as exemplified by
17 Aroclor 1242, that at low levels below ten parts per
18 million, and we later found out it's about three parts
19 per million or thereabouts, the ability of the chickens
20 to reproduce via their eggs in terms of numbers of eggs
21 and hatchability was affected. That was the summary of
22 what I told them.

23 Q Did any of the Congressmen express any
24 interest in whether or not PCBs had been shown to cause
25 cancer in chronic exposures?

1 A I don't recall that question specifically.
2 They could have asked it, but I don't recall it in that
3 particular hearing.

4 Q What was your opinion at that time based on
5 the information available from the IBT study regarding
6 whether chronic exposure to PCBs would cause cancer?

7 A The IBT studies, the conclusions of those
8 studies indicated no carcinogenic effect.

9 Q And is that the testimony that you would have
10 given at that time had you been asked?

11 A That's all I had to give, yes.

12 Q Is that the answer you were giving to people
13 who asked about whether PCBs could cause cancer?

14 A Yes.

15 Q You also mentioned that you went over with
16 the congressmen Monsanto's experience as an employer of
17 people who manufactured or were in the process of
18 manufacturing PCBs. Is that correct?

19 A That is correct.

20 Q Now, what was the purpose of that
21 information?

22 A Well, this was to share with them our 40
23 years of potential exposures to PCBs and the lack of any
24 evidence that would indicate that these chemicals are of
25 the type that are extremely hazardous. And that

1 information was given because, following my
2 presentation, representatives of the capacitor industry
3 spoke on that same subject matter. And our stories were
4 similar.

5 Q Was the testimony given with regard to
6 hazards from acute exposure, hazards from chronic
7 exposure, or both?

8 A Both.

9 Q Did you tell the congressmen that Monsanto
10 had never conducted an epidemiological study of its
11 workmen?

12 A The subject never came up. We did not tell
13 them.

14 Q Wouldn't that have been relevant information
15 for the congressmen to know in evaluating how meaningful
16 your testimony was that there had never been any
17 problems with workmen from exposure to PCBs?

18 A In hindsight, the answer has to be yes. But
19 in that point in time, epidemiology studies by
20 industries was a rarity. I'm not aware of any that were
21 done for industrial chemicals.

22 Q Well, the point of the matter is, the way you
23 try to determine the problem with a particular work
24 force is through an epidemiological study. Isn't that
25 correct?

1 A That's the mathematical way to go about it.

2 Q I see. Did you tell them that you had chosen
3 a nonmathematical way of going about it?

4 A I didn't use that expression. It's the
5 personal observation as well as awareness of workmen's
6 compensation cases, reports of the dispensary, medical
7 treatment, those subjective observations.

8 Q Did you tell them that your information was
9 all based on subjective observations?

10 A Yes.

11 Q I see.

12 You mentioned when you were describing the
13 information you gave to Congress that it related to
14 potential exposures to PCBs. What did you mean by the
15 phrase "potential exposures to PCBs"?

16 A With the presence of PCBs, as with any
17 material, there's always a possibility that a human
18 being might be exposed either accidentally or
19 deliberately or carelessness and the like. So the
20 potential is there.

21 Q Did you tell the congressmen about the steps
22 that Monsanto went to in an effort to keep its workmen
23 from being exposed to PCBs?

24 A Yes.

25 Q And, of course, if those steps were

1 effective, that would greatly reduce or eliminate the
2 potential exposure to PCBs, would it not?

3 A That's the intent, yes.

4 Q And if in fact Monsanto's programs had been
5 effective so as to eliminate the workmen's exposure to
6 PCBs, then the fact that the workmen didn't get sick
7 when working around PCBs but not being exposed to it
8 proved nothing, didn't it?

9 A It definitely proves that the material can be
10 safely handled.

11 Q But it doesn't prove that people who are
12 exposed to it won't be injured by it, does it?

13 A No more than your battery acid in your
14 automobile. If it doesn't get on you, it won't hurt
15 you. But the potential is there.

16 Q Let me make my question very clear so we're
17 asking and answering the same question. If Monsanto's
18 efforts to keep its workmen from being exposed to PCBs
19 were effective, the failure to observe even subjectively
20 any injuries in its work force does not prove that PCBs
21 aren't harmful, does it?

22 A That is correct.

23 Q All it proves is that the effort to keep
24 workmen from being exposed was successful?

25 A That is correct.

1 Q Okay.

2 What other testimony did you give? We've
3 discussed now the Congressional testimony.

4 A I gave testimony on PCBs in New York City.
5 And I'm not certain at the moment of the title of the
6 individual. I think it's the State Attorney General,
7 but I'm not positive. It's -- it's a legal official.
8 Mr. Lefkowitz, as I remember. And it was held in one of
9 those two twin tower -- one of those towers --

10 Q The World Trade Center?

11 A The World Trade Center. In a hearing room
12 which was kind of a formal setting. And I was one of
13 several individuals that testified. Again, my
14 presentation was similar to those we've discussed
15 previously. That's all I recall of that hearing.

16 Q Do you recall approximately when you gave
17 that testimony?

18 A Again, about 1974.

19 Q Do you recall what the occasion for the
20 testimony is, what the Attorney General was
21 investigating?

22 A I believe he was interested in PCBs because
23 of what was happening in the Hudson River.

24 Q Did you understand that the interest in the
25 Hudson River related to discharges from General Electric

1 plants along the Hudson River?

2 A General Electric was mentioned as a source,
3 yes.

4 Q Was anybody else mentioned as a source
5 besides General Electric?

6 A Not that I recall, no.

7 Q And General Electric was, of course,
8 Monsanto's largest PCB customer in the 1970s, was it
9 not?

10 A I don't know.

11 Q I see. Do you recall any other testimony
12 that you have given before any group?

13 A Not in a formal setting, there were no
14 additional presentations.

15 Q Well, what would you characterize as
16 informal, just so I can make sure we're talking about
17 the same thing?

18 A I was asked to attend meetings, for example,
19 of the Great Lakes Governors Council on Pesticides. I
20 believe that's the title, I'm not certain. I was asked
21 to speak before a -- in Michigan -- I don't recall the
22 exact title, but it seemed like a group of garden clubs
23 and Isaac Walton League and environmental groups. I
24 spoke before a -- a panel in the state of Wisconsin that
25 seemed to be a mixture of interested citizens and

1 regulatory representatives, informally again. And these
2 were all primarily in the 1970-'71 period. And I
3 described them as tutorials on PCBs. What are they?
4 Where are they made? Where are they used? What do we
5 know about them? It's that kind of audience. There
6 were several of them.

7 Q In those sorts of tutorials did you give a
8 general history of PCBs?

9 A Yes.

10 Q Did you explain that PCBs were a man-made
11 chemical that didn't naturally occur?

12 A Yes.

13 Q Did you explain that they were first
14 commercially produced in 1929 or 1930 by the Swann
15 Chemical Company?

16 A Yes.

17 Q Did you explain that Monsanto acquired the
18 Swann Chemical Company and it became a part of Monsanto
19 in about 1935?

20 A Yes.

21 Q Did you explain that Monsanto had
22 manufactured PCBs continuously since that time?

23 A Yes.

24 Q And did you explain that Monsanto was the
25 sole producer of PCBs in the United States?

1 A Yes.

2 Q Did you explain that most or all of the PCBs
3 used in the United States were produced by Monsanto?

4 A Yes.

5 Q Did you explain in those tutorials that
6 Monsanto had stopped selling or was in the process of
7 stopping the sale of PCBs for all purposes except
8 dielectric purposes?

9 A Depending on the point of time. If that were
10 truly it, yes, I did. But in early 1970 all I could say
11 is, "We're planning to." Then later I was able to say
12 also "We've discontinued everything but the dielectric."

13 Q So you would give that general background at
14 each one of these presentations?

15 A Yes.

16 Q Would you explain that it was Monsanto's
17 opinion that PCBs did not present any substantial
18 toxicological problems?

19 A Yes.

20 Q Would you in particular attempt to assure
21 people that there weren't any reasons for human health
22 concerns?

23 A Yes.

24 Q Would you repeat your position that based on
25 your observations of -- subjective observations of

1 Monsanto's worker force there didn't appear to be any
2 threat to humans?

3 A Yes.

4 Q In the early Seventies did you give at least
5 interim reports on the animal studies being done by IBT?

6 A Yes. Depending on if Mr. Wheeler was with
7 me, he would give it. If not, I would read from
8 abstracts or summaries.

9 Q Well, who went with you on occasion from
10 Monsanto as part of this team that would go out and
11 speak to these groups?

12 A I don't know that it was a team so much as it
13 was -- if an opportunity presented itself and we were --
14 Elmer Wheeler and I were both available, we would go
15 together. At times we would take Dr. Keller, who was
16 the analytical group leader; or we might take Dr. Scott
17 Tucker, who was the principal analytical chemist
18 involved with PCBs. There was no set team. It was a
19 matter of who was available, what was the audience, and
20 the interest of that audience.

21 Q Were you generally always present?

22 A No. There were meetings held without my
23 presence; I could not attend.

24 Q And who would fill in your role when you
25 could not attend?

1 A It would be principally a marketing
2 individual.

3 Q Like --

4 A Like a Mr. Benignus or, early on, a Mr.
5 Olson, later a Mr. Gossage or a Mr. Randy Graham.
6 Again, it depends on the period of time. David Wood,
7 Cumming Peyton.

8 Q There was a large group of people at
9 Monsanto, I take it, who Monsanto would make available
10 to speak to a formal or informal groups.

11 A Yes.

12 Q Did you seek out opportunities to be able to
13 provide Monsanto speakers on PCBs?

14 A Yes.

15 Q Was that a part of your job?

16 A Yes.

17 Q So basically you would be not only responding
18 to invitations to come and provide information but
19 actively soliciting invitations?

20 A Yes.

21 Q Would you also actively solicit invitations
22 to appear before governmental bodies that might be
23 considering the PCBs?

24 A Yes.

25 Q Did you seek to engage other people, in

1 particular your customers, in making representatives
2 available to testify before both informal and formal
3 groups on PCBs?

4 A Yes.

5 Q Are there any other informal groups that you
6 can recall that you spoke before other than the ones
7 you've listed?

8 A Well, there's a category of meetings that
9 I -- I prefer calling them not informal and not too
10 formal, either. They are the scientific conferences,
11 symposia-type meetings. I recall one in March of 1970
12 in Duluth, Minnesota, called by the director of the
13 water -- the federal water laboratory located there, at
14 which I conducted one of my early tutorials.

15 Q This is one of those basic histories again?

16 A Yes. This was in response to the question:
17 What are these chemicals? Never heard of them before.
18 Tell us something about them.

19 There were meetings in North Carolina, two of
20 them, if I recall correctly. They were called by the
21 director of the National Institutes of Environmental
22 Health Sciences.

23 Q NIOSH?

24 A NIEHS. Dr. David Rall, R a l l. These were
25 commonly referred to as the Quail Roost meetings.

1 Q Because that's the lodge where they were
2 held?

3 A Yes. There, too, I was asked to share with
4 the audience, which was a -- primarily a scientific
5 audience, medical, analytical chemists and the like, and
6 regulatory people, what we knew about PCBs. There was a
7 national conference on PCBs called by EPA in November of
8 1975. And Monsanto was able to participate through at
9 least two speakers that I recall. And I was on the
10 question and answer panel which concluded the session.
11 I can't recall any other meetings called on that
12 subject.

13 Q At this national conference on PCBs sponsored
14 by the EPA in 1975, what month did you say?

15 A November.

16 Q November. Had Monsanto already made its
17 decision to stop selling PCBs at that time?

18 A Not quite.

19 Q Had you made your recommendation to the
20 company to stop selling PCBs at that time?

21 A It was very close to that time. I don't
22 remember the exact -- I don't remember if I went to
23 Chicago and came back and told Mr. Fitzgerald or I told
24 him before I took off for Chicago, but it was very
25 close.

1 Q Was your decision reached either as you
2 prepared for this meeting or as a result of this
3 meeting?

4 A No. I would -- I would better describe it as
5 an evolving kind of thought based on all my experiences
6 to the point where I felt that it was time for Monsanto
7 to -- to make that announcement.

8 Q What were the factors that went into your
9 evolving thought process by which you concluded it was
10 time for Monsanto to get out of the PCB business and led
11 you to suggest that to Mr. Fitzgerald and ultimately get
12 it adopted by the company?

13 A I don't know that I can really recall it
14 crystal clear. It was somewhat subtle. It was a
15 subjective belief that I reached.

16 Q Well, can you tell me --

17 A That I somehow, without any facts, felt that
18 our customers were ready with something. I didn't know
19 what it was, but I felt that they might be ready. And,
20 if not, I felt that Monsanto's announcement might
21 accelerate any plans they might have to change and find
22 alternatives. And this is why I could not tell Mr.
23 Fitzgerald exactly when to stop, but at least let it be
24 known to the industry that we were ready to stop
25 whenever the customer and his facilities were ready.

1 Q Was it your belief that by announcing that
2 Monsanto would stop selling PCBs when an alternative was
3 available that at a minimum that would speed up the
4 process of developing and getting the alternative into
5 use?

6 A That was not so much a belief but a hope.

7 Q All right. And so then your recommendation
8 was based not on knowledge that that would be true but a
9 hope that it would become true?

10 A Yes.

11 Q And, of course, it turned out to be very
12 true, didn't it?

13 A Yes.

14 [Recess]

15 VIDEO OPERATOR: We've been off the record
16 for a brief break and we're back on the record. The
17 time is 3:17 p.m.

18 MR. LACEY:

19 Q Before we took the break, we were talking
20 about the effect of an announcement by Monsanto on the
21 development of replacements for PCBs as dielectric
22 fluids. Did you have the hope that in the event that
23 alternative products were not already ready for the
24 market that would accelerate the development of them?

25 A Yes.

1 Q And I take it you had no idea whether or not
2 at the time you recommended an announcement by Monsanto
3 to get out of the business there were in fact ready
4 replacements waiting for that announcement.

5 A I was aware of the possibility of the silicon
6 fluids being suitable. I had a vague impression that
7 someone had already performed some modest testing that
8 indicated the possibility for success.

9 Q With what?

10 A With the use of silicon fluids, with the
11 willingness to settle for a lower capability of the
12 units. There was a tradeoff involved. With that
13 limited kind of information, I, as I said earlier, had
14 hoped that by Monsanto making an announcement the
15 testing that was required would accelerate the changes
16 in the factories would take place faster. Whatever was
17 required, I hoped -- I had hoped would occur more
18 quickly.

19 Q Did you give any consideration to Monsanto's
20 stage of development of its line of replacement products
21 it intended to offer for PCBs?

22 A By late 1975 our hopes for success were very
23 limited. All the testing that we had done for four
24 years was not fruitful and I could be accused of having
25 personally given up on Monsanto's ability to find a

1 replacement with the properties that PCBs had or that --
2 a material that was unique to Monsanto's expertise.

3 Q Was the fact that Monsanto's research had,
4 from your perspective, not been fruitful a factor that
5 led you to conclude it was ripe to announce Monsanto's
6 intention to get out of the PCB business?

7 A That was a factor, yes.

8 Q There were other PCB products and product
9 uses which Monsanto got out of and announced its
10 intention to get out of before any replacement product
11 had been developed, were there not?

12 A I'm trying to recall a specific situation
13 where there wasn't an alternative, knowing that in some
14 cases there was some modest tradeoff in a characteristic
15 or a property.

16 Q How about carbonless carbon paper?

17 A The carbonless carbon paper, there were two
18 alternatives offered. One was offered to the European
19 process, which I understood was different from the U. S.
20 process, and there was an alternate material that was
21 eventually developed by Monsanto as an alternate to
22 PCBs. So the European business, we had one for the
23 customer. For the U. S. business we had one that
24 appeared very promising and in a few months proved to be
25 so.

1 Q Isn't it a fact that Monsanto got out of --
2 announced its intention to get out of the use of PCBs in
3 carbonless carbon paper before it had an alternative
4 product for the U. S. manufacturer NCR?

5 A It's before NCR accepted the alternative.
6 But in Monsanto's researchers' opinion it was a good
7 alternative.

8 Q And in fact isn't it true that at the time
9 that Monsanto announced its intentions to get out of
10 that business it instituted a crash research program to
11 find an alternative for NCR?

12 A That is true. But there was no date
13 established.

14 Q But the fact of the matter is, when Monsanto
15 made the decision and announced its decision to get out
16 of the supplying of PCBs for carbonless carbon paper in
17 the United States, they and their customer had no
18 replacement product?

19 A In the strict sense, yes.

20 Q And had no replacement product been found,
21 NCR would have had to cease the manufacture of
22 carbonless carbon paper?

23 A I don't know that. Because Monsanto did not
24 have a date for that carbonless application.

25 Q Well, had Monsanto -- had no alternate

1 product ever been found and Monsanto actually stopped
2 sale, then NCR would have been out of the carbonless
3 carbon paper business?

4 A If all those ifs became true, yes.

5 Q And at the point Monsanto announced its
6 intention to get out of the PCB-supplying business for
7 carbonless carbon paper, it then immediately instituted
8 a crash research program to find an alternative, did it
9 not?

10 A Yes.

11 Q And that resulted in the identification of an
12 alternative within a short period of time. Correct?

13 A Yes.

14 Q And thus allowed -- to the extent it was
15 necessary to have carbonless carbon paper, allowed the
16 continuation of that product without the use of any
17 PCBs?

18 A True.

19 Q Okay. Monsanto did not follow a similar
20 course with PCBs as dielectric fluids, did it?

21 A Not until 1975.

22 Q The course was taken with regard to
23 carbonless carbon paper in 1970. Correct?

24 A 1970, yes.

25 Q But it was not until 1975 that Monsanto

1 decided to follow that same course with regard to PCBs
2 as dielectrics?

3 A Yes.

4 Q And when in fact Monsanto announced its
5 intention to get out of the PCB business as dielectrics,
6 there were in fact alternative products that were
7 rapidly made available and used for dielectric fluids.

8 A The word "rapidly" is subjective. Fairly
9 quickly, yes.

10 Q Well, let's try to put a time frame on it.
11 Monsanto didn't make their announcement -- strike that.

12 Let's put a time frame on it. Monsanto made
13 its decision to get out of the PCB dielectric business
14 in December of 1975. Correct?

15 A Yes.

16 Q That decision was not even announced until
17 the spring of 1976, was it?

18 A No.

19 Q When was --

20 A I was present with Mr. Fitzgerald at a
21 meeting that Russell Train called of the -- of Monsanto
22 and the dielectric representatives in Washington, I
23 thought it was in December, it could have been January,
24 at which Mr. Fitzgerald asked for a moment to make a
25 statement. And he told that group of Monsanto's

1 intentions. So this, at the very latest, would have
2 been January 1980. I'm sorry.

3 Q 19 --

4 A 1976.

5 Q Okay. So you believe it was in December '75
6 or January of '76 that Monsanto announced its intention?

7 A Yes. And as I recall, there was a press
8 release at or about that time.

9 Q And the last PCBs that were manufactured by
10 Monsanto were manufactured in the spring of 1977, were
11 they not?

12 A Yes.

13 Q So a period of no more than 13 months from
14 the decision by Monsanto -- or 14 months, I guess --

15 A It was from January to July '77. So about a
16 year and a half.

17 Q A period of 18 months, then, from the
18 announcement to the cessation?

19 A Yes.

20 Q Does that meet the idea of being a rapid
21 process in your mind?

22 A Considering the materials that eventually
23 ended up as alternatives and my understanding that the
24 assembly lines were not modified drastically, the
25 transition could have taken place faster.

1 Q Okay.

2 A That's a personal opinion.

3 Q How much faster do you think the transition
4 could have taken place?

5 A In the manufacturing sense alone, it's my
6 opinion it could have been done in six months. But I
7 don't know what their marketing contracts and
8 commitments to their customers were in terms of
9 delivering a certain kind of equipment. So that might
10 have been the delay.

11 Q And in fact many manufacturers of
12 dielectric-containing equipment -- dielectric-fluid-
13 containing equipment made the transition much more
14 rapidly than in a space of approximately 18 months, did
15 they not?

16 A Some dropped the use of PCBs immediately.

17 Q The announcement came and within a period of
18 weeks they had changed to other products?

19 A In fact, they had dropped it before that.

20 Q There were some manufacturers of electrical
21 equipment who had decided to stop using PCBs even though
22 Monsanto was continuing to manufacture and sell them and
23 was making it known in the industry up until December of
24 1976 that they continued -- they intended to stay in the
25 business?

1 A Yes.

2 Q They voluntarily made the changeover?

3 A Yes.

4 Q Monsanto had put itself in a position to be
5 contractually free to stop selling PCBs earlier than it
6 did, had it not?

7 A Yes.

8 Q So whether or not a PCB customer of Monsanto
9 had made contractual commitments to supply PCB-
10 containing electrical equipment for a long period of
11 time or not didn't affect the position Monsanto had
12 vis-a-vis its customers, did it?

13 A No.

14 Q Put simply, Monsanto wasn't forced to keep on
15 selling PCBs as dielectric because of a long-term
16 contractual commitment. Correct?

17 A The contractual commitment, as I recall, had
18 conditions which if not met would give Monsanto an
19 opportunity to stop selling. If those conditions were
20 met, it's my understanding that there was a firm
21 contract that had to be respected, honored.

22 Q None of those firm contracts extended for
23 more than a one-year duration from the time they were
24 made remade, did they?

25 A That's right.

1 Q So certainly once every year with each
2 customer Monsanto had the opportunity to say: I'm not
3 going to contract to sell you any more.

4 A Yes.

5 Q The contracts also had escape clauses that
6 allowed Monsanto to stop selling even earlier should the
7 customer handle the materials in such a way as to be
8 potentially hazardous to the environment. Correct?

9 A Yes.

10 Q And a discharge of any PCBs into wastewater
11 could be considered a hazardous use vis-a-vis the
12 environment, could it not?

13 A It could be, but one would have to
14 demonstrate and have a basis for it, not just a belief.

15 Q Well, in the case of General Electric, for
16 example, they had some very specific problems with
17 discharges into the Hudson River. Correct?

18 A Yes. But those were discharges of the past.

19 Q As a matter of fact, GE continued to
20 discharge PCBs into the Hudson River in the 1970s, did
21 it not?

22 A All plants did.

23 Q And any plant that was discharging PCBs
24 outside the plant was engaged in conduct that would be
25 in violation of the contractual escape clause that

1 Monsanto had in its contracts, wouldn't it?

2 A No.

3 Q I see.

4 A Because there was no federal regulation that
5 was being -- not being followed.

6 Q Well, actually, the contract put it in
7 Monsanto's discretion to determine if the conduct was a
8 hazard to human health or the environment, did it not?

9 A I don't recall the exact words, but that's
10 close.

11 Q And so the decision on whether or not the
12 conduct was hazardous to the environment is one not that
13 lay with the regulatory body bringing a claim and
14 proving some element, it was a decision by Monsanto if
15 there were a problem or potential problem?

16 A Yes.

17 Q And Monsanto knew, for example, that
18 discharges at a level that it thought were unattainably
19 low were hazardous to shrimp, for example, did it not?

20 A Yes.

21 Q And therefore, by definition, there were
22 discharges that were environmentally potentially
23 hazardous problems that would have allowed Monsanto to
24 exercise its escape clauses had it chosen to do so?

25 A No, I don't agree.

1 Q I see. So you do not agree that if a
2 customer of Monsanto were discharging PCBs from its
3 plant in a sufficient quantity to be hazardous to
4 shrimp, it nevertheless would not be sufficient to allow
5 Monsanto to cease sales under their escape clauses?

6 A If that discharge were made in Escambia Bay
7 in the Gulf of Mexico, where the shrimp breed, that
8 would be a very good basis for termination of sales.
9 A discharge in the Hudson River, where there are no
10 shrimp, would be a very weak basis for Monsanto to take
11 a stand and say, "I will not sell you." It could not
12 support that decision. It would have to have a more
13 solid basis.

14 Q The fact of the matter is that Monsanto never
15 sought to terminate sales to a single customer under its
16 escape clauses, did it?

17 A That is true. Because there was never any
18 evidence of harm. To this day that evidence doesn't
19 exist.

20 Q I see. And Monsanto never refused to renew a
21 contract with a customer because of any concern about
22 the way the customer was handling the product prior to
23 the time that Monsanto itself made the decision that
24 they wanted to get out of the PCB business. Isn't that
25 true?

1 A That's true.

2 Q The only reason Monsanto stopped selling PCBs
3 as dielectric fluid to any customer prior to Monsanto's
4 decision to get out of the PCB dielectric business would
5 be if the customer refused to execute an indemnity
6 clause or indemnity letter in favor of Monsanto.
7 Correct?

8 A That's what happened, yes.

9 Q Or certain classes of customers, which were
10 small companies from whom Monsanto did not accept
11 indemnity clauses. Isn't that correct?

12 A That's because of some financial
13 considerations.

14 Q They weren't big enough to back up the
15 indemnity. Correct?

16 A That's my understanding.

17 Q Okay. And in the case of customers who
18 weren't big enough to back up the indemnity, it was
19 Monsanto's policy to sell the PCBs to customers who were
20 big enough to back up the indemnity and let them in turn
21 sell it to these smaller companies?

22 A [No reply]

23 Q Isn't that correct?

24 A Yes.

25 Q Any other group scientific conferences that

1 you went to? We've just talked about the national
2 conference on PCBs in November 1975.

3 A None come to mind at the moment. I think
4 I've covered all that I can recall.

5 Q Did you seek to make -- and I'm not sure if
6 informal is the right word -- but presentations to
7 individual government agencies about PCBs in an effort
8 to present the Monsanto position?

9 A Did I as an individual or --

10 Q Well, as a representative of the company.
11 What I'm saying is, we've talked about -- I guess I'm
12 trying to focus on this. You've told me about bodies
13 before which you gave sworn testimony.

14 A Uh-huh.

15 Q You've told me about groups where you made
16 informal presentations. You've told me about scientific
17 conferences. And I guess I'm trying to figure out if,
18 for example, from time to time you might go visit with
19 the EPA or the FDA, or whoever else may have an interest
20 in PCBs, and attempt to present to them the view that
21 Monsanto thought was the best view.

22 A We had numerous contacts with representatives
23 of regulatory agencies, federal and state, primarily
24 federal, some of them at their request, some at our
25 request to drop by. In some instances, it was our

1 intent to find out what the agency had done since our
2 last visit and what their findings might be and what
3 their intentions might be. In other instances it was a
4 matter of sharing with them the latest reports that we
5 had received regarding the toxicology tests, the
6 biodegradation testing on PCBs, the analytical chemistry
7 procedure methodology development. Yes, there were
8 numerous visits of that kind with different individuals,
9 and many times the same subject, but with a different
10 person. Those trips were quite frequent. In fact, I
11 did not keep score, but I would suggest that Mr. Wheeler
12 or I or jointly would be in Washington about once a
13 week.

14 Q Over how long a period of time?

15 A Oh, the activity was the greatest in the
16 1970-'71-'72 period.

17 Q What would you characterize your frequency of
18 visits to Washington in the '73 through '76 period?

19 A Oh, I would say that it started to diminish
20 to maybe once a month.

21 Q So from '70 to '72, on average, you or Mr.
22 Wheeler would be in Washington approximately once a
23 week?

24 A Yes.

25 Q From '73 through '76 you would be in

1 Washington on the average of once a month?

2 A Yes.

3 Q Would it be fair to say that more of the
4 meetings that took place in Washington were at
5 Monsanto's request than at the request of the
6 government?

7 A Hum. I didn't keep any kind of record, but I
8 would think it would be fair to say that it's half and
9 half.

10 Q Okay. And at some of these meetings Monsanto
11 not only took along its own employees, they took along-
12 employees of Industrial Biotest, did they not?

13 A The answer is yes. The only -- I'm trying to
14 recall. We did take Dr. Calandra with us when we
15 visited several agencies over a three- or four-day --
16 three-day period. I do not recall if Mr. Wheeler took
17 other representatives of Industrial Biotest
18 Laboratories, as an example, with him.

19 Q But you do know --

20 A But that could have happened.

21 Q You do know that Dr. Calandra went with you
22 on visits to Washington, do you not?

23 A Yes. Definitely. I remember that. I was
24 part of that group.

25 Q And he was there to present the story or the

1 evidence for the fact that PCBs were not a toxic hazard.
2 Correct?

3 A Were not a carcinogen.

4 Q Not a carcinogen. And that was to -- or was
5 supported by his presentation of the chronic toxicity
6 studies done by Industrial Biotest. Correct?

7 A Primarily, as well as an evaluation of some
8 slides of tissue samples supplied by Dr. Renate
9 Kimbrough from the CDC in Atlanta.

10 Q Dr. Kimbrough with the Center for Disease
11 Control in Atlanta had done studies on PCBs that found-
12 results contradictory to those done by Industrial
13 Biotest?

14 A That is correct.

15 Q And Dr. Calandra explained his disagreement
16 or actually, I guess, the disagreement of others within
17 his organization would be more accurate, would it not?

18 A Yes.

19 Q With what Dr. Kimbrough had concluded?

20 A Or Dr. Kimbrough's adviser, pathologist. It
21 was a pathologist-to-pathologist interpretation of
22 observations where the pathologists differed.

23 Q And who was it that Dr. Calandra was
24 reporting on that had actually reviewed Dr. Kimbrough's
25 slides?

1 A I think it was a Dr. Gordon. An employee of
2 Industrial Biotest Laboratories.

3 Q You don't recall Dr. Gordon himself actually
4 going to Washington with you, but rather Dr. Calandra?

5 A Yes.

6 Q Is that because Dr. Calandra made a more
7 impressionable appearance?

8 A Oh, I don't -- he was the top man in that
9 laboratory, and it was our medical director's opinion
10 that the top man ought to get involved here. We are
11 good clients; come speak.

12 Q Which medical director made that decision?

13 A At that point I believe it was Dr. Roush.

14 Q Who had become then the Monsanto medical
15 director after Dr. Kelly?

16 A Yes.

17 Q Have you followed the developments with
18 Industrial Biotest that transpired in the last few
19 years?

20 A I have followed them, but not really in
21 depth; sort of an interested bystander.

22 Q Tell me what you have observed as an
23 interested bystander with regard to the Industrial
24 Biotest problems that have come out in recent years.

25 A Most of my information comes from the popular

1 press.

2 Q When you say the popular press, do you mean
3 the scientific press or do you mean newspaper articles?
4 What sort of thing are you referring to?

5 A When I use the expression "popular press,"
6 I'm referring to newspaper articles such as those that
7 appear in The Wall Street Journal and the local St.
8 Louis paper and the New York Times and the like.

9 Q Did you see any of the articles that appeared
10 in the -- and I'm not quite sure what -- scientific
11 periodicals, I guess would be the way to refer to it? -

12 A No.

13 Q Okay.

14 A I don't recall those. I gathered from
15 reading these articles that the laboratories were
16 accused of poor quality work, improper testing
17 conditions, arriving at conclusions that weren't
18 supported by the -- by good data. That's the essence of
19 my understanding.

20 Q Did you understand that various principals in
21 that firm were charged with misconduct?

22 A Yes.

23 Q And convicted of misconduct?

24 A Yes.

25 Q Did it cross your mind that those sorts of

1 gross irregularities should have been discovered by the
2 Monsanto people who were visiting that laboratory and
3 monitoring the quality of their work for Monsanto?

4 A Yes. In fact, it crossed my mind, really,
5 that I had been to that laboratory and saw nothing
6 anywhere near what I was reading. And I was frankly
7 surprised. It didn't sound like the same laboratory.

8 Q Were you ever able to reconcile in your own
9 mind why you didn't recall seeing the sorts of things
10 that ultimately came out?

11 A I reconciled them in my own mind, but without
12 hard data. What I saw in 1970 was to me a highly
13 professional operation. And I reconciled the difference
14 in making a big assumption that the laboratory may have
15 overextended itself. And subsequent studies suffered
16 from this poor quality management and direction.

17 Q Anything else you were able to conclude in
18 your own mind about why it was your opinion when you
19 visited the lab that everything was perfectly okay?

20 A Well, I've seen enough laboratories, not
21 necessarily animal tests, but different kinds of
22 laboratories, to be able to discern what is an
23 up-to-date laboratory and what is out of date. So, in
24 visiting Industrial Biotest, which happened about four
25 times in a period of two years or so, I saw the best of

1 equipment that money could buy, I saw animals in cages
2 that were immaculate, these are both rats and dogs, I
3 saw professionals about their duties, and heard these
4 professionals make their presentations of their
5 findings. I saw nothing that would have caused me
6 concern in those four visits.

7 Q I see. And this is four visits over a
8 two-year period beginning when?

9 A Early 1970, say the spring of '70, to --
10 through '71, when the final reports were being put
11 together.

12 Q Did somebody from Monsanto visit the
13 laboratory on a more frequent basis than you?

14 A Oh, yes.

15 Q Who?

16 A Dr. Hunt, for one, in early '70. But he
17 visited those laboratories not specific for PCBs, he
18 visited them for all of Monsanto's testing.

19 Q As a matter of fact, Industrial Biotech had
20 an extremely large total set of contracts with Monsanto,
21 did it not?

22 A I don't know how to describe extremely large.
23 I've no way to compare it.

24 Q Well, hundreds of thousands of dollars worth
25 of income per year from Monsanto, testing a large number

1 of Monsanto products.

2 A I understand that's true, yes.

3 Q Okay.

4 You are telling me Dr. Hunt visited
5 frequently in regard not only to PCBs but other products
6 that were being tested by Monsanto?

7 A Oh, I don't remember them specifically, but
8 many were in the agricultural products division.

9 Q I'm not asking you for the particular
10 products. I mean what I understood you to say is that
11 Dr. Hunt visited for all the products --

12 A Yes.

13 Q -- that were being tested.

14 A Yes.

15 Q Dr. Hunt is the toxicologist who actually
16 died while visiting IBT in Chicago, is he not?

17 A Yes.

18 Q Who obtained or was charged with the
19 responsibility of visiting and monitoring IBT's work
20 after Dr. Hunt's death?

21 A Dr. Wright, for one. And I don't recall
22 exactly when Dr. Levinkskas arrived, but he began to
23 participate. And I've forgotten what year he joined
24 Monsanto. And later a Dr. Fred Yohannsen became very
25 active. And, of course, Elmer Wheeler, who was my

1 principal contact, made trips to the laboratory.

2 Q Do you recall approximately when Dr. Hunt
3 died?

4 A It's very approximate. I think it was in
5 early '71.

6 Q Dr. Wright -- strike that.

7 When you went to Industrial Biotest on these
8 four visits, did you meet Dr. Wright there?

9 A No.

10 Q Dr. Wright was an employee of Industrial
11 Biotest at the time that you were visiting the company,
12 was he not?

13 A I found that out later, yes.

14 Q Dr. Wright had initially worked for Monsanto,
15 then went to work for Industrial Biotest, and then came
16 back to Monsanto as a toxicologist for Monsanto, did he
17 not?

18 A I found that out later, yes.

19 Q And if I understand the sequence of the
20 people who were charged with the responsibility of
21 monitoring the work of Industrial Biotest and ensuring
22 that it was properly done and that Monsanto was getting
23 its money's worth, we've got Dr. Hunt, I guess Mr.
24 Wheeler has to fit in there somewhere --

25 A He's the leader of that team.

1 Q Okay.

2 A The top of the pyramid.

3 Q So Mr. Wheeler is at top and he has working
4 for him initially Dr. Hunt.

5 A Correct.

6 Q Who, after he dies, is followed by Paul
7 Wright?

8 A Yes.

9 Q Who after or whenever is replaced by Mr. --
10 Dr. Levinkskas?

11 A Not replaced. They jointly were involved.

12 Q Okay.

13 So let me go back and make sure I've got this
14 right, then. In terms of the Monsanto people who were
15 visiting Industrial Biotech to make sure that the
16 testing was done right, Monsanto was getting what it was
17 paying for, we have Mr. Wheeler at the top of the
18 supervisory role.

19 A Yes.

20 Q Working for him initially is Dr. Hunt.

21 A Yes.

22 Q Dr. Hunt eventually visits no more because of
23 his untimely death there in Chicago?

24 A Yes.

25 Q Following that, working for Mr. Wheeler, we

1 have Dr. Wright.

2 A Yes.

3 Q Who is the man who came to Monsanto from IBT?

4 A Yes.

5 Q Later he is joined at Monsanto by Dr.

6 Levinkskas, and Dr. Levinkskas and Dr. Wright jointly

7 are responsible for the IBT work?

8 A Yes.

9 Q And then yet further down-the-line Dr.

10 Yohannsen shows up?

11 A Yes.

12 Q Okay.

13 Did you ever -- strike that.

14 Your visits to IBT stopped in about 1971.

15 Correct?

16 A Yes.

17 Q What was the purpose of the four visits that
18 you made there in 1970 and 1971?

19 A As far as I was concerned, it's a matter of
20 educating myself in a field in which I had no previous
21 exposure. And in order to understand better the
22 summaries and the final reports, I felt that the more I
23 saw of the laboratories and met with their people, the
24 better I would be able to appreciate what they were
25 trying to tell me.

1 Q Did you ever review draft reports before they
2 were finalized by IBT?

3 A No.

4 Q Who at Monsanto was responsible for that
5 function?

6 A That would be Elmer Wheeler's group. He
7 could either do it himself or delegate it to his staff.

8 Q Was it customary for somebody at Monsanto to
9 review draft reports of testing laboratories like IBT
10 and recommend changes to those reports before they were
11 finalized?

12 A Yes.

13 Q Did that seem inappropriate to you?

14 A No.

15 Q You had no objection to that?

16 A No. Because there were many reasons to offer
17 suggestions for change. Misunderstandings on product
18 spelling, misunderstandings in chemistry,
19 misunderstandings on lot number designations, things
20 that Monsanto could bring to the party as a manufacturer
21 and the toxicologist could bring to the laboratory in
22 terms of his trade, his profession. It's very common in
23 the industry. It's done everywhere and done today.

24 Q So you didn't see it to be inappropriate to
25 change the actual results of the study, not just

1 spellings, not just lot numbers, but the actual
2 substantive report of the studies?

3 A I need a clarification on results and
4 substantive report.

5 Q Well, you have told me that there -- you see
6 no problem with making corrections on spellings of -- of
7 names.

8 A Yes.

9 Q No problem with making corrections on lot
10 numbers of material.

11 A Yes.

12 Q I'm trying to find -- that -- that's the sort
13 of job that the proofreader does to make sure everything
14 is spelled and the grammar is correct.

15 A All right.

16 Q You are telling me there's no problem with
17 that?

18 A That is right.

19 Q I'm trying to find out if you think there's a
20 problem with anything more than proofreading a draft
21 report to make sure that it is grammatically and
22 typographically correct.

23 A I would not personally tolerate any changes
24 in the raw data. The data taken by the laboratory is
25 untouchable. But the narrative that accompanies many a

1 scientific report, especially in the field where a lot
2 of subjectivity still exists, as it does in pathology,
3 there is bound to be a difference of opinion. And it
4 has always been my hope that professional pathologists,
5 toxicologists can arrive at a consensus such that the
6 summaries of the findings are supported by the data and
7 no more, no less.

8 Q So it would seem perfectly appropriate to you
9 for Monsanto to suggest that the independent testing
10 laboratory and its professional staff add language to a
11 report suggesting that a product was not carcinogenic =
12 even if their report did not have that conclusion in it?

13 A I would support a Monsanto professional
14 making that suggestion and giving his reasons for it. I
15 would also expect the laboratory, through its
16 management, if it disagreed, to hang tough on their
17 professional opinions. Otherwise I wouldn't want to do
18 business with that laboratory.

19 Q Well, doesn't it seem to you that the best
20 way to get truly an independent reading on your
21 chemicals is to provide it to the independent testing
22 laboratory -- and that's what Industrial Biotech was
23 supposed to be, wasn't it, an independent testing
24 laboratory?

25 A Yes.

1 Q One of the reasons Monsanto used independent
2 testing laboratories was to have the benefit of saying
3 that the products had been tested by an independent
4 group, was it not?

5 A Yes.

6 Q As a matter of fact, that's one of the things
7 that you pointed out in making your presentations to all
8 these groups was that the results were not Monsanto
9 results but results from independent testing
10 laboratories.

11 A Yes.

12 Q Now, given that fact, don't you think it
13 would be far better to let those individuals reach their
14 results and then simply give to others the results that
15 they found independentl of Monsanto?

16 A Yes, ideally it's great. That's what we --
17 that's what we're buying.

18 Q And when Monsanto people suggest changes in
19 the reports and what they say other than correcting the
20 spelling and the grammar, it's compromising the
21 independence of the report, isn't it?

22 A It depends what the change is. I can see
23 where that could happen. But I'm not aware of any.

24 Q I see. Can you also see where a company that
25 is doing hundreds of thousands of dollars worth of

1 business per year with Monsanto might not hang as tough
2 as it should if it thought the fear to make suggested
3 changes would cause the loss of business?

4 A I don't know how -- is that a question?

5 Q Yes, that is a question.

6 A I'm sorry. I -- I missed it. Would you --

7 Q Well, let me repeat it.

8 A All right.

9 Q You told me that you didn't have any problem
10 with Monsanto people recommending changes to the
11 reports, no more than just spelling and grammar, and you
12 would expect the professionals at the independent
13 testing laboratory to hang tough if they believed what
14 they wrote.

15 A Yes.

16 Q Correct?

17 A But there's a clarification. I did not say
18 that Monsanto people should change the raw data taken.

19 Q I understand. We're not talking --

20 A On which this whole report is based and which
21 outsiders -- professional outsiders could look at that
22 raw data and arrive at their conclusion, their summary
23 of the findings.

24 Q The fact of the matter is, the reason that
25 these independent testing laboratory reports have

1 narrative summaries is because they're used by an awful
2 lot of people who aren't scientific professionals,
3 aren't they?

4 A Well, it's been my experience there are two
5 kinds of summaries, one prepared for laymen like me and
6 another that are prepared for the scientific journals.
7 They do read differently.

8 Q My question to you is that laymen don't get
9 the numbers of the data test results and try to
10 interpret those themselves, they look to what the
11 summary of the results are.

12 A Yes.

13 Q People like congressmen, who are considering
14 legislation and considering the dangers of the products,
15 look to the conclusions of the report that are written
16 for laymen. Isn't that correct?

17 A I'd like to think that they've got
18 professionals that they can go to to help them evaluate
19 the summaries for their validity.

20 Q Nevertheless, you appreciate the importance
21 of the way summaries are written and what they say,
22 don't you?

23 A I do.

24 Q Now, given that background, isn't it true
25 that it is more difficult for laboratory personnel to

1 hang tough, as you used that term, in sticking with
2 their summaries or conclusions when they're dealing with
3 a customer that provides hundreds of thousands of
4 dollars of business per year and that customer is
5 recommending some changes in those summaries?

6 MR. HALL: If you know the answer to that
7 question, tell him. And if you don't know the answer to
8 that question, tell him.

9 A I don't know that there is a -- a distinct
10 answer to the question. He's asking me to put myself in
11 the shoes of a professional who is being paid to provide
12 a service. And I would submit to you that any
13 professional that is so short-sighted that he acquiesces
14 to a need today of that customer and is caught later
15 with bad reports will lose not only that customer but
16 other customers. So I don't think that a rational
17 leader of a good laboratory would tolerate that kind of
18 behavior. I wouldn't deal with a laboratory like that.

19 MR. LACEY:

20 Q Doesn't that describe exactly what happened
21 at IBT and what led to the convictions of the principals
22 of that company?

23 A I don't know what led to the conviction.

24 Q I see.

25 Let me talk to you a little bit about your

1 experience as the plant manager of the Anniston,
2 Alabama, Monsanto facility. You went there in 1965?

3 A Yes.

4 Q How large a plant was that in terms of the
5 number of employees?

6 A When I arrived, it was -- had a hundred
7 and -- about 150 employees.

8 Q And how large was the plant when you left,
9 just for comparison purposes?

10 A About 300.

11 Q How many of the employees at that plant were
12 devoted to PCB work when you arrived?

13 A Thirty or forty.

14 Q That would be roughly 20 to 25 percent of the
15 plant employees, then, were working on PCBs?

16 A Yes.

17 Q When you left, of the 300 employees, about
18 how many were working on PCBs?

19 A About 50.

20 Q And that would be roughly 16 or 17 percent?

21 A About a sixth of the population.

22 Q In terms of the product produced by the
23 plant -- strike that. Let me ask that a different way,
24 I think, to make it clearer.

25 As a plant manager, is it any concern of

1 yours what the cost of production is of an individual
2 product?

3 A Certainly.

4 Q Okay. Is that a type of information that you
5 as the plant manager want to keep up with on a regular
6 basis?

7 A Yes.

8 Q And are you always trying to minimize the
9 cost of production?

10 A I don't know that the word "minimize" is
11 appropriate. There is a -- a target or a scheduled cost
12 to produce each product. And we compare the actual
13 experience each month with the target and see how much
14 it's varying, and in which direction, and what's causing
15 this variation.

16 Q Is it possible to produce the product at less
17 than the target cost, theoretically?

18 A You can for a short period of time.

19 Q But generally the target cost is the lowest
20 cost at which you can sustain production with any
21 reasonable expectancy of being able to have it
22 sustained?

23 A Yes. It's sustainable to produce quality
24 material safely without destroying the assets. You
25 can't let the equipment rust till it falls apart. So

1 you main -- you preserve the assets, make it safely,
2 meet your shipments, and the target numbers are
3 established from years and years of experience.

4 Q Okay. These target numbers, do they take
5 into account not only the cost of the materials that go
6 into the product and the salaries that are paid to the
7 workmen and the energy required to run the plant but
8 also the cost of maintaining the plant and replacing
9 parts that wear out and the like?

10 A Yes.

11 Q Okay. And that is done with the expectation
12 that whatever product is being produced will continue to
13 be produced into the future. Correct?

14 A Well, this can vary. If a product is
15 scheduled to be terminated, it's looked at differently.

16 Q Then you take out replacing and repairing
17 equipment unless it's worn out to the point it can't
18 make the termination of production schedule?

19 A Or becomes dangerous.

20 Q Right.

21 A That's a different perspective.

22 Q Right.

23 A But for a product that is seen as being
24 active for years to come, yes, those numbers are
25 developed to assure that this does happen.

1 Q Now, does the plant manager have any interest
2 at all in the actual price realized by the company for
3 the products that his plant makes and how profitable or
4 nonprofitable they may be when one takes into account
5 all the expenses associated with them?

6 A Well, he's interested as a member of the
7 company, but he really is not judged by those numbers,
8 nor is he expected to contribute to developing those
9 numbers.

10 Q Well, in terms of the PCB production at the
11 Anniston, Alabama, plant, it was a significant portion
12 of the production, I take it, in terms of the number of
13 employees that it consumed, used.

14 A It's significant, yes.

15 Q It was a significant portion of the expense
16 of the plant in terms of all the things that would go
17 into expenses, raw materials used, employee salaries,
18 utilities and even cost of maintenance. Correct?

19 A Yes.

20 Q And in terms of the quantity of the product
21 produced, it was a significant quantity product of what
22 was produced at that plant, was it not?

23 A Yes. We may have a difference in our
24 interpretation of significance, but it's respectable.

25 Q Well --

1 A I don't know what other word to use.

2 Q What percent of the poundage of materials
3 producēd at the Anniston, Alabama, plant were PCBs?

4 A I don't have the numbers.

5 Q Can you give me an approximation? Was it
6 five percent versus fifty percent? Or do you know?

7 A It is hard to measure, primarily because many
8 of the pounds produced in the plant stay in the plant
9 and recirculate, they don't go out the gate.

10 Q Well, let me ask the question another way,
11 then. That's not the right question to ask.

12 Of the products manufactured by a plant that
13 went out the gate at Anniston, what percentage by
14 poundage were the PCB products that went out the gate
15 each year as compared with the total poundage of
16 products that went out of that plant?

17 A I'm going to have to estimate.

18 Q That's fine. You can do that.

19 A And I would suggest that it was about 40
20 percent.

21 Q Okay. And I guess now coming back with that
22 estimate of about 40 percent that would be a significant
23 product of the plant.

24 A Yes.

25 Q Okay.

1 Given the importance of PCBs to the Anniston,
2 Alabama, plant, did you try to keep up with how that
3 product performed in the marketplace?

4 A Certainly.

5 Q How did PCBs perform in the marketplace for
6 Monsanto?

7 MR. HALL: Do you mean in terms of sales or
8 in terms of quality of product?

9 MR. LACEY: In terms of sales, in terms of
10 profitability.

11 A I don't know that I can speak to the exact
12 profitability, but my information led me to believe that
13 it was a respectable product among many in Monsanto that
14 made up the whole corporation. I don't know how else to
15 describe it. It was not what we in Monsanto would call
16 a star that gets the limelight, but it was a steady
17 piece of business.

18 MR. LACEY:

19 Q When you talk about a star, what are you
20 talking about?

21 A Oh, examples that come to mind are the very
22 successful agricultural products such as the pesticides
23 that Monsanto sells, Lasso and Roundup. They are
24 dramatic in their poundage and impact economically.
25 PCBs were never like that.

1 Q Is that because they weren't sold in that
2 large a quantities as compared to chemicals like Lasso
3 and Roundup?

4 A I don't think it's only a matter of quantity,
5 it's a matter of pricing competition, ability for the
6 marketplace to -- to pay more.

7 Q Let me ask about that a minute, if I might.
8 I take it what you are telling me is that products like
9 Lasso and Roundup could make a greater profit for the
10 company because of the market in which they were priced.

11 A And because of patent protection and
12 uniqueness.

13 Q With regard to PCBs, were they a patented
14 product?

15 A At several points in time there were some
16 patents. As I recall, there was an applications patent
17 that was held by General Electric. As I recall, too,
18 there were some patents relating to the processing, the
19 manufacture of it in terms of refinement and treatment
20 and the like.

21 Q Those patents were held by Monsanto, were
22 they not?

23 A Yes, in the Fifties. But the basic process
24 was not protected. Anyone with a pot and chlorine and
25 benzene could go into the business.

1 Q The fact of the matter is that nobody ever
2 went into the PCB business in the United States in
3 competition with Monsanto. Correct?

4 A That is correct.

5 Q You also mentioned the uniqueness of Lasso
6 and Roundup. And I guess I'm going to try to find out
7 to the extent I can whether you considered PCBs to be a
8 unique product.

9 A No.

10 Q There was, I take it, then, a price at which
11 people would not use Monsanto's PCBs.

12 A We always felt there was a price out there.
13 I don't know what it -- I don't know whether we ever
14 determined it. We never tested it.

15 Q And as a result, since some other
16 manufacturer, if Monsanto's price got too high, could
17 make PCBs or, alternatively, customers would just switch
18 to some other product if the price got too high, that
19 was a limitation on the profitability that could be
20 expected of PCBs?

21 A There's a third limitation.

22 Q What's that?

23 A The sophisticated customers could make their
24 own.

25 Q Okay. So you've got the possibility of

1 competition not only by a third-party but by the
2 customer themselves?

3 A Yes.

4 Q Or, if they choose not to make it, they
5 switch off to some other product if the price is too
6 high?

7 A Yes.

8 Q And those factors then kept PCBs from
9 becoming one of the stars?

10 A Yes.

11 Q At the time period that you were at the
12 Anniston, Alabama, plant, were PCBs in the top half of
13 the class in terms of profitability within the company?

14 A I was never under that impression, although I
15 was not privy to all the information.

16 Q Okay. Were PCBs a good enough product while
17 you were the plant manager at the Anniston, Alabama,
18 plant that the company would invest in keeping the
19 process running by replacing equipment and that sort of
20 thing?

21 A Yes.

22 Q While you were at the Anniston, Alabama,
23 plant, were PCBs a good enough producer that any
24 improvements were made at the plant to increase its
25 capacity?

1 A Yes.

2 Q So at least it was not a product that was on
3 its way out because it wasn't performing well enough?

4 A That is correct.

5 Q As between the Anniston, Alabama, plant and
6 the Krummrich plant, the one in Sauget or East St.
7 Louis, Illinois, which plant produced the larger
8 quantity of PCBs?

9 A Do you mean totally or annually?

10 Q Annually.

11 A They were comparable.

12 Q Roughly the same size?

13 A The same, yes.

14 Q Was there any real difference in the
15 technology employed at the two plants?

16 A No.

17 Q Did you ever visit the PCB-producing unit at
18 the Krummrich plant?

19 A Oh, yes.

20 Q Was there any visually-observable difference
21 between the two units?

22 A Yes.

23 Q What was that?

24 A The Krummrich unit was newer.

25 Q Okay.

1 A The equipment was more modern, the
2 instruments were up to date, they weren't ten years old
3 or fifteen years old.

4 Q Did that make them any better or just --

5 A No.

6 Q -- newer in time?

7 A Just different time. Different vintage.

8 It's like the new car and the old car. They both run
9 well.

10 Q Were there any other differences between the
11 two facilities?

12 A I don't know if it's relevant, but the unit
13 at Anniston, Alabama, had as a -- an appendage the
14 ability to make the chlorinated terphenyls that was
15 considered part of that producing unit, whereas that
16 capability was not present at the Krummrich plant, the
17 St. Louis plant.

18 Q They couldn't make terphenyls?

19 A They could not make the terphenyl or the
20 chlorinated terphenyl.

21 Q In the process of -- strike that.

22 Was that a technological difference or an
23 equipment difference or what?

24 A It's a logistics difference. The biphenyl
25 and terphenyl were manufactured at Anniston, not at

1 Krummrich. The biphenyl was shipped to the Krummrich
2 plant and chlorinated there. The terphenyl was retained
3 at the Anniston plant and chlorinated at the Anniston
4 plant.

5 Q Okay. I understand. Why was biphenyl not
6 made there at the Krummrich plant?

7 A Well, the unit at Anniston had enough
8 capacity, more than the Anniston plant required, so
9 there was never any need to build an additional unit in
10 Illinois.

11 Q Okay. I understand. Were there any
12 technological differences between the process in
13 Anniston, Alabama, and the process in Krummrich?

14 A I'm not aware of any.

15 Q So, with the exception of being familiar with
16 a different vintage of equipment, a workman could work
17 on the units in Anniston, Alabama, and be transferred to
18 Krummrich, Sauget, Illinois, and be an effective workman
19 there in a very short period of time?

20 A Yes, uh-huh.

21 MR. LACEY: Is this a good spot to break,
22 Bob?

23 MR. HALL: Whatever is fine for you.

24 MR. LACEY: 4:30 is the time? Why don't we
25 just stop right here.

1 MR. HALL: Okay.

2 VIDEO OPERATOR: We're off the record.

3 [END OF THE DAY]

4

5

6 -----

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

LAWYER'S NOTES

Page Line

[illegible]