

STATE OF MICHIGAN
IN THE CIRCUIT COURT FOR THE COUNTY OF HURON

ROGER A. HALEY and VALERIE J. HALEY,
Husband and Wife; and DONALD L.
HALEY and FLORENCE S. HALEY, Husband
and Wife,

Plaintiffs,

-vs-

MICHIGAN SILO COMPANY, a Michigan
Corporation, C & B SILO COMPANY, a
Michigan Corporation; MONSANTO
COMPANY, a Corporation; and CONCRETE
SILO COMPANY, INCORPORATED, a
Corporation, Jointly and Severally,

Defendants.

No. 77 002593 NP

VOLUME XXXII

Excerpt of the proceedings had and testimony
taken in the above-entitled matter on Monday, May 21, 1984, at
9:00 o'clock A.M., at the Huron County Courthouse, Bad Axe,
Michigan, before the Honorable M. Richard Knoblock.

1 APPEARANCES:

2 MC GRAW & BORCHARD,
3 BY: PATRICK MC GRAW, Esq.,

4 and

5 JAMES N. WOODWORTH, Esq.,

6 and

7 CUBITT, CUBITT & TROWHILL,
8 BY: H. DALE CUBITT, Esq.,

9 Appearing on behalf of Plaintiffs.

10 CHAKLOS, JUNGERHELD & DELLA SANTINA,
11 BY: WILLIAM E. JUNGERHELD, Esq.,

12 and

13 ROBERT A. HAHN, Esq.,

14 Appearing on behalf of Defendant
15 Monsanto.

16 DAVIDSON, BREEN & DOUD,
17 BY: JOHN DAVIDSON, Esq.,

18 Appearing on behalf of Defendant
19 C & B Silo.
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(Whereupon at 9:00 o'clock A.M., Monday, May
21, 1984, the Hearing was continued as
follows:)

THE COURT: Bring in the Jury.

Be seated, please.

Good morning, members of the Jury.

THE JURY: Good morning.

THE COURT: Mr. Jungerheld.

Mr. Papageorge, would you resume the stand? You're
still under oath, sir.

1 WILLIAM B. PAPAGEORGE,

2 a witness herein, produced by and on behalf of the Defendants,
3 having been previously duly sworn, testified further on
4 his oath as follows:

5 THE COURT: Mr. Jungerheld, you may proceed.

6 MR. JUNGERHELD: Thank you, Your Honor.

7 DIRECT EXAMINATION, (Continuing)

8 BY MR. JUNGERHELD:

9 Q If I recall correctly when we left off last Thursday we
10 had been talking about some letters that were sent by
11 Monsanto to its customers and distributors early in 1970,
12 and now I'm going to hand you Defendant's Exhibit 412 which
13 we had just started to get into and I'll ask you if you can
14 identify that please?

15 A This is a copy of a letter that was sent to distributors
16 of Monsanto's Aroclor products as a suggestion to the type
17 of letter he may wish to send to his customers.

18 MR. JUNGERHELD: Your Honor, I believe we
19 had all looked at this Thursday before we ended so I'll
20 offer Defendant's Exhibit 412, which is an expanded ver-
21 sion of an earlier Exhibit, I believe 91.

22 THE COURT: Mr. Woodworth.

23 MR. WOODWORTH: No objection as it's an expand-
24 ed version of 91 that's already admitted.

25 THE COURT: All right.

1 MR. DAVIDSON: No objection, Your Honor.

2 THE COURT: 412 is admitted without objection.

3 Q Now, Mr. Papageorge, since it still is a little bit diffi-
4 cult to read, even an expanded version, from the back rows
5 here, would you please read to the Jury what that says?

6 A It says:

7 "Dear, Sir. Recently several newspapers and articles
8 have been published indicating that polychlorinated
9 biphenyls, PCB's, have been discovered at some points
10 in some marine aquatic and wildlife environment. The
11 quantities detected as said to be in the parts per
12 million and parts per billion category. It is claimed
13 that the PCB's found strongly resemble chlorinated
14 biphenyls containing 54 percent and 60 percent chlorine
15 by weight. We are distributors for products with the
16 tradenames Aroclor 1254 and 1260, and these contain
17 chlorinated biphenyls. As your supplier of Aroclor
18 1254 and 1260 we wish to alert you to the potential
19 problem of environmental contamination as referred to
20 in newspaper and magazine articles. Aroclor 1254 and
21 1260 are manufactured and sold to us by Monsanto
22 Company. For your further clarification and guidance
23 we would refer you to the attached letter sent by
24 Monsanto to its customers concerning PCB's. We have
25 also attached a reprint of a recent article from

1 Chemical Week, October 29, 1969, regarding water
2 pollution standards set by each state in the union.

3 With the present public and government concern with
4 environmental contamination good manufacturing prac-
5 tice in the future may require care in the application,
6 processing and affluent disposal of products used by
7 your company. Very truly yours."

8 Q Mr. Papageorge, the letters that you talked about Thursday
9 of last week, one went directly to the customers, one went
10 directly to distributors, would you tell us what was the
11 function, then, of this particular letter you just read?

12 A The intended function was to assist the distributor in
13 communicating our understanding of the PCB situation to
14 his customers of PCB products.

15 Q Still talking about the March, 1970 period, Mr. Papageorge,
16 I'm going to hand you Defendant's Proposed Exhibit No. 312
17 and ask you if you can identify that, sir?

18 A Yes. That's a copy of a label that was in use -- put into
19 use in 1970.

20 MR. JUNGERHELD: All right, sir.

21 Your Honor, while Mr. Papageorge was reading the last
22 one we had an opportunity to show this to Counsel. We'll
23 offer Defendant's Exhibit 413, which is an expanded version
24 of an earlier exhibit.

25 THE COURT: Any objection, Mr. Davidson?

1 MR. DAVIDSON: No, Your Honor.

2 THE COURT: Mr. Woodworth?

3 MR. WOODWORTH: Is there -- if I may voir
4 dire the witness?

5 THE COURT: Go ahead.

6 MR. WOODWORTH: Is there a date on that label,
7 Mr. Papageorge?

8 A. I don't see any date on the label, no, sir.

9 MR. WOODWORTH: And Mr. Papageorge, that
10 exhibit is in fact comprised of two different labels? It's
11 one label with that warning part on the right-hand side
12 stuck on, is that fair to say? One of those tags?

13 A. No. This was printed as shown. All the wording on the
14 label as shown.

15 MR. WOODWORTH: Okay. I've no objection to
16 that, Your Honor, if I may take a closer look.

17 THE COURT: Go ahead.

18 MR. WOODWORTH: Mr. Papageorge, what does
19 this down here mean? Can you tell us?

20 A. It's my understanding that that is the -- in essence the
21 reference number in the files kept by the Label Design
22 Department in Monsanto.

23 MR. WOODWORTH: Okay. Does that 53 have any
24 significance?

25 A. Not that I'm aware of. It has significance in terms of

1 identifying the label.

2 MR. WOODWORTH: But does it have any signifi-
3 cance insofar as years are concerned?

4 A. I'm not aware of any.

5 MR. WOODWORTH: Okay. I have no objection,
6 Your Honor. That's part of what's already been admitted
7 as 49. 49 is a group.

8 THE COURT: Defendant's 413 then is admitted
9 without objection.

10 Q (By Mr. Jungerheld, continuing:) Mr. Papageorge, when to
11 your recollection did Monsanto commence to use this label
12 that has been put up here on the board?

13 A. Late March, early April, 1970.

14 Q And what was the use of this particular label?

15 A. This label was to be applied -- this specific label was
16 to be applied to 55-gallon drums of Aroclor 1254.

17 Q And would you read for us the contents of that label for
18 the benefit of us that are far away that may have a little
19 bit of difficulty reading that?

20 A. All right. On the left upper corner is the Monsanto logo.
21 And it starts at the top with the trademark Aroclor 1254,
22 chlorinated polyphenyls. "Caution! Contains chlorinated
23 hydrocarbons. Avoid prolonged breathing of vapors or
24 mists. Avoid contact with eyes or prolonged contact with
25 skin. If skin contact occurs remove by washing with soap

1 and water. Following eye contact flush with water. If
2 clothing becomes soaked with fluid, launder before wearing
3 again. This product contains polychlorinated biphenyl,
4 which some studies are shown may be an environmental con-
5 taminant. Extreme care should be taken to prevent any
6 entry into the environment through spills, leakage, use,
7 disposal, vaporization, or otherwise. Lot number, bacteria,
8 net legal weight, 600 pounds. 272.16 kilos. Monsanto
9 Company, St. Louis, Missouri, U.S.A. 826.13-280.11/53."

10 Q Mr. Papageorge, I'm going to hand you, now, Defendant's
11 Exhibit 414 and I'll ask you if you can identify that docu-
12 ment?

13 A This is a copy of a supplementary label for use with
14 polychlorinated biphenyls.

15 MR. JUNGERHELD: All right, sir.

16 Your Honor, I'd offer that. I believe Counsel has had
17 an opportunity to see this. Again, an expanded version of
18 an earlier exhibit.

19 THE COURT: Mr. Woodworth?

20 MR. WOODWORTH: No objection, Your Honor.
21 That's part of Plaintiff's Exhibit 49 package.

22 THE COURT: Mr. Davidson?

23 MR. DAVIDSON: No objection, Your Honor.

24 THE COURT: Defendant's 414 is admitted without
25 objection.

1 MR. WOODWORTH: Excuse me, Your Honor. I
2 think I'm mistaken. May I voir dire the witness again,
3 please?

4 THE COURT: Go ahead.

5 MR. WOODWORTH: Mr. Papageorge, what is the
6 significance of that number? The lower right-hand corner?
7 A That is, again, a reference number for the labeled section
8 of Monsanto's cataloging system.

9 MR. WOODWORTH: If I may just show you briefly
10 what's been admitted as Plaintiff's Exhibit No. 49, that's
11 a similar label, is it not?

12 A Yes.

13 MR. WOODWORTH: Okay. And that's -- just
14 briefly look through that package quickly. Look through
15 that package and see if there's any other label of that
16 particular type, please?

17 A No, there isn't.

18 MR. WOODWORTH: Okay. The one in this package
19 has a -- is just like this one only in the back page
20 there's a /53 again, is there not?

21 A Yes.

22 MR. WOODWORTH: And what is the difference?

23 A I don't know the difference.

24 MR. WOODWORTH: Well, I'd have no objection,
25 Your Honor. There is a difference between the labels.

1 Simply there is a /53 in the Exhibit 49 that was admitted.
2 So this is not the same as the one that was provided to us.

3 THE COURT: Apparently there's testimony this
4 refers to -- there's a filing reference number, internal
5 number, used by them. No relevance other than the date,
6 or anything like that --

7 MR. JUNGERHELD: I believe you will find the
8 language is --

9 MR. WOODWORTH: The language is the same. It's
10 just the significance of the numbers.

11 THE COURT: All right. As I indicated 414
12 has been admitted.

13 Q (By Mr. Jungerheld, continuing:) Mr. Papageorge, now,
14 would you tell the Jury with reference to that exhibit
15 that's on the board, 413 -- or 414 --

16 THE COURT: 414.

17 Q -- 414, what use was made of this label then?

18 A This label was placed on packaged PCB's in the warehouse
19 that already had the previous older label without this
20 message on it.

21 Q Now, this message dealt with what?

22 A This message referred to possible environmental contamina-
23 tion and the caution that entry into the environment should
24 be avoided by preventing spills, leakage and the like.

25 Q All right. And comparing the previous exhibit that we

1 talked about, now, that's 413, with the one that is now on
2 the board, 414, would you tell the Jury what was different
3 in terms of the use of that one and this one? So we're
4 clear in terms of how you were using it.

5 A. The previous exhibit was placed on new containers of
6 freshly packaged PCB's. They were then ready for shipment
7 out of the warehouse. The present exhibit is a copy of
8 the label that was added to a package that had been pre-
9 viously packaged and in the warehouse and in inventory and
10 this was a second label. The original label remained on
11 the package and this was a supplementary label with that
12 extra message.

13 Q. Mr. Papageorge, during the early 1970 period that we have
14 been talking about here where these letters were sent out
15 to customers, distributors, in the suggested letter from
16 distributors and customers, and then these label changes
17 with the environmental wording on them, were you also
18 doing other things at that particular time? Particularly
19 as it related to attempting to gain information?

20 A. We were doing many things at the time. We were trying
21 to make contact with as many individuals as we could who
22 may have some knowledge of PCB's.

23 Q. Did this include any government people?

24 A. Yes. It included government representatives, university
25 representatives, industry representatives.

1 Q Did you have any contacts with the Department of
2 Agriculture?

3 A Yes, we did.

4 Q Had they, to your knowledge, addressed the use of PCB
5 as a pesticide extender?

6 A Yes. In the '50's as I recall there were some studies made
7 by the Department of Agriculture using PCB's to extend the
8 effectiveness of pesticides. That is PCB's in themselves
9 are not pesticides but because of their properties a
10 pesticide would stay in place longer and therefore, the
11 insect would be exposed more -- would be more apt to be
12 exposed, therefore, the pesticide would be more effective.

13 Q Would you describe for us what was the nature of your
14 contacts with the personnel in the Department of
15 Agriculture? What were you trying to do or --

16 A It was two-fold. In 1970 the EPA had -- was a new agency.
17 It didn't have all its people in places yet. The regis-
18 tration of pesticides had been assigned to the Department
19 of Agriculture, so we were talking to individuals in the
20 Department of Agriculture that had experience with pesti-
21 cides. And our discussions would center primarily around
22 what they knew about the PCB situation and what had they
23 learned as part of their pesticide program. Because
24 PCB's, if you recall, were initially misidentified as
25 being DDT and that's how the Department of Agriculture

1 became involved and --

2 MR. WOODWORTH: Objection to hearsay, Your
3 Honor. I don't know if this witness can tell us how the
4 Department of Agriculture became involved unless he was
5 with the Department of Agriculture.

6 MR. JUNGERHELD: Your Honor, he is simply being
7 asked the nature of -- he's not being asked of the con-
8 text of the discussion with the Department of Agriculture,
9 but he's being asked the nature of the receipt of the in-
10 formation, giving of the information, that sort of thing.

11 Also, I think it would go to his mental impressions as
12 a Monsanto representative in charge of the PCB program;
13 as to his impressions about what was the situation as it
14 relates to PCB, apart from the truth of the matter, cer-
15 tainly.

16 THE COURT: As long as it's clear it's his
17 impression whether the Department of Agriculture got in-
18 volved I'll allow it.

19 MR. JUNGERHELD: Go ahead, Mr. Papageorge.

20 A. We also took opportunity to exchange analytical methodolo-
21 gies with the representatives of the Department of
22 Agriculture.

23 Q. What do you mean by that? What did you have to offer to
24 them and they to you?

25 A. We, in Monsanto, had developed a refinement of the

1 analytical method that was first established by Dr.
2 Jensen and Widmark in Sweden. Their method was a pioneer-
3 ing effort. It was a big step forward but it still needed
4 fine tuning.

5 Our laboratory took that method and improved on it
6 and also came up with basically three procedures, one
7 analyzing PCB's in water, the other analyzing PCB's in
8 air; and the third analyzing PCB's in solid materials,
9 such as soil, sediment, animal tissue, and the like.
10 Those methods we felt were good methods but we wanted other
11 laboratories to try them and see how well -- how they
12 worked and how good they were. We were anxious to get good
13 laboratories testing our methods.

14 Q So did you share these methods then with the Department of
15 Agriculture?

16 A Yes.

17 Q And did you have any words to say with the Department of
18 Agriculture concerning the use of PCB's as an extender in
19 pesticides that they had had earlier advocated?

20 A Well, our medical doctor had talked to their medical
21 representatives and in fact followed up with a memorandum
22 -- a letter suggesting that that particular use of PCB's
23 in pesticides be discontinued because it did pose a future
24 environmental problem.

25 Q Mr. Papageorge, did you have any contact with Dr. Burger?

1 A. Yes.

2 Q Are we still, by the way, talking about the early 1970
3 period?

4 A. Yes.

5 Q All right. Who was Dr. Burger and what was the nature of
6 your contact with him?

7 A. He was the head of the office of Science and Technology.
8 I'm not quite certain of that title but it was the
9 executive office of the president. Had an office of
10 Science and Technology and Dr. Burger was the head person.

11 Q And again, what was the nature of your communication with
12 Dr. Burger?

13 A. Dr. Burger was active on the part of the administration
14 at the time and becoming as knowledgeable as he could
15 regarding PCB's, and he played an active role in the forma-
16 tion of an interagency task force, or work group, to con-
17 sider PCB's.

18 Q Did you impart any information to him?

19 A. Yes, we did.

20 Q All right. And did he share any information with you?

21 A. He shared what little he had but he was in a position of
22 not, at that time, knowing much more than what was avail-
23 able in the popular press.

24 Q Mr. Papageorge, did you have any contact with any FDA
25 people in the federal government?

- 1 A Yes, we did. Yes, I did.
- 2 Q Who were those individuals?
- 3 A I don't think I'm going to recall all of them but there
- 4 was a Dr. Gar Fitzhugh, a John Wessell, Albert Kolbye,
- 5 and Dr. Herbert Bluementhal.
- 6 Q What were the nature of the contacts that you had with
- 7 these individuals in the FDA?
- 8 A It covered, again, analytical methodology, the knowledge
- 9 regarding toxicity, their understanding of an incident
- 10 that happened in Japan in '68, their program for analyzing
- 11 for pesticides in food products, which was referred to as
- 12 the market basket study, and, or course, our contribution
- 13 was one of how are PCB's manufactured, where are they
- 14 manufactured, how are they labeled, where are they used,
- 15 and the analytical methodology again.
- 16 Q Did you provide the FDA then as well as the earlier
- 17 agency we talked about with the methodology that Monsanto
- 18 had developed?
- 19 A Oh, yes.
- 20 Q Did there come a time, Mr. Papageorge, when you learned
- 21 of the presence of PCB in milk?
- 22 A Yes.
- 23 Q And when did that occur?
- 24 A About the third week of March, 1970.
- 25 Q And how did you learn of that?

1 A I received a telephone call from a Dr. Hill who was with
2 the Ohio State Department of Agriculture.

3 Q Now, let me ask you, Mr. Papageorge, if you will share
4 with us your impressions of the PCB milk situation as
5 you gleaned it from your conversation with Dr. Hill?

6 A PCB's were found in some of the milk that was sampled in
7 Ohio and at that point in time it seemed to zero in,
8 or involve only two dairy farms.

9 There was an attempt made to get help from the federal
10 FDA regarding what levels were acceptable.

11 Q Excuse me. When you say that are you saying this was your
12 impression of what Dr. Hill had attempted?

13 A Yes. Dr. Hill asked me my opinion. I told him I wasn't
14 qualified to give him such a number. He was completely
15 frustrated. He had finally, after attempts made, gotten
16 the level from someone in the FDA of five parts per
17 million in the butter fat of the milk and had taken action
18 to embargo the milk from two dairy farms.

19 He asked me if I knew anything about silo coatings. I
20 told him I knew nothing about silos or their coatings.
21 He asked me if I knew anything about Cumar. I told him
22 I was familiar with a resin sold by a chemical company and
23 to my knowledge that had no PCB's in it.

24 Q All right. Let me ask you about the resin sold by a
25 chemical company when you were asked about Cumar. What are

1 you referring to?

2 A. There is a resin in commerce which is referred to by the
3 tradenname Cumar, which to my understanding is a registered
4 trademark of the Allied Chemical Company.

5 Q Is the resin Cumar a product of Monsanto Chemical Company?

6 A. No. No.

7 Q Is Neville Chemical Company a different company --

8 MR. WOODWORTH: Objection. There's no state-
9 ment as to Neville. He said Allied.

10 THE COURT: He said Allied.

11 MR. JUNGERHELD: I'm sorry, Your Honor.

12 Excuse me. Allied. I'm sorry.

13 A. Yes. It's my understanding it's Allied's product, yes.

14 Q Is Allied another chemical company?

15 A. Yes.

16 Q From your conversation with Dr. Hill, Mr. Papageorge, did
17 you have an impression of his -- did you have an impres-
18 sion as to how he felt about the analysis that his depart-
19 ment had done of the residues in the milk in Ohio?

20 MR. WOODWORTH: Objection, Your Honor. He can
21 state as to -- for exception to the Hearsay Rule a sense
22 impression, but I think this is getting too far afield
23 asking him to speculate on a sense impression, and I think
24 that's double hearsay.

25 MR. JUNGERHELD: I don't think that is, Your

1 Honor. This goes to this witness's perception of the
2 milk situation in 1970 as to what he knew on behalf of
3 Monsanto. It's, I think, quite important and relevant
4 to his perception of what the situation was. Regardless
5 of whether it's true or not this is his understanding of
6 the situation.

7 MR. WOODWORTH: He can testify as to what he
8 knew himself or his understanding of what he was doing on
9 behalf of Monsanto, but I think for him, first of all, to
10 ask for an exception to the Hearsay Rule about a presence
11 impression, or impression of Dr. Hill, and then base that
12 upon speculation of Dr. Hill -- see, it's not only hearsay,
13 it's speculative. Asking him to base a sense impression
14 off of Dr. Hill's speculation. And I think that is just
15 too far afield and too unreliable. We have no problem
16 with Mr. Papageorge saying what he in fact did but I think
17 Counsel wants to take it too far afield and in that sense
18 it would be unreliable and tends to mislead.

19 MR. JUNGERHELD: Your Honor, I would think this
20 is much closer to the mark than what Mr. Haley's state of
21 mind was as a result of a letter to, or some communication
22 from Senator DeGrow, which was permitted because it dealt
23 with Mr. Haley's state of mind. This is dealing with Mr.
24 Papageorge's state of mind as a result of this particular
25 situation, which I think is closer to the issue of this

1 case.

2 THE COURT: Would you repeat the question
3 please? Can you?

4 MR. JUNGERHELD: Would I repeat the question?
5 Yes, sir. I was asking Mr. Papageorge if he had an im-
6 pression as to the -- as to whether Dr. Hill was confident
7 of the methodology, or confident of the results obtained
8 by the analysis of the residues by his department.

9 THE COURT: On those two farms that he's
10 talked about?

11 MR. JUNGERHELD: Yes.

12 THE COURT: All right. I'll allow it.

13 A I had an impression as a result of an answer to my direct
14 question of how experienced was his laboratory with PCB
15 analysis. And my offer to send him copies of our
16 methodology and my further offer to -- and we were happy
17 to analyze some samples if he could send them to our
18 laboratory. From that conversation I had a vivid impres-
19 sion that there were many questions in Dr. Hill's mind
20 regarding the accuracy of the numbers that he was working
21 with.

22 Q By the way, did you also refer Mr. Hill to Dr. Kelly of
23 Monsanto? You may have already answered that.

24 A Yes. Initially I was under the impression Dr. Hill was a
25 medical doctor and then when he began asking questions

1 about effects on animals and human beings it, being my
2 practice, not to act as a doctor, I gave him Dr. Kelly's
3 name and phone number and suggested the two doctors
4 talk to each other on this subject.

5 Following that I called Dr. Kelly and gave him Dr.
6 Hill's name and phone number and suggested the two doctors
7 talk to each other.

8 Q Did you supply Dr. Hill of the Ohio Department of
9 Agriculture with any literature?

10 A Yes. Following that discussion I sent Dr. Hill a collec-
11 tion of articles that I had made up to that point.

12 Q How about information on Monsanto's product Aroclor 1254,
13 or other plasticizers? Did you send this information to
14 Dr. Hill of the Ohio Department of Agriculture?

15 A Yes. That was part of the information packet.

16 Q With this document marked as Defendant's Exhibit 31 part
17 of the material that was supplied to Dr. Hill?

18 A Not this particular one. The predecessor to this bulletin
19 was sent to Dr. Hill.

20 Q I'm going to -- while we're talking about this document,
21 I'll ask you if you're able to ascertain from the back
22 page, or right back page here, when this was produced?

23 A That was printed in March, 1970.

24 Q All right. Now, you may earlier have testified about this
25 perhaps last week, but as part of the activities that you

1 undertook in early 1970, we talked about the letter and
2 labels and so on, was this brochure revised?

3 A Yes, it was.

4 Q And looking at Pages 12 and 13 of this brochure, what
5 revisions were done, then, in March of 1970?

6 A There were many revisions throughout the pamphlet.

7 Q As it pertains to the issues we're concerned with in this
8 case was anything done to this brochure concerning any
9 language relating to environmental hazards?

10 A Yes. On Page 13 of the bulletin entitled "Environmental
11 Hazards," that entire statement is a totally new statement
12 for this bulletin which was added as of March, 1970.

13 Q All right. And I note that there is a paragraph -- there's
14 a two paragraph statement on Page 13. Did any part of that
15 have to do with your conversation with Dr. Hill?

16 A Yes. The second paragraph.

17 Q Would you explain to the Jury, please, what that second
18 paragraph had to do with your conversation with Dr. Hill
19 in March of '70.

20 A My conversation with Dr. Hill was my first understanding
21 that the materials such as the PCB's could be used in
22 silos and it dawned on me in other food applications as
23 well. And since this brochure was at the printer with
24 the printing plates being prepared I took advantage of
25 that opportunity to have that last paragraph added at the

1 last moment in March of 1970.

2 Q Would you read that paragraph to the Jury?

3 A All right.

4 "Some specific applications where the use of PCB should
5 definitely be avoided are in paints and sealants for
6 swimming pools, paints and waterproofing agents in silos,
7 and other buildings where food products for humans or
8 animals are stored and as a component of any container or
9 wrapping used in the packaging of food products."

10 Q Mr. Papageorge, with reference to your discussion with Dr.
11 Hill did you have any impressions gleaned from that dis-
12 cussion as to whether Dr. Hill was going to do anything
13 in the State of Ohio concerning the silos there?

14 A Yes. Dr. Hill in the discussion mentioned a silo company
15 that erected and coated and maintained silos and my
16 definite understanding was that he was talking to a re-
17 presentative of that company and that he was working with
18 this representative to get the names of the owners of the
19 silo that had been coated with this material.

20 Q Who was that individual and what company, if you know?

21 A It was a Mr. Egan with the Michigan Silo Company located in
22 Massillon, Ohio.

23 Q Did you ever learn, Mr. Papageorge, whether or not Dr.
24 Kelly of Monsanto had ever talked to Mr. Egan of the
25 Michigan Silo Company in Massillon, Ohio?

1 MR. WOODWORTH: Objection. Hearsay, Your
2 Honor, as to what this witness can testify as to communi-
3 cations between Dr. Kelly and Mr. Egan. We have had both
4 of those gentlemen already testify in this case as to
5 their communications, their contacts. I think it would be
6 too far and remote for this witness to testify as to their
7 communications.

8 MR. JUNGERHELD: Your Honor, he's not being
9 asked about their communications. He's only being asked
10 if he learned there had been a communication between the
11 two; not for the substance of it at all.

12 MR. WOODWORTH: The way I have a problem with
13 this, Your Honor, is when the witness is asked as to an
14 impression he has, then the answer will be "Dr. Hill said
15 this" and the way the answer comes out it's making like
16 Dr. Hill said these things and rather than asking the
17 witness for his impression, of which he asked the question,
18 "What is your impression" then he said Dr. Hill said this,
19 Dr. Hill said that.

20 THE COURT: Do you have any objection as to
21 whether or not there was any communication and not what
22 the content of it was?

23 MR. WOODWORTH: I have no problem with that.

24 THE COURT: All right. I'll allow that
25 question then. Whether there was contact.

1 MR. WOODWORTH: I think in fact there is
2 evidence of that in the record already.

3 MR. JUNGERHELD: That was going to be my next
4 point. There was introduced a memorandum from Dr.
5 Kelly to Mr. Papageorge specifically referring to that.
6 And -- but that was --

7 THE COURT: That was contact. What is your
8 next question?

9 MR. JUNGERHELD: I don't think he ever answer-
10 ed the question, Your Honor.

11 THE COURT: He said it's in evidence. Go
12 ahead then.

13 A Yes, I was aware contact -- discussion had been made.

14 Q All right. Mr. Papageorge, did you yourself ever talk to
15 Mr. Egan of the Michigan Silo Company in Massillon,
16 Ohio?

17 A Yes, I did.

18 Q And what did you tell Mr. Egan during the course of your
19 discussion?

20 A I really was trying to find out from him how he came about
21 to use PCB's in his coating. How extensively had he
22 used it. What other dairy farms to his knowledge were
23 having some PCB's found in their milk.

24 And then -- I don't remember everything in that con-
25 versation but I was left with the impression that Mr.

1 Egan was well aware of where PCB's were used and how many
2 silos were involved, although he never gave me a number,
3 nor did he ever give me any names of dairy farmers.

4 Q Did you say anything to him about the use of PCB as it
5 related to silo coatings or food use applications?

6 A Yes. I told him that it was my understanding that they
7 should not be used near food, or animal feed, and re-
8 iterated what I had understood Dr. Kelly to tell him.

9 So I just reaffirmed or underlined what Dr. Kelly
10 had told Mr. Egan.

11 Q Did you say anything to Mr. Egan when you talked to him
12 about what he should do concerning his customers?

13 A Would you repeat that, please, sir?

14 Q Did you say anything to Mr. Egan about what he should do
15 in terms of his customers?

16 A Oh, yes. I told him you better tell your customers that
17 they could possibly have a problem; that they should
18 watch to see that their coating is intact and it's not
19 getting into their silage.

20 Q That conversation with Mr. Egan of Michigan Silo did you
21 gain any kind of an impression as to what his position with
22 this company was?

23 A The impression I have is that he was the principal figure.
24 The key person.

25 Q And what was your understanding as to where he was located?

1 A. He was located in Massillon, Ohio.

2 Q. As a result of your conversation with Mr. Egan from the
3 Michigan Silo Company, Mr. Papageorge, did you have any
4 impression of the PCB situation in milk in Ohio as being
5 a health problem or what?

6 A. The impression I had at the time was that it was not a
7 health problem; that it appeared to be a presence problem
8 in only two farms with some concern on the part of the
9 officials in the Department of Agriculture regarding the
10 wisdom of their embargoing the milk from these two farms.

11 And that the situation was limited to those silos
12 constructed by Michigan Silo Company in Ohio.

13 Q. Mr. Papageorge, at this point, now, we're still talking
14 about March of 1970, did you know what the status was
15 of Monsanto's long-term studies?

16 A. Yes. I knew the status of the ongoing studies because I
17 was receiving status reports.

18 Q. And at that stage was there any discussion of any health
19 problems as a result of Monsanto's ongoing studies?

20 A. No. There was an effect problem at the higher feeding
21 level in the test animals.

22 Q. To your knowledge had this kind of study, that is the long-
23 term feeding studies, ever been conducted for industrial
24 chemicals before?

25 A. To my knowledge this was a first.

1 Q Had Monsanto sought any assistance from the government
2 as to what kind of study to conduct for this kind of
3 chemical?

4 A Yes. In our discussion with the Department of Agriculture,
5 and the Food and Drug Administration representatives, we
6 sought suggestions from those individuals regarding what
7 tests they would deem appropriate to establish whether
8 or not PCB's could pose environmental or human health
9 problems.

10 No one had any experience regarding testing to this
11 extent of industrial chemicals so we chose to follow the
12 test procedures used by the Food and Drug Administration
13 in the approval of chemicals for use in food.

14 Q Were you aware of whether or not there had been any
15 epidemiology studies reported by that time?

16 A No, there weren't any.

17 Q And how about any animal studies that may have been report-
18 ed by that time showing health problems in these environ-
19 mental concentrations?

20 A In March, 1970 there were no animal studies. No.

21 Q During this period of time, Mr. Papageorge, did you have
22 any further communication with government agencies?

23 A With the government it -- are you speaking March of 1970?
24 Early 1970?

25 Q Or continuing on. In other words was this a one time

1 situation or did you continue to communicate with govern-
2 ment people?

3 A. No. It was a continual dialogue with anyone in government
4 that we thought could contribute to the discussion.

5 In fact in those days it was a weekly trip to Washing-
6 ton D.C. making the rounds of all the offices, see what
7 new had developed and to meet new people where possible.
8 So it was a continuing dialogue. In fact I referred
9 earlier to this multi agency group. I have forgotten
10 exactly when but we did make -- by their invitation I made,
11 or arranged, for a presentation before this group and the
12 group represented individuals from the Department of
13 Agriculture, the Food and Drug Administration, the Depart-
14 ment of Interior, Department of Commerce, the Office of
15 Technology of the executive branch of the government. I'm
16 sure I haven't gotten all of them but it was a large
17 audience representing all the key agencies in the federal
18 government.

19 Q. With reference to contact with these agencies, Mr.
20 Papageorge, was it a two-way street in terms of sharing
21 information?

22 A. Yes.

23 Q. Did there come a time when you made any presentations to
24 the company's management committee?

25 A. There were several occasions but there was -- at that point

1 in time this was the first formal presentation, yes.

2 Q When would this be?

3 A Late April, 1970.

4 Q And what was your presentation, then, to the corporate
5 management committee?

6 First off why don't you tell the Jury what was the
7 corporate management committee?

8 A The corporate management committee at that time consisted
9 of the president and chairman of the Monsanto Board and
10 half a dozen or so of the top executives of the company.
11 So it was a decision making group. The top level decision
12 making group in the company.

13 Q And in late April then, of 1970, what was the information
14 or advice, or whatever, that you presented to them?

15 A The discussion as I best recall, was a summary of what
16 we understood of PCB's in the environment. And at that
17 time it was still a matter of detected presence of certain
18 of the PCB's. Not all of them. And when I say certain,
19 it seemed that the higher chlorinated types were the
20 types being reported.

21 I also shared with them that our analytical methodology
22 had been refined and by using this highly sophisticated
23 new technology we were convinced that the reports that
24 we were receiving in terms of presence were probably very
25 true, that it was not just a mistake.

1 As a result I was proposing -- I proposed at the time
2 that some of the uses to which PCB's were put should be
3 discontinued; that some of the higher chlorinated PCB's
4 should be discontinued; that the system, however, there-
5 fore which we could not find a suitable substitute but
6 were closed systems, where the material was contained in
7 equipment, and the equipment which could be maintained
8 properly we felt the the benefits far outweighed the risk
9 of environmental contamination. And that's the type of
10 program I proposed to the corporate management committee.

11 Q What kind of uses did you advocate the termination of
12 sales for?

13 A It was the uses that in Monsanto we refer to as the
14 plasticizer use.

15 There was another use as a solvent in the carbonless
16 copy paper application.

17 And the third use was as a hydraulic fluid in indus-
18 trial equipment.

19 Q Now, why would you recommend to the the corporate
20 management committee that sales for those uses be
21 terminated?

22 A From our understanding of those uses we felt that it was
23 not feasible to expect that the ultimate user could control
24 this material enough to keep it from becoming an
25 environmental problem.

1 Q And could you tell the Jury the types of uses, if any,
2 that you felt could safely be continued?

3 A Yes. We felt that the use in electrical equipment where
4 fire safety was paramount could be continued under the
5 right conditions.

6 We also felt that in heat transfer applications, again,
7 where fire safety was important, that with properly main-
8 tained equipment we could support these PCB's.

9 Q You talked about proper maintenance of equipment. Why
10 would that be significant?

11 A Well, it's important that the PCB's in a system be pre-
12 vented from leaking in the system, going down into the
13 sewer, or under hot conditions that would exist in heat
14 transfer systems, vaporizing into the atmosphere. It's
15 important that the units be properly maintained, other-
16 wise there is no control.

17 Q And what if anything did the corporate management committee
18 do as a result of the presentation you made to them in
19 April of 1970?

20 A Well, they were supportive of the intent of my recommenda-
21 tions, but they asked that I go back and come up with some
22 dates at which all of these things were to take place and
23 they stressed that I do it -- or come up with dates that
24 would make this program effective as soon as possible.

25 Q Was that done?

1 A. Yes, it was done.

2 Q And was this program implemented?

3 A Yes, it was. It was implemented.

4 Q Mr. Papageorge, did you have occasion to attend a meeting
5 in Deluth in 1970?

6 A Yes.

7 Q Would you tell the Jury what and when that meeting --
8 well, when it occurred and what it was?

9 A The meeting occurred in March of 1970 in the water
10 pollution laboratory located in Deluth, Minnesota. The
11 meeting was called by the director of that laboratory and
12 consisted of the audience, the invited participants. Con-
13 sisted of members of water pollution laboratories from
14 the rest of the country, such as the one in -- from
15 Corvallis, Oregon, the one from down near Pensicola,
16 Florida, the one in Athens, Georgia. There are several
17 laboratories that were represented.

18 Then, also, Monsanto was invited because of our
19 knowledge of PCB's, and as I remember there were several
20 individuals from universities also present.

21 Q Now, what was it that you told this group of water quality
22 and university people?

23 A I covered personally the description of how PCB's are
24 manufactured, how long they had been manufactured, the
25 kind of PCB commercial mixture that existed, the types of

1 uses to which they were applied and their properties as
2 we knew them at the time. And I had appointed another
3 individual to speak on the known animal toxicity testing
4 and a third individual to talk about analytical methodology.

5 Q Did those individuals appear and give their presentations?

6 A Yes.

7 Q At this meeting in March of 1970, Mr. Papageorge, did you
8 form any impressions about what was known by this group
9 of federal and university water quality people?

10 MR. WOODWORTH: Objection. Is he talking about
11 the group as a whole or each and every person within the
12 group, or what? I think it's just too far -- again, I
13 don't know how the witness can form an impression about
14 a group.

15 THE COURT: Maybe he didn't. Let's get the
16 answer to the question.

17 MR. WOODWORTH: I wouldn't think the question
18 would be asked if he had --

19 THE COURT: Let's get the answer.

20 A My impression of the group is that --

21 THE COURT: All right. So he did form an
22 impression.

23 A Yes, I did, Your Honor.

24 THE COURT: Well, what is the --

25 MR. JUNGHERHELD: Again, Your Honor --

1 THE COURT: Do you want to respond to the
2 objection?

3 MR. JUNGERHELD: Yes, Your Honor. Again, we
4 are talking about a very important period of time. This
5 is early in 1970. We're talking about what impressions
6 this witness had as Monsanto's man in charge of the PCB
7 situation in terms of what the environmental presence was,
8 what impressions did he have about what the situation was,
9 and of course, one way that we gain impressions would be
10 by communications with people in positions to deal with
11 this kind of situation?

12 Now, again, in terms of judging Monsanto's conduct
13 we're looking at what impressions this man had about what
14 the situation was and then we can look at what he did.

15 So again, it goes to the impressions that he gained
16 about what the environmental situation was.

17 MR. WOODWORTH: What's going on, Your Honor, is
18 on each one of these when he's asked impressions he's
19 testifying about what Dr. Hill said about what these
20 people said. We might as well just let the witness answer
21 one question and have him go on with narrative testi-
22 mony about what everyone has said about PCB's through the
23 1970's. Because that's what these questions are eliciting.

24 MR. JUNGERHELD: Well, Your Honor, I'd briefly
25 respond to that by saying it was deemed significant,

1 apparently that Mr. Haley's mental impression about the
2 situation at a later time were significant to see what he
3 did and I would respectively submit, Your Honor, that Mr.
4 Papageorge's mental impressions about this time -- this
5 time when the environmental presence was becoming known,
6 his impressions I think are just as important to what
7 Monsanto did as Mr. Haley's were to what he did.

8 THE COURT: I'll allow it over objection.

9 Members of the Jury, what he gleaned as his under-
10 standing of what the status of all this was was his under-
11 standing and not necessarily what the truth of the matter
12 was.

13 Go ahead.

14 Q (By Mr. Jungerheld, continuing:) Mr. Papageorge, would
15 you tell us, then, what if any impressions you derived
16 about the environmental situation as a result of this
17 meeting with the federal water quality people and these
18 university people?

19 A I had a definite impression there was considerable scienti-
20 fic interest in PCB's. There was a desire or a need on
21 their part to get Monsanto's analytical methodology as
22 well as samples of PCB's that would serve as standards to
23 be used in their analytical laboratories.

24 There was some work already underway regarding the
25 presence of PCB's in fish and other aquatic creatures. It

1 was still very early. The investigators had not found
2 any widespread presence but they did find some and the
3 impression was, of course, on everybody's part that more
4 work had to be done for anyone to understand exactly
5 what the total situation was.

6 Q Mr. Papageorge, did you agree to share any information
7 with these people?

8 A Yes.

9 Q What kind of information would you provide to them?

10 A I had at that point in time a collection of articles that
11 had appeared on PCB's as well as Monsanto's technical
12 bulletins. Monsanto's analytical methodology. Anything
13 that I had I was more than willing to share with anyone
14 who was interested and I offered this and I had many re-
15 quests which were honored.

16 Q After your Deluth meeting did you take any more steps
17 relating to learning about the environmental situation as
18 it related to PCB? And if so, what?

19 A I think the next large meeting that we held occurred during
20 a trip to Europe.

21 Q And when was that, sir?

22 A It was the latter part of April, early part of May, 1970.

23 Q And why did you go to Europe at that time?

24 A Well, for several reasons. One, for example, we had a
25 great interest in talking with Dr. Jensen in Sweden.

1 Q Who's Dr. Jensen, by way of brief --

2 A Dr. Jensen was the individual who was successful in
3 analyzing samples and detecting PCB's in these samples.
4 And he is the first one to do so.

5 Q When did he do that?

6 A It was -- I think his work was in about the middle '60's.
7 He finally reported it at some academic meeting in '66.
8 1966.

9 Q All right, sir.

10 By the way, who, if anybody, went with you to that
11 meeting?

12 A I had a representative of Monsanto's Medical Department,
13 Mr. Wheeler. And a representative of our analytical
14 laboratory, Dr. Keller.

15 Q And did you have in mind to do anything in addition to
16 meet with Dr. Jensen who had made that '66 presentation?

17 A Yes. We made arrangements to meet with the representa-
18 tives of the producers of PCB's in Europe.

19 Q Why?

20 A To share, again, our understanding with their understand-
21 ing. To inform them of our planned withdrawal program,
22 limiting the uses of PCB, and to determine from them what
23 their plans were regarding their continued production of
24 PCB's.

25 Q Now, did you in fact meet with the European manufacturers

1 of PCB?

2 A. Yes.

3 Q. And what did you tell them then?

4 A. Well, we told them everything we knew regarding reports
5 of presence, some of which they were aware of and others
6 were new to them. We told them of our presentation of
7 our corporate management committee regarding withdrawal
8 from some of the uses of PCB's and informed them that we
9 expected approval any moment which in truth happened while
10 we were in Europe. We were able to confirm with these
11 individuals that Monsanto's program was approved and would
12 be implemented immediately.

13 Q. To your knowledge, Mr. Papageorge, did the European manu-
14 facturers ever withdraw from the market? That is to say
15 did they ever stop making PCB's for open or plasticizer
16 uses?

17 A. No, they did not agree with Monsanto's assessment of the
18 situation.

19 Q. Do they continue today to make PCB's?

20 A. That is correct.

21 Q. Did you ever have an opportunity to see Dr. Jensen?

22 A. We did not get to talk to Dr. Jensen. We spoke with his
23 supervisor, Dr. Widmark.

24 Q. And what did you tell Dr. Widmark?

25 A. I don't remember the specifics. We did talk about our

1 new analytical methodology. That we were convinced that
2 the presence as reported in the environment was very
3 likely.

4 On the other hand we had some questions or I had some
5 questions about the accuracy of the numbers. But the fact
6 that it was present was acceptable. We understood that.
7 We agreed that their method was so new that they --

8 MR. WOODWORTH: Objection. Hearsay.

9 A. It's my understanding --

10 THE COURT: Excuse me. Excuse me.

11 Q Mr. Papageorge, as opposed to telling us what Dr. Widmark
12 told you in so many words, that you cannot do, we would,
13 however -- I would, however. as you whether or not you had
14 not gained an impression from talking with Dr. Widmark as
15 to whether or not Dr. Widmark or Jensen had yet done any-
16 thing further than what they had reported?

17 A. They had no further work.

18 Q And did you see anybody else over there?

19 A. Yes. We talked with the representatives of the agencies
20 in the United Kingdom who were involved with an incident
21 that occurred in the North Sea in which wild birds, sea
22 birds, and seals were found to wash on the beach following
23 a storm and these creatures were reported in the press as
24 being emaciated and the initial suspicions reported were
25 that DDT and PCB's could well have led to their emaciated

1 condition.

2 Q All right. Now, what laboratory was that?

3 A There were two agencies, as I recall. One is the principal
4 labatory in the United Kingdom which is called the office
5 of the chemists. And I talked with him again about analy-
6 tical methodologies and the state of the art as they
7 understood it.

8 Q Did you give them information concerning Monsanto's
9 methodologies?

10 A Yes. We left with them -- I left with them copies of the
11 procedures that we had taken along with us.

12 Q And were there any other laboratories or government labora-
13 tories that you visited in Britain?

14 A The other agency was the ministry and I have forgotten
15 its official title, but it was the agency that was involved
16 with wild birds and their interest, of course, was in the
17 sea birds and the presence of PCB's in them and how it
18 might be affecting the birds themselves as well as the
19 reproduction abilities of the bird.

20 Q And did you gain any impressions from any of these govern-
21 ment agencies as to what if anything they had done in the
22 way of analyzing for PCB's?

23 A They had, in my understanding, done extensive analysis in
24 Dr. Jensen's analytical methodology and they were finding
25 PCB's in some of the tissues of these animals. But the

1 levels were low and nothing was known at the time as to
2 what effect these low levels could have or have had among
3 these seals and birds.

4 Q Mr. Papageorge, did you have any contact with any facilities
5 that Monsanto had there?

6 A Yes. I went to the Monsanto plant in Wales where Monsanto
7 PCB's were manufactured, and reviewed with the staff at
8 the site our total program, analysis, waste reduction,
9 control of waste, control of emissions, proper labeling,
10 and our phase-out program.

11 Q Was the plant at Britain to take part in the phase-out
12 program?

13 A Yes.

14 Q And at this point as applied to the British plant, the
15 British Monsanto plant what then was that to do?

16 A The principal chore that they had to do was to make cer-
17 tain that their handling of wastes was proper such that the
18 PCB's will not get into the sewers, that their maintenance
19 was good enough to prevent any vapors from escaping into
20 the atmosphere, that their labels were redesigned just
21 as they were in the United States, so that the proper
22 information was contained on them, and to inform their
23 customers just as we did in the United States, about the
24 knowledge of PCB's in the environment, and to inform them
25 of the phase-out program.

1 Q Did you see anyone else in Europe concerning the PCB
2 situation while you were there?

3 A We visited the researchers at the University of Utrecht
4 in the Netherlands.

5 Q Why did you do that?

6 A Well, those researchers were leaders in studying PCB's
7 and they had also taken the additional step to study,
8 or look for contaminants or materials that might be pre-
9 sent in PCB's and have afforded the presence of another
10 set of chemicals called chlorinated dibenzofurans in
11 some of their samples.

12 Q Do you have an impression as to -- did you, in your
13 communications with the University fo Utrecht, gain any
14 impressions as to the natures of these contaminants and
15 in whose PCB's they were?

16 A Yes. The contaminants that they reported were found in the
17 European produced PCB's other than Monsanto's United
18 Kingdom plant. They did not detect any in the Monsanto
19 produced materials.

20 Q Did you learn whether or not they had done any more re-
21 search since the reports that you talked about that
22 prompted your contact in the first place?

23 MR. WOODWORTH: Objection, again, as to hear-
24 say, Your Honor. I just, you know, feel uncomfortable with
25 this until the Court instructs the Jury this is his

1 impression, this is not the fact as to what the people
2 in the Netherlands are doing.

3 MR. JUNGERHELD: The specific question was
4 whether or not he even learned anything about that. Not
5 what he learned, but whether or not he did. And I think,
6 Your Honor, we have instructed the Jury several times,
7 now, that we're talking about this man's impressions,
8 about what the situation was at that time.

9 MR. WOODWORTH: Well, to start with every
10 time one of these questions is asked "did you have an im-
11 pression, or learn" there hasn't been a time yet that he
12 said no. So I would have to assume that the answer is
13 going to be yes, that he's going to say yes I had an im-
14 pression or yes, I did learn something, the next time
15 when the question comes up as to what his impression, or
16 whatever, he's saying what they were doing and again is
17 hearsay. Now, we're just, you know, question after ques-
18 tion after question as to what they did at the University
19 of Utrecht, what they did at the ministeries in Great
20 Britain, or the United Kingdom, or Dr. Jensen's staff
21 was doing, what they did at the meeting in Deluth.
22 Question after question is what these people were doing and
23 I think that's the -- the questioning is coming out what
24 these people were doing, not what his thoughts were.

25 THE COURT: I'll allow the testimony on the

1 basis it goes to the understanding of the situation of
2 the Defendant in this case and the reasonableness of their
3 response -- actions in response to that information. So
4 I'll allow it. It's not necessarily the truth of whether
5 or not what this witness was understanding is true, but merely
6 what his understanding was.

7 Go ahead.

8 MR. JUNGERHELD: I have forgotten the question.
9 Perhaps you have too, Mr. Papageorge.

10 Q (By Mr. Jungerheld, continuing:) I believe I asked you
11 whether or not you had any impression as to whether or not
12 the University of Utrecht through the individuals you
13 were in contact with had done any more research that
14 changed their findings in regards to contaminants in the
15 European PCB's versus the Aroclors.

16 A Yes. That laboratory continued to do research looking for
17 contaminants in PCB's.

18 Q And did you gain an impression that any of the earlier
19 information was changed?

20 A No.

21 Q Did you then return from Europe?

22 A Yes.

23 Q And what, then, did you do?

24 A Upon returning I immediately saw to it that the program
25 as approved by the corporate management committee was

1 being quickly and properly implemented; that the right
2 notifications had been prepared and taken place were
3 appropriate; that our plants and our salespeople and our
4 managers, everyone was well aware as to what the intent
5 of the company was.

6 Q Could you tell us whether or not it was necessary, then,
7 to adjust production and inventories because of your
8 plan of attack here, so to speak?

9 MR. WOODWORTH: Objection. Leading.

10 MR. JUNGERHELD: Well --

11 THE COURT: I'll sustain the objection. I
12 think you're leading him.

13 MR. JUNGERHELD: I'll ask it in another way.

14 Q What did you do in terms of your plants that were making
15 PCB's, Mr. Papageorge?

16 A Well, the decision was made that following our phase-out
17 program we no longer had need to produce units. One of
18 the units had to be shut down. The decision was made to
19 keep the unit in Illinois running since it was the newer
20 unit, more modern unit, and the unit in Anniston, Alabama
21 eventually -- well, the program was put in place to re-
22 sponsibly and carefully shut down the unit in Anniston,
23 Alabama and that was finally accomplished as best I remember
24 in about 1971.

25 Q Was there any further information given to your customers

1 about that time? If I follow you correctly we're now
2 talking about, when, in 1970?

3 A This is about May of 1970.

4 Q And was there further communication, then, to your custo-
5 mers and distributors at that time?

6 A Yes. There were letters mailed to both.

7 Q All right. I'm going to hand you Defendant's Proposed
8 Exhibit 415A and 415B and as you if you can identify
9 that?

10 A This is a copy of a letter addressed to a representative
11 of the distributor of Monsanto's describing the phase-out
12 program.

13 Q Would this letter be representative of those that were
14 sent to distributors at that time?

15 A Yes.

16 MR. JUNGERHELD: Your Honor, I have showed
17 these already to Counsel. I'd offer 415A and 415B, which
18 are expanded versions of an earlier exhibit, that being
19 131.

20 THE COURT: Any objection?

21 MR. WOODWORTH: Yes. That's Plaintiff's 131
22 that we admitted.

23 THE COURT: Any objection?

24 MR. WOODWORTH: No.

25 THE COURT: Mr. Davidson?

1 MR. DAVIDSON: No, Your Honor.

2 THE COURT: Very well. Defendant's 415A and
3 B are admitted without objection.

4 Q Mr. Papageorge, referring to 415A and B would you describe
5 to the Jury, then, what this letter was?

6 A This is a copy of a letter addressed to an individual re-
7 presenting a distributor of Monsanto's PCB products for
8 plasticizer use.

9 Q All right. I notice that this one is addressed to Mr.
10 Giloth of Central Solvents & Chemical Company. Would this
11 letter be representative of those that went to distributors?

12 A Yes.

13 Q Would you read that letter out loud please?

14 A "May 25, 1970. Mr. Carl F. Giloth, Central Solvents
15 & Chemicals Company. 2540 West Flornoi Street, Chicago,
16 Illinois, 60612.

17 Mr. Giloth, you have received previous communica-
18 tions from us regarding the allegations that certain
19 polychlorinated biphenyls, PCB, have been found in the
20 environment and were contaminants. Since that time
21 other reports concerning PCB's have been published.
22 An examination of the PCB matter now indicates that
23 their use in modifier and plasticizer applications may
24 be a source in the alleged environmental contamination.
25 Monsanto has sold PCB containing materials under the

1 "tradenames of Aroclor. These Aroclors included
2 Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor
3 1254, Aroclor 1260, Aroclor 1263, Aroclor 1268,
4 Aroclor 4465, Aroclor 1100 series. Montar 1,
5 Toluene or Xylene blends of the above products also
6 contain PCB.

7 In the view of the allegations which have been
8 made concerning PCB's and being a concern and respon-
9 sible member of the world community we have come to a
10 decision to discontinue the sale of the PCB containing
11 products for modifier and plasticizer applications
12 effective August 30, 1970. We will notify our direct
13 customers using the above products of this decision
14 by June 1, 1970. As a distributor of these products
15 it would seem appropriate that you will follow the
16 same course of action at as early a date as feasible.
17 A record should be kept of all customers notified
18 along with the dates on which the letters were
19 transmitted.

20 Recognizing that this action will result in con-
21 siderable effort to define replacement products on
22 your part and on the part of your customers we have
23 prepared data sheets outlining suggested alternatives
24 for most applications. Copies of these sheets for
25 your use and for the use of your customers will be

1 'sent to you and to your regional offices prior to
2 June 1. Additional copies may be obtained from the
3 appropriate Monsanto regional office. The rest of
4 these sales offices is enclosed with this letter.

5 We regret the work that this action will create
6 for you. However, as a responsible supplier we feel
7 we have a duty to keep our customers informed on
8 matters concerning the safe handling and use of our
9 products. We appreciate your support in this
10 matter. As in the past we stand ready to assist you
11 in any way possible. Very truly yours. W.E. Schalk,
12 Director of Sales, Plasticizers."

13 Q Mr. Papageorge, I'm going to hand you Defendant's Proposed
14 Exhibit 416A and 416B and I'll ask you if you can identify
15 that?

16 A This is a copy of a letter addressed to customers of
17 Monsanto of PCB's informing them of the discontinuance of
18 sales to plasticizer applications.

19 MR. JUNGERHELD: Your Honor, once again I
20 have shown these to the other attorneys. This is 416A
21 and 416B. This is an expanded version of an earlier exhibit,
22 132.

23 THE COURT: Any objection, Mr. Woodworth?

24 MR. WOODWORTH: No, Your Honor. We admitted
25 it as No. 132 during our case.

1 THE COURT: Mr. Davidson?

2 MR. DAVIDSON: None, Your Honor.

3 THE COURT: Defense 416A and B are admitted
4 without objection.

5 Q Mr. Papageorge, can you distinguish for us then, the
6 difference between the persons to whom the letter now on
7 the board was sent and that that we just read before?

8 A This letter went to customers to whom Monsanto sold
9 directly to. The previous was sent to distributors of
10 Monsanto's product.

11 Q All right. Now, would you read this letter, then, to the
12 Jury please?

13 A "Dear Customer, you have received our letter dated
14 February 27, 1970 notifying you of the allegations that
15 certain polychlorinated biphenyls, PCB's, have been
16 found in the environment and were contaminants. Since
17 that time other reports concerning PCB's have been
18 published. An examination of the PCB matter has in-
19 dicated that their use in synthetic resin compositions
20 may be a source of a alleged environmental contamina-
21 tion. Monsanto has sold PCB's under the trade name
22 of Aroclor. These Aroclors include Aroclor 1232,
23 Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260,
24 Aroclor 1262, Aroclor 1268, Aroclor 4465, Arclor 1100
25 series and Montar 1, Toluene or Xylene blends of the

1 "above products also contain PCB's.

2 In review of the allegations which have been made
3 concerning PCB's and being a concerned and responsible
4 member of the world community we have come to the
5 decision to discontinue the sales of the PCB containing
6 products for modifier and plasticizer applications
7 effective August 30, 1970.

8 Recognizing that this action will result in re-
9 search effort on your part to find adequate replace-
10 ments we have prepared a series of data sheets out-
11 lining suggested alternatives for most applications.
12 Copies of the report for your applications may be
13 obtained by calling the regional office closest to you
14 as shown on the attached sheet. We urge that you con-
15 sider initiating now any necessary work on your part
16 to effect the change to a new material. We stand
17 ready to assist you in any way possible. Very truly
18 yours, W.E. Schalk, Director of Sales, Plasticizers."

19 Q Mr. Papageorge, at this same time frame we're talking
20 about here was there any further work done in terms of the
21 disposal, if you will, of PCB's, or further consideration
22 given to that?

23 A Yes. The important and new approach was the design and
24 eventually building and operating an incinerator capable
25 of destroying PCB's.

1 Q Was there any other work done, or was there any work done,
2 let's put it this way, was there any work done in the
3 field of developing alternatives?

4 A Yes. The developing of alternatives is always an ongoing
5 research activity, but because of this withdrawal program
6 that activity was accelerated and we did find some
7 materials that we could recommend as alternatives.

8 Q With reference to the meeting you talked about with
9 several -- with representatives of several agencies of the
10 federal government in 1970, this is before the EPA legis-
11 lation had been passed --

12 MR. WOODWORTH: Objection. That is not into
13 evidence as to whether or not -- that's gratuitous and
14 I don't think it's accurate. The EPA was passed in 1969,
15 so first of all that's a leading question. And secondly,
16 it's inaccurate.

17 MR. JUNGERHELD: Well, Your Honor, I believe
18 what I'm trying to do is direct Mr. Papageorge's atten-
19 tion back to a meeting that he talked about earlier, which
20 I thought he described as being with representatives of
21 various agencies before the EPA was in place. I'm not
22 asking him about whether enabling legislation was passed.
23 I'm asking him about before this agency was in place and
24 functioning and I believe he alluded to that earlier and I
25 want to direct his attention back to that point.

1 MR. WOODWORTH: I still think it's a leading
2 question. The enabling legislation was passed in 1969.
3 Made it knowledgeable there was an EPA on the horizon in
4 1970. I think the witness can testify to what was going
5 on without Counsel leading.

6 THE COURT: He did, though, previously. I'll
7 allow the testimony as to how it stands.

8 Go ahead. I guess you didn't finish. That's the
9 question.

10 Q (By Mr. Jungerheld, continuing:) Going back to that point
11 -- first of all do you remember that group, if you will?

12 A Yes, I do.

13 Q And did you in fact meet with that group?

14 A Yes.

15 Q Could you tell us what did you tell that group about what
16 you knew at that time?

17 A There were three general areas that I told them about.
18 One is how PCB's are manufactured. Where Monsanto manu-
19 factured them. How we described them using the Aroclor
20 terminology. What uses PCB's were involved in. What our
21 analytical methodology research had resulted in. The
22 fact we had now three procedures developed and ready to
23 share. Our willingness to provide samples to any labora-
24 tory that was interested in analyzing for PCB's. The
25 status of the animal testing which was underway in 1970.

1 The fact that we were going to do some degradation work
2 that was underway. Just getting started. And the hope
3 that as soon as we had the data we could come back to
4 them and share it with them. And our thinking at the
5 time of withdrawing from the plasticizer copy paper and
6 hydraulic fluid applications.

7 Q Was there any discussion about the milk situation in
8 Ohio?

9 A Yes. I had mentioned that I had been in telephone con-
10 tact with representatives of the Ohio Dairy Agency and
11 this was not news to them, of course. Particularly, FDA.
12 They had been informed before I was.

13 THE COURT: In light of the hour we'll take
14 our recess at that time.

15 Members of the Jury, retire to the Jury Room. We'll
16 call for you in about 15 minutes.

17 (Whereupon a recess was taken.)

18 MR. WOODWORTH: Would the Court have on a
19 particular exhibit what an objection may have been?

20 THE COURT: Looks like there wasn't -- it
21 wasn't offered. It looks like it from my notes.

22 MR. WOODWORTH: Plaintiff's 141?

23 THE COURT: Right. Looks from my notes that
24 it was offered, but I could be wrong.

25 MR. WOODWORTH: Well, we have it in -- this

1 was -- this was the letter if I -- maybe if I showed the
2 Court the exhibit itself. Excuse me.

3 THE COURT: I recall the exhibit.

4 Do you recall whose testimony it was offered in con-
5 junction with?

6 MR. WOODWORTH: All these, the three exhibit
7 letters and everything, were Mr. O'Connor's and I offered
8 the whole file, I recall. All of them. Then we went
9 through them.

10 THE COURT: Okay. Was 141 in there?

11 MR. WOODWORTH: It's crossed out and it is
12 not in the file and I remember I offered the entire group.

13 THE COURT: All right. Is there another
14 exhibit that 141 might be a duplicate of?

15 MR. WOODWORTH: That's all Mr. Mc Graw can
16 think of.

17 THE COURT: I noticed it says duplicates.

18 MR. MC GRAW: The only reason we would have
19 taken things out is if it was duplicated at that time.

20 MR. WOODWORTH: I don't have an objection to
21 the other one that Mr. Jungerheld has here. It's already
22 been admitted as our, what, Plaintiff's 137 so I don't
23 have any problem with that.

24 141, if I can find what it's a duplicate of --

25 THE COURT: What are we referring to, Mr.

1 MR. JUNGERHELD: First off, Your Honor,
2 Exhibit 418.

3 THE COURT: Mr. Woodworth indicated no objec-
4 tion.

5 Mr. Davidson?

6 MR. DAVIDSON: No, Your Honor. I think it's
7 already in.

8 THE COURT: All right. 418 is admitted with-
9 out objection.

10 Why don't you hold on?

11 MR. WOODWORTH: If he's going to read it --

12 THE COURT: Go ahead if you have are going to
13 him read it.

14 MR. JUNGERHELD: Yes.

15 Q (By Mr. Jungerheld, continuing:) Mr. Papageorge, now,
16 talking about Exhibit 418, would you kindly tell the Jury
17 what that was?

18 A That is a copy of a letter which was mailed to distributors
19 of Monsanto's Aroclor products in which we attempted to
20 share with them the latest PCB information available to
21 Monsanto in August, 1970.

22 Q Would you read that letter since back this far it's
23 difficult to read?

24 A All right. It's dated August 14, 1970.

25 "Dear, Sir. During the week of August 10, 1970

1 "Monsanto is sending to all its direct customers for
2 Aroclors in plasticizer, modifier applications, one,
3 a letter summarizing the latest information on PCB's,
4 and two, a most recent Aroclor technical bulletin.
5 This bulletin replaces and supercedes O/FL-306-Aroclor
6 plasticizers. Inasmuch as some important information
7 concerning recent FDA actions and changes to Monsanto's
8 returned goods policies are discussed we strongly
9 urge you to forward copies of this bulletin and a
10 letter to your Aroclor customers. Copies of both
11 have been enclosed for your use.

12 The change in return goods policy for our direct
13 customers involve a two-month extension of the dead-
14 lines for returning materials to Monsanto. The same
15 two-month extension will apply to our distributors.
16 A copy of our revised goods policy is attached. We
17 realize that this additional communication provides an
18 added workload for your people. However, in view of
19 the importance of the importance of this matter we feel
20 that it is necessary for you as our distributor to
21 assist in this matter.

22 Very respectfully, Walter E. Schalk, Director of
23 Sales, Plasticizers."

24 MR. JUNGERHELD: Now, Your Honor, I want to
25 deal with 419A and B.

1 THE COURT: Mr. Woodworth?

2 MR. WOODWORTH: It's already been admitted
3 as Plaintiff's 98. I found it.

4 THE COURT: So you have no objection?

5 MR. WOODWORTH: No objection.

6 THE COURT: Mr. Davidson?

7 MR. DAVIDSON: No, Your Honor.

8 THE COURT: Defendant's 419A and B are admitted
9 without objection.

10 Q Mr. Papageorge, now, let's deal with Exhibit 419A and
11 419B. You have just read a letter dated August 14, 1970,
12 and I believe you indicated that went to your distributors.

13 Who did the letter that is now on the board, 419A and
14 B, go to?

15 A This letter went to customers that Monsanto sold Aroclors
16 directly to.

17 Q And would you read that letter, then, to the Jury, please?

18 A "Dear, Sir. You have received our letters of
19 February 27th, 1970 and June 1, 1970 covering Monsanto's
20 withdrawal of polychlorinated biphenyls, PCB's, from
21 the market. The February 27 letter reviewed some of
22 the potential hazards of PCB's and of environmental
23 pollution in general. The June 1 letter announced
24 that we are withdrawing all polychlorinated biphenyls
25 used as plasticizers, or modifiers, from the market

1 "and that the last shipment of these materials would
2 be made August 30, 1970.

3 Inasmuch as you may have some inventory of these
4 materials which you might be planning to use during the
5 period in which you change over to other products we
6 felt it imperative to inform you of the latest informa-
7 tion concerning PCB's. It was recently brought to our
8 attention that the Food and Drug Administration has
9 apparently established guidelines setting forth a
10 suggested maximum levels of PCB's allowable in certain
11 foods. These levels, as we understood them, are five
12 parts per million in fish and 0.2 parts per million
13 in milk.

14 Monsanto, therefore, strongly recommends that PCB's
15 not be used in applications which could lead either
16 directly or indirectly to the contamination of food
17 and water supplies for humans or animals.

18 Examples of applications which would seem partic-
19 ularly hazardous would be coatings for water treatment
20 facilities, coatings for food handling equipment, or
21 coatings for such farm items as silos and feed hoppers.

22 It has recently come to our attention that PCB's
23 have been found in cows' milk. This adds emphasis
24 to Monsanto's recommendation that PCB's not be used in
25 any application where they might come in contact with

1 "Or otherwise contaminate food silage, water supplies,
2 et cetera. The latest available bulletin on our line
3 of Aroclors is enclosed for your use. This publica-
4 tion replaces and supercedes Bulletin O/PL-306-
5 Aroclor plasticizers.

6 The only products listed which will be sold after
7 August 31, 1970 are one, Aroclor 1221, a monochlori-
8 nated biphenyl, which is readily biodegradable, and
9 two Aroclors, 5442 and 5460, both chlorinated turphenols
10 which have not shown themselves to be environmental
11 contaminants.

12 Please pay special attention to the section of this
13 bulletin which relates to environmental hazards.

14 In addition to the products listed above which will
15 remain on the market, Monsanto will sell a series of
16 blends of Aroclor 1221 and Aroclor 5460, which will re-
17 place the polychlorinated byphenols for applications.

18 During this withdrawal of PCB's from the market Monsanto
19 has had in effect a modified returned goods policy stating
20 that unopened containers less than one year old could be
21 returned for full credit through July 31, 1970. From
22 August 1 through August 31, 1970, 90 percent of credit would
23 be allowed. From September 1 through December 31, 1970,
24 50 percent credit would be allowed. The customer will
25 pay all return freight. All of the dates in the time

1 "schedule for this returned goods policy are hereby
2 extended an additional two months.

3 Monsanto realizes that the removal of these pro-
4 ducts from the market has caused a great deal of
5 concern and expense for our customers. This is
6 certainly regrettable. However, it appears to us
7 that as a responsible supplier this is the only
8 reasonable course of action. We stand ready to assist
9 you as we can with your reformulation work. Very
10 respectfully, Walter E. Schalk, Director of Sales,
11 Plasticizers."

12 Q Mr. Papageorge, did a copy of this letter you just read
13 go to the distributors along with the letter we just
14 read a moment ago?

15 A Yes.

16 Q And it indicated therein, you specifically read and speci-
17 fically said in the letter about the PCB in milk. Had
18 you, by this time, analyzed the samples that were sent
19 to you by Dr. Hill in Ohio?

20 A Yes.

21 Q And what kind of samples had he sent?

22 A As I remember he had sent some samples of silo scrapings
23 and some samples of extraction from the milk and later
24 some samples of milk itself.

25 Q Did Monsanto's laboratory analyze those samples?

1 A Yes.

2 Q Now, earlier in this case there was introduced as an
3 exhibit, and I believe it was read to the Jury, these
4 letters that we just read to the Jury were not, but I
5 believe the memo from Mr. Tucker to you dated April 16,
6 1970 was read to the Jury. Do you recall a memo from Mr.
7 Tucker to yourself dated April 16th of 1970?

8 A Yes, I do.

9 Q And what did that tell you?

10 MR. WOODWORTH: Objection, Your Honor. The
11 exhibit speaks for itself. I think -- you know, it's in
12 evidence and it is available and it speaks for itself.
13 He's a recipient of it.

14 THE COURT: Want to refer to the exhibit it-
15 self?

16 MR. JUNGHERHELD: Pardon me, Your Honor.

17 THE COURT: You wish to refer to the exhibit
18 yourself?

19 MR. JUNGHERHELD: Not really. He's read it
20 recently in preparation for the course of the trial.

21 THE COURT: Go ahead. I'll allow it.

22 A As I remember Dr. Tucker was informing me that he had com-
23 pleted the analysis sent to him from Dr. Hill's laboratory
24 and that the material identified as a PCB matched Dr.
25 Tucker's standard for Aroclor 1254. So he was convinced

1 that what he was seeing was a PCB that resembled Aroclor
2 1254.

3 I think he also informed me in that letter that the
4 extraction -- one of the samples, I think it was a milk
5 sample, was destroyed in transit and he had asked for a
6 second sample.

7 Q Asked of Dr. Hill for a second sample?

8 A Of the laboratory that did the work for Dr. Hill.

9 Q And did this rule out Kanechlor or Clophen, to you when
10 you read that letter?

11 MR. WOODWORTH: Objection. Leading. That's
12 why the exhibit speaks for itself, I think, Your Honor.

13 THE COURT: That isn't the exhibit now. That's
14 another question. I'll sustain the objection. It is lead-
15 ing.

16 Q What if anything did this exhibit tell you? Did this
17 letter or memo from Dr. Tucker -- is it Mr. Tucker, or
18 Dr. Tucker?

19 A Dr. Tucker.

20 Q What if anything did that tell you concerning Kanechlor,
21 or Clophen, or any other PCB?

22 MR. WOODWORTH: Objection, Your Honor. There's
23 no reference within that letter to Kanechlor, or Clophen.
24 He's using an exhibit for a question and leading the
25 witness into it, or from it. I think it's rephrasing

1 another question.

2 THE COURT: I'll allow this one. Go ahead.

3 Can you answer it?

4 A Yes. Dr. Tucker's letter only reported analytical results.
5 It did not determine the type of commercial material that
6 could lead to the presence of this finding.

7 Q Do you recall concentrations reported in the memorandum
8 from Dr. Tucker to yourself?

9 A I think I recall them. Not in exact numbers but in magni-
10 tudes.

11 Q All right. And did this indicate to you any threat to human
12 or animal health, the concentrations that were dealt with
13 in that memornadum?

14 A Not to me, no.

15 Q Now, we have covered a fair amount of the year of 1970,
16 Mr. Papageorge, and during this period of time what was
17 Monsanto doing, if anything, as it related to providing
18 standards of its Aroclors to universities and government
19 agencies and whoever else?

20 A We had a program of supplying standards to anyone who asked
21 for them. And I never kept any score sheet but there must
22 have been hundreds, approaching thousands, that we very
23 freely distributed.

24 Q And to what kind of agencies would you distribute these
25 standards?

- 1 A Oh, it would cover the whole -- all types. It would be
2 the regulatory agencies at the federal level, it included
3 the Department of Agriculture, FDA, and water pollution
4 agencies that existed at the time. The state agencies
5 of all types. Food and environmentally related. Universi-
6 ties, both for study purposes and for consulting work that
7 some universities do. Industry. A lot of -- many in-
8 dustrial laboratories were interested in determining
9 whether their products, their supplies, their raw materials,
10 their environment around their plant had PCB's in them.
- 11 Q Did there come a time later in 1970 when you had further
12 contact with Dr. Hill from the Ohio Department of
13 Agriculture?
- 14 A I had telephone contacts with Dr. Hill and finally later
15 in the year, I think it was November -- yes, November, I
16 met with Dr. Hill in his office.
- 17 Q Was anybody else present?
- 18 A Well, Dr. Hill's supervisor, a Mr. Stackhouse, I believe
19 was his name was present also.
- 20 Q And what was the reason you met with Dr. Hill and Mr.
21 Stackhouse then in Dr. Hill's office?
- 22 A The principal reason was to compare notes -- well, first
23 I wanted to meet the man. I had talked to him many, many
24 times on the phone and I also felt it better if I could
25 meet a person personally face-to-face to talk with him,

1 compare what new information he may have picked up, what
2 new information I may have picked up. I took along some
3 new articles that I had copied from the literature to
4 share with him. And also to determine what he had done
5 regarding communicating the PCB silo milk situation in
6 his state.

7 Q Was there any discussion about the National Silo Associa-
8 tion?

9 A Yes.

10 Q And what was the National Silo Association?

11 A As I understand it the National Silo Association is an
12 association consisting of companies and individuals
13 associated with silo construction, silo maintenance, silo
14 use, people who have an interest in silos throughout this
15 country.

16 Q And did you know whether or not there were any meetings
17 scheduled for that association still in 1970?

18 A Yes. Yes.

19 Q Do you know there was?

20 A There was a meeting scheduled for December, 1970, and I
21 -- one of the reasons for the trip was to ask Dr. Hill
22 whether he planned to attend the meeting or participate
23 in the meeting.

24 Q Did you plan to attend that meeting then after your dis-
25 cussion with Dr. Hill in his office?

1 A. Not after I had my conversation. I decided that I could
2 add nothing in addition to what Dr. Hill was going to re-
3 port so my presence would not have added to the information
4 that was passed on.

5 Q All right. Did you have any impression, then, from the
6 meeting with Dr. Hill as to whether or not he was going
7 to make a presentation about this situation to the Silo
8 Association?

9 A Yes, I did.

10 Q Did you contact Dr. Hill after the meeting of the National
11 Silo Association in December of 1970?

12 A Yes, I did.

13 Q What was the purpose of your conversation, then, with Dr.
14 Hill?

15 A I wanted to determine how well the meeting went. What type
16 of information was discussed. What type of information
17 was discussed. What type of information was he in the posi-
18 tion to offer. And did he pick up any new information
19 regarding PCB's in silos.

20 Q Did you gain any impression from Dr. Hill about whether or
21 not he had presented this Ohio silo information to the
22 National Silo Association?

23 A Yes, he did present it.

24 Q Did you in this conversation learn anything new, then,
25 from Dr. Hill?

1 A Nothing new.

2 Q By the way, was your contact with Dr. Hill after the
3 National Silo Association meeting in person or was that
4 over the telephone?

5 A Over the telephone.

6 Q Mr. Papageorge, earlier there had been a couple of memos
7 introduced into evidence relating to your visits to two
8 Ohio farmers. Did that take place at the same time as your
9 visit with, or at the same time as your visit to Ohio
10 wherein you met Dr. Hill?

11 A Yes. They were side trips that I took.

12 Q Do these memos accurately reflect your impressions gained
13 on those visits?

14 A Yes.

15 Q The word confidential appears on those memorandums and
16 what does confidential mean in the context of it appearing
17 on those memorandums concerning your meeting with those
18 two Ohio farmers?

19 A I'm the one that used that word and right or wrong I felt
20 I was new regarding the involvement of attorneys and matters
21 in terms of a technical nature and in meeting with one of
22 the farmers in the living room of the home one of the
23 individuals present was an attorney and I decided perhaps
24 there was something here I wasn't capable of assessing
25 properly so I chose to use the word confidential and sent

1 copies of this memorandum only to the top managers of
2 the businesses involved. The medical director and
3 environmental attorney. Very limited distribution.

4 Q Do you remember anything further? Anything significant
5 occurring in 1970 as it relates to the PCB situation,
6 other than what we have now discussed before the Jury?

7 A Well, I don't know that I can recall anything that's
8 outstanding. The principal activity really was one of
9 communicating, responding to the letters and telephone
10 calls from hundreds of people throughout the world asking
11 us what our PCB's -- what will they do, how do I analyze
12 for them. This constant request for information occurred.

13 In addition to that there was our continuing effort
14 to keep talking to individuals studying PCB's, analyzing
15 for them, and the like.

16 Q All right, sir. Did you respond to these requests for
17 information.

18 A Yes. Yes.

19 Q Did you supply the requested information?

20 A Yes.

21 Q Talking now about 1970, 1971. Did you have any occasion
22 in 1971 to meet anybody connected with a silo company?

23 A Yes. I remember meeting in 1971 fairly early with an
24 individual who was and is, to my understanding, a presi-
25 dent of a silo company, and also an official in the

1 National Silo Association.

2 Q And what is his name?

3 A Charles Boswell.

4 Q What silo company was he connected with?

5 A He was connected with the Monteagle Silo Company in
6 Monteagle, Tennessee.

7 Q And what was the reason that you met with him?

8 A Boswell asked for a meeting seeking help from Monsanto
9 on how to respond to some letters he had received from
10 his customers as a result of his communicating to his
11 customers as recommended by the Silo Association through
12 its newsletters. And through the meeting that was held
13 in December --

14 Q Did you have any impressions then from this meeting as
15 to whether or not information about the PCB milk situation
16 had been dissiminated into what we might call the silo
17 community?

18 A Very definite impression that the communications through
19 the Silo Association was working very well.

20 Q And did you gain any impression as to where Mr. Boswell's
21 silos were located?

22 A Yes, I did.

23 Q And did you take any steps in connection with that?

24 A For the silos that Mr. Boswell constructed in northern
25 Georgia I paid a visit to the agency representative in

1 Atlanta, Georgia to determine the extent of the PCB
2 silo milk situation in Georgia, and I left that meeting
3 assured that it was not serious. It found some PCB's.
4 Nothing to be concerned about. That things were under
5 control.

6 Q Did you have any impression or develop any impression after
7 meeting with the Department of Agriculture individual there
8 in Georgia as to whether or not that state was communi-
9 cating with its dairy farmers about that situation?

10 A Yes. Definitely.

11 MR. WOODWORTH: Objection. Hearsay, again,
12 Your Honor. Same objection as before. He's testifying
13 on behalf of the National Silo Association, Mr. Boswell,
14 and now apparently on the State of Georgia.

15 THE COURT: I'll allow it on the basis of his
16 -- that being his impression. Not necessarily the truth
17 of the matter.

18 Q Did you have any other impressions about the silo situation
19 as it related -- as you drew it from your communication
20 with this individual?

21 A I guess the principal impression I had was that there
22 was no health problem. There was a presence problem.
23 The amounts discovered were very, very low. Not enough
24 to create any concern on the part of the regulatory
25 agencies. And no milk, to my knowledge, was ever embargoed

1 in Georgia as a result of PCB's.

2 Q And did you provide any information to that official?

3 A I supplied him the identical information I had given to
4 other governmental representatives in terms of what we
5 knew about PCB's. What data we had. What literature we
6 collected, analytical methodology, standards, the whole
7 bit.

8 Q There has been some testimony in this case about what's
9 been referred to as the Holly Farms situation. Did that
10 occur in 1971 as far as you can recall, Mr. Papageorge.

11 A Yes.

12 Q Would you outline for us what your involvement in that
13 was?

14 A In July, 1971 a marketing representative from Monsanto's
15 agricultural products unit informed me that a customer of
16 his was having problems with chickens. Reproduction --
17 reproducing. The eggs were not hatching. His customer
18 -- I was left with the impression his customer suspected
19 PCB's coming from a heat transfer application in North
20 Carolina. I was asked the question did you sell Aroclors
21 or heat transfer fluid to this company. Of course, I
22 didn't know firsthand. I offered to check personally.

23 Q What company was it?

24 A The company mentioned was East Coast Terminals Company
25 in Willmington, North Carolina.

1 I went back and checked the records and yes, we did
2 sell PCB's to this company.

3 Q What did you do, then, in connection with that?

4 A I went to the marketing people involved with that product
5 and asked them to check to see what kind of company East
6 Coast Terminals was. What was the operation. Because
7 in St. Louis none of us knew what business this terminal
8 was in. It was my understanding that the terminal had
9 as part of its business in one building of their operation
10 a unit that pasteurized fish meal to reduce the bacteria
11 count, and they did this reduction by heating the fish
12 meal to fairly high temperatures and they used a PCB fluid
13 as the heating material.

14 And in their operation they developed a break in
15 their system that allowed the PCB's to intermingle with the
16 fish meal. The fish meal in turn was sold with the PCB
17 fluid in it to companies that manufactured or formulated
18 poultry feed. So the chickens ended up ingesting high
19 levels of PCB which in turn affected the hatchability of
20 the eggs.

21 Q Did you take any steps in this regard with East Coast
22 Terminals?

23 A As soon as I found out they were in the food, feed handling
24 business and that there was a contamination problem I
25 called the individual in charge of the operations and

1 informed him that he should not be intermingling the
2 contaminated material and selling it to his customers and
3 he chose to ignore my recommendations and I remember
4 vividly the expression he used, "Well, fellow, you do
5 your thing and I'll do mine". That was the reaction I
6 got from that telephone conversation.

7 Q Did you then take any steps as a result of that event?

8 A Yes. I reported this to the medical director and in my
9 presence he assigned his assistant Mr. Wheeler who called
10 the FDA and informed them about our understanding of what
11 was happening in North Carolina.

12 Q And did this discovery of the East Coast Terminals
13 situation prompt any activity, then, by Monsanto other than
14 informing the FDA?

15 A Well, it immediately taught us that although we had
16 assumed that heat transfer systems were closed systems,
17 that could be maintained and control could be -- adequate
18 control could be reached, this situation was a vivid
19 example where we may have assumed something that was not
20 quite right.

21 So as a result of this one experience Monsanto decided
22 and we implemented as quickly as we could a program where
23 we decided not to sell the heat transfer systems any longer.
24 So there was another phase-out effort that took place.

25 Q Mr. Papageorge, still talking about 1971, did you have any

1 offices with any electrical-type committees?

2 A. Yes. Yes. I was chairman of a committee under the
3 auspices of the National Electrical Manufacturers
4 Association. NEMA.

5 Q. And what was your involvement with that? What was the
6 committee and what did you have to do with it?

7 A. The committee consisted of manufacturers of electrical
8 equipment, the users, such as the power company, utilities,
9 the service companies that maintain and look at trans-
10 formers that are in service and drain the fluid and replace
11 it and so on, the service units. It was a mixed group
12 of individuals interested in the use of PCB's in electri-
13 cal equipment.

14 The purpose of the committee was to develop guidelines
15 for the proper handling, use, disposal, transportation of
16 PCB's in electrical service.

17 Q. And did you attend any meetings of any groups or
18 organizations in 1971 at which PCB's were discussed?

19 A. I attended many meetings. I have to confess I don't
20 recall them all. They were different groups interested
21 in PCB's. There was, as I remember it, a group which called it-
22 self the Great Lakes Governor's Council on pesticides.
23 PCB's or pesticides. But in their study they kept
24 hearing PCB's so they were interested in PCB's and I was
25 invited to speak before them.

1 Q What did you tell them?

2 A I repeated my typical presentation of, again, what are
3 PCB's, why are they manufactured, what does Aroclor
4 number so-and-so mean, where are they used, what kind
5 are found in the environment. The general draw a picture
6 of PCB situation. And there were --

7 Q I'm sorry. I was going to ask if you attended a meeting
8 in North Carolina at the end of --

9 A Yes. That was another meeting. There were many meetings
10 in between and I don't remember the exact date. But I
11 do remember one that was -- I thought it was the
12 Associated Garden Clubs of Michigan, right here in this
13 state. As I remember that was held in Lansing. And that
14 group was a mixed group of individuals. Some industry.
15 Primarily people interested in conservation. The Isaac
16 Walton League was represented, The Audobon Society was
17 there. They were interested in PCB's and environmental
18 issues. There again the same kind of questions I was
19 asked to help them under. What are the strange chemicals.
20 And yes, in the last month, December of '71, there was a
21 meeting called by the director of the National Institute
22 of Environmental Health Sciences by invitation. They
23 invited individuals interested in PCB's to attend a multi-
24 day session. We met for almost a week. It was a very
25 indepth review of what individuals worldwide understood

1 about PCB's in the environment.

2 Q Were you invited to attend that meeting?

3 A Yes.

4 Q What were the types of people that were represented or
5 type of agencies, or whatever, that were represented at
6 that meeting?

7 A Well, of course, I remember the newly formed EPA representa-
8 tives were there. I mentioned the National Institute of
9 Environmental Health Sciences was there. The Food and
10 Drug Administration people were represented, The Depart-
11 ment of Agriculture, the Department of Interior. Because
12 they're interested in fish and wildlife. We had the
13 individuals from the University of Utrecht were invited
14 and they attended. We had Japanese representatives to
15 speak on the incident that occurred in the Yusho pre-
16 fector(sic) in 1968. We had a few industrial people, the
17 Electrical Manufacturers were represented, and Monsanto
18 was represented.

19 Q And what did you do in connection with this meeting?

20 A I made a presentation, again, of Monsanto's PCB's, re-
21 peating what I described just before. How it's made,
22 where it's made, where it is used.

23 Q Did you have any of your, shall we call them, retained or
24 hired testing people available at this meeting?

25 A Yes. The laboratory that was conducting the animal study

1 for Monsanto was represented by their president.

2 Q Now, what lab was this?

3 A Industrial Biotest Laboratories located in Northbrook,
4 Illinois.

5 Q And what was that individual to -- what information was
6 that individual to communicate to this group in North
7 Carolina in December, 1971?

8 A He communicated the findings as of that moment, December,
9 1970, of the long-term feeding studies that were ongoing
10 with rats, dogs and chickens.

11 Q By the way, what was the reputation of the Industrial
12 Biotest, to your understanding, at that time?

13 A It was an excellent laboratory. If not, I would suggest,
14 it may have been considered the best in the world.

15 Q And what was the information, then, that was known as of
16 that time concerning the tests that IBT was conducting
17 for your company?

18 A As I remember in 1970 the rats exposed to the high level
19 in their daily diet of a hundred parts per million PCB's
20 of higher chlorinated materials, the Aroclor 1254, 1260,
21 had two obvious effects. One is they did not grow as
22 big, as fast, as the controls. They eventually got to the
23 proper weight but it took them longer.

24 The other effect noted was their livers were enlarged.

25 For chickens it wasn't the higher chlorinated that

1 seemed to effect them. It didn't seem to bother them.
2 The Aroclor 1242 at 10 parts per million, which was the
3 middle exposure, one, ten and a hundred, at ten there was
4 a problem with hatchability of eggs and thin egg shells.

5 The dogs showed nothing at that point.

6 So that was the status in 1970.

7 Q With reference to the chickens, you said one, ten and a
8 hundred. What does that figure represent?

9 A I didn't make myself clear. All of these animals -- these
10 types of animals were exposed to one part per million in
11 their diet, or ten parts per million in their diet, or a
12 hundred parts per million in their diet. Daily diet. The
13 lifetime of the animal.

14 Q Excuse me. Is that a different concept than tissue con-
15 centrations in the animal itself?

16 A Oh, yes. This is the amount of PCB's in the food that
17 the animal eats every day. All of it's food. So when I
18 say that ten parts per million that meant at one part
19 per million there was no effect on the eggs but at ten
20 parts per million an effect was noticed.

21 And of course, at a hundred parts per million it was
22 noticed.

23 Q And anything else concerning the IBT work up to that
24 point? We're still talking about North Carolina,
25 December, 1971.

- 1 A. The highlight of that meeting was really our lack of under-
2 standing, my lack of understanding, from what I per-
3 ceived at the meeting of what really happened in Japan.
4 It had been throughout the year a frustrating experience
5 for several reasons. One, is the language problem. We
6 just could not get enough information to make a proper
7 assessment.
- 8 Q Going back to the IBT studies, Mr. Papageorge, up to the
9 end of 1971, were there any effects on mutagenicity or
10 teratogenicity?
- 11 A No. Except -- no.
- 12 Q Were the IBT slides available to the people at this meet-
13 ing.
- 14 A Yes. There was a discussion that started informally be-
15 tween some investigators with the federal government and
16 the Industrial Biotech representatives regarding observa-
17 tions of specimens taken from some animals that were
18 sacrificed. So they could get some tissues from them and
19 the offer was made and fulfilled where we flew in from the
20 laboratory some slides of liver tissue and brought in a
21 microscope and they set it up in the room that I had and
22 these scientists took turns looking through the micro-
23 scope to determine what effect if any was observable in
24 these tissues.
- 25 Q Did you gain any impression from that whether or not there

1 were any effects visible?

2 A. The impression I had was all of the scientists involved
3 agreed that there was no evidence of cell damage in those
4 tissue samples.

5 Q Mr. Papageorge --

6 MR. WOODWORTH: I'll object to the hearsay
7 nature of that unless we have all of the scientists
8 identified, Your Honor. It's another one of these series
9 of questions that I have been objecting to.

10 THE COURT: I think that goes beyond the scope
11 of his impressions, Mr. Jungerheld. I'll sustain the
12 objection. Unless he can testify as to who each of these
13 people were that he developed his impression concerning
14 their impression of what they saw when they looked through
15 the microscope.

16 MR. JUNGERHELD: All right.

17 Q Who was it that looked through the microscope if you can
18 recall that, Mr. Papageorge?

19 A. I can recall some of them. There was Dr. Renada
20 Kimbrough from the -- I don't recall exactly, she was
21 either with the Food and Drug Administration in Atlanta,
22 or had transferred to the Center for Disease Control. She
23 changed positions at a point in time. I don't know just
24 when. She had been interested in rat studies with PCB's.

25 There was Dr. Keplinger who represented the Industrial

1 Biotest Laboratories.

2 And as I remember a Dr. Good from Industrial Biotest
3 Laboratories, and a Dr. David Rahl, who was a director of
4 the National Institute of -- National Center for Environ-
5 mental Sciences.

6 Q Was he the chairman of the conference, by the way?

7 A Yes, he was.

8 Q Mr. Papageorge, there's been testimony in this case that
9 much later Industrial Biotest ran into some trouble with
10 the law because of altering some results. And my question
11 to you is if you had any involvement in that situation?

12 A I had involvement, yes.

13 Q And did any of the questioned work of IBT deal with its
14 work for Monsanto concerning PCB's?

15 A No.

16 Q And were you involved with any of the chemicals that had
17 been tested or whatever by IBT and the results of which
18 were called into question?

19 A Yes.

20 Q What was done, then, with those chemicals that IBT had
21 worked on and the results of which were called into ques-
22 tion?

23 A Some of the studies were thoroughly studied and audited
24 and validated by an outside consultant, Booze, Allen &
25 Hamilton, and the results were verified as being neither

1 accurate or --

2 MR. WOODWORTH: Objection. Hearsay as to
3 -- unless they have that certification produced, Your
4 Honor.

5 MR. JUNGERHELD: Well, Your Honor, that is,
6 Mr. Papageorge was involved in taking steps regarding the
7 chemicals that were involved and what he had been asked
8 to testify to is as to what he did.

9 THE COURT: I'll allow it.

10 A. In addition to the tests that were validated as being
11 accurate and proper, those that didn't pass that criteria
12 were redone at different laboratories. The tests were
13 repeated.

14 Q And did any of them involve PCB?

15 A. No.

16 Q Still talking about 1971, did you have any other contacts
17 with anybody that may be working with cows and PCB?

18 A. During the year I -- I don't know exactly what month of
19 the year, but I had made contact, personal contact, with
20 Dr. Fries from the Department of Agriculture in Maryland,
21 a Dr. Willett in Ohio with the Ohio Agricultural Research
22 and Development Center, and a Dr. Cook with Michigan State
23 University in Lansing.

24 Q And what did you communicate to those individuals?

25 A. Well, the initial contact would again be one of providing

1 them with materials to use in their testing and sharing
2 with them the collection of articles that I had put
3 together, and dependent on the studies that they were
4 doing and the degree of activities they were involved
5 with. We had telephone conversations to the findings. And
6 I made it a point to visit, whenever I could, with them
7 personally to see what new was developing that they could
8 share with me.

9 Q And with reference to your contacts with these individuals
10 as it related to PCB in dairy animals, did you develop any
11 impressions from these contacts concerning this substance
12 in dairy animals as to any effects?

13 A No. No health effects.

14 Q Then, by the end of 1971 what was the status of PCB's as
15 as Monsanto was concerned?

16 A Well, as far as Monsanto was concerned by the end of '71 we
17 were selling only to the manufacturers of electrical
18 equipment. We had started a program for discontinuing the
19 sale to the heat transfer applications. We no longer
20 sold to the plasticizer, hydraulic fluid for carbonless
21 copy paper applications. We were not aware -- I was not
22 aware and understanding there was no health problem to any
23 creature, human or otherwise. There was a presence problem.
24 No question about that.

25 Regarding the milk situation the federal government was

1 active through the FDA in their market basket survey
2 trying to determine how much PCB was in the dairy foods
3 as well as cereals and vegetables and fruit and the like.

4 I was with the understanding, definite understanding,
5 there was no concern of a -- for health matters.

6 At the state level I was aware of three states involved
7 with PCB's in milk and silos and that was Ohio, Tennessee
8 and Georgia. We had visited -- I had visited personally
9 with two of them with individual responsibility for
10 monitoring the milk supply in their respective states.
11 This was Ohio and Georgia. I had another individual
12 do it for me in the State of Tennessee.

13 Only two silo companies were involved to my knowledge.
14 There was a Michigan Silo Company in Ohio and a Monteagle,
15 Tennessee Silo Company. That's all I recall about the end
16 of '71.

17 Q Now, did there come a time when you met with a Dr. Willett
18 of the OARDC?

19 A Yes.

20 Q You may have alluded to that.

21 And what was your purpose in meeting with him?

22 A Well, I have communicated with Dr. Willett by letter and
23 telephone in the latter part of 1971, and as is my practice
24 I like to meet individuals personally so I made it a point
25 to visit with him in his laboratory in Wooster, Ohio

1 sometime in early, 1972 to determine what he was studying,
2 what he was doing, what he was finding.

3 Q To your knowledge had Dr. Willett already been doing some
4 work concerning PCB in dairy cows by that time?

5 A Oh, yes. Yes.

6 Q Is that how you happened to learn of him?

7 A Right. Right.

8 Q And did you communicate any information to Dr. Willett?

9 A Well, I had mentioned earlier I had sent him a packet of
10 materials, analytical methodology, enough material to
11 conduct his tests. I don't remember anything else.

12 Q And did you do anything further concerning any work that
13 Dr. Willett may have had underway at that time?

14 A Yes. When I visited Dr. Willett I was under the vivid
15 impression there was a great concern about completing
16 the study that was underway and it was a study trying to
17 determine where do PCB's end up after a cow has ingested
18 feed with PCB's in it. He was particularly concerned that
19 he could no longer afford the hiring of an analytical
20 chemist to do his analytical work for him, and that kind of
21 disturbed me because the subject -- the research study
22 was almost completed. It needed that little bit extra to
23 finish it. He asked me if we could help him. I told him,
24 well, I -- right at that moment couldn't offer any sub-
25 stantial help but it's certainly worth considering and it

1 would help me understand where he's headed if he would
2 put his needs in writing, and he did that later, and I
3 was able, as I remember, several months later to pay him
4 another visit and presented him personally with a check
5 made out to the Center for \$5,000 to complete that ongoing
6 work.

7 Q You say made out to the Center?

8 A Yes.

9 Q The OARDC?

10 A OARDC, correct.

11 Q At the time you first met with Dr. Willett was his study
12 just beginning, or was it well along?

13 A When I first met him it was well along.

14 Q Did Monsanto at any time have any control over Dr.
15 Willett's study or the publications of it?

16 A No.

17 Q Mr. Papageorge, rather than contributing money to OARDC
18 for such a study to be conducted, why didn't Monsanto go out
19 and buy some dairy cows and run a study itself?

20 A Well, I suppose it could have been done, but in order to
21 do a proper study you have to have individuals with the
22 right expertise and Monsanto, even to this day, doesn't
23 have expertise in chemicals and -- of the PCB type and how
24 it might affect the cattle, milk production, breeding
25 problems, and the like. It's much better to go find some

1 expert who's very knowledgeable and have him conduct the
2 study for us.

3 Q To your knowledge, Mr. Papageorge, what is Monsanto's
4 practice regarding funding studies and what was it back
5 at that time?

6 A Well, we fund studies of all kinds. Some of them are
7 very specific to Monsanto and controlled by Monsanto in
8 terms of what material is to be tested and how it's to
9 be tested. That's one kind of study. And those are nor-
10 mally, though, placed with companies that are in the busi-
11 ness for conducting such studies.

12 There is other funding that's of a general nature where
13 funds are provided by Monsanto to universities with
14 no strings attached. The researchers spend that money as
15 they wish to conduct their studies as they see fit and
16 to report the results as they wish.

17 Q Were these studies back then limited to PCB in dairy
18 animals, or did it deal with broader areas than that?

19 A Oh, PCB's in dairy animals is only one part of the total.
20 A very small part, really. There are many, many studies
21 involved primarily in the human health arena.

22 Examples that come to mind are the contributions to
23 Harvard Medical School, and Washington University Medical
24 School These are the kinds of activities that Monsanto
25 primarily sponsors.

1 Q And is there any other areas in which Monsanto funds
2 funds research for this kind of thing?

3 A Well, they give funds to engineering schools for engineer-
4 ing studies. Again, some are very specific but the
5 majority if them are at the discretion of the professor in
6 charge of the program, how he wants to conduct the study,
7 how he will report it, and what publications are made.

8 Q Is this the practice that was followed before the PCB
9 dairy animal, in 1970?

10 A Yes. And it continues to this very day.

11 THE COURT: In light of the hour, Mr.
12 Jungerheld, we'll take our lunch recess.

13 Members of the Jury we'll call -- return to the Jury
14 Room so we can call for you promptly at 1:15. We'll re-
15 convene then. Until then we stand recessed.

16 (Whereupon at 12:00 o'clock noon, a recess
17 was taken until 1:15 o'clock P.M., of the same
18 day, Monday, May 21, 1984.)
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1 (Whereupon at 1:15 o'clock A.M., the Hearing
2 reconvened.)

3 THE COURT: Good afternoon, Ladies and Gentle-
4 men of the Jury.

5 THE JURY: Good afternoon.

6 THE COURT: Mr. Jungerheld?

7 MR. JUNGERHELD: Thank you, Your Honor.

8 Q (By Mr. Jungerheld, continuing:) Mr. Papageorge, still
9 talking about the year '72, did there come a time when you
10 made a presentation to the Federal Interagency Task Force
11 on PCB's?

12 A Yes.

13 Q Were any others involved besides yourself from Monsanto?

14 A Yes.

15 Q And in sort of a summary fashion, what was the presenta-
16 tion done that you made or was made by Monsanto to this
17 particular agency?

18 A The presentation was put together under my direction and
19 the intent was to share with the Interagency Task Force
20 on PCB's Monsanto's results of studies that had to do with
21 biodegradation in a simulated environmental situation.

22 Along with that, we took the opportunity of meeting
23 these people to describe with them the status of Monsanto's
24 PCB product withdrawal program.

25 Q And what was this biodegradation study that you mentioned?

1 A. This study takes sewage from a municipal treatment plant
2 into the laboratory, wherein glassware, we simulate what
3 happens in a municipal treatment plant, using this sewage,
4 sludge as the source of the bacteria.

5 It's introduced into the equipment, PCB's are added,
6 and air is bubbled through the sludge and water and the
7 PCB's are then analyzed with time.

8 And the intent here is to determine how many of the
9 PCB's disappear or how many survive after a period of
10 time.

11 Q. While I think of it, did Monsanto fund any such studies,
12 that is, relating to, for instance, bacterial degradation
13 on PCB's back in '71?

14 A. Yes. In addition to the work that was going on in
15 Monsanto's laboratory, we were aware of studies going on
16 in the University of Ghent in Wales, and we arranged to finance
17 that study to get another source of similar information
18 to see if our work was good work.

19 Q. Was the IBT, the IBT work that we've talked about earlier,
20 concluded in 1972?

21 A. Yes, the final reports were published in 1972.

22 Q. Was that information shared with anybody?

23 A. Oh, yes. The complete report was shared with the proper
24 professionals in the regulatory agencies. Some of the
25 summaries of the reports were shared with anyone who asked

1 for copies. So that those who were not toxicologists or
2 medical doctors or pharmacologists would get the summary
3 instead of the full report.

4 Q Did you meet again with Dr. Willett in 1972?

5 A Well, the second visit in '72 was a visit I described
6 earlier in which I was able to present his research center
7 with a small amount of money to help him complete his on-
8 going study.

9 Q And was there any other reason you wanted to meet with
10 him at that time?

11 A Well, again, it's my continuing effort to try to keep up-
12 to-date on what is going on and, of course, at that time,
13 which I think was, as best I can remember, about July or
14 so of 1972, I had copies of the Task Force report that
15 was issued the previous May. I brought along a copy with
16 me and left it with Dr. Willett in the event he hadn't a
17 copy yet.

18 Q Was that the Task Force to which you had made a -- you and
19 some others with Monsanto made the presentation we talked
20 about just a moment ago?

21 A Yes.

22 Q Did you have impressions from Dr. Willett as to whether
23 there had been any new development in the dairy-farm-silo-
24 PCB situation?

25 A No new developments in a dramatic kind of way. My real

1 concern was any health effects or any effects on the
2 animals. I understood that none were observed.

3 Q During this year did your duties continue to have anything
4 to do with the dispersal of information concerning PCB's?

5 A That was one of my principal duties, yes; freely disperse
6 any and all information we had.

7 Q And without going through inquiry by inquiry or meeting by
8 meeting, would this be sort of a general duty that you had
9 during this period of time?

10 A Yes.

11 Q And in this year, and we're kind of maybe in a way sum-
12 marizing 1972, what was the status of PCB sales?

13 A PCB sales by the end of '72 were limited only to electri-
14 cal equipment. All other uses were discontinued.

15 Q Let's talk briefly about the year of '73. What did you
16 do that year as it related to PCB in the environment?

17 A Of course, we continued our information sharing program.
18 That was always ongoing, day in, day out.

19 Q Did you have occasion to go to Europe that year?

20 A Yes, that year I did go back to Europe.

21 Q What was the purpose for that visit on this occasion then?

22 A It was two-fold. One is to communicate again with the
23 producers of PCB's in Europe regarding their current
24 understanding and actions regarding PCB; and the second
25 purpose, I was aware of a disposal facility in the United

1 Kingdom which was really a -- what I thought was to be a
2 more modern incinerator; that I was very interested in
3 seeing how it operated, whether it might be helpful to
4 the United States situation.

5 Q By that time had the plant that Monsanto had in Britain
6 that had manufactured PCB's, had it stopped sales for non-
7 electrical uses?

8 A Yes. The program for Monsanto PCB's was world wide.

9 Q Did the British plant then stop when the American plants
10 did?

11 A Yes.

12 Q How about your competitors in Europe? Did they stop manu-
13 facturing in '73?

14 A No. The competitors were -- did not agree with Monsanto's
15 approach. In fact, they were disturbed that what we were
16 doing might impact on their business. They were, in fact,
17 very indignant.

18 Q Mr. Papageorge, did you have a meeting with Mr. Willett or
19 Dr. Willett and Mr. Boswell that year?

20 A In 1973, yes.

21 Q And what was the subject of that meeting?

22 A Mr. Boswell was involved in a very active program with
23 his customers in sandblasting and replastering silos that
24 he had constructed in Tennessee and Georgia. The approach
25 he was using was expensive. It was perceived as being

1 expensive.

2 He was very interested in learning from us are there
3 better ways to do it not only economically but faster,
4 because the time he had to work was limited to a few months
5 in the summer and he just could not take care of all the
6 silos quickly enough.

7 Q Is this the same Mr. Boswell of the Monteagle Silo Company
8 that you had met with earlier?

9 A Yes.

10 Q In the year of 1973, then, perhaps if to summarize in a
11 few words, did you learn anything new regarding the pre-
12 sence or effects of PCB in the environment?

13 A In 1973 nothing new, no.

14 Q Did your job title and responsibilities then change at
15 this point?

16 A Sometime in 1973 I was retitled, yes.

17 Q And what was your new title?

18 A The title was manager of products acceptability.

19 Q And did your duties change or the burden of your duties
20 change, shall we say, as far as that amount of it that
21 related to PCB?

22 A The PCB duties remained essentially the same.

23 Q Did you have additional duties?

24 A I was given duties involving another list of products.

25 Q What kind of duties did you have regarding these other

1 products?

2 A. Oh, more or less routine duties regarding to product in-
3 formation, labeling, customer communication as appropriate.

4 Q So PCB's then by this time had become to be just a part
5 of your duties whereas previously they had been pretty
6 much full-time, is that correct?

7 A. That is correct.

8 Q And in 1974 did anything of significance occur involving
9 you in 1974 as it related to PCB?

10 A. I don't recall anything other than the routine occurring
11 during 1974. Things had become more or less stabilized.
12 I don't recall anything outstanding.

13 Q Did your function in terms of communicating information
14 continue?

15 A. Yes, that was always there.

16 Q Did you continue to be in contact with governmental
17 agencies as the need or interest arose?

18 A. Yes, I was still attending group sessions. I was meeting
19 individuals on a one-on-one basis.

20 Q Was any consideration given then sometime that year to
21 ceasing production even for the electrical industry?

22 A. Well, that thought always was with us, but, yes, in
23 1974 it became a little more crystal clear that perhaps
24 there, too, if the electrical industry could find a sub-
25 stitute, we would be very willing to terminate all PCB

1 sales, yes.

2 Q Mr. Papageorge, going on now to 1975. Did you have occa-
3 sion to meet with any government officials in Michigan
4 in '75 relating to PCB?

5 A Yes, I did.

6 Q And who was it and how did it come about?

7 A I met with a Mr. Van Patten, I think it's a Kenneth
8 Van Patten, who was in the Department of Agriculture, as
9 I remember, having to do with dairy matters.

10 Q Had you earlier heard of any PCB dairy situation in
11 Michigan?

12 A No, that was my first awareness of PCB's in milk in
13 Michigan.

14 Q You have testified earlier to contact with Dr. Hill of
15 Ohio and Mr. Egan of the Michigan Silo Company. Were you
16 advised in any of those contacts with any silo situation
17 in Michigan, silo PCB situation in Michigan?

18 A Did I advise them or --

19 Q Did they advise you?

20 A No, no one. They or anyone else.

21 Q And over the years before '75, had you had occasion to
22 be in contact with Michigan government officials at some
23 of those conferences that you talked about?

24 A Yes, I did. I meet many representatives of the State of
25 Michigan, but these were with respect to the Great Lakes and

1 fish and PCB's. At no time was milk -- PCB in the milk
2 supply mentioned, although Dr. Cook at Michigan State was
3 studying PCB's in milk. I was aware of his work.

4 But I met a Dr. -- I believe his name was Humphreys
5 from the Michigan Department of Public Health on many
6 occasions; PCB seminars and the like.

7 Q Now, in '75, then, when you learned of the Michigan
8 situation, what did you do?

9 A Well, I repeated what I had done for the other states
10 in each case when we heard of PCB in milk. My first step
11 was to discuss with the authorities in the state who had
12 responsibilities for monitoring milk to find out the ex-
13 tent of the problem, the levels found, any health effects
14 noted or known.

15 So I did exactly in Michigan what I had done previously
16 in Ohio and in Georgia and that I had done for me in
17 Tennessee, talked with the individuals responsible for
18 milk monitoring.

19 Q Did you come to Michigan in connection with that?

20 A Yes.

21 Q And then did you meet with Mr. Van Patten in person?

22 A Yes.

23 Q Did you provide information to Mr. Van Patten?

24 A There, again, yes, I talked with him about the program that
25 was being done in Tennessee and Georgia in terms of

1 cleaning up silos, placing them back in service.

2 I mentioned the Ohio situation. I was under the
3 impression that this was not news to him. He was well
4 aware of it.

5 I was also left with the impression that Mr. Van Patten
6 did not see any need to act precipitously. He was well
7 aware of the need to protect the milk supply in Michigan,
8 but he was not in -- by any means in a position to state
9 he was going to stop any milk from reaching the market-
10 place, because he did not perceive it to be a serious
11 problem.

12 Q So you both gave information to Mr. Van Patten, received
13 information from him, is that correct?

14 A That is correct.

15 MR. WOODWORTH: Object as to this being in-
16 formation that he received from Mr. Van Patten. I thought
17 that this is coming in, again, as the other testimony,
18 as his impressions, therefore being an exception to the
19 Hearsay Rule. But if they want to put it in as informa-
20 tion from Mr. Van Patten, it's hearsay.

21 THE COURT: I will sustain the objection.

22 MR. JUNGERHELD: All right. In my defense,
23 Your Honor, I would offer that I did not ask him what the
24 information was, merely that he communicated information
25 to Van Patten and received it from him.

1 THE COURT: Well, from the information that
2 he received, he formed certain impressions.

3 MR. JUNGERHELD: Yes.

4 THE COURT: Which somebody else might have
5 formed a different -- so I'll sustain the objection.
6 It's merely his impression of what Mr. Van Patten's
7 situation was.

8 Q Did you have occasion in this trip to Michigan to find out
9 about any silo companies?

10 A Yes.

11 Q And from whom did you find out about the silo companies?

12 A I don't recall specifically. It could have been Mr.
13 Van Patten and it also could have come from our Law
14 Department. One of the two. I don't remember just which.

15 Q And what did you do in connection with any silo companies
16 in Michigan?

17 A We arranged to meet with representatives of the C & B Silo
18 Company.

19 Q Do you remember where that took place?

20 A In Charlotte, Michigan.

21 Q And on who's facilities?

22 A At the office site of the company.

23 Q Why did you meet with the people from the C & B Silo
24 Company?

25 A I had the understanding from -- the C & B Silo Company

1 had been involved in constructing some silos that had
2 been constructed using Michigan Silo supplies and under
3 Michigan Silo contracts that had been purchased by the
4 C & B Silo Company.

5 Q Did you have any other understanding as to whether or not
6 the facilities on which you were standing at that time
7 had ever belonged to Michigan Silo?

8 A I was not aware of that.

9 Q And did you on this occasion gain any understanding as to
10 whether or not C & B used the silo coating that we heard
11 in this case, called Cumar?

12 A Yes.

13 Q And what was your understanding in that regard?

14 A My understanding was that upon purchase of the contracts,
15 the coating was made available as part of the materials
16 that were involved in constructing or modifying silos
17 and that is coating was applied to the silos and consumed;
18 and the site no longer had any supply of Cumar on hand
19 when we visited, when I visited.

20 Q Mr. Papageorge, speaking still of '75, did you have any
21 occasion to address or attend an EPA seminar, PCB seminar
22 in Chicago?

23 A Yes, I did.

24 Q What was your function on that occasion?

25 A I was asked to serve on a panel with other individuals to

1 answer questions from the floor at the end of the session.

2 Q And do you remember what information you or anybody else
3 from Monsanto, if you were present when this occurred,
4 communicated to this panel? What were the areas covered,
5 if you can characterize it that way, and perhaps summarize
6 it that way.

7 A The Monsanto contribution was the summarizing of the
8 animal toxicity studies and this was presented in
9 Monsanto's behalf by Dr. Calandra, the president of the
10 Industrial Biotech Laboratories.

11 Q Speaking now through the end of 1975, Mr. Papageorge,
12 you have spent some time here over the last day and part
13 of the end of the prior day's testimony, outlining what
14 was done by Monsanto as we have discussed.

15 In '75 -- by the end of '75 were there any government
16 regulations that have required any of this activity to be
17 done?

18 A No, no. All of this that Monsanto did to control the amount
19 of PCB's in commerce was at Monsanto's own initiative.
20 There was no legal requirement to do anything regarding
21 PCB's.

22 Q Now, speaking of 1976, did you have any significant in-
23 volvement at all that year as it related to your duties,
24 as you talked about, concerning PCB?

25 A My association with PCB's directly, my direct association

1 terminated the 1st of March, '76, but I was asked to serve
2 on a panel formed by the National Institute of Occupa-
3 tional Safety and Health, that is NIOSH, in reviewing a
4 document they call the PCB criteria document. And this
5 review panel met in Cincinnati in the latter part of
6 1976 and I was there.

7 Q Mr. Papageorge, there has been some testimony in this
8 case about some legislation called -- that's been
9 referred to as FIFRA, F-I-F-R-A, I believe.

10 Are you familiar with that at all?

11 A Yes.

12 Q And did that deal with PCB in any way?

13 A No.

14 Q We also talked in this case about NEPA. Are you familiar
15 with that act?

16 A Yes.

17 Q And when, by the way, was that passed, if you know?

18 A It was passed in 1969.

19 Q What did that deal with?

20 A That was the enabling legislation that allowed for the
21 formation of the Environmental Protection Agency, their
22 administration.

23 Q When did that agency actually begin functioning -- in
24 place and functioning?

25 A It was evolving during 1970. The principal individuals

1 were in place early in the year, but those that would
2 do the actual work were not available until the latter
3 part of the year. It was not -- there was not too much
4 activity in 1970.

5 Q And what did that -- what did that deal with, the MEPA or
6 the EPA then?

7 A That dealt with water pollution, air emissions, primarily,
8 at that point in time.

9 Q Mr. Papageorge, earlier there's been an exhibit intro-
10 duced which purported to be the recipe or, I guess, to be
11 technical, the formula of the Cumar silo coating. And
12 with reference to the ingredients, peridene was listed
13 as one of them.

14 Was that a Monsanto product?

15 A No.

16 Q And there was listed on the ingredients a nevil resin.
17 Was the nevil resin a Monsanto product?

18 A No.

19 Q How about clay?

20 A No.

21 Q How about Parlon?

22 A No.

23 Q How about -- of course, the Aroclor was, correct?

24 A Yes.

25 Q And xylol.

1 A. No.

2 Q. And SC solvents?

3 A. No.

4 Q. Did Monsanto sell any of those products, let alone manu-
5 facture them, other than Aroclor, of course?

6 A. No.

7 Q. Mr. Papageorge, did Monsanto ever have a facility in
8 Martinsville, Illinois, for manufacture or sale?

9 A. Not to my knowledge.

10 Q. Did Monsanto, to your knowledge, ever manufacture a silo
11 coating per se?

12 A. No.

13 Q. Have you ever heard of any other situations where PCB's
14 reached out of a coating into the food or feed chain?

15 A. No.

16 MR. JUNGERHELD: Your Honor, I believe that's
17 all at this time of this witness.

18 THE COURT: Mr. Davidson?

19 MR. DAVIDSON: No questions, Your Honor.

20 THE COURT: Mr. Woodworth?

21 MR. WOODWORTH: Thank you, Your Honor.

22 Your Honor, one matter if we could approach the bench.

23 THE COURT: You may.

24 (Whereupon a discussion was held out of the
25 hearing of the Jury.)

1 THE COURT: Members of the Jury, I have a
2 legal matter to dispose of. If you would retire to the
3 Jury Room.

4 (Whereupon a legal matter ensued in the ab-
5 sence of the Jury.)

6 THE COURT: Go ahead, Mr. Woodworth.

7 MR. WOODWORTH: Thank you, Your Honor.

8 CROSS-EXAMINATION

9 BY MR. WOODWORTH:

10 Q Hello, Mr. Papageorge. Mr. Papageorge, you are a chemical
11 engineer, is that correct?

12 A That is correct.

13 Q And as such you would be a subscriber or periodically re-
14 view the Chemical and Engineering News?

15 A Yes.

16 Q And, as a matter of fact, Monsanto advertised in that maga-
17 zine over a number of years?

18 A Yes.

19 Q And during the 1960's Monsanto advertised its Aroclor
20 products in Chemical and Engineering News, did they not?

21 A I don't remember specifically but it's highly likely that
22 they did, yes.

23 Q And within your business, do you consider that a reputable
24 publication?

25 A Yes.

1 Q You testified, Mr. Papageorge, upon direct examination
2 that you belonged to or you shared your information in
3 1970 and subsequent to that with a number of governmental
4 organizations, science organizations, and so on, about
5 PCB's, is that correct?

6 A That is correct.

7 Q And that you also participated with an intra-governmental
8 task force, is that correct?

9 A That is correct.

10 Q In 1970 after the concern came about, about PCB's, did the
11 government request of Monsanto the sales figures of PCB
12 for over the years?

13 A Requests were made by representatives of the government,
14 but they were never official requests. Individual re-
15 quests.

16 Q And, in fact, those requests were not honored by Monsanto
17 for quite some time, were they?

18 A That is correct.

19 Q And in that sense you did not willingly provide the in-
20 formation to the governmental agencies seeking the informa-
21 tion, is that correct?

22 A That is right.

23 Q And are you aware of whether or not there was any type of
24 attempted legislation in late 1971 by the federal govern-
25 ment to compel chemistry industries to divulge such

1 information?

2 A I'm not aware of that.

3 Q When ultimately did Monsanto release its sale production
4 figures of PCB's to the government and to the scientific
5 community?

6 A As I remember, that was late 1971. Monsanto sent the in-
7 formation by mail, registered mail, return receipt re-
8 quested, and it was not accepted and the government --
9 the mail came back undelivered.

10 Q Mr. Papageorge, I'm just going to show you -- it's not a
11 very good one, but it's a copy of a page out of Chemical
12 and Engineering News regarding that article there.

13 Have you ever seen that before?

14 A I remember this, yes.

15 Q Now, was there not a lot of governmental pressure on
16 Monsanto in 1971 to release its sales figures?

17 A I did not perceive it as governmental pressure. I per-
18 ceived it as the desire on some of the members in the
19 government to see these numbers and they tried on several
20 occasions to get them from Monsanto.

21 Q And, in fact, until that time when it was divulged, do
22 you know when it was? Does this help your recollection,
23 this article, as to when that material was ultimately
24 turned over?

25 A We finally sent it to the Department of Commerce in

1 November of 1971.

2 Q Okay. So in that sense, if we might correctly characterize
3 your testimony, during the years of 1970 and on up to
4 December, 1971, when I had understood your testimony to
5 say that Monsanto was cooperating with the government and
6 cooperating with the scientific community, at least we're
7 to the point Monsanto did not cooperate to the extent of
8 supplying how much they had made of this PCB over a number
9 of years, is that correct?"

10 A That is correct.

11 Q And am I correct to characterize the reason that informa-
12 tion was kept secret was because Monsanto Corporation had
13 considered the information, what would be called a trade
14 secret, is that right?

15 A I don't know what you mean by the expression, "trade
16 secret."

17 Q I picked that up someplace in the literature and that is
18 why I'm asking you.

19 A Well, the reason it was not shared is many-fold. One of
20 them is that our -- my distinct understanding and impres-
21 sion that divulging these numbers would contribute nothing,
22 really, to understanding why PCB's end up in the North
23 Sea or in the swamps of Louisiana and the like. We did
24 not see it as being a productive piece of information.

25 Secondly, we have an obligation to our customers and

1 to our shareholders and our employees that when we
2 voluntarily phase out of a business, that we not allow
3 the competitors an advantage by sharing with them numbers
4 that would give them an idea of the marketplace. We
5 thought we could -- and still do, we could responsibly
6 remove the product from the marketplace and still try to
7 retain some of the business with substitute materials.

8 Q Okay. Mr. Papageorge, are you familiar with the publi-
9 cation entitled Science?

10 A Yes.

11 Q And is that considered a fairly reputable publication?

12 A Yes.

13 Q I'm going to show you another clipping that I have here
14 and I bracketed just one paragraph there. I'd ask you
15 to read that, please.

16 THE COURT: To himself I --

17 MR. WOODWORTH: Yes, I'm sorry.

18 MR. JUNGERHELD: Your Honor, I wonder if we
19 might have a date or title or something from this.

20 MR. WOODWORTH: I'd just like him to refresh
21 his recollection.

22 THE COURT: Let him look at that. Maybe he
23 will be able to supply that to Mr. Jungerheld.

24 A I don't specifically recall this document but it appears
25 to be an article out of Science, dated September, 1971.

1 Q This is probably where I got the information or I got
2 the term, "trade secret."

3 MR. JUNGERHELD: Is Counsel testifying now,
4 Your Honor.

5 MR. WOODWORTH: I'm explaining to him as to
6 what the words trade secret is.

7 THE COURT: Go ahead.

8 Q Was there not a law in effect at that particular time that
9 permitted a company in certain situations to withhold in-
10 formation which it might consider to jeopardize its com-
11 petitive advantages?

12 A I'm not familiar with such a law.

13 Q Did the National Academy of Sciences in 1971 disagree with
14 Monsanto's policy of withholding the information?

15 A That is what the article says.

16 Q Do you have any recollection of that yourself?

17 A No, I don't.

18 Q What is the National Academy of Sciences?

19 A It is a group or an association of reputable sciences
20 that, to my understanding, is funded by congressional
21 funds. It is not, in my understanding, a regulatory
22 agency of the government.

23 Q In reading this, does it refresh your recollection at all
24 as to whether there was any type of bill being processed?

25 A There is a sentence that refers to that here.

1 Q Do you recall that yourself, now, independently?

2 A No, I don't. I never had that impression.

3 Q There was a position taken -- do you recall whether or not
4 the National Academy of Sciences undertook a position
5 stating that this information was important?

6 MR. JUNGERHELD: Your Honor, now he is being
7 asked -- he is testifying he does not have recollection of
8 this document or this article. He is now being asked,
9 in essence, apparently, to read from it or select portions
10 from it. If that is going to be the case, I think we're
11 entitled at least to take a look at it.

12 MR. WOODWORTH: I'm not asking him to read
13 from it at all. He can put the document aside. I will
14 take it back, even.

15 THE COURT: Why don't you do that. Make it
16 clear to him when you are asking him these questions, you
17 are asking of his memory refreshed.

18 Q In 1971 do you recall the position of the National Academy
19 of Sciences insofar as it related to Monsanto's position
20 of not releasing the production figures of Aroclors and
21 PCB's?

22 A No.

23 Q Do you know whether they had one or not, of your own in-
24 dependent recollection?

25 A I never heard from them, no.

1 Q The production figures were finally released to the
2 government in late November, did you say?

3 A Yes.

4 Q Late November of 1971. Was it in fact more than a year
5 after Monsanto decided to terminate its use in open-ended
6 systems, is that correct?

7 A Yes.

8 Q The production figures that were released to the govern-
9 ment, can you tell us what they added up to be? How
10 much polychlorinated biphenyls was produced by Monsanto
11 over the years?

12 A I never added up the total, no, because there are many
13 years that are missing prior to the beginning of that re-
14 port. I have forgotten the exact dates.

15 Q Although you haven't added up the figures, these years
16 that you have spent being Monsanto's manager or director
17 of its PCB's, have you not seen in the literature a number
18 as to how much PCB Monsanto has produced over the years?

19 A I've seen it but I don't remember it.

20 Q You don't have any recollection whatsoever?

21 A I honestly don't. All I remember is that we reached a
22 maximum of eighty million pounds a year and it goes back
23 to 1929 at zero. So I guess one could estimate.

24 Q Do you remember what your production was in 1970 com-
25 pared to the production in 1969?

1 A No, I don't.

2 Q Of polychlorinated biphenyls?

3 A No.

4 Q Do you remember whether or not the production in 1970,
5 the year that you began to withdraw this from open-ended
6 use, was higher or lower than your production or manu-
7 facture of PCB's in 1969?

8 A 1970 was higher than '69 because of economic conditions.
9 It was a good year. Had nothing to do with withdrawal.

10 Q I didn't mean to imply that. I'd just like to know whether
11 it's higher or lower.

12 And, Mr. Papageorge, 1971, was that higher or lower
13 than 1970?

14 A I don't remember.

15 Q Let's move over to these letters. You have read a number
16 of these letters that were sent out. For example,
17 Defendant's Exhibit 419, which we also admitted in our
18 case as a Plaintiffs' exhibit.

19 Mr. Papageorge, you said that was sent out -- and I
20 think that is -- yes, that was sent out to customers?

21 A That we're looking at now is it a copy of what was sent
22 to customers? Yes.

23 Q Wasn't that sent only to present customers, customers who
24 might have been purchasing in 1970 or those carried over
25 from 1969?

1 A. Yes.

2 Q That was not sent to old customers, only those who might
3 have carried over from the 1969 customer list?

4 A. These are the active customers as of 1970, yes.

5 Q By the way, Mr. Papageorge, prior to testifying did you
6 have an opportunity to review any of the depositions or
7 daily transcripts in this case?

8 A. Yes.

9 Q Did you review Mr. O'Connors?

10 A. Only a summary, not the full transcript.

11 Q And who compiled the summary?

12 A. The attorneys did.

13 Q And Mr. O'Connor testified as to these letters and the
14 labels and another set of documents, the news releases,
15 did he not?

16 A. Yes.

17 Q And did you read a summary of that testimony?

18 A. Yes.

19 Q Mr. Papageorge, I'm going to show you what's been marked
20 and admitted as Plaintiff's Exhibit No. 349, and this has
21 been compiled as a -- what it states to be, a sales
22 summary.

23 Now, it contains on there sales to silo companies,
24 does it not?

25 A. Yes.

1 Q Do you know whether or not those were direct sales by
2 Monsanto to the silo companies of Aroclors, Aroclor
3 1254?

4 A I can from the dates speculate what they were.

5 Q Direct sales. Okay. And why would you -- why would the
6 dates be significant?

7 A Because in the late '60's Monsanto arranged with dis-
8 tributors to sell the PCB's to those customers that received or
9 ordered material in less than truckload quantities.

10 Q Ohio Solvents, Hoosier Solvents, that kind of companies,
11 for example?

12 A Those are examples, yes.

13 Q So when these warning letters or these notifications came
14 out over a period of time, none of those went to these
15 companies, did they?

16 A That is correct.

17 Q These letters that came out, Mr. Papageorge, I have a ques-
18 tion on one -- a question on two of them.

19 Here you refer this August 14th letter to your letter
20 of February 27, 1970, right, and June 1, 1970, as to
21 prior letters, correct?

22 A Yes.

23 Q Regarding withdrawal. We even go back to May of 1970
24 saying that they're going to withdraw this from sale
25 effective August 30, 1970, as a plasticizer?

1 A. Yes.

2 Q. Why didn't you just stop selling it for plasticizer rather
3 than going and writing everybody and saying we're going
4 to be stopping it?

5 A. I don't understand the question.

6 Q. In May of 1970 rather than sending a letter out and saying
7 in August -- at the end of August or September 1st we're
8 going to stop selling it as a plasticizer, why didn't you
9 just right out and say we are not selling this as a
10 plasticizer anymore for use in plasticizers?

11 A. Precipitous action like that is irresponsible. It leaves
12 the customer without any opportunity to develop a new
13 product.

14 Q. And, in fact, what this does, though, it lets customers
15 know that you are going out of business and let them load
16 up on it, though, too, isn't it?

17 A. That is speculation on your part. I don't know.

18 Q. That opportunity is there, is it not?

19 A. Anybody can guess that.

20 Q. Have you ever looked over your sales figures from February
21 to September 1st for Aroclor 1254 or any of these Aroclors
22 and see if it was increased or decreased?

23 A. I looked them over. I don't recall.

24 Q. Have you encountered that same question in any other matter?

25 A. No.

1 Q Mr. Papageorge, as you are well aware, this case in-
2 volves a claim for PCB's being situated within silos.
3 Your deposition was taken in this case, is that right?
4 A Yes.
5 Q Just for the advantage of the Jury, I'm sure we are
6 familiar with it, do you recall the day it was taken?
7 A I believe it was January, 1983. I believe that's it.
8 Q And, in fact, it was a rather long deposition, wasn't it?
9 A Yes.
10 Q Besides reviewing a summary of Mr. O'Connor's testimony
11 prior to trial, what else have you reviewed?
12 A I reviewed documents that I was told had been submitted
13 as exhibits in this matter.
14 Q And for example?
15 A Oh, all these letters that we talked about earlier. I
16 draw a blank at the moment. There were several. I don't
17 remember them all.
18 Q Did you review any other testimony or summaries of testi-
19 mony?
20 A Yes.
21 Q And who else's?
22 A Just about everybody that appeared before this Court
23 through May the 9th.
24 Q So you are well aware of what has transpired up to this
25 date in a certain sense for as much as you could --

1 A In summary form, yes.

2 Q And you have been present here in Court on and off for
3 the last couple weeks?

4 A Yes.

5 Q Do you personally on on behalf of Monsanto have any idea
6 on how the PCB's got in the Gemmell or the Haley silos?

7 A Only what I have been told.

8 Q Okay. But as a result of your opinion -- or what you
9 have been told, do you have an opinion on how they got
10 into the silos?

11 A Yes.

12 Q Okay. And what is that? What is your opinion?

13 A My opinion is that an individual who was in the silo con-
14 struction business through some advice from a university
15 professor came up with a coating recipe that he would
16 mix on his own, using supplies that he would purchase at
17 some distributor's. That's my understanding.

18 This coating was not only used by his company but
19 other silo companies. And as a result we had PCB's in
20 silos and milk.

21 Q Do you recall being asked that very same question, though,
22 in your deposition in January as to whether you had any
23 idea as to how the PCB's got into the Haley or Gemmell
24 silos?

25 A I don't recall it specifically.

1 Q Mr. Papageorge, if I can read you a question and answer
2 on Page 275 of your deposition, commencing at Line 15,
3 and this is by Mr. John McGraw asking you the questions.

4 "All right. Does Monsanto or do you have any knowledge
5 or idea how PCB's got into the Gemmell or Haley silos?
6 Answer: No."

7 Mr. Papageorge, when did you become aware of the
8 sealant or coating for silos that is called Cumar, not the
9 trademark name of Allied Chemical, but the Cumar that
10 we're taking about in this case?

11 A I became aware of that during my conversations with Dr.
12 Hill starting in March, 1970, and for several weeks follow-
13 ing that.

14 Q And I imagine at that particular time if I may surmise,
15 that your identification or your knowledge of that was it
16 was used inside of silos as a sealant, is that correct?

17 A That is what I was told, again.

18 Q To your knowledge was Aroclor 1254 recommended by Monsanto
19 as an ingredient in sealants for concrete?

20 A Yes.

21 Q And were those sealants which Monsanto recommended the use
22 of Aroclor 1254 within, were those represented to be able
23 to resist acid alkalines, chemicals and molds?

24 A Yes.

25 Q Would you agree, Mr. Papageorge, that in this case, in

1 fact, Aroclor 1254, Monsanto's trademark product, was
2 used in the Cumar to be coated inside the Haley silos?

3 A. I can't be totally positive, but the information would
4 indicate so, yes.

5 Q. Have you had an opportunity to read the pleadings in this
6 case, the complaint that was filed against Monsanto and
7 the answers?

8 A. I don't recall seeing that, no.

9 Q. You have answered some interrogatories yourself in this
10 case, haven't you?

11 A. I've been involved, yes.

12 Q. Can you characterize of a general nature, without going
13 through each and every interrogatory at this particular
14 time, the general nature as to whether or not during the
15 process of discovery, whether or not Monsanto admitted
16 any knowledge of Aroclor 1254 being in the Cumar?

17 A. I don't remember.

18 Q. How about whether or not Monsanto admitted any knowledge
19 of Aroclor 1254 being in the Haley silos?

20 A. I don't remember that at all.

21 Q. When you came to Michigan in 1975, you visited Mr. Van
22 Patten at the Michigan Department of Agriculture and then
23 you also visited -- did you say what the person's name
24 was at C & B?

25 A. No, I didn't say. I don't recall it at the moment. There

1 were two individuals.

2 Q If I might try to assist you. Would it have been Ralph

3 Baird?

4 A That is it.

5 Q Did you have an opportunity prior to your testimony to

6 review either a summary of Mr. Baird's deposition in

7 this case or the deposition itself that he had given

8 some time ago that we read in this case or during the

9 trial? -

10 A I believe I did read it, but it was some time ago.

11 Q Mr. Papageorge, in one of your letters you -- one of these

12 letters that were introduced as an exhibit, but it made

13 reference to some regional sales offices.

14 A Yes.

15 Q And in 1970 can you tell us where the regional sales

16 offices were located?

17 A I'd have to look at the list myself. I don't remember.

18 Q Was there one in Des Plaines, Illinois?

19 A Very likely, yes.

20 Q Boston, Massachusetts?

21 A Very likely, yes.

22 Q And New York?

23 A New York.

24 Q St. Louis?

25 A St. Louis.

1 Q Wilmington, Delaware?

2 A Yes.

3 Q And there was also a -- I don't know what you would call
4 it, something in Akron, Ohio. What was that?

5 A Well, I'm aware of the presence of Monsanto in the Akron
6 area, but I don't know -- I think it's a laboratory, but
7 I'm not certain.

8 Q And that was there in 1970, wasn't it?

9 A Yes.

10 Q Perhaps for lack of a better term, could it be called a
11 research center?

12 A Yes.

13 Q And Akron is pretty close to Canton, Ohio, is it not?
14 Twenty miles or so?

15 A Yes.

16 Q Twenty-five miles from Massillon, Ohio?

17 A I don't know the exact mileage, but it's fairly close.

18 Q In 1971 to -- you met with Dr. Hill, you said, in Ohio?

19 A Yes.

20 Q And visited two farms?

21 A Yes.

22 Q And one of the farms you mentioned, I believe you said
23 Humphreys.

24 A Yes.

25 Q And what was the other one?

1 A. Schwarzwaldar.

2 Q Do you remember which one you went to first?

3 A. I believe I went to the Schwarzwaldar farm first.

4 Q Were you alone when you went to the Schwarzwaldar farm?

5 A. Yes.

6 Q And when you went to Humphreys' farm, were you alone?

7 A. I was alone.

8 Q And when you met with the Humphreys, besides Humphreys'

9 attorney being present, was anyone else present?

10 A. There was an individual present who I understand repre-

11 sented some dairy farmers group or cooperative or some

12 sort of association of that type.

13 Q You had been in your new position for Monsanto for about

14 11 months?

15 A. Yes.

16 Q At your meeting that day, did you meet both Mr. and Mrs.

17 Humphreys?

18 A. Yes.

19 Q And do you recall Mrs. Humphreys?

20 A. Yes.

21 Q Did you tell her anything that PCB's caused human health

22 effects?

23 A. No, I couldn't, that'd be a lie.

24 Q So what you're saying is you didn't tell Mrs. Humphreys

25 that PCB's would cause any human health effects, is that

1 correct?

2 A. That is correct.

3 Q Did you tell Mrs. Humphreys whether PCB's caused any
4 animal health effects?

5 A. I couldn't. I had no information to say that at the
6 levels that we were talking about.

7 Q When you met with Mrs. Humphreys and discussed this matter,
8 did you consider her basically a -- what was your impres-
9 sion of Mrs. Humphreys?

10 A. Well, she -- I was of the impression that she appeared
11 to be a good manager. She had college courses in chemistry
12 and understood analytical techniques. And she understood
13 more than the average person of what was meant by analysis
14 of milk and finding material in those.

15 Q So she knew about PCB's and methods of analysis, is that
16 correct, in a certain sense?

17 A. She knew better than the average person but not as much
18 as the expert.

19 Q Did you and she discuss any effects or chemical effects
20 of PCB's that day while sitting in her living room at her
21 house?

22 A. The subject of health never came up in our discussions
23 with the Humphreys.

24 Q So it was not mentioned either, you know, whether or not
25 it was discussed, was it mentioned gratuitously by either

1 of you?

2 A. No.

3 Q And, Mr. Papageorge, when you visited Michigan in 1975
4 to talk with Mr. Baird or at C & B Silo and Mr. Van Patten
5 at C & B Silo, did you meet with anyone else during that
6 trip?

7 A. Yes, but Mr. Van Patten was not with C & B Silo.

8 Q I know. He was with the Michigan Department of Agriculture.

9 A. Yes, we did meet with others.

10 Q And did you meet with a farmer who had a claim or complaint
11 about a PCB silo?

12 A. He had a -- I guess I would call it a problem. The state
13 had warned him that his milk contained PCB's and that he
14 should take whatever steps were appropriate to keep his
15 milk from containing PCB's.

16 Q Did he make the complaint or claim to you, to you as a
17 representative of Monsanto, that he was suffering or had
18 suffered some economic loss or damage?

19 A. Yes, the loss or damage at the time was due to the fact
20 that he couldn't use his silos and was forced to construct
21 a different structure to contain feed for his cattle.

22 Q Did he mention anything about possible or probable milk
23 production loss?

24 A. He mentioned that state authorities were implying that un-
25 less he took the proper action he might be embargoed.

- 1 Q Did he mention anything as to health effects, animal or
2 human?
- 3 A No.
- 4 Q And what was your response to him about the complaints?
- 5 A I don't, of course, recall the exact words, but the dis-
6 cussion then became one of sharing information with him
7 as to our understanding of what was done elsewhere to make
8 his silos reuseable so he could get back in operation as
9 quickly as he could.
- 10 Q Did you offer to assist him in any way?
- 11 A Well, I thought that by referring to contacting a Mr.
12 Boswell with Monteagle Company would be helpful. I felt
13 that sharing with my understandings from our discussion
14 with Mr. Van Patten would be helpful.
- 15 We mentioned that he might want to talk with Dr. Cook
16 at Michigan State University. The whole discussion was
17 one of here is what Monsanto understands about PCB silos
18 and milk, these are the people we've talked to. Dr.
19 Lynn Willett was another name. George Fries in Maryland
20 was another name we mentioned. These experts in the field
21 might be helpful.
- 22 Q So what you are saying, the general tone of the meeting
23 then was to assist this man that had some complaints and
24 troubles, is that correct?
- 25 A That was our intent, yes.

1 Q And it was not about something that this man had complaints
2 and there was no response by you or the gentleman accomp-
3 anying you that nothing could be done or that you would
4 do nothing, is that correct?

5 A That is correct.

6 Q And who was with you? Mr. MacFarland?

7 A There was a Mr. MacFarland with me, yes.

8 Q And he is an attorney from Tennessee, is he not?

9 A Yes.

10 Q And he has represented Monsanto over a period of time in
11 PCB matters?

12 A Yes.

13 Q And is he the one that you referred to as taking care of
14 contacting the Tennessee people or the Tennessee government?

15 A Yes.

16 Q And has Mr. MacFarland in fact participated in the pre-
17 paration of the trial of this case?

18 A I don't know.

19 Q There was some testimony that there was a meeting sometime
20 ago, not too long ago, at Metro Airport and one of the
21 witnesses I believe for Monsanto said that there was Mr.
22 Lon MacFarland present at that meeting at Metro Airport.

23 Are you aware of whether or not he was?

24 A I think I heard that in the room here. I don't know if
25 he was or not.

1 Q When was the last time you had any contact with him?

2 A It's been several years. I don't recall anymore; two or
3 three years ago.

4 Q When you visited the Humphreys' and Schwarzwalders' farm
5 going back now to 1970, in November of 1970, did you stop
6 at your research center in Akron that day?

7 A I would have no -- that laboratory is a rubber chemicals
8 research center. I had nothing to do with that product.

9 Q Did you stop at Mr. Hess's office in Canton?

10 A I had stopped at Mr. Hess's office several times. I don't
11 remember specifically whether I stopped at his office
12 during that particular trip.

13 Q Would you explain to the Jury who Mr. Hess is, please?

14 A Mr. Hess is an attorney located in Canton, Ohio who was
15 working for Monsanto's interest in PCB matters in that
16 matter.

17 Q Mr. Hess in fact authored a paper on PCB's and silos with
18 Mr. Willett, did he not?

19 A Yes.

20 Q And you have seen that paper?

21 A Yes.

22 Q And that was authored in 1975, I believe?

23 A That is about right, yes.

24 Q And have you read that paper?

25 A Yes.

1 Q When were you given a copy of it?

2 A I don't remember the exact date. I think it's something
3 within two or three months after publication I was sent
4 a copy.

5 Q So this is information provided by Dr. Willett who had at
6 that time been -- you had been in consultation with on
7 a few times?

8 A Yes.

9 Q And to whom you had provided some gift of grant money at
10 that time?

11 A Yes.

12 Q And by Mr. Hess who is, in fact, an attorney who worked
13 for Monsanto on occasion?

14 A Yes.

15 Q And what was Mr. Hess's function in writing that document,
16 do you know?

17 A I don't know.

18 Q Mr. Papageorge, I'm going to show you a document marked
19 as Plaintiffs' Proposed Exhibit No. 158 and ask if you can
20 identify that. You are probably going to have to look
21 through it because I think it's a number of documents
22 stapled together.

23 A This exhibit appears to be a collection of operating
24 instructions used by the two Monsanto plants for the
25 production of Aroclors.

1 Q Those would be Anniston and the Krummrich which would be
2 Sauget?

3 A Correct.

4 Q Mr. Papageorge, I'm going to go back to one point I
5 covered before, but just to clarify, and then we'll come
6 back to this exhibit, if we might.

7 When you met, and I'm sorry for jumping around, but
8 as you are aware, we did in the deposition, too, we're
9 talking a number of years.

10 When you met in 1975 with this farmer that we're talk-
11 ing about, when you came to Michigan to see Mr. Van Patten,
12 at the Department of Agriculture, and you also saw on
13 that visit Mr. Baird of C & B Silo Company, did you see
14 see more than one farmer or did you only see one?

15 A I only saw Mr. -- the one farmer.

16 Q Did you see at any other time anybody else in Michigan
17 to sit down and talk as you did that time?

18 A Well, Mr. Cubitt was there.

19 Q But no other time did you meet anyone else, is that
20 correct? Say, two years later, did you come back and
21 talk to another one?

22 A No.

23 Q I'm sorry, Mr. Papageorge, for changing the directions on
24 you. But this is the safety instruction manual, is
25 that correct?

1 A. No, this is the -- like I said earlier, a collection of
2 operating instructions. These tell the operator how --
3 what to do to make Aroclors.

4 Q I would presume that you have seen those before?

5 A. Yes.

6 Q And those are, in fact, Monsanto's, are they not?

7 A. Yes.

8 Q And what I did at the top is to tag some of those so you
9 wouldn't have to search for through the dates that are on
10 them.

11 There are some that apply to the years that you were,
12 in fact, in the plants and some in the years afterwards,
13 is that correct?

14 A. That appears to be so, yes.

15 I would like to make a clarification. When I said
16 "those are operating," those are excerpts from operating
17 instructions.

18 Q I understand.

19 A. They're not the complete set.

20 Q On the first one, Mr. Papageorge, if I can look over your
21 shoulder, this is for the Anniston Plant, is that right?

22 A. Yes, for the Anniston Plant.

23 Q And what is the date of those instructions?

24 THE COURT: Are you offering that Exhibit?

25 MR. WOODWORTH: Yes, Your Honor. I'm sorry.

1 THE COURT: What is the number?

2 MR. WOODWORTH: The number is 158. I move for
3 its admission.

4 THE COURT: Any objection, Mr. Jungerheld?

5 MR. JUNGERHELD: None, Your Honor.

6 THE COURT: Mr. Davidson?

7 MR. DAVIDSON: None, Your Honor.

8 THE COURT: 158 will be admitted without ob-
9 jection. Go ahead.

10 A The date is July, 1964.

11 Q And that has a stamp on it "confidential". Is that to
12 keep the information within the company?

13 A Yes.

14 Q And would you read, please, then, what we have -- first
15 of all, on the very first page we have a title: Operating
16 Instructions as to Aroclor.

17 Is that right?

18 A That is right.

19 Q And then subsequent to that we get into an area called
20 chlorine gas, is that correct?

21 A True. But it's under a broader heading.

22 Q Go ahead and tell us.

23 A The heading is this is the safety and housekeeping sec-
24 tion of the operationg instructions. And the first item
25 referred to under that safety and housekeeping section is

1 the chlorine gas you referred to.

2 Q Now, Mr. Papageorge, what was the chlorine gas used for?

3 A That was used to provide the chlorine that is present in
4 the finished product.

5 Q That is what you bubbled through the benzene biphenyl or
6 the biphenyl after it was made from benzene?

7 A Correct.

8 Q And so you had chlorine gas on hand on the premises for
9 this process?

10 A Yes.

11 Q And how was it stored? Was it liquid under pressure or
12 how? Obviously it was gas because it says chlorine gas.

13 A In 1964 the chlorine was generated at another unit as a
14 gas and was transferred into the Aroclor unit and used
15 directly.

16 Q Chlorine gas itself is fairly toxic, is it not?

17 A Oh, yes.

18 Q And what, in fact, does it state for the very first causes
19 and action to prevent as to chlorine gas? What is the one
20 I have marked there?

21 A It reads:

22 "Chlorine gas is a very toxic, corrosive gas. Leaks
23 at high pressure can occur to liberate it."

24 Q We're still on chlorine gas. Does this next page refer
25 to chlorine gas yet?

1 A The next page skips from No. 1 Item chlorine gas to No.
2 5 Item, fires. It's another section of that safety and
3 housekeeping portion.

4 Q And the next page is back on chlorine gas?

5 A The next page appears to be a continuation of a reference
6 to chlorine gas, so I don't know what preceded that.

7 Q Mr. Papageorge, I'm going to ask you to read, and this is
8 under safety and housekeeping as to chlorine gas, and
9 as to biphenyls, the next topic under it. And if you'd
10 just read those three paragraphs, please.

11 A The first paragraphs is under chlorine gas and reads:

12 "If you are caught without a gas mask and large
13 amounts of chlorine gas are liberated, hold your
14 breath and go crosswind until you are out of range
15 of the gas. Once out of the area, obtain an emergency
16 gas mask and return to the area and correct the
17 problem."

18 The second paragraph:

19 "A victim of chlorine gas fumes must be removed as
20 quickly as possible from the gaseous area. Place
21 patient on his back, with head and back elevated. Milk
22 may be used in mild cases as a relief from throat
23 irritation. If the patient has stopped breathing,
24 start artificial respiration immediately."

25 Third paragraph --

1 Q And if I might interrupt just for a moment. The third
2 paragraph now refers to biphenyls, is that correct?
3 A Biphenyls.
4 Q Biphenyls?
5 A Correct.
6 Q And that is the product that was made by the uniting of
7 the benzene rings?
8 A That is correct
9 Q And what is the safety and housekeeping recommendation or
10 instruction regarding the biphenyl?
11 A It reads:
12 "Biphenyl is a flammable material which will burn.
13 Burning should not be done in the presence of biphenyl
14 or biphenyl vapors. The melting point is 68.7
15 degrees centigrade, flash point of 106 degrees centi-
16 grade. The fire point 124 degrees centigrade. And
17 the auto ignition temperature is 258 degrees centi-
18 grade. Inhalation of biphenyl fumes is not recommended
19 since it can cause a drugged effect on the person."
20 Q And the next, as we go down this list, we come to a Sub-
21 paragraph H referring to crude Aroclors?
22 A Yes.
23 Q And then if you would just read the last sentence under
24 crude Aroclors under H on Page 6, please.
25 A The last sentence reads:

1 A. Yes.

2 Q And that is one of the biphenyls, is it not? It has
3 one chlorine ring?

4 A That is correct.

5 Q What is the other hazard under that?

6 A "This material can cause dermatitis, systemic poison-
7 ing from the fumes, and yellow atrophy of the liver.
8 There are skin, mucous membranes and eye hazards
9 encountered in handling this material."

10 Q Can you tell us what is meant or what you understand is
11 meant by the term "yellow atrophy of the liver"?

12 A I have an impression that it means the liver is damaged and
13 has abnormal appearance as a result.

14 Q And the paragraph under storage and handling with the
15 monochlorobiphenyl.

16 A "Protect the skin, lungs and eyes by wearing approved
17 protective clothing, respirator and goggles. People
18 who handle this material at elevated temperatures
19 should have medical supervision and the air should be
20 sampled to ensure compliance with MAC."

21 Q What is MAC?

22 A I don't recall at the moment. I just don't remember.

23 "There are no special storage restrictions under
24 normal conditions except for in a ventilated area."

25 Q Thank you. Now we move to another set of operating

1 "Prior to air blowing, the material has HCl fumes
2 entrained in it which are irritating to the skin or
3 mucous membranes."

4 Q Now, we finished that one for 1964, July, 1964, is that
5 correct?

6 A That is all I can see at the moment.

7 Q Then we go on to another set and this is W.J. Krummrich
8 operations manual. I imagine that is for the Krummrich
9 Plant?

10 A That is correct.

11 Q And it's kind of hard to read, but if you could bend around
12 just the first paragraph of what is there on the first
13 paragraph, please?

14 A It seems like the last piece of a sentence which I can
15 only read: Comma, but. There is an explosion hazard if
16 chlorine is mixed with a strong reducing agent such as
17 hydrogen or hydrogen carbides at high temperature.

18 Q And the next paragraph there, perhaps that is the one I
19 had marked.

20 A Under other hazards.

21 "This material causes eye, skin and mucous membrane
22 irritation."

23 Q Thank you.

24 A It doesn't say what that material is, though.

25 Q What is this word? Is that monochlorobiphenyl?

1 instructions and these are dated October, 1974, is that
2 right?

3 A. That is right.

4 Q And Department 246 is still operated -- would be the
5 person who runs the distiller for Aroclors?

6 A. Yes.

7 Q Is that correct?

8 A. Yes.

9 Q And Department 246, where is that located?

10 A. This is at the W.J. Krummrich Plant at Sauget, Illinois.

11 Q If you'd read just the introductory paragraph on this under
12 what is called Aroclors.

13 A. Yes.

14 "Aroclors as manufactured in Department 246 are non-
15 flammable liquids which may vary greatly in viscosity
16 at room temperature. Contact with skin should be
17 avoided. In case of spills on the body, wash the
18 affected area with soap and water. Inhalation of
19 Aroclor and Montar fumes should be avoided as they are
20 highly toxic. Protect the skin, lungs, and eyes by
21 wearing protective clothing, respirator and goggles.

22 If spilled on clothing, change to clean clothes."

23 Q The next is another set of instructions that is 246,
24 again, out of the Krummrich manual, is that correct?

25 A. It looks like 246 and an additional marking of some kind.

1 It's hard to read.

2 Q Okay. And this is dated March, 1974, correct?

3 A That is correct.

4 Q And would you read that paragraph, what the operating in-
5 structions are for?

6 A "These operating instructions are the property of
7 Monsanto Industrial Chemical Company and the re-
8 cipient is responsible for its safekeeping. It con-
9 tains confidential information of Monsanto Industrial
10 Chemicals Company which must not be reproduced,
11 revealed to unauthorized persons or sent outside the
12 company without proper authorization. Either retain
13 in the Operating Department or return to the standard
14 Documents Department."

15 Q Thank you. This is again Krummrich Plant operating
16 instructions, Department 246 and distillary operating,
17 the next group?

18 A That's right.

19 Q I was going to ask you to read this paragraph, but it
20 looks like one that you just read a short time ago, is
21 it not, as to Aroclors? In fact, the one you just read
22 a short two paragraphs go.

23 A Yes, it appears to be so.

24 Q This again for the Krummrich Plant operating instructions,
25 Department 246?

1 A. Yes.

2 Q And the date of this is June, 1976?

3 A. Yes.

4 Q And the next set is from Krummrich operating instructions,
5 Department 246, and what is this for?

6 A It's an abbreviation. PREM, period; OP, period. That is
7 premium operator. That is the top work assignment in
8 that department.

9 Q And the next is standard manufacturing process Aroclors,
10 Department 246, and that is dated 1972.

11 A There is a written notation on it. That says 1972.

12 Q It also says before that, "Do not loan".

13 Is that something that typically would have been
14 written on it?

15 A I don't know that it's typical, but it's not surprising.

16 Q On the last page of this, Mr. Papageorge, under Paragraph
17 G, there is Aroclors, a reference to that. And it says
18 in parenthesis: See hygienic guide series on chloro-
19 diphenyls.

20 Right.

21 A. Yes.

22 Q Looking earlier in this particular process, it will state
23 something -- for example, it says chlorine has as a des-
24 cription and formula and constance, toxic hazards rating,
25 toxicology information. It has the same on hydrochloride

1 off gas.

2 A. Yes

3 Q And it has the same previous on biphenyls. But when we
4 get to Aroclors, it says to refer to the hygienic guide
5 series.

6 What is the hygienic guide series?

7 A. That was a publication that addressed the safety and
8 industrial hygiene of -- in this case, chlorodiphenyls.

9 Q And would that then be incorporated into the manual, so
10 to say?

11 A. Yes. A copy was attached or inserted into the manual.

12 Q And who published that or where did it come from?

13 A. I don't recall the exact name of the group, but this was
14 a group of professional industrial hygienists that put
15 this information together for many products.

16 Q The next set looks almost like a duplicate of the previous
17 set. Again we have a standard manufacturing process
18 Aroclors, Department 256. Then this handwriting: Do not
19 loan, 1972.

20 A. That is what it says.

21 Q And when we get to the last page, again, for the reference
22 on Aroclors, it says: See the hygienic guide series on
23 chlorodiphenyls.

24 A. Yes.

25 Q That would be the same one we talked about?

1 A. That is correct.

2 Q. Now, we have another one, another publication or set of
3 instructions, process description for the manufacture of
4 Aroclors in Department 246, is that correct?

5 A. That is correct.

6 Q. And I took that '66 there to mean 1966. Would that be
7 reasonable? In fact, I'm sorry --

8 A. It seems to be reasonable, yes.

9 Q. It has a date written in, 1966, does it not?

10 A. Yes.

11 Q. And did you know these gentlemen here, by the way, that
12 signed this, who approved it?

13 A. Yes.

14 Q. Mr. Harris and the other gentleman?

15 A. Mr. Heisler, yes; Mr. Gibbs and Mr. Carter, yes.

16 Q. And this has the same caveat, so to say, this process is
17 the property of Monsanto Company?

18 A. That is a standard statement that appears on all of
19 Monsanto's instructions.

20 Q. Now, this manufacturing process from 1966, if I can direct
21 your attention to the Aroclor on Page 39. On Page 40
22 going to Aroclor and would you please read what the other
23 hazards are in relation to Aroclors.

24 A. It reads on other hazards:

25 "This material can cause dermatitis, systemic

1 poisoning from the fumes, and yellow atrophy of the
2 liver. There are skin mucous membranes and eye
3 hazards encountered in handling this material."

4 Q And what is systemic poisoning?

5 A I have an understanding. I don't know if it's accurate.
6 But this is a reaction by the body to a foreign material
7 and it's in the system, in the body system.

8 Q It's a poisoning to the body, in other words?

9 A That is a way to look at it, yes.

10 Q And this looks like a repeat of the previous one?

11 A Yes.

12 Q I put a question mark on that because it says old SMP
13 Aroclors. What would SMP --

14 A Standard Manufacturing Process.

15 Q There is a first sentence, I think, to that other para-
16 graph that you couldn't read before.

17 A I see.

18 Q Would you read it, please? Just that first paragraph.

19 A It says:

20 "Diphenyl and Aroclor are toxic materials. To pre-
21 vent toxicity," end of statement.

22 Q And then go to the next page.

23 A "Clean change of clothes is furnished daily to each
24 employee and time is allotted at the end of each shift
25 for bathing. In addition, one should wash his hands

1 "and face before eating."

2 But I don't know that the two are necessarily related.

3 Q Would the reason for recommending to the employees to
4 wash their hands and face before eating is so they wouldn't
5 ingest this material?

6 A Yes. This is a fairly common statement for chemical manu-
7 facturers.

8 Q To protect the health and safety of your workers?

9 A That is right.

10 Q Would you read this paragraph, please, under the hazards
11 in -- the one below it.

12 A "There are many accidents that can occur that may be
13 classed as safety and health hazards. These accidents
14 might result from such things as broken process lines
15 gas leaks, acid leaks, steam burns, et cetera. The
16 following safety equipment is provided to each
17 employee: One pair rubber overalls, goggles, one pair
18 spectacles, one pair rubber shoes, one pair rubber
19 covered gloves, one pair canvas gloves, and one fume
20 respirator; and for the department's use: One gas
21 mask, one clean change of clothes, four safety
22 showers and one stretcher."

23 Q Thank you. And this, again, this appears to be a duplicate
24 of the prior one on SMP Aroclors?

25 A It appears to be the same.

1 Q We have the same sentence at the beginning?

2 A Right.

3 Q And would you read just from the very last page on the
4 hazards paragraph, just the first paragraph of the
5 hazards.

6 A "The fumes from Aroclor 1254 are quite noxious and are,
7 when inhaled, excessively dangerous and hazardous.
8 When handling this material in relatively closed areas,
9 ample ventilation, parenthesis, hoods in extreme cases,
10 close parenthesis, should be provided for removal of
11 the fumes from the working area. The fumes attack
12 the mucous membrane of the nasal passages and
13 irritation of the membranes and slight lung congestion
14 might result from excessive inhalation of the fumes."

15 THE COURT: In light of the hour, members of
16 the Jury, we'll take a 10 minute recess. If you will
17 retire to the Jury Room we will reconvene at 3:10.

18 (Whereupon a recess was taken.)

19 Q (By Mr. Woodworth, continuing:) Mr. Papageorge, on
20 January 1st, 1970, when you took your position as
21 manager, environmental control, was it?

22 A Yes.

23 Q Of Monsanto?

24 A Yes.

25 Q How many plants did Monsanto have that were manufacturing

1 PCB's?

2 A Two in the United States, one in the United Kingdom, and

3 an interest in a Japanese unit.

4 Q The one in the United Kingdom, which I referred to as

5 Great Britain, was in Wales?

6 A That is correct.

7 Q What's the interest that Monsanto owned in the Japanese

8 unit?

9 A. To my understanding it was 49 percent.

10 Q And was that in Toyko?

11 A I don't believe it was in Toyko, no.

12 Q Was it in -- what was the name of the company? Was it

13 Mitshubishi?

14 A It's Mitshubishi Monsanto.

15 Q And who made the PCB's that were involved in the Yusho

16 incident?

17 A I believe it was made by another Japanese company and I'm

18 -- I have the understanding it's the Kanafugi Company.

19 Q And how long did Monsanto have an interest in this 49

20 percent interest in the Japanese manufacture?

21 A Of which product now?

22 Q PCB's.

23 A PCB's. The unit, as I recall, started out in 1969 and

24 it was shut down in -- I'm not certain of the date,

25 somewhere along 1972 or '73.

1 Q In fact, the manufacture of PCB's were discontinued in
2 Japan around that time, were they not?

3 A Yes.

4 Q What was the trademark name that the Japanese product in
5 which Monsanto was concerned were marketed under?

6 A Aroclors.

7 Q And in Great Britain, in Wales, what years did they manu-
8 facture PCB's there?

9 A I'm not certain of the original production. The best of
10 my recollection it was after World War II and and con-
11 tinued until, again I'm guessing, a little bit, 1973 or
12 thereabouts.

13 Q And what was the trademark's name there? Aroclors?

14 A Aroclors, yes.

15 Q Prior to January 1st, 1970, when you assumed your new
16 position, had you visited either of these plants?

17 A No.

18 Q And after 1970 you did at least visit the one in Wales --

19 A That is correct.

20 Q On a few occasions. Did you visit the one in Japan?

21 A No.

22 Q When you were in your new position with Monsanto after
23 1-1-70, when you -- or we refer to PCB's, would it take
24 into consideration PCB's from those other two plants,
25 from Japan and Wales, or were you strictly concerned with

1 the environmental control with the PCB's within the United
2 States?

3 A The responsibility assigned to me was worldwide for
4 Monsanto's PCB products.

5 Q While I'm thinking of it, Mr. Papageorge, did you have
6 an opportunity to review a transcript or a summary of the
7 testimony of Mr. Egan who testified in this case?

8 A I reviewed a summary, yes.

9 Q And did you agree with what he testified to?

10 MR. JUNGERHELD: Well, Your Honor, I wonder
11 if we could be a little more specific on that. He
12 testified for quite awhile.

13 THE COURT: Can you focus a little more on
14 what you are referring to?

15 Q Mr. Egan specifically -- I don't recall, and I don't have
16 my notes here with me, Mr. Papageorge, but I don't recall
17 Mr. Egan ever saying that he had any contact with you.
18 But you are testifying that you did, in fact, have some
19 contact with Mr. Egan?

20 A Yes. I remember vividly talking to the man on the tele-
21 phone, yes.

22 Q And Mr. Egan testified that Jacob Hess called him up
23 prior to his coming to Court and his interpretation was
24 that Mr. Hess didn't want him to be coming here to testify.

25 Were you aware of Mr. Hess's phone call prior to his

1 appearing or subsequent?

2 A I know nothing of that.

3 Q Do you know how it came to be you who was chosen to be
4 the environmental control officer or person for
5 Monsanto?

6 A All I can say to that is I was interviewed for the opening
7 and I was selected for the opening. I do not know how the
8 individuals who made the decision arrived at it.

9 Q And at this point you changed from a person who had pretty
10 well worked inside the plants and been plant manager,
11 department manager, superintendent, those kinds of
12 things, from being inside the organization to being a
13 person who went outside the organization, is that correct?

14 A Yes.

15 Q And, in fact, your new duties, under your duties from
16 January 1, 1970, would involve a substantial amount of
17 contact with the public, with the scientific community,
18 with university people, and with the government, would it
19 not?

20 A Yes, it did.

21 Q And you said at one point during the '70's it seemed like
22 like you were going to Washington almost weekly?

23 A Yes.

24 Q And you traveled through Europe on behalf of Monsanto?

25 A Yes.

1 Q And that you met with ministers -- or ministries from
2 the United Kingdom?

3 A Yes.

4 Q And when we get down to environmenal issues, during the
5 1970's you were the person at Monsanto that people would
6 ultimately come into contact with if they went to the
7 top of environmental issues, of PCB"s?

8 A PCB's, yes.

9 Q So would it be fair to say, Mr. Papageorge, that you were
10 the face of the persona, so to say, that Monsanto put
11 forward regarding your PCB's for the corporation?

12 A I don't know the exact meaning of the word persona, but
13 I did represent Monsanto in matters relating to PCB's.

14 Q And that you were interviewed quite a bit, I take it, by
15 newspapers, magazines, publishers?

16 A I had some of that, yes.

17 Q And do you remember a quote that you might have given in
18 1977 to Newsday magazine regarding PCB's as to the
19 performance and manufacture of PCB's?

20 A I don't remember, no.

21 Q Just one paragraph from this book here. Start right there
22 and read to yourself that paragraph.

23 MR. JUNGERHELD: Your Honor, could we have an
24 identification of what it is?

25 THE COURT: Would you identify the book?

1 MR. WOODWORTH: If Counsel desires me to,
2 I just --

3 THE COURT: Yes, he'd like to know what you
4 are reading.

5 MR. WOODWORTH: The book's name is Who Is
6 Poisoning America.

7 A. I've read the paragraph you've indicated.

8 Q. Do you recollect making that statement?

9 A. The statement is one I would have made. I don't recall
10 exactly when and where I made it.

11 Q. But you do recall the statement and it's general context?

12 A. Yes.

13 Q. And that is all I wanted to do is refresh you recollec-
14 tion as to that, Mr. Papageorge, because in this state-
15 ment you said that in terms of performance, the PCB's
16 were as perfect an industrial chemical as could be, or
17 something along those lines, did you not?

18 A. Close to that, yes.

19 Q. And in that article they went on to quote you along the
20 lines of saying that it didn't burn, that it doesn't break-
21 down.

22 Is that correct?

23 A. That is right.

24 Q. And would you agree with that yet today?

25 A. Well, we found since then that it will burn under certain

1 conditions.

2 Q Extremely high temperatures.

3 A And some of them do break down under certain conditions.

4 Q And that it does not react with other materials?

5 A I'm quoted as saying that, yes.

6 Q You were, within that article, Mr. Papageorge, referred
7 to as a PCB expert from Monsanto.

8 A That is what it says here.

9 Q And is that a fair characterization at that time?

10 A I'm a poor one to make that assessment. This apparently
11 is the author's term. It's his impression.

12 Q If you want to look at the footnote, too -- oh, I can
13 tell you the footnote is July 20, 1977, Newsday Magazine.

14 A I don't see any footnote.

15 Q Here, I'll refer you to it. Right there. Footnote 10,
16 July 20, 1977.

17 A It does say that. I just don't remember that.

18 Q And then it says Monsanto was the sole producer in the
19 United States until the chemical was outlawed.

20 MR. JUNGERHELD: Well, now, wait a minute,
21 Your Honor, this is hearsay information.

22 THE COURT: I will sustain the objection, Mr.
23 Woodworth.

24 MR. WOODWORTH: I'm asking him if that is
25 correct.

1 THE COURT: If that is his statement?

2 MR. WOODWORTH: Yes.

3 THE COURT: If he made that statement?

4 MR. WOODWORTH: No, I'm asking him if the
5 statement is correct. I will rephrase it.

6 THE COURT: You are implying the statements
7 from the book. I will sustain the objection.

8 Q Was Monsanto the sole producer of PCB's in the United
9 States until it was outlawed?

10 A Not in my understanding, no.

11 Q Mr. Papageorger, prior to 1970 did you ever testify on
12 behalf of Monsanto in any type of proceeding, be it
13 civil or administrative?

14 A I don't recall of any such testimony, no.

15 Q However, since January 1, 1970, you have testified as a
16 substantial amount of time -- well, I guess the word sub-
17 stantial is not definitive.

18 You have testified a number of times?

19 A Yes.

20 Q And you testified in both the civil matters and before
21 administrative bodies or before administrative hearings?

22 A Yes.

23 Q Can you tell us, Mr. Papageorge, from 1970 to today,
24 approximately how many times have you testified before
25 government committees, subcommittees, investigative groups

1 and things of that type, administrative type hearings or
2 investigations or trials?

3 A I have never kept a record. My best guess would be a
4 dozen times.

5 Q And would all of them have been generally in regard to PCB's
6 or did you go into other areas?

7 A They were generally PCB's.

8 Q And from 1970 to date about how many times have you testi-
9 fied in a court such as this setting, in a civil matter?

10 A Three including this one.

11 Q And from 1970 to date, how many times have you testified
12 by deposition?

13 A About half a dozen times.

14 Q These would be any type of testimony, is that correct?
15 I'm not confining my question just to PCB's, but in any
16 sense, any type of such case?

17 A Yes.

18 Q What are the trials that you have testified in?

19 A I don't quite know how to describe them. This was a trial
20 in New Hampshire relating to PCB's and mink.

21 Q And when was that testimony?

22 A 1974.

23 Q And what were the claims generally regarding the PCB --

24 MR. JUNGERHELD: Wait a minute, Your Honor,
25 I'm going to object to this. I don't see any relevancy to

1 this case here. Mink has got nothing to do with dairy
2 animals. Claims made have -- it is strictly hearsay as
3 to this witness.

4 And so for a variety of grounds, relevancy and hearsay,
5 we would object to going into some claims relating to
6 mink.

7 MR. WOODWORTH: Your Honor, I think it's
8 very relevant. This is cross-examination. This man is
9 an employee of Monsanto Chemical Company. He was during
10 the 1970's. That he was their PCB official and as such
11 he had numerous contact with both other industry, with
12 scientists, and a number of areas. And I would like to
13 know the areas in which he has been involved with PCB's
14 other than this particular case.

15 I think we've established some other areas, but I would
16 like to know what other areas because there is testimony in
17 this trial already as to effects of PCB's on mink by Dr.
18 Hansen and other scientists. That isn't exactly the pur-
19 pose of the testimony --

20 THE COURT: What is the purpose?

21 MR. WOODWORTH: The purpose of it is just to
22 understand the general nature of claims back in 1974 that
23 were being asserted, notice and knowledge.

24 THE COURT: I'll allow it.

25 Q What generally were the types of claims made in that case,

1 Mr. Papageorge?

2 A The claims as I understood them, was that the presence of
3 PCB's in the duck entrails fed to mink led to reproduction
4 problems and poor quality pelts in several mink ranches in
5 the New Hampshire area.

6 Q Is this the Bethlehem Mink case as we referred to or can
7 I call it that?

8 A That was the common terminology used at that time, yes.

9 Q And so these mink ate some feed or product containing
10 PCB and it affected them?

11 A It was not really a feed, it was the intestines and waste
12 parts of ducks that were frozen and shipped into New
13 Hampshire and fed to the animals.

14 Q They use that duck entrails for mink feed?

15 A As part of it. It was part of their feed.

16 Q And were there mink deaths?

17 MR. JUNGERHELD: Well, Your Honor, this is
18 asking this witness if he knows that. Number one, there
19 is no testimony that he knows anything about those mink.
20 Number two, it would be hearsay as to him unless he knows
21 that somehow firsthand.

22 THE COURT: Are you talking about the claims?

23 MR. WOODWORTH: Yes, I will refer my question
24 to that.

25 THE COURT: He's already answered part of that.

1 but go ahead.

2 Q Were there any claims as to reproductive problems and/or
3 mink deaths in that case?

4 A I don't remember mink deaths. I do remember poor quality
5 pelts and lack of reproduction.

6 Q You had, in fact, encountered problems with mink before
7 this, had you not?

8 A I had -- no.

9 Q Did you ever visit Dr. Ringer at Michigan State University
10 regarding his mink studies?

11 A Yes.

12 Q And when was that that you visited him?

13 A My memory fails me a bit, but in the '71, '72, '73 era.
14 And this had to relate to PCB's in fish which in turn were
15 fed to mink, yes.

16 Q And what was the purpose of your visit? How did you happen
17 to see Dr. Ringer?

18 A I was in the area talking with others about PCB. I don't
19 remember the exact situation. But I recall having a
20 dialogue with Dr. Ringer, supplying him with standards
21 and again the literature and analytical methodology. And
22 since I was in the area, I made arrangements to meet
23 with Dr. Ringer.

24 As I remember, it was through Dr. Cook. I'm not
25 positive. And, as I remember, we had lunch in the faculty

1 dining room and talked about PCB's and his studies.

2 Q And was he investigating or did he ask you did you have
3 information or did you investigate any claims about mink
4 reproduction problems or mink losses as a result of
5 eating PCB fish?

6 A At that time it was still difficult to determine whether
7 it was the DDT or the PCB or the combination of the two
8 that might be causing the effects that were noted. So
9 the study was ongoing and I was attempting to try to keep
10 abreast of new developments.

11 Q And the new developments you attempted to keep abreast of,
12 did that ultimately show that there were some mink problems,
13 reproduction, in the midwest as a result of mink being
14 fed Great Lakes PCB contaminated fish?

15 A Some months later, maybe years later, there was a report
16 published by Dr. Ringer, yes.

17 Q Do you recall the year of that report?

18 A Not absolutely. It seems to me about 1974.

19 Q What was the year of the claim made in the event of the
20 Bethlehem Mink case?

21 A I don't know that.

22 Q The trial, I understand, if I'm correct, Mr. papageorge,
23 was 1974, though, that you testified at?

24 A Yes.

25 Q Did you give a deposition in that case?

1 A. Yes.

2 Q. And when was your deposition, approximately?

3 A. About a year before that. Sometime before that. My

4 memory isn't that good.

5 Q. So may we understand that you were aware of the mink

6 claims in the matter of the Bethlehem Mink case,

7 in at least 1973 when you gave your deposition?

8 A. Yes.

9 Q. What other trials have you testified in? I think you said

10 three, including this one?

11 A. Yes. One more.

12 Q. What was the other?

13 A. This is a trial in Tennessee regarding the spillage of

14 the transformer liquid from a transformer being delivered.

15 Q. That was a G.E. transformer, General Electric?

16 A. It was a General Electric transformer.

17 Q. It was leaking fluid and the highway patrol pulled the

18 driver over and the driver -- in other words, it

19 stopped leaking and it opened up --

20 A. That is fairly close. There was a leakage and the highway

21 patrolman ordered the truck to move over to the shoulder.

22 The driver contacted his home office dispatcher and asked

23 for instructions. And he was instructed to drain the unit.

24 And he opened the valve and dumped the liquid on the

25 shoulder of the road.

1 And, as I remember the allegations, were that the
2 presence of this PCB created some health problems in the
3 neighboring farmers, to the neighboring farmers and their
4 families. And there was another family alleged that as
5 they drove along the road in the opposite direction,
6 through the open car windows they were sprayed with this
7 material as they passed the moving truck with its load,
8 and they, too, suffered some health problems.

9 Q Mr. Papageorge, what year was this?

10 A About 1976.

11 Q Do you know when the event occurred?

12 A I don't remember anymore.

13 Q Do you recall whether or not there were any claims for --
14 let me rephrase that.

15 Besides for humans, what types of animals were claims
16 made for in that case?

17 A I don't remember any animals involved.

18 Q Were there not claims for effects to cows in that case at
19 the farms near the area where this material was dumped?
20 There could have been, but I just -- I don't associate that
21 case with cows. But it's been a while. I don't remember.

22 Q Any other case you testified in besides two and the
23 present case.

24 A That's all.

25 Q Now, depositions, Mr. Papageorge. You said you gave a

1 deposition in the Bethlehem Mink case. Did you give
2 one in this Tennessee case?

3 A. Yes.

4 Q. And you gave a deposition in the present case back in
5 Janaury, 1980.

6 A. Yes.

7 Q. And what other cases have you given depositions in?

8 A. The Holly Farms case in North Carolina. There was a case
9 involving a dental laboratory in Detroit. If my memory
10 serves me right, it was referred to as something like
11 the Parsons and Howell case or something like that.

12 Q. You didn't mention that particular case, the Parsons and
13 Howell case, at the time we took your deposition, did
14 you?

15 A. I don't remember. But that was not -- it depends on the
16 question you might have asked. This, in my mind, was not
17 a PCB case.

18 Q. Parsons and Howell did deal with Aroclors?

19 A. Yes.

20 Q. It was a higher number Aroclor?

21 A. It was 4465.

22 Q. 4465?

23 A. Yes.

24 Q. And there was testimony within your deposition in the
25 Parsons and Howell case, a fair amount of testimony in

1 questions and answers regarding PCB's, in fact, was there
2 not?

3 A There was some. Not as lengthy as others.

4 Q No, I wouldn't imagine it would be as lengthy as this one.

5 Did that slip your mind or did you -- well, I probably
6 should find the question first for you, Mr. Papageorge,
7 before I ask anything further. And I can do that later.

8 What other cases would you have given depositions
9 in?

10 A I gave a deposition in a matter involving a transformer
11 leak in a packing house in Montana.

12 Q Is that referred to by the name of Pierce?

13 A Pierce Packing Company, yes. I can't recall any others
14 at the moment.

15 Q Did you give a deposition in the early 1970's in Canton,
16 Ohio, between 1970 and 1973?

17 A No, no.

18 Q Do you know if you ever testified in any other deposition
19 or testimony that you did in fact give a deposition in
20 Canton, Ohio at that time?

21 A I did and I was in error. I was confusing my depositions.

22 Q Did you testify in the Campbell Soup case?

23 A No, I'm not aware there was ever such a case.

24 Q I'm talking about the one in -- I believe we had some
25 testimony regarding it in your deposition, perhaps.

1 I'm not sure. The incident that occurred in 1970 in
2 New York?

3 A I think that's the one. In my mind I refer to that as
4 the New York chicken case.

5 Q New York chicken case.

6 A All right. Yes, I forgot that one. That was another
7 deposition. Yes.

8 Q And that was when?

9 A '75. 1975.

10 Q And just briefly or summarily, Mr. Papageorge, what were
11 the claims in that case?

12 A This was a case involving, again, PCB's in the poultry
13 feed. And the source of the PCB's was difficult to
14 determine. There was some indication that some of it may
15 have come from printing ink and in adhesives in packaging
16 of bakery goods in which the stale bakery goods and the
17 package are crushed and ground and become an ingredient
18 in poultry feed.

19 There is also some indication that it may have come
20 from waste materials from a bakery which used PCB's to
21 heat their ovens and the contention was made that a leak
22 had occurred, contaminated some of the product, the product
23 was put in disposal bins, the disposal bins picked up by
24 a service company that in turn passed it on to the crushed
25 bakery good operation and it in turn ended up in the

1 poultry feed.

2 Q Were you manager of environmental control at Monsanto when
3 that incident did in fact occur?

4 A Yes.

5 Q That was in 1970 when that happened?

6 A Yes.

7 Q And there were some chickens that were destroyed as a re-
8 sult of it, is that correct?

9 A I don't know that. I'm not under that impression.

10 Q That there were chickens destroyed as a result of the con-
11 tamination?

12 A I'm under the impression that there was salvage operations
13 made to get the level of PCB in the end product down to
14 an acceptable level. I do not know of any destruction.
15 That doesn't mean that it didn't happen. I'm not aware of
16 it.

17 Q I believe there was some testimony as to some destruction
18 of chickens in that case and it might have been Dr.
19 Kelly.

20 Did you hear Dr. Kelly's testimony?

21 A Some of it, yes.

22 Q Did you hear him refer to the chicken soup case or the
23 Campbell soup case?

24 A Yes.

25 Q Is this the same one we're talking about?

- 1 A. Not in my mind. There is two separate instances.
- 2 Q. What is the separate -- the one that you are referring to
- 3 now as being the separate instance?
- 4 A. This is the case in which I was -- underwent deposition up
- 5 in New York. The Campbell Soup incident, in my under-
- 6 standing was not related to that.
- 7 Q. The one that you went through deposition in New York, when
- 8 was that, about 1975?
- 9 A. The deposition, I believe, was somewhere in '75, '76, some-
- 10 where in that area.
- 11 Q. Is that the intercounty --
- 12 A. Intercounty was the source of the poultry feed, as I
- 13 understood it.
- 14 Q. And there were a number of counties that were ultimately
- 15 involved in that thing, is that correct?
- 16 A. Yes.
- 17 Q. And in that case, in intercounty, were chickens destroyed
- 18 in that case, eggs?
- 19 A. That is the case I was talking about. I don't remember
- 20 any -- I don't remember any chickens destroyed.
- 21 Q. Mr. Papageprge, can you tell us in the Holly Farms
- 22 matter, that was out of North Carolina, correct?
- 23 A. Yes.
- 24 Q. And as a result of that were any chickens destroyed?
- 25 A. I believe there were, yes.

1 Q Do you recall how many?

2 A I don't remember. There were substantial numbers.

3 Q About 88,000, does that ring a bell?

4 A No, it doesn't, but it was a large number.

5 Q And weren't over a hundred thousand pounds of egg products
6 destroyed?

7 A My memory is not that good.

8 Q Now, was there -- were there other -- and I'm not sure on
9 this in my own mind, as to other companies or other things
10 being involved in this like Harold's Hatchery, or is
11 that something separate?

12 A I have heard of Harold's Hatchery. I don't know quite
13 how it fitted into the Holly Farm situation.

14 Q Was Ralston Purina involved in that?

15 A It's my understanding that Ralston Purina also received
16 some of this contaminated fish meal, but that's the extent
17 of my recollection.

18 Q Is Bond Bakery related to any of these cases you have re-
19 ferred to?

20 A To my understanding, they're related to the New York
21 intercounty situation.

22 Q And Bond Bakery had a heat transfer unit?

23 A That was my understanding.

24 Q You were in your position in Monsanto in environmental
25 control and then the name was changed to environmental

1 protection and then product what, development?

2 A. Manager of product acceptability.

3 Q And until what year?

4 A. Till 1977.

5 Q And then what did you go to?

6 A. I was made director, environmental operations, for one
7 of the operating units within Monsanto.

8 Q What do you mean by operating unit?

9 A. Monsanto is divided at that time into five operating
10 units. Each one having a specific type of product. For
11 example, there was a textiles unit, an agricultural pro-
12 ducts unit, industrial chemicals unit, a plastic unit.
13 And the unit I was in was called the chemical intermediate
14 unit.

15 Q And what are chemical intermediates? Are those -- well,
16 you tell me.

17 A. Our definition, these are chemicals that are not in them-
18 selves end products, they are used as starting materials
19 for other chemical products.

20 Q And you will either use those within the company itself
21 or sell those to other companies?

22 A. That is correct.

23 Q Up until that time in 1977, were you working for one
24 department or division or area within Monsanto or was it
25 the entire Monsanto corporation?

1 A. I was working at different times for different parts of
2 Monsanto; never for total Monsanto.

3 Q. Were you aware, Mr. Papageorge, of the incident in 1978
4 of some dumping episodes of PCB's, not which Monsanto was
5 involved in, but what was commonly referred to as mid-
6 night dumpers?

7 A. I heard of some of those.

8 MR. JUNGERHELD: Your Honor, just a moment,
9 I'm going to object on the grounds of relevancy. Now,
10 apparently whatever Counsel is testifying here about
11 occurred in 1978. I don't see where that's got relevancy
12 to anything that occurred on Mr. Haley's farm between
13 '72 and '76.

14 MR. WOODWORTH: Once again, Your Honor, this
15 is cross-examination. Mr. Papageorge is involved in
16 PCB's and environmental control for Monsanto for quite
17 some time. They made PCB's. It again goes to knowledge
18 -- of effects and knowledge of claims, knowledge of
19 environmental contact of the chemical.

20 THE COURT: How is it relevant to -- how is
21 knowledge acquired in 1978 relevant?

22 MR. WOODWORTH: He is testifying today
23 as the knowledge that he acquired since 1977 when the
24 suit was filed. I think I would be entitled to cross-
25 examine into areas since this has been filed.

1 MR. JUNGERHELD: Your Honor, I don't recall
2 that at all. I think the last year we talked about, if I
3 understand correctly, was 1976. And I would remind the
4 Court that Monsanto didn't even make PCB's after 1977 when
5 they ceased operations, even for the electrical industry,
6 and it stopped manufacture for other uses well before
7 that.

8 So I fail to see the relevancy of anything that went
9 on in '78.

10 MR. WOODWORTH: I'll rephrase the question,
11 Your Honor.

12 THE COURT: Okay.

13 Q Mr. Papageorge, after Monsanto -- when did Monsanto
14 cease manufacture of PCB's?

15 A 1977.

16 Q Are you familiar with the Toxic Substance Control Act?

17 A Yes.

18 Q And when was that passed?

19 A 1976.

20 Q And did that provide for a timetable for the discontinua-
21 tion of manufacture of PCB's?

22 A Yes.

23 Q And what was the timetable within the Toxic Substance
24 Control Act?

25 A As I recall, it was targeted for October, 1978.

1 Q So in 1976 the federal government via the TSCA, said that
2 they were not to be manufactured after October, 1978?

3 A That is my recollection.

4 Q Not to be sold after October of 1978.

5 Now, up until that time there were millions of pounds
6 of this material that had been manufactured, or billions
7 of pounds, is that correct, by Monsanto?

8 A I don't know about billions, but many, many pounds, yes.

9 Q And in the latter '70's you -- or in the '70's you had
10 set up a reclamation program or also set up an incinerator
11 to dispose of this material?

12 A I don't recall any reclamation program. The destruction
13 program by incineration.

14 Q And a lot of it still remained out, is that correct, in
15 transformers, in a number of places?

16 A Oh, yes. Probably in this building, right over our heads.

17 Q And a lot of it also continued to be a problem, did it
18 not?

19 MR. JUNGERHELD: Well, Your Honor, I wonder if
20 we could be a little more specific. I'm not quite sure
21 what he means.

22 MR. WOODWORTH: Well, I think the witness
23 can answer rather than trying to explain to Mr. Jungerheld.
24 I think the witness can say if he doesn't understand the
25 question rather than me explaining to Counsel.

1 THE COURT: I think it's a legitimate objec-
2 tion, though. If the question is so big that he can't --
3 it's difficult to determine what the answer that is being
4 sought.

5 So I will sustain the objection. Maybe you could be
6 more specific.

7 Q Subsequent to the passing of the Toxic Substance Control
8 Act, there did continue to be a number of PCB type epi-
9 sodes in the United States, exposures, contacts, environ-
10 mental problems, were there not, that you are familiar
11 with?

12 A I am familiar with incidences in which PCB's are involved.
13 But in every case, as I understand it, it's a mishandling
14 of the PCB's that creates the problems that are alleged.
15 It is not the proper use within the electrical equipment
16 that is the problem.

17 Q And what types of mishandling incidents are you referring
18 to?

19 A Well, improper disposal.

20 Q Like into landfills, dumps?

21 A That kind of thing. The unapproved disposal in these
22 landfills. There are instances of leaking, electrical
23 equipment that aren't properly maintained and the leaks
24 are not controlled. There are instances of the owners,
25 the possessers of these PCB's not managing them properly

1 on their premises according to the requirements of the
2 TSCA regulations. I don't know if that answers your ques-
3 tion any.

4 Q In part, Mr. Papageorge.

5 Besides landfills and dumps, were there any other areas
6 of environmental contact concern that arose that you are
7 aware of?

8 MR. JUNGERHELD: What period of time now are
9 we talking about?

10 MR. WOODWORTH: Same period as I was talking
11 before. He partially answered my question.

12 MR. JUNGERHELD: Well, I don't know what
13 period of -- Your Honor, I wonder if I may, I don't think
14 it's an unreasonable request, I wonder what the time period
15 is.

16 Q Mr. Papageorge, are you familiar with the time period I was
17 referring to subsequent --

18 A I think we're talking about the period shortly after the
19 passage of the Toxic Substance Control Act and the PCB
20 Statutes and Regulations that are covered by that act, and
21 the reported instances of PCB situations, and I tried to
22 describe as best as I recall the kinds of things that
23 are happening.

24 Q And you did, and I thank you. I asked you whether there
25 were any areas or contacts within that area or time period

1 that we're talking about?

2 A. I don't recall any.

3 MR. JUNGERHELD: I was going to object, Your
4 Honor.

5 THE COURT: He doesn't recall anything so --

6 MR. JUNGERHELD: That takes care of that.

7 Q. Were you aware of any claims made out of an American
8 possession from Ralston Purina in Puerto Rico in 1977?

9 MR. JUNGERHELD: Again, I don't see any
10 relevancy whatsoever to this, the time period. It doesn't
11 seem to have anything to do with this case. It's not
12 specified as whether we're talking about Aroclor 1254 or
13 what we're talking about or what species or what kind of
14 claims.

15 THE COURT: Mr. Woodworth, response to the
16 objection?

17 MR. WOODWORTH: I think the witness is going
18 to answer it no, anyway. May I ask the question and ask
19 him if he knows?

20 Q. Are you aware of that?

21 A. I don't recall -- something about Purina in Puerto Rico?

22 Q. Yes, in 1977.

23 A. I'm not familiar at all with that situation.

24 Q. In the Pierce packing case you testified by deposition,
25 I believe you said?

1 A. Yes, sir.

2 Q. What were the claims in that case?

3 A. As I remember, this involved the leakage of PCB's pre-
4 sumably from a transformer and its leakage was permitted
5 to enter the drainage system in this packing house that
6 joined all of the wastes generated in the normal packing
7 house. And these wastes are collected and they are
8 processed in a way that makes them useful in animal feeds.

9 As I understand it, the PCB's found itself into some
10 animal feeds that in turn were alleged to have harmed these
11 animals. I don't recall if they're just chickens alone
12 but it seems to me there was some swine involved, hogs
13 and so on.

14 Q. And there were alleged what, damage to these products or
15 health effects or what? Do you recall?

16 A. As I remember, these were, as far as the poultry were con-
17 cerned, similar to what I had heard previously in other
18 similar cases of hatchability problems and presence.

19 Q. And were animals destroyed, do you know?

20 A. I do not know.

21 Q. And were food products -- or animal by-products went into
22 food products destroyed?

23 A. I don't know.

24 Q. Are you acquainted with the Outboard Marine claim?

25 A. Yes, that was another deposition I had.

1 Q And when did you give that deposition, Mr. Papageorge?

2 A 1975, somewhere in that period.

3 Q And what were the claims in that case?

4 A The claims were that the operations of the Outboard
5 Marine facility were such that PCB's were permitted to
6 be discharged into the bay and resulting in contamination
7 of the bay. That is, in essence, what it was all about.

8 THE COURT: Let's take a 10 minute recess,
9 Mr. Woodworth.

10 (Whereupon a recess was taken.)

11 THE COURT: Go ahead, Mr. Woodworth.

12 Q (By Mr. Woodworth, continuing:) Mr. Papageorge, we were
13 just talking about the Outboard Marine matter where you
14 gave a deposition.

15 Were you involved in any way in the early '70's with
16 the Hudson River and PCB's in the Hudson River?

17 A I was involved in two hearings. One conducted by an appoint-
18 ed judge of some sort. It was not a court scene. It was
19 the hearing judge of some sort, administrative judge. And
20 the other was before the attorney general of New York
21 state.

22 Q And what years were those? What basically were the purposes
23 of those hearings?

24 A As I understood it, the purpose of the hearings was to
25 establish the source of PCB's in the Hudson River, an

1 evaluation of any effects that that presence might have,
2 and some attempt to come up with a workable remedial plan,
3 if that were at all possible.

4 Q And when was this?

5 A Somewhere about 1975.

6 Q Mr. Papageorge, have you ever testified or been involved
7 in any investigations regarding any toxic landfills or dumps or
8 sites or anything along those lines insofar as PCB's are
9 concerned?

10 A I don't recall any, no.

11 Q This Howell and Parsons case you referred to that you
12 gave a deposition in, that involved Aroclor 4465?

13 A Yes.

14 Q And Dr. Kelly testified, I believe, and this is the best
15 of my recollection, Mr. Papageorge, maybe yours would be
16 different, that Aroclor 4465 was approximately a rough
17 mixture of about 50 percent PCB's, polychlorinated bi-
18 phenyls, and the other 50 percent, polychlorinated
19 terphenyls?

20 A That is --

21 MR. JUNGERHELD: In the interest of con-
22 sistency, I would object to that because that case involved
23 not a PCB but rather 4465 which is a different substance.

24 Also in that case it involved heating the substance. I
25 think there's been testimony about that and there were

1 fumes which I don't think has any relevance to issues in
2 this case.

3 THE COURT: I'll allow it.

4 Q Going back to my question, Mr. Papageorge, that involved
5 a substance that was approximately 50 percent PCB's,
6 polychlorinated biphenyls, and the other 50 percent -- or
7 approximately 50 percent polychlorinated terphenyls, is
8 that right?

9 A Yes, it was a mixture of Aroclor 1268 and Aroclor 5460. -

10 Q Aroclor 5460, is that the one that was used in the Cumar?

11 A Yes, that is one of the two.

12 Q What is 5460? Is that a resin-type or what is it?

13 A It's a solid. It's a resin.

14 Q Well --

15 A So --

16 Q I'm sorry.

17 A I was going to elaborate. So Aroclor 1268, that is a
18 solid, also. So the mixture is a solid which looks a lot
19 like table salt when it's sold.

20 Q And what were the claims in that case?

21 A I don't recall the specifics. But it seemed that employees
22 of the dental laboratory claimed that they were affected
23 health-wise as a result of using that resin Aroclor.

24 Q Did you ever give any testimony in a case involving
25 tetrachlorophthalic anhydride?

1 A. Yes.

2 MR. JUNGHERHELD: I don't know how far afield
3 we're going to go here, but this is a substance that's
4 got nothing to do with anything in this case. We would
5 object on the basis of relevancy.

6 MR. WOODWORTH: Your Honor, I asked Mr.
7 Papageorge all the cases that he had testified in or given
8 depositions, and he mentioned a few of them. And this
9 appears to be one that was not mentioned.

10 THE COURT: But do we have to get into past
11 that? What beyond that is relevant, beyond that fact?

12 MR. WOODWORTH: Well, when it was, what type of
13 case it was.

14 MR. JUNGHERHELD: What is the relevance of it
15 then in the framework of this case?

16 THE COURT: I will sustain the objection.

17 MR. WOODWORTH: May I ask when it was?

18 THE COURT: Sure.

19 Q Okay. When was that, Mr. Papageorge?

20 A I honestly don't remember that one well at all.

21 Q Without going into any of the claims in the matter or
22 anything about what it was about, let's see if I can find
23 it here.

24 You do recall testifying in a case such as that, though?

25 A. Yes.

1 Q And was that by deposition or court testimony?

2 A Deposition.

3 Q Do you know an Elmer Wheeler?

4 A Yes.

5 Q And he was -- Dr. Kelly referred to an Elmer Wheeler that
6 worked in the Medical Department for Monsanto.

7 Is that the same one that you are thinking of?

8 A I believe so, yes.

9 Q Toxicologist from Monsanto?

10 A He handled toxicology matters. He was not a toxicologist
11 by training.

12 Q Is he still with Monsanto?

13 A No.

14 Q Do you know a person by the name of Jack T. Garrett?

15 A Yes.

16 Q And who is Mr. Garrett?

17 A He is a member of our Department of Medicine and Environ-
18 mental Health and is currently involved with industrial
19 hygiene matters.

20 Q Do you know a Dr. Harvey Elkins?

21 A I've heard of the name. I never met the man.

22 Q Are you familiar with the American Industrial Hygiene
23 Association?

24 A I'm aware of such an organization, yes.

25 Q And what is their purpose, to your knowledge?

- 1 A It's a professional organization to which industrial
2 hygienists, the professionals, belong, just like many
3 other professional organizations. They meet periodically
4 compare notes with each other, make presentations of
5 technical papers and the like.
- 6 Q And do they assist the chemical industry in setting
7 hygiene standards and guides within plants or factories?
- 8 A No, that is another group, a different group that does
9 that.
- 10 Q What would that group be, one with the initials IMA?
- 11 A I'm not aware of IMA being involved, no.
- 12 Q Mr. Papageorge, I'm going to show you what's been marked
13 as Plaintiff's Proposed Exhibit No. 423 and ask you if
14 you can identify that.
- 15 A This is copy of the hygienic guide series relating to
16 chlorodiphenyls.
- 17 Q Exhibit No. 158, being the operating instructions for
18 Aroclor, is it in fact when we referred to some of these
19 back in here, for example, on this one page under Aroclor,
20 it said see hygienic guide series on chlorodiphenyls?
- 21 A I recall that.
- 22 Q And is that what this is referring to?
- 23 A Yes.
- 24 Q The hygienic guide series?
- 25 A This is it.

1 Q And have you seen that before?

2 A Yes.

3 Q And that was used then -- it was appended to Monsanto's
4 instructions for industrial process for PCB's?

5 A Yes.

6 Q And you used it in the manufacture -- in the course of
7 manufacture of PCB's?

8 A Yes.

9 MR. WOODWORTH: I'd move for its admission,
10 Your Honor.

11 MR. JUNGERHELD: I haven't seen it yet, Your
12 Honor.

13 MR. DAVIDSON: I would only object as to my
14 client is not a manufacturer of these items.

15 THE COURT: What is the exhibit number?

16 MR. DAVIDSON: 423.

17 THE COURT: Any objection, Mr. Jungerheld?

18 MR. JUNGERHELD: No, assuming a foundation
19 from this witness that it pertains to the manufacture of
20 1254.

21 THE COURT: Well, there is testimony that it
22 pertains to the manufacture of PCB's.

23 MR. JUNGERHELD: I'm saying, to the extent it
24 does, including the substance we're talking about in this
25 case, I don't have any objection.

1 THE COURT: All right. So I will allow
2 423 subject to Mr. Davidson's objection.
3 Q Does this refer to chlorodiphenyls?
4 A Yes.
5 Q This refers to chlorodiphenyls in what percent chlorine?
6 A The 42 percent and the 54 percent.
7 Q And the 54 percent chlorine trademark name for Monsanto
8 would be Aroclor 1254, would it not?
9 A More for Monsanto, yes.
10 Q And directing your attention to that exhibit, Mr.
11 Papageorge, I'm going to ask you first to look at the
12 left-hand column of it and the tiny print down at the
13 bottom and who are they thanking for the assistance in
14 drafting that document, for contributions towards that
15 document, if you'd read that, please?
16 A You want me to read it verbatim?
17 Q Yes.
18 A "The committee wishes to acknowledge the preparation
19 of the medical information section of this guide by the
20 Industrial Hygiene and Clinical Toxicology Committee of
21 IMA, and to acknowledge also the assistance of Elmer
22 P. Wheeler and Jack T. Garrett in the writing of this
23 guide."
24 Q And what is the date of this, if you'd look at the second
25 page?

1 A It's dated January/February, 1965.

2 Q Now, under the very first paragraph, what is enumerated
3 with the No. 1, there are recommended maximal atmospheric
4 concentrations, is that correct? And one of those --

5 A Yes.

6 Q And one of those is for 54 percent.

7 A Yes.

8 Q Now Paragraph B. Would you please read that paragraph
9 B?

10 A Paragraph B is entitled Short Exposure Tolerance.

11 "Ten milligrams of a diphenyl of unspecified chlorine
12 content per cubic meter of air has been reported as
13 unbearably irritating."

14 Q And if you'd turn to the next page, please. And the next
15 page begins, "Toxic properties of the two chlorodiphenyls"
16 that they're referring to, is that correct?

17 A That is right.

18 Q And one of them is 42 percent but the second paragraph
19 refers to 54 percent, is that correct?

20 A That is correct.

21 Q And does it not, within that paragraph, state that there
22 is -- that there was reported injury to liver cells and
23 increased liver weights in rats?

24 A There is a reference and it's based on 83 days, seven-hour
25 days, exposures over a hundred twenty-one days and so

1 forth.

2 Q And does the last of it refer to distinct microscopic
3 changes in the liver? Is that correct?

4 A Yes.

5 Q Would you please read the next paragraph to the Jury, Mr.
6 Papageorge?

7 A "The literature contains many references to the
8 potential toxic effects of chlorinated diphenyls in
9 man and animals. Early work included investigations
10 of chlorinated naphthalenes, chlorinated diphenyls,
11 chlorinated diphenyl oxides, and various mixtures of
12 these."

13 Q Excuse me, I'm sorry, Mr. Papageorge. Diphenyls and
14 biphenyls are the same thing, are they not?

15 A They are interchangeable, yes.

16 Q Excuse the interruption. Continue, please.

17 A "An early report indicated serious toxic effects from
18 chlorodiphenyls chlorinated to the extent of 65 per-
19 cent. A later report by the principal author properly
20 identified the earlier sample as a mixture of
21 chlorinated diphenyl and chlorinated diphenyl benzene.

22 However, few operators of subsequent papers,
23 bulletins or textbooks, have noted this correction and
24 the original data are cited repeatedly as relating to
25 chlorinated diphenyl alone."

1 Q Thank you. The next paragraph enumerated with the letter
2 B is regarding skin contact. It states that both compounds,
3 regarding 42 percent, 54 percent, are readily absorbed
4 through the clipped, intact skin of rabbits, is that right?
5 A That is right.
6 Q And under Paragraph D, the last sentence, will you please
7 read that?
8 A "Ingestion. The acute oral toxicity --"
9 Q Well, just the last sentence rather than the entire para-
10 graph.
11 A Oh, I'm sorry.
12 Q Right after the --
13 A "Central atrophy of the liver appears to be the chief
14 toxic effect."
15 Q Thank you. And then we go to the division entitled in-
16 dustrial hygiene practice. And under letter C are
17 hazards and their recommended control.
18 Would you please read what is recommended under Paragraph No.
19 1, inhalation. Just the first sentence or first two
20 sentences.
21 A "Absorbtion is chiefly by inhalation. Concentrations
22 in the workroom atmosphere must be maintained below
23 the recommended levels".
24 Q And Monsanto did in fact do that in their plants?
25 A Yes.

1 Q And on the next page, please, Paragraph No. 2, would you
2 read that as to skin contact.

3 A "Operations and handling procedures should be such as
4 to avoid the possibility of prolonged or repeated
5 skin contact. Contaminated clothing must be laundered
6 before reuse."

7 Q Okay. And then there is the next paragraph on eye contact.
8 Would you please read that.

9 A "Eye protection should be used where there is a possi-
10 bility of liquid splashes."

11 Q And the next paragraph, Paragraph 4.

12 A "Ingestion of these materials is not a problem in
13 industry."

14 Q This stuff wasn't made to be mixed in root beer, so to
15 say, as Dr. Kelly said?

16 A That is correct.

17 Q Neither was it made to be mixed in milk, was it?

18 A That is correct.

19 Q Nor to be mixed in animal feed, is that correct?

20 A That is correct.

21 Q So when this was written, would it be fair to say that
22 ingestion was not contemplated within the industrial scene?

23 A That is a reasonable assumption, yes.

24 Q And, in fact, Monsanto took workplace precautions to make
25 sure that workers would not ingest the material, is that

1 true? The recommendation of washing hands and face.

2 A. Yes, that is true of all chemicals, yes.

3 Q Going down further, Mr. Papageorge, under the Roman Numeral
4 IV, referring to medical information.

5 Would you please read the first two paragraphs under
6 Paragraph A or Division A?

7 A. It's entitled Emergency Room.

8 "Skin surfaces exposed to chlorodiphenyls should be
9 thoroughly washed with soap and water at once. If
10 clothing has been contaminated, it should be removed
11 promptly. If exposure to a high vapor concentration
12 occurs, as in the case of spills at elevated tempera-
13 tures, the patient should be moved from exposure and
14 kept at rest until seen by a physician. Oxygen should
15 be administered if breathing is difficult."

16 Q Thank you. And would you read the very last paragraph,
17 Paragraph B, entitled Special Procedures, please.

18 A. "Special Procedures. Persons who are regularly or
19 repeatedly exposed to chlorodiphenyls should be
20 examined periodically to detect early evidence of
21 skin irritation and/or liver damage. Persons with
22 known liver disease should not be exposed to repeated
23 contact with the chlorodiphenyls."

24 Q Thank you. Now, looking at this article right after that
25 paragraph, Mr. Papageorge, there are references, is that

1 correct?

2 A. Yes.

3 Q And we may take it that those references are what the
4 authors used in order to write the paper?

5 A. That is a good assumption, yes.

6 Q And together with the footnote on the front page giving
7 thanks to the industrial hygiene and Clinical Toxicology
8 Committee of the IMA, plus Mr. -- or Mr. Wheeler and Mr.
9 Garrett of Monsanto contributed towards the authorship of
10 this article, is that correct?

11 A. That appears to be so, yes.

12 Q Now, under references, there is eight references.

13 A. Yes.

14 Q And the first one is referring to Monsanto Company's own
15 Organic Division, technical bulletin, PL-306.

16 Are you familiar with that bulletin?

17 A. Yes.

18 Q And as dated, that is dated December, 1960?

19 A. That is what it says here, yes.

20 Q And it's entitled Aroclor Plasticizers.

21 A. Yes.

22 Q Mr. Papageorge, I'm going to show you what's been marked
23 as Plaintiff's Exhibit No. 52 and ask you if you can
24 identify that?

25 A. This appears to be a copy of Monsanto's technical bulletin

1 O/PL-306.

2 Q And have you seen that before?

3 A I have seen an original, yes, sir.

4 Q And what is the purpose of that bulletin? What is it
5 used for?

6 A It is used as an information document that is shared with
7 customers and -- potential customers of the Aroclor
8 Plasticizers to help them develop their own processes.

9 Q Thank you.

10 MR. WOODWORTH: I'd move for the admission,
11 Your Honor, Plaintiff's Exhibit 52.

12 MR. DAVIDSON: My only objection is there
13 has been no showing that my client has had access to
14 that or that he even knew about it.

15 MR. JUNGERHELD: I have no objection, Your
16 Honor.

17 THE COURT: I'll allow admission of Plaintiff's
18 52 over Mr. Davidson's objection.

19 Q Mr. Papageorge, does the PL in the prefix to the number
20 have any significance? Does that mean plasticizer or
21 anything?

22 A That designates that was a bulletin issued by the plasti-
23 cizers business department.

24 Q And what does the O mean?

25 A At that time the plasticizer business group was part of the

1 organic Chemicals Division and the O stands for organic.

2 Q Now, looking at that particular document, Mr. Papageorge,
3 I direct your attention to Page 5, please.

4 A All right.

5 Q And also the top paragraph, second sentence. Does it not
6 represent there, Mr. Papageorge, that Aroclor compounds are
7 not hydrolized by water and what does that mean?

8 A By the expression "hydrolized," the chemist is talking about
9 a reaction in which oxygen and hydrogen attach themselves
10 to the chemical and form a new chemical. And many chemicals
11 in the presence of water will do this. The Aroclor
12 materials do not do this.

13 Q And it goes on to state that it also resists alkalies,
14 acids and corrosive chemicals.

15 A It does say that, yes.

16 Q What are alkalies?

17 A It's like caustic soda or soda ash, sal-soda. You may be
18 familiar with those terms.

19 Q And on the same page, Mr. Papageorge, the third paragraph,
20 the second sentence, does not this bulletin represent that
21 the Aroclor compounds are unsurpassed for the plasticizing
22 of protective coatings, particularly for use in chemical
23 plants and of the facilities that require a tough chemical
24 resistant surface?

25 A That is what it says, right.

1 Q And, Mr. Papageorge, I'll further direct your attention to
2 Page 16. It doesn't have a number on it, so you will
3 have to locate it by the numbers on the pages either before
4 or after.

5 A I believe I have it.

6 Q Okay. And if you'd read, please, the first sentence of the
7 very last paragraph on the page.

8 A "Epoxy resin protected surface coatings. The use of
9 Aroclor 1254, 1260 or 1262, economically imparts
10 excellent chemical resistance particularly to acids
11 and alkalies."

12 Q Now, if I could direct your attention then to Page 22.
13 I don't know if that has a number on it, either. There
14 is some charts on that page.

15 A I believe I have that.

16 Q Okay. And the top chart is entitled "Paints for alkaline
17 surfaces," is that correct?

18 A That is what it says, yes.

19 Q Now, there's a number of ingredients listed within that
20 chart, is that correct?

21 A That is correct.

22 Q And what is this, a recommended or a suggestion on how
23 materials can be combined to formulate a paint to be
24 resistant to alkaline surfaces, alkaline compounds?

25 A These recipes or formulations are suggestions that

1 customers might consider and either use as indicated or
2 modify to produce their own products.

3 Q So what you do, and correct me if I'm wrong, Mr. Papageorge,
4 the company will suggest you can use your Aroclor 1254 or
5 you can use some of your chemicals in combination with,
6 for example, on this chart, another company's chemicals,
7 a trademark name of another company, is that right?

8 A That's right.

9 Q Now, let's look at this particular chart, Mr. Papageorge,
10 the ingredients recommended within this.

11 What is the very first one listed on the chart?

12 A It refers to a federal specification.

13 Q I'm sorry, the first ingredient.

14 A Oh, the ingredient?

15 Q Yes.

16 A It's a tradename Parlon, p-a-r-l-o-n.

17 Q And what is Parlon?

18 A Well, it's a rubber that contains chlorine. It's a
19 chlorinated rubber.

20 Q Now, Parlon, that recipe I don't -- rather than getting it
21 out right now, but do you remember the formulation for
22 Cumar? That was admitted as an exhibit. Mr. Jungerheld
23 asked you some questions about it.

24 A Yes, I remember some of the ingredients but not all of
25 them.

1 Q Do you remember Parlon being one of them?

2 A No, I don't. I'd have to see it again.

3 Q I'm going to show you, Mr. Papageorge, Plaintiff's
4 Exhibit No. 317 and that is what was admitted as one of
5 the recipes for Cumar.

6 Parlon appears in that, does it not?

7 A Yes. Yes, it does.

8 Q Now, going back to this chart within the Monsanto bulletin,
9 what's the very second ingredient listed on this recommen-
10 dation?

11 A Aroclor 1254.

12 Q Okay. And Aroclor 1254 is found in Cumar, is it not?

13 A Yes.

14 Q Okay. And what's the third ingredient in the chart on the
15 bulletin, is Aroclor 1260, but what is the fourth one?

16 A Aroclor 5460.

17 Q And Aroclor 5460 is found in Cumar?

18 A Yes.

19 Q Now, going down near the bottom of this recommended paint
20 or alkaline surfaces, there is a Solveso 100. Do you see
21 that?

22 A I see that, yes.

23 Q And that is also in the formula for Cumar?

24 A That is right.

25 Q And there's also xylene. That is a solvent, isn't it?

1 A Yes.

2 Q And within the recipe for Cumar there is another solvent,
3 only this one is referred to as xylol.

4 Are you familiar with xylol?

5 A Yes, I am.

6 Q This formula for Cumar is not something completely
7 radical or out of anyone's chemical comprehension, is
8 it not? It is not too unlikely to be set forth within
9 the Monsanto bulletin? Is that fair to say?

10 A Yes. But your designation of the ingredients would imply
11 that all of these listed in Monsanto's bulletin appeared
12 in the formulation, whereas the examples given, some are
13 not used along with others, so there is a difference there.

14 Q We have, for example, a recommendation for concrete
15 swimming pools for a maximum acid and alkali resistance
16 and using different parts of this, is that correct?

17 A An obvious difference. There is a reference in the bulletin
18 to Aroclor 5460 as being an ingredient in some federal
19 government specifications, paint. Aroclor 5460 does not
20 occur in any other examples.

21 Q Okay.

22 A Xylenol, down below in this same government specification,
23 doesn't appear at all, and yet it appears in the Cumar
24 formula.

25 Q It also appears in the concrete swimming pool formulation

1 for paints.

2 A That is true, but that formulation doesn't include 5460.

3 So there is a mismatch here.

4 Q But this is not a, so to say, nonsensical, this formula

5 for Cumar, it isn't a nonsensical formula so to say?

6 A I can't speak to that because I have no idea how this

7 material will adhere to a surface and how long it will

8 stay on that surface and so on. I just don't know.

9 Q Fine. Mr. Papageorge, if I could direct your attention

10 then within the same exhibit, the bulletin, next to Page 36.

11 I don't know if there is a number on it.

12 A I think I have it.

13 Q There is a paragraph that has a caption or it's entitled

14 "Vapor suppression or longer insecticide kill life."

15 A There is a reference, yes.

16 Q Would you please read the first sentence just by way of

17 introduction?

18 A The effective kill life of expensive chlorinated insecti-

19 cide is extended as much as ten-fold by the incorporation

20 of equal parts of Aroclor 5460 which act both as a vapor

21 suppressant and as a sticking agent.

22 Q Now, go down to the last paragraph.

23 A Aroclor 5460 is also recommended for non-crop insecticide

24 formulations containing --

25 Q You can skip that. Just go to the last sentence. Well,

1 if you want, go ahead and read it then. Continue on.

2 A I'm confused.

3 Q I'm sorry. I heard a laugh. They thought it was funny
4 I asked you to skip it, so repeat the paragraph as it
5 was.

6 A Aroclor 5460 is also recommended for non-crop insect formulations
7 containing Clorodane, Aldrin, and Dieldrin. The other
8 resinous Aroclor products, 1254, 1260, 1262, 4465, and
9 5442, also non-volatile and sticky or tacky, likewise
10 merit evaluation as insecticide extenders.

11 Q What do you mean "merit evaluation"? Are you recommending
12 that people can use that stuff, 1254, for an insecticide
13 extender?

14 A We're suggesting that the manufacturer of the pesticide
15 product, they might want to consider this, but he must
16 evaluate it thoroughly because the insecticide -- the
17 active ingredient is using -- may or may not be com-
18 patible, may not work well, so it's up to the person try-
19 ing to evaluate this combination to make the final decision
20 as to whether it's proper or not.

21 Q So, in other words, what we do here, have a -- in a certain
22 sense, a recommendation of Aroclor 1254 to be used as a
23 pesticide or, more properly, an insecticide extender,
24 within this Monsanto bulletin, don't we?

25 A That is what this says.

1 Q Because we had some testimony from Mr. Kelly and I believe
2 some -- perhaps another witness that the use of Aroclor
3 1254 was with insecticide, was unknown.

4 Do you agree with that?

5 A Well, it was unknown to many of us, that is true.

6 MR. JUNGERHELD: For the record, Your Honor,
7 I would object to the characterization of Dr. Kelly's
8 testimony. I don't think he said it was unknown.

9 THE COURT: All right. Well, he answered the
10 question, "It was unknown to me."

11 Q Mr. Papageorge, was not Aroclor 1254 registered with the
12 United States Department of Agriculture from at least
13 the 1950's as an insecticide extender?

14 A I don't know that the Aroclor itself was registered. I
15 think a combination of ingredients making a final product
16 was given a permit for manufacture and use.

17 Q And FIFRA, that Mr. Jungerheld referred to, and has been
18 referred to within this trial, the Federal Insecticide,
19 Fungicide and Rodenticide Act.

20 A Yes.

21 Q That was in 1970?

22 A Yes.

23 Q Would that, to your understanding, disallow the use of
24 Aroclor 1254 within insecticides?

25 A No. That Act gives the EPA authority to make judgments and

1 allow permits or reject permission for use of materials.

2 Q Do you know, as a result, then, as a result of FIFRA being

3 passed, did the EPA then reject Aroclor 1254 as an in-

4 gredient or an extender in insecticides?

5 A The EPA took no action because the Department of Agriculture

6 had already taken action prior to EPA's active involvement

7 with pesticides.

8 Q And the United States Department of Agriculture then, did

9 they take action in banning or discontinuing the permit

10 of Aroclor 1254 as being an allowable or permissible

11 ingredient in insecticides?

12 A To my understanding they did, yes.

13 Q They did?

14 A Yes.

15 Q Next paragraph, please, Mr. Papageorge, is referred to as

16 moisture proofing, is it not, on the same page?

17 A It is.

18 Q And so we don't go through the entire thing. It basically

19 states that moisture proof coatings for -- and it refers

20 to concrete, among others --

21 A I see that.

22 Q And it's best combined with such things -- then it refers

23 to chlorinated rubber among the ingredients?

24 A Yes, there is a list of many ingredients.

25 Q And Parlon is a chlorinated rubber?

1 A Yes.

2 Q And parlon is found in Cumar along with Aroclor 1254?

3 A Yes.

4 THE COURT: We'll recess for the day, Mr.
5 Woodworth.

6 We'll look for you promptly at 9:00 o'clock tomorrow
7 morning. So you are then excused.

8 (Whereupon legal argument ensued in the
9 absence of the Jury.)

10 (Whereupon at 4:50 o'clock P.M., on Monday,
11 May 21, 1984, Court was adjourned until 9:00
12 o'clock A.M., Tuesday, May 22, 1984.)
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1 STATE OF MICHIGAN)
2) SS
3 COUNTY OF HURON)
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5 We, James R. Fritzler, a Notary Public and
6 Court Reporter in and for Saginaw County, State of Michigan
7 and Donald E. Pearson, a Notary Public and Court Reporter in
8 and for Midland County, State of Michigan, acting in and for
9 Huron County, State of Michigan, do hereby certify we steno-
10 graphically recorded the proceedings had and testimony taken
11 on the 21st day of May, 1984, before the Honorable M.
12 Richard Knoblock.

13 We further certify that the foregoing and
14 attached 203 typewritten pages, or parts of pages, constitute
15 a true and complete transcript of our stenographic notes then
16 and there taken.

17 
18 James R. Fritzler, RPR, CSR-2067
19 Notary Public, Saginaw County
20 My commission expires: 8-30-87

21 
22 Donald E. Pearson, RPR, CSR-0279
23 Notary Public, Midland County
24 My commission expires: 11-18-87

25 bmq: 5-21-84