

ORIGINAL

IN THE MATTER OF:

Transwestern Pipeline Company
vs.
Monsanto Company, et al.

Cause No. BC 026959

Deposition of W.B. Papageorge
November 4, 1992

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1 SUPERIOR COURT
2 FOR THE STATE OF CALIFORNIA
3 FOR THE COUNTY OF LOS ANGELES
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7 TRANSWESTERN PIPELINE COMPANY,
8
9 Plaintiff,
10
11 vs. NO. BC 026959
12
13 MONSANTO COMPANY AND
14 DOES 1 THROUGH 200 INCLUSIVE,
15
16 Defendants.
17
18 Continued depositions of W.B.
19 PAPAGEORGE, taken on behalf of the
20 Plaintiff, at the offices of Bryan Cave,
21 One Metropolitan Square, in the City of St.
22 Louis, State of Missouri, on the 4th day
23 of November, 1992 before Ronald A. Gore,
24 Registered Professional Reporter and Notary
25 Public.

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1 W.B. PAPAGEORGE,
2 of lawful age, having been first duly sworn
3 to testify the truth, the whole truth, and
4 nothing but the truth in the case
5 aforesaid, deposes and says in reply to
6 oral interrogatories propounded as follows,
7 to-wit:

8 EXAMINATION
9 QUESTIONS BY MR. TALLON:

10 Q: Why don't we continue. Good
11 morning, Mr. Papageorge.

12 A: Good morning.

13 Q: I just wanted to touch back on two
14 or three things that we had discussed
15 yesterday. At one point during the day I
16 asked you if by late 1968 you thought that
17 a competent scientist should be able to
18 distinguish between PCBs and DDT found in
19 the environment, and you indicated on the
20 record that you thought that that was not a
21 true statement, that that was perhaps too
22 early to make that distinction. Have I
23 remembered it accurately, so far as you
24 recall?

25 A: I'm trying to recall what we said

1 before that, too. You used the word
2 competent scientist.

3 Q: Yes.

4 A: I assume that means not only in
5 his training and experience generally, but
6 with PCBs specifically, and with the
7 appropriate equipment.

8 Q: Right.

9 A: And methodology.

10 Q: Okay.

11 A: Okay.

12 Q: I had just wanted to review with
13 you a moment a brief passage from a
14 deposition you gave earlier in the
15 Bethlehem Mink case, which was given
16 sometime ago, in 1974. And I'll hand this
17 transcript to you and to your counsel.
18 And, certainly, read so much of it as you
19 feel is necessary to give yourself some
20 context, but the passage that I am
21 interested in appears starting at the top
22 of page 54 through about the middle. And I
23 wonder if you could just take a moment and
24 read that.

25 A: Okay.

1 Q: Did you get a chance to look that
2 over?

3 A: Yes.

4 Q: Okay. Let me, therefore, ask you
5 whether you think today that by late 1968 a
6 competent scientist could distinguish
7 between DDT and PCBs found in the
8 environment?

9 A: Yes.

10 Q: Thank you.

11 A: And in those days there might have
12 been a half a dozen in the world.

13 Q: Let's also mark as the next
14 exhibit, which I believe is 1095, a one
15 page memo from Mr. Papageorge to Elmer
16 Wheeler dated February 12, 1970.

17 (Deposition Exhibit Number
18 1095 mark'd for identification).

19 A: I've read the document.

20 Q: Is that a memorandum that you sent
21 to Mr. Wheeler?

22 A: It is.

23 Q: And that was the memorandum that
24 you sent in February 1970?

25 A: Yes.

1 Q: Did you think then that 10 parts
2 per billion was rapidly becoming accepted
3 as a well established and permanent target
4 for maximum PCB concentration?

5 A: At that time, yes.

6 Q: Let me also have marked as the
7 next exhibit, 1096, a multi-page document
8 bearing production numbers STR 001559
9 through STR 001583, although I will note
10 for the record that on the last page of the
11 document the Bates number is partially
12 obscured.

13 (Deposition Exhibit Number
14 1096 mark'd for identification).

15 A: I have reviewed the document.

16 Q: Is this one of the documents that
17 you reviewed after you assumed your new
18 position as of January 1, 1970?

19 A: It is.

20 Q: And was this, so far as you
21 understood it, a presentation to the
22 corporate development committee for their
23 meeting of November 17, 1969?

24 A: This reflects a major part of that
25 particular presentation.

1 Q: Do you know if this is a
2 presentation made by one particular
3 individual at that meeting?

4 A: I understand that it was made by
5 one person.

6 Q: Who was that?

7 A: Mr. Bergen.

8 Q: There is -- that, by the way, was
9 the meeting at which the position which you
10 ultimately assumed was created, is that
11 right?

12 A: It was recommended and approved,
13 yes, sir.

14 Q: Okay. Thanks. The fourth page of
15 the exhibit, "Monsanto world-wide Aroclor
16 business", if you could just glance at that
17 for a moment. Was it your understanding as
18 of the time you took on your new position
19 that Monsanto had world-wide sales per year
20 of approximately 22 million from the
21 Aroclor business?

22 A: Yes, sir. 22 million dollars.

23 Q: 22 million dollars. And that that
24 resulted from sales of 104 million pounds
25 per year?

1 A: Yes.

2 Q: And that the gross profit from
3 world-wide Aroclor sales was approximately
4 10 million dollars?

5 A: Yes.

6 Q: The majority of which, about 75
7 percent of which was from sales of
8 functional fluids?

9 A: Yes.

10 Q: Can you page over, if you will --
11 the numbers at the top of the pages are a
12 little difficult to read, but I believe
13 it's 13. If it's of any help to you, the
14 Bates number or numerical production number
15 at the bottom of the page that I'm
16 interested in is STR 001570.

17 A: I have it.

18 Q: Have you seen this particular page
19 within this presentation before today?

20 A: I have.

21 Q: And does the chart here conform to
22 your understanding in terms of sources of
23 fluids pollution?

24 A: Yes, it does. And by fluids, it's
25 meant the -- it's Monsanto's definition of

1 the type of application as distinguished
2 from plasticizer. PCBs are fluids in
3 either case, but this refers specifically
4 to the applications.

5 Q: Okay. So, for example, to just
6 pick up on that answer for a moment, the
7 first application identified on that chart
8 is industrial fluids, correct?

9 A: Correct.

10 Q: And the indication in the chart is
11 that the intensity of pollution was the
12 greatest for industrial fluids?

13 A: Yes. Greatest in comparison to
14 the others that follow.

15 Q: So that --

16 A: It's a relative description.

17 Q: The least intense source of
18 pollution in relative terms was the
19 Monsanto producing plants?

20 A: That was our evaluation, yes.

21 Q: Take a look, if you will, at this
22 page. And, again, the numbers are a little
23 hard to read. It appears that the number
24 at the top of the page is 15, but certainly
25 the number at the bottom of the page is STR

1 001573. And the caption on that page is
2 "Fluids business threatened, 1970
3 budget". Do you see that?

4 A: I do.

5 Q: The initial concern, as I
6 understand it, at Monsanto was that the
7 problem of PCB contamination of the
8 environment was confined to Aroclors 1254
9 and 1260, is that right?

10 A: Yes.

11 Q: But there was concern as of
12 November 1969 that other Aroclors,
13 including 1242 and 1248, would also be
14 implicated as part of the problem, correct?

15 A: Correct.

16 Q: Did you attend a meeting convened
17 by or called by the Water Pollution Control
18 Administration in Duluth, Minnesota in
19 March of 1970?

20 A: I did.

21 Q: And were you requested to attend?

22 A: Yes.

23 Q: By whom?

24 A: By the director of that
25 laboratory, Dr. Mount.

1 Q: As you understood it, what was the
2 purpose for which that meeting was
3 convened?

4 A: Dr. Mount had initially expected
5 to invite knowledgeable people from
6 Monsanto to visit Duluth Laboratory and
7 have an office type conference with himself
8 and a few of his lieutenants, I'm going to
9 call them, the people who were in charge of
10 some of the activities at the laboratory,
11 to become more familiar with PCBs in terms
12 of the material itself, the product names,
13 the applications and the general
14 distribution throughout the industrial
15 world. That was his initial objective.

16 Q: And did that objective change
17 before the meeting was, in fact, held, so
18 far as you understand it?

19 A: It changed primarily in the size
20 and type of the audience that eventually
21 was drawn.

22 Q: In terms of the size of the
23 audience that was drawn to the meeting
24 grew?

25 A: It did.

1 Q: How did the type of attendee
2 change?

3 A: It included many individuals
4 outside of that particular laboratory. As
5 I recall, most of those who attended were
6 -- had scientific background, they were
7 involved with the science of analyses,
8 effects and so on. From federal agencies
9 as well as state.

10 Q: When you attended the meeting, you
11 were accompanied by Jack Garrett and Dr.
12 Keller?

13 A: Yes.

14 Q: Let me show you a document that's
15 a one page memo from Dr. Keller to R.A.
16 Lidgett. L-i-d-g-e-t-t, is that Lidgett?

17 A: Yes.

18 Q: At Ruabon. That's a document
19 bearing production number Tran 061124,
20 which we'll have marked as the next
21 exhibit.

22 (Deposition Exhibit Number
23 1097 mark'd for identification).

24 A: I have read the exhibit.

25 Q: Did you get a copy of this memo

1 from Dr. Keller in March of '70?

2 A: I did.

3 Q: Were you aware that Dr. Keller had
4 written that a massive nationwide PCB
5 program is unfolding in public agencies in
6 the U.S.A.?

7 A: Yes.

8 Q: Did you concur with his assessment
9 that one possible future result of this
10 effort would be the setting of limits for
11 PCBs in the environment?

12 A: Yes.

13 Q: Let me show you another document
14 relating to the same meeting, Mr.
15 Papageorge. It's a multi-page document
16 that has a production series 0001441
17 through 1446. We'll have that marked as
18 the next exhibit.

19 (Deposition Exhibit Number
20 1098 mark'd for identification).

21 A: I have reviewed the document.

22 Q: Actually, there are two documents
23 here, right, Mr. Papageorge? One is a
24 brief overall summary and one is a more of
25 a narrative description of the meeting?

1 A: Yes. I should have said I
2 reviewed the exhibit.

3 Q: Now, you received copies of both
4 from Mr. Wheeler in March of 1970?

5 A: I did.

6 Q: Did you give him any written
7 changes to either of these two documents?

8 A: I did not.

9 Q: Do you recall the conversations
10 and discussions that occurred at the
11 meeting in Duluth?

12 A: To some degree, yes.

13 Q: Was it a subject of discussion at
14 the meeting in Duluth that the participants
15 -- well, was it a subject of discussion
16 at the meeting that a federal or state
17 agency could establish or set tolerance
18 levels for PCBs in food?

19 A: There was discussion on the need
20 for setting tolerances and the probability
21 that such tolerances would eventually be
22 established as soon as enough information
23 was available to lead them to some level
24 that was based on good data.

25 Q: Was there discussion at the

1 meeting that such tolerance levels could be
2 established within six to twelve months
3 after the meeting in Duluth?

4 A: That was the hoped for period that
5 was expressed, yes.

6 Q: Hoped for by whom?

7 A: By Dr. Mount, as the spokesman. I
8 personally felt that there were several in
9 the audience that supported that
10 speculation, really, on Dr. Mount's part.

11 Q: Was there discussion in the course
12 of the meeting that Aroclor 1242 was an
13 environmental contaminant?

14 A: Yes, there was.

15 (Discussion off the record).

16 MR. TALLON: Was it a subject of
17 discussion at the Duluth meeting whether
18 Aroclor 1254 being seen in environmental
19 samples could actually be decomposed or
20 broken down to Aroclor 1242?

21 A: Let me see if I understand.
22 You're saying 1254 break down to 1242?

23 Q: Let me put the question again.
24 Was it a subject of discussion at the
25 Duluth meeting that what was being reported

1 as Aroclor 1254 found in the environment
2 was actually the decomposition products of
3 Aroclor 1242?

4 A: That potential was discussed.

5 Q: That was also an issue under
6 discussion at Monsanto during the same time
7 period?

8 A: Yes.

9 Q: At the time of the Duluth meeting,
10 were there individuals working for Monsanto
11 who believed that the lower chlorinated
12 PCBs were not being detected because they
13 might have been degrading?

14 A: Yes.

15 Q: Was Monsanto asked at the Duluth
16 meeting for production figures?

17 A: I don't remember specifically at
18 this meeting. That request was made so
19 often that it could well have been made. I
20 just don't remember any prolonged
21 discussion on that subject.

22 Q: At about the time of the meeting
23 in Duluth, was there any internal
24 discussion in Monsanto that you recall with
25 respect to the possibility of regulation of

1 PCBs through legislation?

2 A: Certainly.

3 Q: During 1970 did your Monsanto
4 colleagues in the U.K. meet with
5 representatives of British or U.K. official
6 bodies concerning PCBs?

7 A: Yes.

8 Q: And was one of those bodies the
9 Ministry of Agriculture, Fisheries and
10 Food?

11 A: Yes.

12 Q: Do you know, Mr. Papageorge,
13 whether in 1969 Aroclor 1242 accounted for
14 78 percent of total world-wide sales of
15 Aroclors?

16 A: I don't recall the exact number,
17 but I do know that it represented a
18 considerable portion of the total.

19 Q: Do you know if in 1969 Aroclor
20 1242 accounted for 78 percent of the total
21 U.K. Aroclor sales?

22 A: Again, I don't remember the
23 specific numbers, but it was -- of all the
24 Aroclors, it was the most popular.

25 Q: Most popular, does that mean it

1 had the highest sales?

2 A: That's what I meant by that, yes.

3 Q: Okay. Were you aware that
4 representatives of Monsanto were meeting
5 with U.K. government officials in 1970?

6 A: Certainly.

7 Q: Did the Monsanto representatives
8 in the U.K. have any reporting
9 responsibility to you?

10 A: Yes.

11 Q: Was it their responsibility to
12 keep you apprised with respect to the
13 meetings they were having with U.K.
14 government officials?

15 A: Yes.

16 Q: Did they also keep others in St.
17 Louis apprised?

18 A: Certainly.

19 Q: Including Mr. Bergen?

20 A: Yes.

21 Q: And do you recollect the names
22 Cameron and Vodden?

23 A: Yes.

24 Q: Were those gentlemen
25 representatives of Monsanto in the U.K.

1 A: Yes.

2 Q: And do you today remember what
3 their respective titles were?

4 MR. PREUSS: In 1970?

5 MR. TALLON: Yes.

6 A: Mr. Cameron was the marketing
7 representative for products containing
8 PCBs. Mr. Vodden was the chemist working
9 in the Ruabon laboratories, as I recall,
10 who was involved with the technical
11 activities relating to PCB and its
12 products.

13 Q: Are you familiar with an entity
14 called Wiggins Teape?

15 A: Yes.

16 Q: It's a company in the United
17 Kingdom. I don't know all of their
18 activities, but I do know that they were
19 the European company that manufactured
20 carbonless copy paper based on NCR
21 technology.

22 Q: Did they manufacture the
23 carbonless copy paper for NCR?

24 A: I don't know the business
25 relationship between NCR and Wiggins Teape

1 in terms of technology and the commercial
2 aspects.

3 Q: Do you know if Wiggins Teape was a
4 licensee of NCR for purposes of producing
5 the carbonless copy paper?

6 A: That I don't know.

7 Q: Did Wiggins Teape purchase
8 materials from Monsanto in order to produce
9 the carbonless copy paper?

10 A: Yes.

11 Q: Did they purchase Aroclor 1242?

12 A: Yes.

13 Q: Monsanto did not have an ownership
14 interest in Wiggins Teape, so far as you
15 know?

16 A: That is correct.

17 Q: Let me show you a document, Mr.
18 Papageorge, that's a report dated -- well,
19 it's actually as of January 27, 1970, it
20 may be dated February 5, 1970. We'll have
21 that marked as the next exhibit.

22 (Deposition Exhibit Number
23 1099 mark'd for identification).

24 A: I have reviewed the exhibit.

25 Q: Can you identify that exhibit, Mr.

1 Papageorge?

2 A: It's a copy of a report of a
3 meeting between Monsanto representatives
4 and representatives of the Ministry of
5 Agricultural, Fisheries and Food in London
6 on the subject of PCBs in various samples.

7 Q: Did you receive a copy of this
8 memorandum in February of 1970?

9 A: I did.

10 Q: Is the handwriting on the first
11 page of this memo identifiable as Howard
12 Bergen's handwriting?

13 A: Yes, it is.

14 Q: Did you have discussions with
15 either Mr. Cameron or Mr. Vodden before the
16 date of their January 27th meeting with the
17 Ministry of Agriculture, Fisheries and
18 Food?

19 MR. PREUSS: About the subject
20 matter of the meeting?

21 MR. TALLON: Yes.

22 A: I certainly had discussions with
23 both gentlemen. I am trying to recall the
24 timing. I was aware of their plans to
25 attend such a meeting. I recall talking to

1 Mr. Cameron and bringing him up to date on
2 what I understood was the U.S. situation,
3 and encouraged him to offer cooperation,
4 especially in the analytical methodology
5 area, and I supported the free exchange of
6 information and samples as appropriate.
7 That type of discussion I recall. And the
8 more I think about it, I did do this before
9 the -- this meeting.

10 Q: Were you asked by either Mr.
11 Cameron or Mr. Vodden before the January
12 27th meeting that they had with the
13 ministry whether they could disclose
14 production figures?

15 A: I don't recall that subject coming
16 up.

17 Q: Were you asked by either Mr.
18 Vodden or Mr. Cameron whether, if asked,
19 they could disclose the names of Monsanto
20 customers in the U.K.?

21 A: I don't believe so.

22 Q: To your knowledge, was -- did Mr.
23 Cameron or Mr. Vodden ask anyone at
24 Monsanto in St. Louis whether, if asked,
25 they could disclose the names of Monsanto

1 customers in the U.K.?

2 A: I don't know.

3 Q: Did you have an understanding in
4 February of 1970 whether the World Health
5 Organization could put residue limits on
6 PCB?

7 A: Yes.

8 Q: And what was your understanding?

9 A: That that group could establish
10 those kinds of limits, and I -- well,
11 that's it, they could do that.

12 Q: Was it your understanding that NCR
13 used a significant percentage of all of the
14 Aroclor 1242 sold by Monsanto in the U.K.?

15 A: Did they use all of the 1242?

16 Q: A significant percentage of all of
17 the Aroclor 1242 sold by Monsanto in the
18 U.K.?

19 A: Oh. I don't know that I ever knew
20 the exact amount. So, I can't respond even
21 with the word significant. I do know that
22 it was an important part of the business.

23 Q: There is a note on page 3 of this
24 exhibit, Mr. Papageorge, in the fourth
25 paragraph from the top that states that in

1 1969, NCR's offtake of 4.4 million pounds
2 Aroclor 1242 accounted for 46 percent of
3 total U.K. Aroclor sales: BICC came next
4 with 1.4 million pounds. Do you know
5 whether that is accurate or not.

6 A: I have no reason to doubt its
7 accuracy. And you'll note it refers to
8 total Aroclor sales as distinguished from
9 just limiting it to the 1242 business.

10 Q: So, it's your understanding that
11 the total U.K. Aroclor sales referred to in
12 that sentence is all of the various
13 Aroclors, 1254 and so forth?

14 A: Yes.

15 Q: Do you remember, by the way, that
16 there were reports of PCBs being found in
17 herring?

18 A: Oh, yes.

19 Q: Do you recall approximately when
20 you heard about that?

21 A: Pretty early in January, when I
22 was being tutored by Mr. Wheeler.

23 Q: Let me show you another document
24 which bears production numbers Tran 005558
25 through 5560. And we'll mark that as the

1 next exhibit.

2 (Deposition Exhibit Number
3 1100 mark'd for identification).

4 A: I have reviewed the exhibit.

5 Q: Is that exhibit a report by Mr.
6 Vodden of European -- status report of
7 European studies being conducted in the
8 U.K. in March of 1970?

9 A: It is.

10 Q: There is a list of recipients on
11 the top of the first page, and you are
12 indicated as a cc, or carbon copyee,
13 correct?

14 A: That is correct.

15 Q: Does the fact that there is a line
16 under your name indicate to you that this
17 is a copy of the copy that you got?

18 A: Yes.

19 Q: And is that your handwriting at
20 the top right-hand corner, indicating
21 "Bergen"?

22 A: Not my handwriting.

23 Q: Do you know whose that is?

24 A: I can only guess.

25 Q: Don't guess. Is that Mr. Bergen's

1 handwriting on the second page of the
2 document?

3 A: Yes.

4 Q: There is a -- actually, on the
5 first page there is a reference to --
6 biodegradation is the first topic, do you
7 see that?

8 A: I do.

9 Q: Is it accurate to say that by
10 March 1970 there were biodegradation
11 studies and analyses under way in the U.K.?

12 A: Yes.

13 Q: At the Ruabon facility?

14 A: Yes.

15 Q: Do you know by March 1970 how long
16 such studies had been in progress?

17 A: As best I recall, they were in
18 progress six to eight months, starting in
19 '69.

20 Q: The second sentence of the first
21 paragraph refers to a trichlorobiphenyl
22 isomer and a tetrachlorobiphenyl isomer.
23 Do you see that reference?

24 A: Which paragraph, again?

25 Q: The first paragraph, second

1 sentence, "Isomers which appear to resist",
2 and so forth.

3 A: And your question, again, referred
4 to the trichloro and tetrachloro?

5 Q: The initial question was,
6 basically, whether you saw the sentence or
7 not. The numbers which appear respectively
8 before trichlorobiphenyl and
9 tetrachlorobiphenyl, are those designations
10 for specific isomers?

11 A: Yes.

12 Q: So that the designation 2, 4 -- 2
13 prime 4 prime tetrachlorobiphenyl
14 represents a particular isomer among the
15 tetrachlorobiphenyl isomers?

16 A: Correct.

17 Q: And the number sequence indicates
18 the positioning of the chlorine atoms on
19 the biphenyl rings?

20 A: Yes.

21 Q: Was it your understanding that the
22 particular tetrachlorobiphenyl isomer
23 described in the first paragraph was
24 resistant to degradation in the studies
25 being conducted in Ruabon in March of 1970?

1 A: That's what this report informs
2 the reader of.

3 Q: Is that also your understanding?

4 A: Yes, sir.

5 Q: Did you keep up with Messrs.
6 Cameron and Vodden with respect to their
7 plans to meet again with the Ministry of
8 Agriculture, Fisheries and Food in March of
9 1970?

10 A: I did.

11 Q: And did you receive a report from
12 them as to the outcome of a March 10, 1970
13 meeting with the Ministry of Agriculture,
14 Fisheries and Food?

15 A: I received so many reports, that
16 one does not really stand out. But I would
17 be surprised if I had not received it.

18 Q: Let me show you a document that
19 purports to be a report of a meeting on
20 March 10, 1970, and bears production
21 numbers Tran 005552 through 5557.

22 (Deposition Exhibit Number
23 1101 mark'd for identification).

24 A: I have reviewed the exhibit.

25 Q: Does that appear to you to be a

1 report of a meeting between Monsanto
2 representatives and the Ministry of
3 Agriculture, Fisheries and Food on March
4 10, 1970?

5 A: It does.

6 Q: Did you get a copy of that report?

7 A: I did.

8 Q: Did you speak with Mr. Cameron or
9 Mr. Vodden before the date of that March
10 10, 1970 meeting about the subjects to be
11 discussed at the meeting?

12 A: I just don't remember.

13 Q: Do you have a recollection of
14 having given Mr. Cameron, Mr. Vodden or Mr.
15 Lidgett any instructions not to disclose
16 the names of Monsanto customers for PCBs?

17 A: I did not.

18 Q: Do you know whether anyone else in
19 St. Louis gave any of those three gentlemen
20 instructions not to disclose the names of
21 Monsanto customers?

22 A: I do not know.

23 Q: Do you know whether Messrs.
24 Cameron, Vodden and Lidgett felt
25 constrained not to disclose the identity of

1 NCR as a customer for Aroclor 1242 at their
2 meetings?

3 MR. PREUSS: I object, calls for
4 speculation.

5 MR. TALLON: I asked him if he
6 knew.

7 A: I don't know.

8 Q: Turn to page 5 for a moment, would
9 you, please, Mr. Papageorge? There is a
10 reference in the paragraph which is
11 numbered 8 indicating that "Because of the
12 instructions received from St. Louis and
13 despite the fact that both Wiggins Teape
14 and NCR U.K. believe that disclosing their
15 application for 1242 would be a positive
16 and constructive step, we did not identify
17 this application, nor did we even mention
18 the paper industry as a user". Do you see
19 that?

20 A: I do.

21 Q: Do you have any knowledge or
22 information of what instructions are
23 referred to in that sentence that I just
24 read into the record?

25 A: I do not.

1 Q: Did any of Mr. Cameron, Mr.
2 Lidgett or Mr. Vodden ever discuss with you
3 whether -- either before or after the date
4 of this March 10, 1970 meeting whether they
5 should disclose that NCR was a user of
6 Aroclor 1242 in the U.K.?

7 A: I don't remember such a
8 discussion.

9 Q: Do you remember such a discussion
10 occurring with respect to Wiggins Teape?

11 A: I do not.

12 Q: Do you recall that Wiggins Teape
13 determined that it would disclose its use
14 of Aroclor 1242 to U.K. government
15 officials?

16 A: Do I recall that Wiggins Teape did
17 disclose, you say?

18 Q: Decided to disclose.

19 A: To disclose. I do recall that
20 eventually it was disclosed. The timing, I
21 do not recall just when all this happened.

22 Q: The initial reports and studies
23 indicated that what was being found in the
24 environment looked like Aroclor 1254 and
25 1260, correct?

1 A: Correct.

2 Q: Was there a concern by the time
3 you took on your position that 1242 was
4 also implicated in environmental
5 contamination?

6 A: Certainly, there was a growing
7 belief that the higher chlorinated parts of
8 1242 might well be the type of material
9 being discovered in some samples.

10 Q: Was there a concern that Aroclor
11 1242 could, indeed, be a substantial
12 contributor to environmental contamination
13 because of the NCR application?

14 MR. PREUSS: What time frame,
15 please?

16 MR. TALLON: As of the time Mr.
17 Papageorge took on his position, January
18 1970.

19 A: I would more correctly describe it
20 as a contributor. Whether it was
21 substantial or not, there was no way for
22 any of us to know.

23 Q: Do you know, by the way, what
24 percentage or order of magnitude of
25 world-wide Aroclor sales were comprised of

1 sales of Aroclor 1242?

2 MR. PREUSS: In 1970?

3 MR. TALLON: Actually, '69.

4 A: I'd have to see the numbers, I
5 just don't recall.

6 Q: In what format were those numbers
7 maintained, what kind of report or other
8 document?

9 A: Well, there is the information
10 contained in the interagency task force
11 report put out by the government agencies,
12 where it lists the different Aroclors and
13 the amounts by year.

14 Q: And what is the date of
15 publication of that interagency report?

16 A: May of 1972.

17 Q: Are there internal Monsanto
18 documents that would indicate world-wide
19 sales of Aroclor 1242 for 1969 and later
20 years or, indeed, earlier years?

21 A: There were, yes.

22 Q: And can you identify any such
23 documents by name, such as an annual report
24 for the functional fluids group or the
25 like?

1 MR. PREUSS: Well, counsel, we have
2 discussed Exhibit 1096, which is a
3 presentation in 1969 which has a number of
4 figures.

5 MR. TALLON: Right.

6 A: That's an example.

7 Q: Sure. Anything else that you can
8 think of?

9 A: Of course, there are -- there
10 used to be internal reports in which the
11 sales numbers were reported and the
12 production numbers reported as a normal
13 record of business.

14 Q: Okay. Let's take a brief look at
15 another document, this one purporting to be
16 a report of a meeting held April 17, 1970.
17 This particular document bears production
18 numbers Tran 005547 to 5548.

19 (Deposition Exhibit Number
20 1102 mark'd for identification).

21 A: I have read the exhibit.

22 Q: Have you seen that document
23 before, Mr. Papageorge?

24 A: I have.

25 Q: Does looking at the top of the

1 second page of the document refresh any
2 recollection you may have regarding a
3 decision by Wiggins Teape to disclose their
4 usage of Aroclor 1242 to the Ministry of
5 Technology?

6 A: It does refresh my memory
7 regarding the date of disclosure.

8 Q: And to what extent is your memory
9 now refreshed? That is to say --

10 A: That it was done in early April of
11 1970.

12 Q: Did you have any discussions with
13 representatives of Wiggins Teape with
14 respect to that disclosure?

15 A: Yes.

16 Q: And approximately when did you
17 have those discussions?

18 A: When in Europe, in April, May 1970
19 we had a meeting with Wiggins Teape
20 representatives. I don't recall the date
21 of that meeting. But at that meeting the
22 Wiggins Teape representatives brought up
23 the subject of disclosure. And not that it
24 was new to us then, I was already aware of
25 it, but they did bring it up again.

1 Q: You were already aware of what?

2 A: Of the disclosure of the use of
3 PCBs in their paper product.

4 Q: You were aware that they had
5 disclosed their use of PCBs or that they
6 were going to disclose?

7 A: They had disclosed.

8 Q: By the time of your meeting?

9 A: Or they had given, really,
10 permission to, and Monsanto did the
11 disclosure.

12 Q: Did Wiggins Teape representatives
13 furnish you any explanation or
14 justification to underlie their decision to
15 make a disclosure?

16 A: All I recall is their continued
17 belief that this would be a responsible
18 action, and believed it might be helpful to
19 all concerned. That's all I recall about
20 the reasons for doing so.

21 Q: Is it your understanding that
22 before the date of your meeting in the U.K.
23 with representatives of Wiggins Teape, do
24 you know whether representatives of
25 Monsanto communicated with representatives

1 of Wiggins Teape regarding whether or not
2 they should disclose their use of Aroclor
3 1242?

4 A: I was informed so, yes.

5 Q: And were you informed as to the
6 identities of the Monsanto representatives
7 that met with representatives of Wiggins
8 Teape?

9 A: I was, but all I recall is Mr.
10 Cameron, as a name. I don't recall who
11 else was present.

12 Q: How did you learn of that
13 communication or series of communications?

14 A: Well, as I indicated, when we met
15 with the Wiggins Teape people as part of
16 the introductory comments made before the
17 rest of the meeting took place, and in an
18 attempt for both Wiggins Teape people and
19 Monsanto Europe people to bring me
20 up-to-date, they went through this review
21 of what had transpired. And the subject of
22 divulgence did come up, and they both
23 indicated that both parties were involved,
24 Monsanto and Wiggins Teape, in the
25 discussion. But as I said, the only

1 Monsanto individual I recall was Mr.
2 Cameron. I don't know who the others
3 were. I don't remember who the others
4 were.

5 Q: In advance of your meeting in the
6 U.K. did you receive any telephonic
7 communications from Mr. Cameron or others
8 concerning communications with Wiggins
9 Teape on the subject of disclosure?

10 A: I don't recall such a telephone
11 call.

12 Q: Do you know if others in St. Louis
13 received telephonic communications from Mr.
14 Cameron or others?

15 A: I don't know.

16 Q: Do you know if Mr. Cameron ever
17 took the position with Wiggins Teape that
18 disclosure should not be made?

19 A: I do not know.

20 Q: Do you know if Mr. Cameron ever
21 took the position with Wiggins Teape that
22 disclosure should be delayed?

23 A: I do not know.

24 Q: Are you familiar with a Mr. Bailly
25 from the -- do you know of a Mr. Bailly

1 from the Ministry of Agriculture and
2 Fisheries in the U.K.?

3 A: I don't remember the name.

4 Q: Let me show you a document which
5 is a document relating to a meeting of
6 September 29, 1970, bearing production
7 numbers Tran 040534 through 536. We'll
8 have that marked as the next exhibit.

9 (Deposition Exhibit Number
10 1103 mark'd for identification).

11 A: I've read the exhibit.

12 Q: Is that a copy of a meeting report
13 relating to a meeting on September 29,
14 1970, authored by Mr. Lidgett of Monsanto?

15 MR. PREUSS: When you say Monsanto,
16 are you talking about Monsanto Chemicals
17 Limited?

18 MR. TALLON: Yes.

19 A: It is.

20 Q: And did you receive a copy of this
21 report at about -- in September or October
22 of 1970?

23 A: I did.

24 Q: Do you recall learning from this
25 report that analytical work being done at

1 Unilever Research indicated that
2 degradation of lower chlorinated PCBs could
3 give rise to a chromatogram similar to a
4 higher PCB?

5 A: I do.

6 Q: Did that, in a sense, confirm some
7 of your own questions or suspicions?

8 A: Yes.

9 Q: Let me show you a document which
10 is a two page memo dated March 4, 1970,
11 bearing production numbers Tran 005779 and
12 5780, which we'll ask the court reporter to
13 mark as the next exhibit.

14 (Deposition Exhibit Number
15 1104 mark'd for identification).

16 A: I have reviewed the exhibit.

17 Q: Can you identify the exhibit?

18 A: The exhibit is a memorandum, a
19 Monsanto memorandum authored by E.S.
20 Tucker, the recipient is R.A. Lidgett in
21 Ruabon, Wales. And it covers the subject
22 of the shipment or transfer of samples of
23 material from the U.S. to the United
24 Kingdom.

25 Q: Are you noted as a recipient,

1 copyee of that memorandum?

2 A: I am.

3 Q: Do you recall receiving it?

4 A: Yes.

5 Q: Do you recall learning that Scott
6 Tucker held the view that due to
7 degradation of the lower chlorinated
8 isomers through a food chain most materials
9 reported as 1254 and 1260 could be, in
10 fact, residue of lower chlorinated
11 Aroclors?

12 A: I do.

13 Q: Had you discussed that topic with
14 Mr. Tucker at any time before March 4,
15 1970?

16 A: Certainly.

17 Q: Did you know Mr. Tucker before you
18 took on your job in St. Louis starting as
19 of January 1, 1970?

20 A: I did not.

21 Q: Did you meet him after you took on
22 that position?

23 A: Yes.

24 Q: Was he one of the people you began
25 talking to in January?

1 A: Oh, yes.

2 Q: And that was because he was --
3 well, why was that?

4 A: He was the individual most closely
5 associated with the analytical methodology
6 and its development and the results that
7 were being generated in his laboratory
8 regarding the PCBs in many, many samples.

9 Q: Let me show you a document, Mr.
10 Papageorge, which is another memo from Mr.
11 Tucker, or so it purports to be, dated July
12 14, 1970, a one page memo which has
13 production number Tran 038632, which we'll
14 have marked as the next exhibit.

15 (Deposition Exhibit Number
16 1105 mark'd for identification).

17 A: I have reviewed the memo.

18 Q: Is that a memo to you from Mr.
19 Tucker dated July 14, 1970?

20 A: It is.

21 Q: Do you recall getting it?

22 A: I do.

23 Q: Do you recall having any
24 discussions with Mr. Tucker with respect to
25 the subject matter of this memorandum?

1 A: Certainly.

2 Q: Do you have a recollection as to
3 where in the Mississippi River the two carp
4 discussed had been taken?

5 A: The best I knew, it was near the
6 Monsanto plant in Saujet, Illinois.

7 Q: The last complete paragraph of the
8 typed portion of the memo states that "The
9 E.C. Chromatogram of sample number 251
10 closely resembles that of Aroclor 1242,
11 while that of number 233 is very much
12 altered with respect to the closest
13 standard, Aroclor 1254". Do you see that?

14 A: I do.

15 Q: Did Mr. Tucker ever explain to you
16 what he meant by the term very much altered
17 with respect to the closest standard as it
18 was used in that sentence?

19 A: We discussed that terminology
20 frequently, but not necessarily with this
21 specific sample.

22 Q: And in your discussions with Mr.
23 Tucker with respect to that terminology,
24 did you acquire an understanding as to the
25 meaning or usage of that terminology?

1 A: I did.

2 Q: What is your understanding?

3 A: The chemist looks at the graph
4 printed out by the instrument, the peaks
5 and valleys that are charted, and compares
6 that to a graph of the manufactured
7 material, the particular Aroclor. He
8 compares the peaks and tries to match the
9 unknown sample versus the known. And in
10 those cases where he talked about altered,
11 it meant that all the peaks did not match,
12 some were different, or some were missing,
13 so he's then in the position where he has
14 to resort to comparing it to the standard
15 material that most closely matches the
16 unknown.

17 Q: And the standard material was
18 developed by taking the product, for
19 example, known as Aroclor 1254 and running
20 a sample of that through the testing
21 equipment?

22 A: Yes.

23 Q: That is not Mr. Tucker's
24 handwriting on the bottom of this
25 memorandum, is it?

1 A: It is not.

2 (Recess).

3 MR. TALLON: Let me show you a
4 document, Mr. Papageorge, which is dated
5 December 7, 1970, and is titled "PCB
6 environmental problem, November status
7 report". And it bears production numbers
8 Tran 003094 through 3104. We'll mark that
9 as the next exhibit and then give you an
10 opportunity to look it over.

11 (Deposition Exhibit Number
12 1106 mark'd for identification).

13 A: I have scanned the exhibit.

14 Q: Is that a document that you
15 authored, Mr. Papageorge?

16 A: I would suggest that I acted more
17 as editor rather than author.

18 Q: And does that indicate that there
19 were different contributors for the
20 information appearing in the document?

21 A: Yes.

22 Q: Did you have responsibility for
23 pulling the information together and
24 reporting it?

25 A: Yes.

1 Q: And you reported it to all of the
2 gentlemen whose names are listed on the
3 first page of the memo?

4 A: Yes.

5 Q: Was the creation of an
6 environmental problem status report a
7 routine activity for you?

8 A: Yes.

9 Q: And do you recall having edited
10 this December 7, 1970 report?

11 A: Yes.

12 Q: Do you recall having written any
13 portion of it?

14 A: I didn't see anything in here that
15 I would suggest was my contribution, no.

16 Q: When you used the term editing,
17 are you referring to the activity of
18 collecting reports from various sources and
19 then summarizing them in this format?

20 A: That is certainly part of it.
21 It's primarily what I'm going to call a
22 scissors and paste job. I would get
23 contributions from several individuals, and
24 then I would put it together in what I felt
25 was a readable form for the audience it was

1 intended for.

2 Q: Were you requested to create such
3 routine reports?

4 A: I would suggest -- it was more of
5 a suggestion. I recall putting out a one
6 page summary at one point in time, and the
7 recipients reacted favorably to that
8 attempt, but wanted a little bit more. So
9 I expanded it, and instead of being an
10 author of a one page document I became the
11 -- in essence, the editor and distributor
12 of a multi-page.

13 Q: When, initially, you took on your
14 position as of January 1, 1970, was it
15 explained to you that the duration of that
16 position would be from six months to a
17 year, or shorter time?

18 A: Yes.

19 Q: Actually, what was the amount of
20 time described to you when you initially
21 took on the position?

22 A: Well, Mr. Bergen, in our
23 discussion, predicted that this assignment
24 could last six months, at most a year, by
25 that time he was hopeful that everything

1 would be in order.

2 Q: Excuse me, did you say six months
3 to a year?

4 A: Yes.

5 Q: And did you at some point during
6 the course of 1970 get the idea that it was
7 going to last a little bit longer than
8 that?

9 A: Oh, certainly. It was quite soon
10 after I became a little more knowledgeable.

11 Q: The first caption of information
12 in this document is titled "Marketing". Do
13 you see that?

14 A: Yes.

15 Q: Do you know the source for the
16 information which is reflected after that
17 caption?

18 A: It came from marketing
19 representatives. In this case, I just
20 don't recall the specific person. But it
21 came from the marketing representatives of
22 the U.S., Japan and the United -- Europe.

23 Q: When you included information that
24 you got from sources such as marketing, did
25 you adopt the information that they were

1 giving you, did you accept it as accurate?

2 A: On an occasion, and it didn't
3 happen often, I would read something that
4 was totally new to me, so I would make it a
5 point to call and get a better
6 understanding of what was meant and what
7 had happened, so I tried to reassure myself
8 that what was being reported fit in with
9 the overall purpose of the program.

10 Q: Was it your understanding that by
11 December 7, 1970 NCR was making progress
12 toward the replacement of Aroclor 1242 in
13 their carbonless carbon paper?

14 A: Yes.

15 Q: And do you know when NCR began
16 their efforts to achieve that replacement?

17 A: Their efforts, really, were
18 ongoing when I arrived and assumed this new
19 responsibility. I personally don't know
20 just what year they started this program.

21 Q: Did you have a contact at NCR that
22 you spoke with over the course of 1970?

23 A: I did not have a regular contact,
24 no.

25 Q: There is a reference in the third

1 paragraph on page 1 to Mr. Katayama of MMK,
2 do you see that? The bottom of page 1?

3 A: Yes.

4 Q: What was MMK in December 1970?

5 A: MMK is the acronym that I
6 associate with the Monsanto Mitsubishi
7 venture in Japan.

8 Q: What was Mr. Katayama's position,
9 as you recall it?

10 A: I don't know the exact title, but
11 I would -- I related it in my thinking as
12 sort of a business director for PCB type
13 products in Japan.

14 Q: On page 3 there is a list of
15 points made with respect to Europe. Do you
16 see that?

17 A: I do.

18 Q: Do you know who contributed the
19 information that appears there?

20 A: As best I can recall, it was Mr.
21 Cameron.

22 Q: Was it your understanding that a
23 decision had been made to cease sales of
24 Aroclors or PCB products to
25 non-controllable applications in the U.K.

1 by March 1, 1971?

2 A: Yes.

3 Q: And to your knowledge, who made
4 that decision, either individually or
5 collectively?

6 A: I don't know.

7 Q: Do you know what is meant by the
8 phrase non-controllable applications as it
9 is used in that sentence?

10 A: Yes.

11 Q: What?

12 A: These are the applications that
13 Monsanto referred to as the plasticizer
14 applications. The applications in paints
15 and varnishes and caulking and adhesives,
16 inks, that type of application.

17 Q: That would include the use of
18 Aroclor 1242 in the manufacture of
19 carbonless carbon paper?

20 A: Yes.

21 Q: Were there any fluids included
22 within the use of the term non-controllable
23 applications, as you understood it at this
24 time?

25 A: At that time, no.

1 Q: Was it your understanding that
2 sales for all applications in continental
3 Europe would continue until the end of
4 1971?

5 A: Yes.

6 Q: And do you have an understanding
7 as to the difference in timing between
8 sales in Europe and sales in the U.K.?

9 A: The difference was driven
10 primarily by the perception held by
11 Monsanto representatives in Europe
12 regarding the cooperation and acceptance by
13 the governments throughout Europe, whether
14 they would go along with the replacement
15 materials and whether they would accept
16 accelerated testing, and whatever was
17 involved, to demonstrate that the
18 replacement product was suitable.

19 Q: Was it a factor in the decision to
20 terminate sales in the U.K. by March or,
21 relatively speaking, earlier than sales in
22 continental Europe, that U.K. regulatory
23 authorities were expected to regulate the
24 use of PCBs earlier than continental
25 Europe?

1 MR. PREUSS: Let me just object,
2 because I think 1 talks about
3 non-controllable applications and 2 talks
4 about all applications, which you didn't
5 distinguish.

6 MR. TALLON: I know.

7 A: Well, there is a difference in the
8 types of applications reviewed or described
9 here. I know of no decision regarding the
10 sales of PCBs in the U.K. that was based on
11 any perception of the U.K. Government's
12 plans to regulate.

13 Q: Could I hear the answer?

14 (The requested portion of the
15 record read by the reporter).

16 MR. TALLON: So far as you know,
17 were government regulators in Europe more
18 willing to work with PCB producers in terms
19 of developing replacement products than
20 were regulators in the U.K.?

21 A: In the U.K. I'm not aware of any
22 government regulatory activity regarding
23 PCBs at this point in time. In continental
24 Europe, and I have in mind one specific
25 example that illustrates this, the

1 authorities in Germany that have to do with
2 safety in the mines were reluctant to
3 consider an alternative material for the
4 mining equipment. That's the kind of
5 obstacle, let me call it, that Monsanto
6 faced in continental Europe regarding the
7 searching for and substituting of
8 alternative materials.

9 Q: What was the material used in
10 mining machinery in Europe -- in Germany?

11 A: It was one of the PCB mixtures. I
12 believe it was a 40 something percent, 48,
13 42 percent, something like that.

14 Q: Was it a Pydraul product?

15 A: No. No. No. This was a German
16 formulation.

17 Q: Meaning not made by Monsanto?

18 A: That is correct.

19 Q: Made by one of Monsanto's
20 competitors?

21 A: Yes.

22 Q: Do you know which one?

23 A: Beyer Company.

24 Q: Do you know what percentage of PCB
25 sales in the U.K. were attributable to

1 Monsanto?

2 A: PCB sales in the U.K.?

3 Q: Yes. In 1970, for example.

4 A: Virtually all in the U.K.

5 Q: Take a look, if you would, please,

6 Mr. Papageorge, at the caption

7 "Environmental Studies-Ruabon" on page 6.

8 Did you learn in 1970 that the Tolworth

9 Laboratory of the Ministry of Agriculture,

10 Fisheries and Food had conducted analyses

11 which showed that residues of Aroclor 1242

12 tended to resemble Aroclors 1254 and 1260?

13 A: Yes.

14 Q: Did you learn that representatives

15 of that laboratory believed that Aroclor

16 1242 may be a major source of environmental

17 pollution in the U.K.?

18 A: Yes.

19 Q: Did you have any discussions with

20 Monsanto representatives in the U.K.

21 concerning the viewpoint of representatives

22 of the Ministry of Agriculture, Fisheries

23 and Food concerning the source of PCBs in

24 cardboard?

25 MR. PREUSS: At or about this

1 time?

2 MR. TALLON: Yes.

3 A: Yes.

4 Q: And did you have those discussions
5 with Mr. Cameron or Mr. Vodden or someone
6 else?

7 A: With both individuals, Mr. Cameron
8 and Mr. Vodden, at different times.

9 Q: In general, what do you recollect
10 with respect to those discussions?

11 A: I recall that the suspicion had
12 been raised that the presence of PCBs in
13 cardboard might be traceable back to the
14 fact that cardboard was made from recycled
15 paper products, and amongst other sources
16 the PCB could have come from the carbonless
17 copy paper.

18 Q: Carbonless copy paper that was
19 recycled for use in making cardboard boxes
20 or other recycled paper products?

21 A: Yes.

22 Q: Do you know whether Factory Mutual
23 is an insurance company?

24 A: Well, I don't keep up-to-date on
25 insurance companies. I associate Factory

1 Mutual as providing service to industry
2 regarding acceptability of products on a
3 safety basis. And that's the extent of my
4 understanding.

5 Q: And where did you acquire that
6 understanding, general knowledge?

7 A: Just general knowledge.

8 Q: Do you know whether in 1970 a
9 representative of Factory Mutual reviewed
10 certain Pydraul products being reformulated
11 by Monsanto?

12 A: Yes.

13 Q: And do you know the results of the
14 Factory Mutual visit which you recall?

15 A: I don't recall specifics. I do
16 know that approval was granted in some
17 alternative materials and not in others.

18 Q: Take a look at the caption
19 "Pydraul Reformulation" which appears on
20 page 7. And particularly at the caption
21 "Factory Mutual visit". Do you see that?

22 A: I've read that.

23 Q: Did you draft that particular
24 passage in this status report?

25 A: Did I draft it?

1 Q: Yes.

2 A: No.

3 Q: You incorporated it?

4 A: I incorporated it, yes.

5 Q: And to the best of your
6 recollection, who was the draftsman or
7 draftsmen for this section?

8 A: I don't recall the specific
9 person. The closest I can come to it is
10 that this came out of the research
11 department.

12 Q: In the functional fluids group?

13 A: Yes.

14 Q: And do you have the name of a
15 particular person or persons in mind in the
16 research department in that group?

17 A: There were --

18 Q: There were many?

19 A: There were 30 or 50 all together.

20 Q: Did you have an understanding that
21 by December of 1970 certain Pydrauls had
22 been slated for reformulation?

23 A: Oh, yes.

24 Q: And do you know by December of
25 1970 how long that project had been under

1 way?

2 A: At least a year, but maybe a
3 little bit more than that.

4 Q: And did you acquire an
5 understanding when you took on your job as
6 of January 1, 1970 why Pydraul products had
7 been slated for reformulation?

8 A: Yes, I did.

9 Q: What was your understanding?

10 A: The initial efforts to reformulate
11 were aimed at removing the Aroclor 1254 and
12 1260 types of PCBs from those formulations
13 that did contain them. That's based on the
14 initial perception that the contaminant PCB
15 resembled this type of material, therefore,
16 let's try to do without it. As evidence
17 came in regarding the possibility that some
18 of the five and six chlorine type PCBs that
19 were being detected in the environment
20 could have come from such Aroclors as
21 Aroclor 1242, coupled with the fact that
22 there seemed to be some success in the
23 laboratory with the alternative materials
24 that were being newly developed, the
25 decision was made let's go with

1 alternatives with all the PCB mixtures,
2 irrespective of whether we thought that
3 they were the higher chlorinated or lower
4 chlorinated or mixtures thereof. In other
5 words, let's attempt to get out of PCB use
6 all together. That was evolutionary, it
7 didn't just happen on any one day. Since
8 the alternative material was a new
9 chemical, new to commerce, it took sometime
10 to, first of all, develop the process in
11 the laboratory, make enough sample to test
12 it, turn it over to the engineers to design
13 equipment and find the raw materials, the
14 starting materials out there from other
15 chemical producers. Anyway, through that
16 period of time a decision was made that we
17 can, fairly quickly, do away with PCBs in
18 all these products by going through an
19 interim step, which was going through a
20 chlorinated terphenyl, and that's what's
21 referred to in this document.

22 Q: The reformulations he's referred
23 to on page 7 are reformulations chlorinated
24 with terphenyls?

25 A: Yes, sir.

1 Q: You mentioned, for lack of a
2 better description, a two phase approach to
3 Pydraul reformulation, the first phase
4 being the elimination of the more highly
5 chlorinated Aroclors and the second phase
6 being the elimination of other Aroclors.
7 When did the second phase start?

8 A: I don't know that there is any one
9 specific day. It was an evolutionary kind
10 of program that -- well, the effort was
11 under way in about the middle or last
12 quarter of 1970.

13 Q: And had it begun to evolve before
14 then?

15 A: The thinking started to evolve,
16 but I'm talking about the bench work right
17 in the laboratory.

18 Q: I'm sorry, I thought you were not
19 finished. There is a product referenced in
20 that paragraph under the caption "Factory
21 Mutual visit", which is MCS 1063, and that
22 is followed by the name in parentheses
23 Turbinol 153A, do you see that?

24 A: I see that.

25 Q: Do you know if MCS 1063 was slated

1 to be a replacement for Turbinol 153?

2 A: Yes.

3 Q: Do you know whether that fluid was
4 submitted to a Factory Mutual
5 representative on November 4 and 5, 1970
6 for testing?

7 A: Yes.

8 Q: Do you know if that fluid passed
9 -- excuse me, was approved by the Factory
10 Mutual representative at that time?

11 A: Yes.

12 Q: It was?

13 A: Yes. Now, that had to do with
14 fire safety only, it had nothing to do with
15 suitability for other reasons.

16 Q: Can you turn for a moment, please,
17 to page 8, Mr. Papageorge.

18 A: I have it.

19 Q: There is a further reference to
20 the same product, Turbinol 153A, and,
21 indeed, the report indicates that MCS 1063
22 demonstrated good lubricity, do you see
23 that?

24 A: I do.

25 Q: MCS 1063 and Turbinol 153A, are

1 those terms being used interchangeably in
2 this passage?

3 A: They are.

4 Q: The same paragraph also refers to
5 moderate wear which was attributed to high
6 TAN Krummrich CDT, do you see that?

7 A: Yes.

8 Q: What is the reference to TAN
9 Krummrich CDT?

10 A: I don't recall the TAN acronym.
11 The CDT refers to cresyl diphenyl
12 phosphate.

13 Q: The same paragraph goes on to
14 state that this fluid also exhibited low
15 deposits in the Alcor Deposition test. Do
16 you see that?

17 A: Yes.

18 Q: Is it your understanding that that
19 is a favorable comment?

20 A: Yes.

21 Q: Do you know by December of 1970
22 how long MCS 1063 had been under
23 development?

24 A: No, I don't.

25 Q: Do you know if there was a

1 particular person or persons who were
2 responsible for development of that
3 reformulation?

4 A: I only know the name of the person
5 ultimately responsible, that would be Dr.
6 Richard. I do not know the team reporting
7 to him.

8 Q: Was it a factor in deciding to
9 reformulate Pydraul products that Pydraul
10 products were used in applications where
11 spills and leaks could occur into the
12 environment?

13 A: That, in general, is correct. And
14 it had to do with the use in high pressure,
15 high temperature systems.

16 Q: Let's mark as the next document a
17 multi-page exhibit which is sequentially
18 numbered from Tran 004898 through Tran
19 004911.

20 (Deposition Exhibit Number
21 1107 mark'd for identification).

22 MR. TALLON: Mr. Papageorge, please
23 take your time in reviewing this exhibit.
24 I'm particularly interested, if it will
25 save you time, in the page which has the

1 Bates number Tran 004909.

2 A: I've scanned the document.

3 Q: Okay. Thanks. Setting aside for
4 a moment the handwriting, do you recognize
5 the format of these pages that are titled
6 "Monsanto Company Organic Chemical
7 Division Research Department index"?

8 A: This is the first time I've seen
9 this document or similar documents.

10 Q: So, the three column format pages,
11 job number and subject is new to you as of
12 today?

13 A: Yes.

14 Q: Did you know a Paul Fowlkes as an
15 employee of the research department in the
16 organic chemicals division in 1970?

17 A: We used to call him Dwayne, I
18 think.

19 Q: His name is Paul Dwayne?

20 A: It could be. I knew a Mr.
21 Fowlkes.

22 Q: Do you know if Mr. Fowlkes ever
23 worked on a reformulation of Turbinol 153?

24 A: I do not.

25 Q: Have you ever seen indices to lab

1 books at Monsanto?

2 A: No.

3 Q: Do you know if the appellation MCS
4 1063, if the 1063 refers to any particular
5 entry in a lab book or reference to a lab
6 book?

7 A: I am aware of a document from
8 which numbers like 1063 are obtained, and a
9 description is included that relates to
10 that number, and it also includes the name
11 of the researcher assigned to that number,
12 and it's dated. I recall seeing such an
13 entry.

14 Q: What document or book are you
15 referring to in which such numbers are
16 maintained?

17 A: It's a log of -- I forget the
18 official title. As I understood, it was a
19 log of new product studies, the designation
20 of new product studies.

21 Q: And was that maintained by a
22 particular department or group, so far as
23 you know, in 1969 or 1970?

24 A: It was maintained by the office of
25 the director of the research laboratories.

1 Q: And in 1970, who was the director
2 of the research laboratories?

3 A: I don't recall.

4 Q: Do you know whether numbers were
5 sequentially assigned to new products being
6 developed in order or whether they were
7 random or related somehow to the
8 composition of the product?

9 A: No. They were sequentially
10 assigned. The next available number was
11 assigned to the study, no matter what the
12 study was about.

13 Q: Was the appellation MCS applied to
14 new products in development, so, for
15 example, MCS 1063?

16 A: Yes.

17 Q: By the time you took on your
18 position in January of 1970, had any
19 attention been devoted to the issue of PCBs
20 in the environment by Congressman Ryan?

21 A: Yes.

22 Q: And did you -- was that attention
23 one of the subjects that you learned about
24 after you assumed your position in January
25 of 1970?

1 A: Yes.

2 Q: Did you learn about that attention
3 from Elmer Wheeler or someone else?

4 A: As best I recall, it was Elmer
5 Wheeler.

6 Q: And what understanding do you
7 recall acquiring with respect to
8 Congressman Ryan's activity?

9 A: At that time the understanding was
10 from Mr. Wheeler that there is a
11 Congressman out of New York that is making
12 some remarks and including statements in
13 the Federal Register, I believe it was the
14 Federal Register, relating to PCBs and
15 their presence in the environment and the
16 harm they might be doing.

17 Q: Do you know if -- well, do you
18 recall acquiring an understanding that
19 Congressman Ryan was considering
20 legislation to ban PCBs or to regulate
21 them?

22 A: Yes.

23 Q: Let me show you a document which
24 bears a series of production numbers
25 commencing with Tran 005201 and going

1 through 005208. We'll have that marked as
2 the next Exhibit.

3 (Deposition Exhibit Number
4 1108 mark'd for identification).

5 A: I have read the exhibit.

6 Q: Can you identify the document?

7 A: This is a copy of the text that I
8 used in making a presentation to the
9 corporate development committee of Monsanto
10 Company in April of 1970.

11 Q: Did the corporate development
12 committee change its name during the course
13 of 1970 or 1971?

14 A: Yes. I don't recall the exact
15 timing, but it had several titles. At
16 times it was called the corporate
17 management committee, other times it was
18 the corporate administrative committee,
19 other times it was the corporate
20 development committee. I do not recall the
21 dates at which each of these names were
22 changed.

23 Q: Was the corporate development
24 committee also known at some point as the
25 corporate management committee?

1 A: Yes.

2 Q: And are those two terms synonymous
3 in your mind?

4 A: In my mind they are.

5 Q: Did each of those two bodies have
6 the same constituents, that is to say,
7 members?

8 A: There was some change in
9 personnel, but the functions these
10 individuals represented were there -- were
11 represented by someone.

12 Q: So, for example, a senior
13 vice-president might actually change
14 positions, but that same function would
15 still be represented on the committee?

16 A: Yes. The senior vice-president of
17 marketing would be there.

18 Q: No matter who it was?

19 A: It might be Mr. X and it might be
20 Mr. Y.

21 Q: Did you draft the presentation
22 which is before you?

23 A: I did.

24 Q: Did you make any recommendations
25 to the committee as of the date of that

1 presentation?

2 A: Yes, I did.

3 Q: And what recommendations do you
4 recollect having made?

5 A: This doesn't appear to be a full
6 document. I made recommendations regarding
7 the -- well, there were about a dozen, I
8 can't recall them all. Recommendations
9 regarding the termination of sales to the
10 open uses, the continuation of toxicity
11 testing programs, the continuation of the
12 analytical methodology development, the
13 communications to customers, the thorough
14 review of the termination of making and
15 selling the Aroclor 1254 and 1260, the
16 close cooperation with government,
17 university, industry laboratories. I think
18 I've covered most of them. As I remember,
19 it was a 12 point program, or something
20 like that.

21 Q: Do you recollect having learned,
22 about two weeks before your presentation to
23 the committee, that the FDA was considering
24 establishing a limit of two parts per
25 million PCB in food?

1 A: I do.

2 Q: And you reported that to the
3 committee?

4 A: Yes. Did you say two parts per
5 million or two-tenths?

6 Q: .2 parts per million, two-tenths.

7 A: That's correct.

8 Q: There is a reference on the next
9 page, it's actually not readable, but I
10 think it's page 3, and at the bottom page
11 5203, that states "From the U.S. point of
12 view we were reluctant to divulge this
13 information because of adverse consequences
14 world-wide". Do you see that?

15 A: I do.

16 Q: That is a reference back to a
17 request of the Ministry of Agriculture,
18 Fisheries and Food to disclose customer
19 names?

20 A: Yes.

21 Q: And do you now recall why you were
22 reluctant to divulge this information?

23 A: Yes.

24 Q: Why?

25 A: We were very concerned about our

1 customers -- customer relations, many of
2 whom we knew did not want their names
3 divulged to any regulatory agencies for any
4 purpose. And the thought there was that if
5 we do this in the U.K., the rest of the
6 world would expect the same type of action.

7 Q: Do you recall whether it was the
8 point of view of Monsanto representatives
9 in the U.K. that disclosing customer names
10 in confidence would be a wiser approach?

11 A: Yes. That reflects the United
12 Kingdom approach to matters of this type.

13 Q: Do you recall, by the way, meeting
14 with General Electric representatives in
15 January of 1970?

16 A: Yes. Shortly after I arrived.

17 Q: And do you recall that General
18 Electric representatives opposed the notion
19 of withdrawing Aroclors 1254 and 1260 from
20 the market?

21 A: Yes.

22 Q: Would you flip, finally, Mr.
23 Papageorge, to the page which is numbered
24 on the bottom 5208. Is it your
25 recollection that by the time of this

1 report to the committee you and others
2 working with you were disappointed in the
3 resistance to degradation to some of the
4 isomers in Aroclor 1242?

5 A: Yes.

6 Q: And was it your belief at the time
7 that that resistance tended to confirm the
8 belief that some of the 5 and 6 chlorinated
9 biphenyls being found in the environment
10 could be residue from degraded Aroclor
11 1242?

12 A: Yes.

13 Q: Let me show you a document that
14 bears production numbers Tran 006174 and
15 6175, appearing to be a copy of a letter
16 from J.G. Jim Bryant to Mr. Lou Shoaff at
17 Westinghouse.

18 (Deposition Exhibit Number
19 1109 mark'd for identification).

20 A: I have read the document.

21 Q: Have you seen that document before
22 today?

23 A: Yes.

24 Q: And is that a letter from Mr.
25 Bryant to Mr. Shoaff?

1 A: Yes.

2 Q: Did you attend a meeting with
3 Westinghouse representatives in St. Louis
4 in April of 1970?

5 A: I did.

6 Q: And Elmer Wheeler, Doctors Keller
7 and Tucker were also present?

8 A: Yes.

9 Q: And as well as Dr. Richard and Dr.
10 Munsh?

11 A: Yes.

12 Q: At that meeting the replacement
13 product Aroclor 1242 was a subject of
14 discussion?

15 A: One of the subjects, yes.

16 Q: At that time, do you know what
17 percentage of sales were represented by
18 purchases of Aroclor products or mixtures
19 from Monsanto by Westinghouse, either in
20 pounds or dollars?

21 A: No, I do not.

22 Q: Do you know whether Westinghouse
23 was a substantial customer?

24 A: Well, the word substantial is
25 rather vague. They were one of the bigger

1 customers.

2 Q: Were they as big as G.E.?

3 A: I don't believe so.

4 Q: Were they in the same order of
5 magnitude as G.E.?

6 A: One could say that, yes.

7 Q: Let me show you a document that's
8 dated May 27, 1970, Mr. Papageorge, and it
9 appears to be a memo with an attachment
10 from you to a Mr. Durland in Tokyo, and it
11 bears sequential production number 085321
12 through 23. We'll have that marked as the
13 next exhibit.

14 (Deposition Exhibit Number
15 1110 mark'd for identification).

16 A: I have reviewed the document.

17 Q: Is that memorandum a memorandum
18 that you wrote to Mr. Durland on or about
19 May 27, 1970?

20 A: Yes.

21 Q: And describe, if you would, the
22 attachment to that memorandum. It's
23 labeled "present plan"?

24 A: The attachments?

25 Q: Yes. It's a two page document

1 entitled "Present plan".

2 A: It enumerates the approved
3 Monsanto program relating to sale of PCBs
4 and proper handling thereof.

5 Q: Did that six point plan emanate
6 from a meeting of the corporate management
7 committee?

8 A: Emanate? This was discussed at
9 such a meeting, and the six points were
10 approved by that committee.

11 Q: Were the six points approved by
12 the corporate management committee at the
13 same meeting for which Exhibit 1108 was the
14 presentation you gave, or a different
15 meeting?

16 A: It was a different meeting.

17 Q: Was it approximately a month or so
18 after the meeting to which you referred in
19 connection with Exhibit 1108?

20 A: Yes.

21 Q: And can you recall the
22 circumstances under which the six point
23 plan was developed for a May 1970 meeting
24 of the corporate management committee?
25 Strike that. Let me put it this way, was

1 the business group directed to come up with
2 a plan?

3 A: Following the April meeting, the
4 corporate management committee instructed
5 the business group to arrange for a
6 subsequent meeting and come up with a plan
7 that had target dates that were not as
8 extended as the original proposal. In
9 other words, speed up the program. And the
10 meeting in May did do that.

11 Q: And the six point plan which is
12 depicted in the attachment to your memo to
13 Mr. Durland is the plan that was approved
14 by the corporate management committee at
15 their May 1970 meeting?

16 A: Yes.

17 Q: Who drafted or who participated in
18 the drafting of the six point plan?

19 A: The six point plan was drafted by
20 John Mason. I cannot speak as to who
21 participated in the development of these
22 six points as he put it together.

23 Q: Did you give Mr. Mason any
24 suggestions as to the components or timing
25 to be used in the six point plan?

1 A: Yes.

2 Q: And to your knowledge, did Mr.
3 Mason adopt any of those suggestions?

4 A: Yes.

5 Q: Which ones?

6 A: Oh, I believe I commented on all
7 six of those. Some of my comments were
8 supportive. I don't recall anything in
9 particular that was originally mine and
10 mine alone. My participation really was
11 one of serving as a sounding board. I was
12 in Europe at the time. He called me long
13 distance and, actually, he read the script
14 that he was going to use, and I was
15 commenting considerably regarding the
16 points he was raising in that text. And
17 then when he came to his six points, I
18 don't know that I contributed anything that
19 he didn't already have there.

20 Q: Was it your understanding that the
21 six point plan reflected in the attachment
22 to your memo to Mr. Durland covered the
23 treatment of all Aroclors in mixed
24 products?

25 A: It was intended to cover all

1 Aroclors, yes.

2 Q: And what about mixed products?

3 A: Well, Aroclors no, matter whether
4 they were sold as Aroclors or as
5 ingredients in other products.

6 Q: Turning for one moment to your
7 memo to Mr. Durland. Mr. Durland was part
8 of the MMK organization,
9 Monsanto-Mitsubishi?

10 A: Yes.

11 Q: And his title, do you remember?

12 A: I don't recall it.

13 Q: Did he have a responsibility, in
14 part, for dealing with the PCB issues that
15 had arisen as of this time?

16 A: Yes.

17 Q: Was it your understanding in May
18 of 1970 that the only Aroclors which at
19 that time were considered biodegradable are
20 Aroclor 1221 and a fractionally distilled
21 Aroclor 1242 that did not contain the
22 higher chlorinated isomers?

23 A: Yes.

24 Q: And the fractionally distilled
25 Aroclor 1242 to which I've just referred,

1 that was referred to at the time as Aroclor
2 1242 B, is that correct?

3 A: That is correct.

4 Q: By the time -- by May of 1970 --
5 or, let's put it this way, by the end of
6 May of 1970 you had been in your position
7 for approximately five months, correct?

8 A: Yes.

9 Q: And during that time had you
10 undertaken to learn the customers to which
11 PCB products were sold?

12 A: As much as I could, yes.

13 Q: By the end of May 1970 were you
14 aware that there was a product known as
15 Turbinol 153?

16 A: Certainly.

17 Q: Were you aware of the customer or
18 customers to which it was sold by that
19 time?

20 A: At the time I was shown a list.
21 Not having adequate background, I had no
22 way of really understanding what that list
23 was telling me. But I did recognize that
24 on that list were what I'm going to call
25 sophisticated companies, they were not mom

1 and pop operations in the sense of lack of
2 sophistication or lack of resources.

3 Q: What kind of sophistication are
4 you referring to?

5 A: Oh, this can fill the whole gamut
6 of business management, technology, access
7 to all kinds of resources, whether they be
8 money or talent of all kinds, whether
9 they're in-house or available. By talent,
10 I'm talking, now, engineering, medical,
11 financial and so on. Have I helped you?

12 Q: You're referring to a list of all
13 customers or a list of customers broken
14 down by type of product?

15 A: Well, my thoughts apply to any
16 list, when I glance at it, based on what
17 knowledge I may have, I kind of -- I think
18 I can pretty well pick out those who have
19 the resources and what I'm going to still
20 call the mom and pop operation that is on a
21 shoestring, barely getting by, doesn't even
22 understand some of the terminology we use.
23 So, there is differences in customers.

24 Q: Did you ever see a list of the top
25 20 customers for Aroclors and Aroclor

1 products? Not ever, but in the first six
2 months of 1970.

3 A: I don't know that there was ever
4 such a list, top 20. No. I don't recall
5 such a list.

6 Q: Do you recall ever seeing a list
7 of the top 20 customers for Pydrauls?

8 A: No.

9 Q: You including among the customers
10 who you would refer to as sophisticated
11 General Electric?

12 A: Certainly.

13 Q: And Westinghouse?

14 A: And Westinghouse.

15 Q: Among the six points identified on
16 the present plan which is the attachment to
17 your May 27, 1970 memo to Mr. Durland,
18 where did you fit Turbinol 153 at the time,
19 if you did?

20 A: This program does not address the
21 situation that it would apply to a Turbinol
22 153 use.

23 Q: And why is that?

24 A: Well, for one, it was not
25 perceived as a non-biodegradable

1 chlorinated biphenyl as understood at that
2 time. And, number two, it was perceived to
3 be used in a controllable end use as
4 distinguished from the expression seen in
5 item one, non-controllable end use.

6 Q: I'm sorry, did I understand you to
7 say that the product -- that as of May 1970
8 the product known as Turbinol 153 was not
9 understood to include a non-biodegradable
10 biphenyl?

11 A: That's right.

12 Q: Did you understand that Turbinol
13 153 was composed in part of Aroclor 1242?

14 A: Yes.

15 Q: And if the -- if a product was
16 not specifically covered in one of these
17 categories as being identified for
18 termination of sales, did you anticipate
19 that sales would continue?

20 A: Certainly.

21 Q: Would it be fair to say that,
22 actually, this is a seven point plan with
23 the inference being that if it's not
24 specifically prohibited it could continue
25 as a product for sale?

1 A: Yes.

2 Q: You mentioned that the
3 understanding at the time was that Turbinol
4 153 was being used -- was not being used
5 in a non-controllable end use, is that
6 right?

7 A: That's our understanding, yes.

8 Q: From whom did you acquire that
9 understanding?

10 A: From the individuals in Monsanto
11 who were close to the customer and
12 understood that this material was going to
13 that customer and the type of use it was
14 in, and the relationships with that
15 customer in terms of understanding this
16 product and being well aware of what it is
17 and what it can do and so on.

18 Q: You referred to that customer,
19 you're referring to one customer, right?

20 A: Well, I'm talking in generalities,
21 am I not?

22 Q: I don't know. Are you? Are you
23 referring to one customer or more than one
24 customer? I'm talking now about -- I'm
25 sorry.

1 A: The comments I made refer to any
2 relationship between the Monsanto people
3 and the customer as it relates to virtually
4 every product.

5 Q: Okay. So, in your comments of a
6 moment ago you were referring to the
7 paradigmatic customer?

8 A: Yes.

9 Q: With specific reference to
10 Turbinol 153 did you know in May of 1972,
11 to what company or companies that product
12 was being sold?

13 A: At the time I knew, yes.

14 Q: And at the time, that is to say,
15 May 1970, was it your understanding that
16 Turbinol 153 was being used by that
17 customer or those customers in uses that
18 were not non-controllable?

19 A: No. I had the opposite
20 understanding, that these uses were
21 controllable.

22 Q: Right. Who was the customer or
23 who were the customers that you understood
24 were purchasers of Turbinol 153 in May of
25 1970?

1 A: The one I do remember was Texas
2 Eastern, for sure, primarily because it was
3 the largest customer. There were others on
4 the list that I -- as I indicated, I
5 really have forgotten, they were so small.

6 Q: You indicated yesterday that one
7 was Columbia Gulf Transmission Company?

8 A: Yes, Columbia Gulf comes to mind.
9 But I, again, cannot recall the dates.
10 Now, you mentioned 1970.

11 Q: I did.

12 A: 1970, I just don't recall with any
13 clarity who was on that list, really, other
14 than Texas Eastern.

15 Q: Do you recall the names of the
16 Monsanto employees who were responsible for
17 that account in 1970?

18 A: I certainly recall the manager of
19 that group, or that team, Norm Johnson, for
20 sure. I don't recall the exact dates when
21 other individuals became involved. I
22 recall a Larry Bradford. I think his
23 initials are C.L., but I never knew what
24 the C stood for. There is a Roger Hatton.
25 I'm having difficulty recalling the other

1 name. There is at least one more person
2 that I'm having difficulty recalling.
3 Nevertheless, those are the people that I
4 relied on. Primarily Mr. Johnson, really.
5 He was my contact.

6 Q: Your contact for the purposes of
7 Turbinol 153 alone or for other products as
8 well?

9 A: For his whole assignment, his
10 whole product line.

11 Q: What was his product line?

12 A: His product line, I suggest, was
13 the use of industrial fluids in many, many
14 applications.

15 Q: Was he primarily responsible for
16 the Pydraul product line?

17 A: Pydraul was one of his lines.
18 Vacuum pump oils were in his product line.
19 Turbinol was a product line.

20 Q: Turbinol was a product line in and
21 of itself?

22 A: Well, I don't know how to describe
23 it. Turbinol was a product line intended
24 for turbine use. Santovac represented a
25 product for vacuum pumps and so on.

1 Q: Did either Mr. Johnson or Mr.
2 Bradford or Mr. Hatton or someone else
3 provide you with information about the
4 application or use of Turbinol 153 by Texas
5 Eastern as of May 1970?

6 A: They gave me a brief overview of
7 the type of application, yes.

8 Q: And do you recall approximately
9 when they gave you that brief overview?

10 A: The first half of 1970.

11 Q: And do you recall what -- rather,
12 do you recall which of the gentlemen I've
13 named or any other names, persons who
14 actually provided you with information?

15 A: Principally, Norm Johnson.

16 Q: When you say principally, it
17 suggests that others also provided
18 information. Do you recall --

19 A: Bits and pieces. In Norm
20 Johnson's absence, I would contact whoever
21 was available in the office area and touch
22 on some points that were either fuzzy in my
23 thinking or I had misunderstood. That kind
24 of conversation kind of took on -- rather
25 informally, really, it was not a structured

1 kind of meeting or anything.

2 Q: In 1970 did Mr. Johnson or anyone
3 working for you provide you with a written
4 summary of the use to which Texas Eastern
5 was putting Turbinol 153?

6 A: I don't recall any written
7 summary. I just don't recall that, no.

8 Q: Do you recall what description any
9 of Mr. Johnson or his colleagues gave you
10 of the application of Turbinol 153 by Texas
11 Eastern?

12 A: I recall the reference to its use
13 in turbines that are used to propel gas in
14 transmission systems. And I recall the use
15 of the Turbinol in these turbines. Really,
16 that's about it. I didn't need to know too
17 much more than that for my purposes.

18 Q: Why is that?

19 A: Well, I certainly wasn't going to
20 maintain them or design them or --

21 Q: Were you interested in finding out
22 whether an application was an open
23 application or closed application?

24 A: Well, certainly, I was informed in
25 such a way that led me to believe that

1 these were closed systems. You don't have
2 the fluid spraying out, and once through
3 kind of thing. This is a recycling or kind
4 of self-contained kind of system.

5 Q: Do you recall what it was that was
6 explained to you or that you were told that
7 led you to the conclusion that you reached
8 with respect to whether the turbine use was
9 a closed system or an open system?

10 A: I don't recall the exact words.
11 In my mind, from our discussions, I related
12 it an awful lot to the oil in my car engine
13 kind of application.

14 Q: Did you have any responsibility,
15 Mr. Papageorge, with respect to seeing to
16 it that the six point plan described in the
17 attachment to your May 27, 1970 memo was
18 implemented?

19 A: Yes. I was expected to monitor
20 the activities, to get feedback as
21 reflected in those monthly reports, and --
22 it's really a monitoring and reporting
23 activity. And if I sensed that the
24 activity was stalling or not moving as
25 quickly, I would make it a point to sit

1 down with the manager and get some action.

2 Q: Was the six point plan as
3 described in that attachment implemented in
4 full by the dates which are reflected in
5 the plan?

6 A: Some of the dates were extended.

7 Q: Extended by the corporate
8 management committee?

9 A: Yes.

10 Q: At the request of the business
11 group?

12 A: Yes.

13 Q: And which dates were those?

14 A: Oh, I recall some delays
15 encountered in the NCR paper application,
16 for example. I recall some delays
17 encountered in the hydraulic applications.
18 These delays I'm talking about were
19 primarily of a technical nature. The
20 research program can't be controlled that
21 easily. The results determine what actions
22 take place, so the timing just didn't match
23 what we had hoped for.

24 Q: By the way, was Turbinol 153A ever
25 sold to a customer?

1 A: No.

2 Q: Do you know why not?

3 A: No.

4 Q: Do you know if 1242 B was
5 ultimately used as a component part of
6 hydraulic fluids?

7 A: It was never used in hydraulic
8 fluids.

9 Q: Do you know why not?

10 A: By the time 1242 B, or then known
11 as Aroclor 1016 was commercially available,
12 the program in the laboratory regarding the
13 reformulation of hydraulic fluids was going
14 quite well with the phosphate ester
15 chemicals, and it was decided by those
16 responsible for that product line to
17 concentrate on the phosphate ester approach
18 rather than end up with a product line that
19 had some or both of each. It was a
20 business decision, and I was not involved.

21 Q: To the best of your recollection,
22 when did work start on reformulating
23 products with phosphate esters?

24 A: I thought we covered that earlier.

25 Q: I don't remember phosphate

1 esters.

2 A: Well, it had to do with the
3 reformulation of hydraulic fluids. And
4 that study -- that started before I
5 arrived on the scene, and of course,
6 continued through 1970, 1971.

7 (Discussion off the record).

8 MR. TALLON: Let me show you a
9 document that's been marked as -- rather,
10 has production numbers Tran 037752 through
11 54 and appears to be excerpts from the
12 minutes of a corporate management committee
13 for September 14, 1970. We'll mark that.

14 (Deposition Exhibit Number
15 1111 mark'd for identification).

16 A: I've reviewed it.

17 Q: Can you identify that document,
18 please, Mr. Papageorge?

19 A: This document is a copy of
20 portions of the minutes of the meeting of
21 the Monsanto corporate management committee
22 meeting held on September 14, 1970.

23 Q: And did you get a copy of these
24 excerpts in October of 1970?

25 A: I did.

1 Q: Did the corporate management
2 committee approve an extension with respect
3 to certain of the dates which had been
4 contained in the previously approved six
5 point plan?

6 A: Yes.

7 Q: Did you make any presentation at
8 any meeting that requested such an
9 extension?

10 A: Did I personally?

11 Q: Yes.

12 A: No.

13 MR. PREUSS: To the CMC?

14 MR. TALLON: Yes. Did any person
15 that you know about make any presentation
16 to the CMC that was a request to make the
17 extension or grant the extension?

18 A: Yes.

19 Q: Who?

20 A: Mr. Mason.

21 Q: Do you know whether phosphate
22 esters ultimately replaced PCBs in
23 hydraulic fluids?

24 A: Yes.

25 Q: Starting when?

1 A: Some of them were replacing PCBs
2 early 1971, as I recall.

3 Q: In what products?

4 A: One of the Pydrauls. I can't
5 recall just which one. I'd have to see
6 some notes to refresh my memory.

7 Q: Just to touch back on something
8 you said a moment ago, the phosphate
9 esters, was there a particular person who
10 was responsible for development of
11 phosphate ester replacements to PCBs that
12 you recall today?

13 A: I think I'd respond by saying that
14 the particular person responsible is Dr.
15 Richard, and he had a team of several
16 individuals working on phosphate ester
17 studies.

18 Q: All right. Thank you. Let me
19 show you a document, just one page, and it
20 bears production number Tran 037262, which
21 we will have marked as the next exhibit.

22 (Deposition Exhibit Number
23 1112 mark'd for identification).

24 A: I have read the document.

25 Q: Have you seen this document

1 before, Mr. Papageorge?

2 A: I don't recognize it.

3 Q: Do you recognize the handwriting
4 to the extent that it's legible?

5 A: I believe I do.

6 Q: And whose handwriting do you
7 believe that it is?

8 A: Mr. Bergen's.

9 Q: Did you ever -- rather, in early
10 1970 did you participate in any meetings
11 preparatory to meeting with General
12 Electric on the subject of the continued
13 manufacture of Aroclors 1254 and 1260?

14 A: I did not participate in any
15 preparatory discussions, no.

16 Q: But you did participate in
17 meetings with General Electric?

18 A: Yes.

19 Q: Let me show you another document,
20 which is titled "The PCB pollution
21 problem", and bears production numbers Tran
22 022030 through 039.

23 (Deposition Exhibit Number
24 1113 mark'd for identification).

25 MR. TALLON: Take a moment and

1 review that, please.

2 A: I have reviewed the document.

3 Q: Can you identify that document,
4 Mr. Papageorge?

5 A: Yes. It's a copy of minutes to a
6 meeting held in St. Louis on January 21 and
7 22, 1970, with Monsanto representatives and
8 General Electric representatives on the
9 subject of the PCB pollution problem.

10 Q: You were present at that meeting?

11 A: I was.

12 Q: This was not long after you took
13 on your new position?

14 A: That's true.

15 Q: By the way, after January 1, 1970,
16 did you continue to be plant manager at
17 Anniston?

18 A: For a while, yes.

19 Q: Until a replacement was
20 identified?

21 A: Yes.

22 Q: How long a while was that?

23 A: Most of the month of January, as
24 best I recall.

25 Q: Do you remember being at this

1 meeting?

2 A: Yes.

3 Q: Do you remember that at the
4 meeting there was discussion with the
5 General Electric representatives of the
6 status of toxicity tests then under way?

7 A: Yes.

8 Q: Do you recall that Elmer Wheeler
9 reported that the toxicity tests results
10 then available were not as favorable as had
11 been hoped or anticipated?

12 A: Yes.

13 Q: Do you recollect discussion with
14 the General Electric representatives
15 regarding the degradation of PCBs in the
16 environment?

17 A: Yes.

18 Q: And do you recall that one or more
19 Monsanto representatives stated that PCBs
20 up to and including 3 chlorine atoms appear
21 biodegradable in preliminary lab work?

22 MR. PREUSS: Where are you?

23 MR. TALLON: I was reading from the
24 bottom of page 3.

25 A: Yes.

1 Q: Do you also recall that one or
2 more Monsanto representatives also
3 indicated that at that time there was no
4 evidence that higher chlorinated biphenyls
5 will biodegrade?

6 A: That's true.

7 Q: There is a reference on page 5,
8 Mr. Papageorge, to Monsanto's program to
9 handle scrap. Do you see that?

10 A: I do.

11 Q: How do you understand the use of
12 the term scrap in that context, if you have
13 an understanding?

14 A: This is intended to refer to
15 materials containing PCBs. And the
16 reference to scrap is applied to those
17 PCB-containing materials which, because of
18 some defect, are not suitable for use in
19 any known application, and, therefore, must
20 be disposed of.

21 Q: Did G.E. propose that Monsanto
22 dispose of the scrap by buying it back?

23 A: That was a topic of discussion,
24 yes.

25 Q: Did Monsanto subsequently buy back

1 scrap from G.E., or take it back?

2 A: On a very limited basis. It was
3 not a successful program.

4 Q: Do you recollect discussion at the
5 meeting with the General Electric
6 representatives in late January 1970 of
7 whether there was evidence of natural
8 sources of PCBs in the environment? I was
9 referring specifically to item 12 on page
10 8.

11 A: That discussion did come up.

12 Q: And do you recollect one or more
13 Monsanto representatives stating or
14 agreeing with the statement that there is
15 no evidence of natural sources of PCBs nor
16 any source other than industrially produced
17 and used PCBs in the environment?

18 A: Yes. And keep in mind, this
19 refers to PCBs with the -- I'm going to
20 call it fingerprint of the man-made
21 material.

22 Q: Was there any discussion at this
23 meeting about whether G.E. would assume
24 legal liability for its use of Aroclors
25 1254 and 1260?

1 A: There was some discussion, yes.

2 Q: And was General Electric requested
3 by one or more Monsanto representatives
4 whether it would assume legal liability for
5 use of Aroclor 1254 and 1260?

6 A: It was asked of them, yes.

7 Q: Did one Monsanto representative
8 ask that question or more than one, or do
9 you remember?

10 A: I really don't remember.

11 Q: And did, in fact, a Monsanto
12 representative ask whether G.E. would
13 assume sole and complete liability for its
14 use of Aroclors 1254 and 12630?

15 A: The topic was raised and
16 discussed, yes.

17 Q: And the G.E. representatives
18 indicated an unwillingness to do so, is
19 that right?

20 A: That is correct.

21 Q: Was there also discussion at the
22 meeting about anticipated price increases
23 associated with sales of Aroclors 1254 and
24 1260?

25 A: Yes, sir.

1 Q: Did one or more Monsanto
2 representatives state at the meeting that
3 Monsanto's pollution control expenses would
4 warrant a price increase with respect to
5 those products?

6 A: Yes.

7 Q: And do you recollect the substance
8 of the discussion on that topic?

9 A: The substance was that in
10 responding to the PCB environmental issue,
11 Monsanto was incurring unanticipated costs,
12 not only in the studies, but in the search
13 for alternative materials, and somehow
14 those bills had to be paid, and it would
15 have to be reflected in the selling price
16 of the products still sold.

17 Q: Okay. Did the General Electric
18 representatives indicate at this meeting
19 that they wanted to continue to use
20 Aroclors 1254 and 1260 for the applications
21 they had been using them?

22 A: They did.

23 Q: And did the Monsanto
24 representatives at this meeting indicate
25 that they wanted to continue selling those

1 Aroclors to G.E.?

2 A: Yes. With the proviso that G.E.
3 do all it can to keep it out of the
4 environment.

5 Q: G.E.'s application was to fill
6 transformers with mixtures including
7 Aroclors 1254 and 1260?

8 A: Yes.

9 Q: And you consider that to be a
10 closed use?

11 A: Yes.

12 Q: Did you, in 1970, consider NCR's
13 use of Aroclor 1242 to be an open use?

14 A: Yes, definitely.

15 Q: Indeed, it could be said that
16 NCR's use of Aroclor 1242 was among the
17 most open, is that right?

18 A: One could arrive at that
19 conclusion easily, yes.

20 Q: And that is because that the
21 carbonless carbon paper was disposed of as
22 ordinary garbage in landfills or it was
23 burned or otherwise no special precautions
24 were taken with respect to its handling,
25 right?

1 A: That is correct.

2 (Noon Recess).

3 MR. TALLON: Mr. Papageorge, we
4 were talking, among other things, before
5 lunch about the understanding that you had
6 acquired during 1970 about the use to which
7 Texas Eastern Transmission Company put the
8 Monsanto product Turbinol 153. Do you
9 remember that we did touch on that topic?

10 A: I do remember.

11 Q: Did I understand you to say that
12 it was your understanding that Turbinol 153
13 contained a non-biodegradable biphenyl?

14 MR. PREUSS: As of the time of --

15 MR. TALLON: 1970.

16 A: In 1970 --

17 MR. PREUSS: Well, I'm just going
18 to object, because the context of the
19 question was at the time of the April
20 meeting.

21 MR. TALLON: All right. Let me ask
22 you, then, did you have an understanding at
23 any point during 1970 that the product
24 Turbinol 153 contained non-biodegradable
25 biphenyls?

1 A: As defined by those knowledgeable
2 about PCBs in 1970, yes.

3 Q: Okay. Did your understanding with
4 respect to the components of Turbinol 153
5 related to their non -- to their
6 biodegradability change at any time?

7 A: Yes.

8 Q: And when did that change occur?

9 A: It was -- well, initially there
10 was this speculative discussion regarding
11 the possibility that some of the higher
12 chlorinated parts of 1242 might be in the
13 environment. There was no hard evidence,
14 just speculation. That, of course, planted
15 the thought in all of us that were involved
16 with PCB that if this were possible, we
17 have got to do something to study it, to
18 determine whether it's truthful. And this
19 initiated the -- resulted in the
20 biodegradation studies that we talked
21 about. Those studies indicated that those
22 higher chlorinated components in Aroclor
23 1242 resisted degradation. So you make
24 another speculation that these tests showed
25 this, therefore, some of the PCB being

1 found out in the environment could have
2 started out as a 1242, but, years later we
3 look at it and it doesn't look like 1242,
4 it looks more like Aroclor 1254. So, I
5 would suggest that in my mind that
6 understanding was fairly firm in, I would
7 suggest, the latter part of 1970 or
8 thereabouts, pretty well implanted.

9 Q: Were you aware at any time that
10 Turbinol 153 consisted of something in
11 excess of 75 percent Aroclor 1242?

12 A: Yes.

13 Q: Do you recollect that at the
14 January 1970 meeting with General Electric
15 Monsanto representatives stated that there
16 was no evidence that tetrachlorobiphenyls
17 degraded in the environment?

18 MR. PREUSS: Well, can we have a
19 reference?

20 MR. TALLON: Yes, that would be
21 fine with me. Actually, page 3.

22 A: Which exhibit?

23 Q: Yes, I'm assuming that you've got
24 your hands right on it. It's the one you
25 have your hand right on.

1 A: What's the number? This one. All
2 right.

3 Q: For the record, we'll refer to
4 that by number, now that we have identified
5 it, as 1113. And if you look at the bottom
6 of page 3.

7 MR. PREUSS: What's the question?

8 MR. TALLON: The question was, at
9 the January '70 meeting with General
10 Electric, did Monsanto representatives
11 indicate that there was no evidence that
12 higher chlorinated biphenyls will
13 biodegrade? And the "higher" is in the
14 connotation of three chlorine atoms
15 referred to in the immediately preceding
16 sentence.

17 MR. PREUSS: I object to a
18 mischaracterization of the document. The
19 document speaks for itself. And, further,
20 paragraph C and E would shed light on the
21 question.

22 MR. TALLON: Okay. Why don't we
23 answer the question first, and then we can
24 shed light on it later.

25 MR. PREUSS: Okay.

1 A: As I recall the question, there is
2 evidence -- there is no evidence that
3 Monsanto was aware of that, that the higher
4 chlorinated would resist degradation. But
5 by higher they meant higher than 3.

6 Q: Higher than 3 chlorine atoms?

7 A: 3 and below, there was evidence
8 that they did degrade.

9 Q: Is tetrachlorobiphenyl a higher
10 chlorinated biphenyl, as you understand the
11 use of that term in numbered paragraph 2 on
12 the bottom of page 3?

13 A: It would be included in that
14 categorization.

15 Q: Do you know today what other
16 components were in Turbinol 153?

17 A: Not specifically. But I recall
18 there was a monochlorobiphenyl type of
19 product, Aroclor 1221. And I also recall a
20 phosphate ester, but I'm having difficulty
21 remembering the specific ester that was
22 used.

23 Q: Turbinol 153A was a proposed
24 reformulation of Turbinol 153, is that
25 right?

1 A: That is correct.

2 Q: And you believe that that was a
3 reformulation using terphenyls?

4 A: As one of the ingredients.

5 Q: And was it your understanding that
6 the terphenyls replaced the biphenyls in
7 the reformulation that was being
8 considered?

9 A: Yes.

10 Q: And, to your knowledge, when did
11 the reformulation program to use terphenyls
12 commence?

13 A: Fairly late in '71.

14 Q: Just to clarify that for a moment,
15 if you would, I want to refer back to your
16 memorandum dated December 7, 1970, which I
17 can help you find in the stack of
18 exhibits.

19 MR. PREUSS: 1106.

20 MR. TALLON: I think that's it
21 there. On page 7 of that memo there is a
22 reference to Turbinol 153A under the
23 caption "Pydraul reformulation-Factory
24 Mutual visit".

25 A: Yes.

1 Q: I believe you indicated that the
2 reformulated products referred to in that
3 paragraph were terphenyl reformulations, is
4 that not correct?

5 A: Many of them are, yes.

6 Q: What about Turbinol 153A?

7 A: That's included, yes.

8 Q: So this memorandum is dated
9 December 7, 1970, correct?

10 A: I was in error, I should have said
11 late '70.

12 Q: So it was '70, not '71?

13 A: Not '71, correct.

14 Q: And the particular paragraph that
15 we were just looking at indicates that the
16 Factory Mutual representative visited the
17 fire test facility November 4 and 5, do you
18 see that?

19 A: Yes.

20 Q: Was that, by the way, a Monsanto
21 fire test facility?

22 A: Yes.

23 Q: Located here in St. Louis?

24 A: Yes.

25 Q: In order for the Factory Mutual

1 representative to have tested or observed
2 tests of Turbinol 153A, reformulation would
3 have had to have occurred and resulted in
4 some samples by November 4th and 5th, 1970,
5 right?

6 A: Yes.

7 Q: So, at least by the beginning of
8 November 1970 the Turbinol 153A
9 reformulation had been produced in test
10 quantities?

11 A: Or a version of 153A. I don't
12 know how many different recipes were titled
13 153A.

14 Q: Was it typical to have more than
15 one recipe use the same nomenclature?

16 A: Oh, yes. When you're testing, you
17 just try all kinds of combinations.

18 Q: Was is it your understanding that
19 whether there was one or more than one
20 combination of Turbinol 153 in the time
21 period under discussion, that those were
22 terphenyl reformulations of that product?

23 A: Yes. The designation A indicates
24 the presence of terphenyls. The amount of
25 terphenyl and type of terphenyl could vary.

1 Q: I see. And do you have any sense,
2 as you sit here today, how long before
3 November 4th reformulation of this
4 particular product had commenced?

5 A: No, I do not.

6 Q: Let me show you a document, Mr.
7 Papageorge, which is dated January 29, 1970
8 and bears production numbers Tran 025002
9 through 003.

10 (Deposition Exhibit Number
11 1114 mark'd for identification).

12 A: I have read the document.

13 Q: Is that a memorandum from Scott
14 Tucker to Dr. Keller dated January 29,
15 1970?

16 A: It is.

17 Q: Did you receive a copy of that on
18 or shortly after its date?

19 A: I did.

20 Q: After you assumed your position as
21 of January 1, 1970, did you become aware
22 that there was ongoing a biologically
23 populated river water degradation study?

24 A: Yes.

25 Q: Was that study being conducted by

1 Monsanto or an outside laboratory?

2 A: By Monsanto.

3 Q: Where?

4 A: In St. Louis.

5 Q: And did you become aware that
6 Aroclors 1221, 1242, 1248 and 1254 were
7 being tested in that study?

8 A: Yes.

9 Q: And did you become aware that the
10 -- after completion -- or, rather, after
11 completion of the initial biologically
12 populated river water degradation studied
13 on those Aroclors the results indicated
14 that under the conditions employed in the
15 test Aroclors 1242, 1248 and 1254 remained
16 unaffected after an exposure period of five
17 weeks?

18 A: Yes.

19 Q: And that the major isomers in
20 Aroclor 1221 are readily degraded?

21 A: Yes.

22 Q: And did you also become aware that
23 as of the time that you assumed your
24 position as of January 1, 1970, there was
25 ongoing semi-continuous activated sludge

1 degradation studies?

2 A: Yes.

3 Q: Were those undertaken by Monsanto?

4 A: Yes.

5 Q: Did Mr. Tucker have responsibility
6 for both of these studies to which we have
7 referred?

8 A: Yes.

9 Q: And did you learn that the results
10 of the semi-continuous activated sludge
11 degradation studies were that the major
12 isomers of Aroclor 1221 were readily
13 degraded?

14 A: Yes.

15 Q: And, additionally, that there were
16 indications that some of the lower
17 chlorinated isomers in 1242 and 1248 were
18 beginning to be affected?

19 A: Yes.

20 Q: Do you know what methodology Mr.
21 Tucker used -- or Dr. Tucker used to test
22 the samples in these studies?

23 A: There were two studies.

24 Q: Right.

25 A: I have an understanding of what

1 procedures were used.

2 Q: Do you know that whether in
3 analyzing his results he used gas
4 chromatography?

5 A: Oh, certainly. The analytical
6 methods were those that were developed as
7 of 1970 for PCB analysis in waters and
8 sludges.

9 Q: During 1970 and 1971 were you
10 copied on most memos having to do with PCB
11 environmental contamination issues, so far
12 as you know?

13 A: I was copied in on many. I don't
14 know how to measure the total, therefore, I
15 can't tell you if it was most.

16 Q: Was it part of your job to keep up
17 with the correspondence that you got?

18 A: As it related to the environmental
19 issue, not as it related to other matters,
20 such as marketing and pricing and the like.

21 Q: Did you have responsibilities for
22 marketing and pricing?

23 A: No.

24 Q: Did you have any responsibilities
25 with respect to profitability in the

1 functional fluids group?

2 A: No.

3 Q: Who had responsibilities for
4 profitability in the functional fluids
5 group in 1970 and 1971?

6 A: That would be Mr. Bergen.

7 Q: He was the head of that group?

8 A: Yes.

9 Q: I'd like to show you a one page
10 memo from Scott Tucker to Mr. Lidgett,
11 dated February 18, 1970.

12 (Deposition Exhibit Number
13 1115 mark'd for identification).

14 MR. TALLON: Would you take a
15 moment to review that document, Mr.
16 Papageorge.

17 A: I have read it.

18 Q: Is this a memorandum from Scott
19 Tucker to Mr. Lidgett in Ruabon, dated
20 February 18, 1970?

21 A: It is.

22 Q: Did you get a copy of that on or
23 after February 18, 1970?

24 A: I did.

25 Q: As of the time you assumed your

1 position as of January 1, 1970, was there a
2 program ongoing to substitute brominated
3 biphenyls for the polychlorinated
4 biphenyls?

5 A: Yes.

6 Q: And when, to your understanding,
7 had that program been instituted?

8 A: As I recall, it was about the
9 middle of '69, as best I can recall.

10 Q: Aroclor 1221, is that a compound
11 with which you became familiar after you
12 took on your position January 1, 1970?

13 A: No.

14 Q: Was it a compound with which you
15 were familiar before you took on that
16 position?

17 A: Yes, sir.

18 Q: Was it your understanding in 1970,
19 or before, that Aroclor 1221 included
20 biphenyls to which no chlorine atoms had
21 attached?

22 A: There was some amount of the
23 unchlorinated biphenyl present, yes.

24 Q: And did it come to your attention
25 in 1970 that Scott Tucker had observed that

1 Aroclor 1221 showed significant degradation
2 and that he believed this is probably due
3 to its high biphenyl content?

4 A: Yes.

5 Q: Let me show you a document bearing
6 production numbers Tran 021705 through
7 707.

8 (Deposition Exhibit Number
9 1116 mark'd for identification).

10 A: I have reviewed the exhibit.

11 Q: Can you identify that exhibit,
12 please, Mr. Papageorge?

13 A: This is a copy of a monthly
14 report, this particular one covering two
15 months, January and February 1970, for
16 research work performed for functional
17 fluids by the research department's
18 analytical chemistry group.

19 Q: Is this a periodic report issued
20 by that group?

21 A: It is.

22 Q: And you got a copy of this?

23 A: Yes.

24 Q: There is a reference on the first
25 textual page, page 021706, to an effluent

1 sample from the fifth settling pond at the
2 BMC Central Foundry Division. Do you see
3 that? It's in the first sentence in the
4 second paragraph.

5 A: I see it, yes.

6 Q: Do you know what BMC Central
7 Foundry Division is referred to there?

8 A: I don't recognize that customer.

9 Q: Do you recollect that this report
10 indicated that the effluent referred to
11 contained about 10 parts per million of
12 apparent PCBs which were not identical to
13 either Aroclor 1242 or Aroclor 1248, but
14 like a mixture of the two?

15 A: I understand that.

16 Q: I don't know if this is the entire
17 report or not, but there is a reference
18 right at the top of the first page which
19 reads "Aroclor defense". Do you see that?

20 A: Yes.

21 Q: Had you seen that same term used
22 in other memoranda?

23 A: There were some individuals in the
24 research department that used that to
25 describe the Aroclor PCB environmental

1 issue.

2 Q: Did Dr. Richard use that term?

3 A: He was the originator of that
4 term, yes, sir.

5 Q: Did Dr. Richard ever explain to
6 you the reason why he selected that
7 particular term?

8 A: No, he didn't.

9 Q: Did Dr. Richard ever -- well, was
10 Dr. Richard ever encouraged to discontinue
11 using that term?

12 A: Encouraged by who?

13 Q: To discontinue using it, by any
14 person.

15 A: Not that I'm aware of.

16 MR. PREUSS: Just for the record,
17 it does appear that it's not complete,
18 since the sentence starts on the bottom of
19 the second page there, the second numbered
20 page.

21 MR. TALLON: Right. There is no
22 third page. Let me show you another
23 monthly summary, Mr. Papageorge, this one
24 from March 1970, bearing production numbers
25 Tran 024397 and 398, which we'll have

1 marked as the next exhibit.

2 (Deposition Exhibit Number
3 1117 mark'd for identification).

4 A: I have read the exhibit.

5 Q: Is this a research and development
6 report for March 1970?

7 A: Yes.

8 Q: And you got a copy of this?

9 A: I did.

10 Q: Were these reports rendered in
11 connection with any kind of periodic
12 meeting?

13 A: No. This was a report of the
14 activities of this particular group by
15 month.

16 Q: Do you recollect learning in or
17 about March 1970 that Lake Michigan fish
18 had been collected and examined using the
19 GC mass technology?

20 A: Yes.

21 Q: Do you know -- or, rather do you
22 recollect whether the analysis was
23 conducted by Monsanto or by the Wisconsin
24 Alumni Research Foundation or some other
25 entity or group?

1 A: The analyses were conducted by
2 both Monsanto and the Wisconsin Alumni
3 Research Foundation as a cross-check on the
4 results obtained by both laboratories.

5 Q: Did the results of the Monsanto
6 analysis yield the conclusion that
7 polychlorinated aromatics containing 3
8 through 6 chlorine atoms per molecule with
9 mass numbers corresponding to chlorinated
10 biphenyls were found in two of the four
11 extracts?

12 A: Yes.

13 Q: There is a reference in the fourth
14 paragraph to the -- to a WGK plant, do you
15 see that?

16 A: Yes.

17 Q: Do you know to what that refers?

18 A: That's the W.G. Krummrich plant,
19 which is the Saujet, Illinois plant.

20 Q: And is that near St. Louis?

21 A: Right across the river here, yes.

22 Q: The paragraph refers to downstream
23 river water sampling?

24 A: Yes.

25 Q: Do you know how downstream, how

1 far downstream samples were collected?

2 A: I don't, no.

3 Q: And do you know whether downstream
4 river water that was analyzed as described
5 in that paragraph contained PCB typical of
6 Aroclor 1242 at the 5 parts per million
7 level?

8 A: That was reported, yes.

9 Q: Did you meet with representatives
10 of the Wisconsin Alumni Research
11 Foundation?

12 A: I did.

13 Q: When did you do so?

14 A: I believe it was 1971.

15 Q: Was it in connection with the
16 analysis of the Lake Michigan fish referred
17 to in the functional fluids research and
18 development report that we just looked at?

19 A: That was one of the topics
20 discussed, yes, sir.

21 Q: Did the Wisconsin Alumni Research
22 Foundation use the same analytical approach
23 as Monsanto did in analyzing those fish?

24 A: Basically the same. But the two
25 laboratories communicated pretty closely

1 for a period of time to the point where
2 eventually the WARF laboratory was using
3 the Monsanto method.

4 Q: Did you from time to time refer
5 Monsanto customers to WARF?

6 A: I believe I did, yes.

7 Q: And for what purpose did you do
8 so?

9 A: This was usually in response to an
10 inquiry regarding reputable laboratories
11 that could conduct analyses, and I included
12 the WARF laboratory as one of them.

13 Q: As one of the reputable
14 laboratories?

15 A: Yes.

16 Q: Let me show you a document that
17 bears production number Tran 060453, which
18 purports to be a memo from R.A. Baxter to
19 Dr. Richard, dated 25 February 1970.

20 (Deposition Exhibit Number
21 1118 mark'd for identification).

22 A: I have read it.

23 Q: Though you are not shown as a
24 copyee in the typewritten portion of this
25 memo, it does appear that someone has

1 written your name in the upper left-hand
2 corner of the document, perhaps indicating
3 that you were to receive a copy. Do you
4 recall receiving a copy of this memo?

5 A: I did receive it, yes, sir.

6 Q: Was that Dr. Richard who sent it
7 to you?

8 A: Yes.

9 Q: There is a reference in the fourth
10 paragraph that indicates that from R.A.
11 Baxter's point of view it looks as show the
12 higher chlorinated biphenyls are highly
13 resistant to biodegradation. Do you recall
14 reading that?

15 A: Yes.

16 Q: That same paragraph goes on to
17 state that "even the lower ones seem to
18 require the presence of biphenyl itself, at
19 any rate under the conditions we have
20 examined so far". Do you have any direct
21 knowledge of what is meant by the
22 terminology that the lower ones seem to
23 require the presence of biphenyl itself?

24 A: I have an understanding.

25 Q: What's your understanding?

1 A: That at least up to this point in
2 time the micro-organisms, the bacteria that
3 were used to degrade mixtures of PCBs
4 seemed to be more effective if there was
5 some biphenyl present. I have never been
6 told or given any explanation as to why
7 this happens.

8 Q: When you referred to biphenyl, are
9 you referring to biphenyl which is not
10 accompanied by any chlorine atoms attached
11 to the benzene rings?

12 A: Exactly.

13 Q: After you took on your position
14 starting in January of 1970, did you become
15 familiar with river die-away studies that
16 were conducted by Monsanto or by a
17 laboratory working for Monsanto?

18 A: Certainly.

19 Q: What's your understanding of the
20 terminology river die-away study?

21 A: That was the term that was
22 eventually used to describe the studies,
23 the reports of which we've seen, in which
24 Dr. Tucker and his team took water from the
25 Meramec River here in Missouri, naturally

1 occurring water, took it to the laboratory
2 and introduced into that water different
3 types of PCBs and then periodically
4 analyzed that water to see what, if
5 anything, was happening to the PCBs. That
6 is the river die-away. The die-away had
7 reference to the disappearance of some of
8 the PCBs.

9 Q: And was it a conclusion of the
10 river die-away studies that Aroclor 1221
11 disappeared?

12 A: Yes, sir.

13 Q: And was it also a conclusion that
14 Aroclors 1242, 1248 and 1254 were
15 undegraded in the river die-away studies?

16 A: Undegraded? Essentially, that's
17 true, yes. The identity of those materials
18 remained the same as the original, yes.

19 Q: And were you aware of shake flask
20 studies being undertaken by Monsanto in the
21 United Kingdom during the course of 1970?

22 A: Yes.

23 Q: And what is a shake flask study?

24 A: Flask is a glass container used in
25 laboratories, sort of an inverted funnel

1 shape, in which the material being tested
2 is included, along with the media, the
3 culture, and the culture contains bacteria
4 which are believed -- at least the
5 bacteria are being tested to see if they're
6 effective. And the given amount -- or
7 known amount of PCB is added, and these
8 flasks are mounted on a device that's sort
9 of an oscillating platform that just keeps
10 shaking them, and after periods of time
11 samples are withdrawn and analyzed and the
12 amount of PCB present is determined.

13 Q: Samples of the liquid in the
14 flasks were withdrawn and examined?

15 A: Yes. Not only liquid, but the
16 solids, also. It's the composite.

17 Q: Were the liquids evaporated before
18 the samples could be analyzed or were the
19 liquids analyzed, also, in 1970?

20 A: The PCB methodology involved some
21 procedures up front for taking the sample
22 as is, extracting the PCBs from it -- and
23 that, incidentally, is the hard part of
24 this whole procedure. And it's this
25 extract that -- we have references to

1 extracts and all, that extract is what's
2 run through the machine.

3 Q: Let me show you a document dated
4 July 17, 1970 with production numbers Tran
5 036322 through 6324, which we'll ask the
6 court reporter to mark.

7 (Deposition Exhibit Number
8 1119 mark'd for identification).

9 A: I have reviewed the document.

10 Q: Flip, if you would, please, Mr.
11 Papageorge, to page 2 and to, in
12 particular, the discussion under the
13 caption "MCS 1016".

14 A: I see it.

15 Q: The M-1016, again, is the product
16 which is synonymous with Aroclor 1242 B?

17 A: It's MCS 1016. You said M-16.

18 Q: I may have. MCS 1016 is
19 synonymous with Aroclor 1242 B?

20 A: Correct.

21 Q: And I take it that from your
22 discussion in paragraph 4 on page 2 that
23 certain customers were under the impression
24 that MCS 1016 was completely biodegradable?

25 A: That was the misimpression that

1 was present in some locations, yes.

2 Q: Which capacitor customers are
3 referred to, if you recall?

4 A: Oh, I don't remember specifically,
5 no.

6 Q: MCS 1016 was not fully
7 biodegradable, as you understood it at that
8 time?

9 MR. PREUSS: That time being July
10 of 1970?

11 MR. TALLON: Yes.

12 A: Fully -- they were fully
13 degradable under the right conditions with
14 enough time. But they were not
15 instantaneously degradable like, for
16 example, sugar water.

17 Q: Do you know the amount of time
18 involved for 1016 to degrade fully?

19 A: No. Because, again, this depends
20 on several factors: concentration,
21 presence of the right kind of bacteria,
22 other chemicals in the environment,
23 presence or absence of heat, presence or
24 absence of light, and so on.

25 Q: In either case -- or, rather, in

1 any case, it was your view in July 1970
2 that neither Aroclor 1242 nor MCS 1016
3 could be dumped into the environment?

4 A: That is correct.

5 Q: There is a specific mention at the
6 end of that same paragraph to less
7 controllable hydraulic fluids applications,
8 do you see that?

9 A: I do.

10 Q: Which applications did you have in
11 mind with respect to that particular
12 sentence?

13 A: The kind of applications we'd find
14 in diecasting plants, processes that used
15 high pressure hydraulic machinery.

16 Q: Where the possibility existed for
17 a hose or line rupture?

18 A: Yes. That kind of thing.

19 Q: MCS 1016 was considered for use in
20 electrical capacitors?

21 A: Yes.

22 Q: And it was your understanding at
23 the time, that is to say, July 1970, that
24 electrical capacitors would be filled with
25 materials including MCS 1016 and then

1 sealed?

2 A: Yes.

3 Q: Let me show you a document which
4 is dated as of April 7, 1970, and appears
5 to be a memo from you to Mr. Bergen and
6 others, to which is attached another
7 document. In series, the document numbers
8 are STR 001530 through 1539.

9 (Deposition Exhibit Number
10 1120 mark'd for identification).

11 A: I've scanned the article.

12 Q: Can you identify the memorandum
13 and the document which is attached to it?

14 A: The memorandum is authored by me
15 and addressed to members of Monsanto's
16 management -- top management of the
17 business groups that dealt with PCB
18 products in 1970. Attached to it is a
19 summary prepared by me regarding the status
20 of the PCB environmental issue and a
21 listing of objectives that I was proposing
22 to this group of addressees, followed,
23 then, by an action plan listing those
24 activities which I felt would help achieve
25 the listed objectives.

1 Q: Were the objectives what you
2 believed to be the objectives of the
3 business groups?

4 A: It's really the objectives of the
5 individuals assigned to the business groups
6 and addressed to the managers of the
7 business group.

8 Q: The memorandum, which is addressed
9 to Mr. Bergen, Mr. Mason and others,
10 indicates that the plan was reviewed with
11 representatives of a variety of
12 departments, including the business groups
13 concerned. Was that the case, that, in
14 fact, this plan was reviewed with the
15 medical, legal, public relations
16 departments and the business groups
17 concerned?

18 A: True.

19 Q: And what individuals from the
20 business groups were you referring to?

21 A: Well, I was referring, for
22 example, to Mr. Bergen's research director,
23 marketing director, manufacturing manager.
24 I believe that covers his group. And the
25 same type of team from Mr. Springgate's

1 group.

2 Q: Did you understand it to be an
3 objective of the business groups in April
4 1970 -- in fact, did you understand it to
5 be the overall objective of the business
6 groups in April 1970 to manage the PCB
7 pollution problem to prevent it from
8 adversely affecting the established return
9 on investment return objectives of the
10 groups?

11 A: That was the consensus of those
12 individuals that worked to put these
13 thoughts together.

14 Q: Do you recall that Mr. Mason
15 responded to your draft plan in writing?

16 A: Yes, I do.

17 Q: One more thing before we leave
18 this document. On the very last page there
19 is a section entitled "V. Costs".

20 A: I see it.

21 Q: Did you develop that list of
22 costs, or did you develop it in conjunction
23 with members of the business groups?

24 A: Oh, this was developed in
25 conjunction with all of those representing

1 the members of the departments listed on
2 the cover memo, the second paragraph,
3 medical, legal and the business groups.

4 Q: The dollar figure is stated in
5 thousands, is it not?

6 A: Yes.

7 Q: So 675 thousand was the total
8 anticipated cost for 1970 with the program
9 described in this plan?

10 A: That is correct.

11 Q: And was it -- did you anticipate
12 at the time you drafted this that some or
13 all of those costs would be defrayed by the
14 continued sale of some of those products,
15 including PCBs?

16 A: I would hope so, yes.

17 Q: Let me show you a document which
18 is dated April 9, 1970, and bears
19 production numbers Tran 005549 through
20 5551, which we'll ask the court reporter to
21 mark.

22 (Deposition Exhibit Number
23 1121 mark'd for identification).

24 A: I've reviewed the memorandum.

25 Q: Is this a memorandum to you from

1 Mr. Mason commenting on your draft plan
2 which was conveyed to him by your April 7,
3 1970 memo?

4 A: Yes.

5 Q: And did you discuss the comments
6 that Mr. Mason outlined in this memo with
7 him?

8 A: Yes.

9 Q: Did you make changes to your draft
10 plan as a result of these comments?

11 A: I did.

12 Q: And as you understood it at the
13 time, in brief, how did Mr. Mason want to
14 vary the plan as put together by you?

15 MR. PREUSS: Well, I object
16 inasmuch as the document speaks for itself.

17 MR. TALLON: True. Summarize it,
18 would be fine.

19 A: I'll try to summarize. One point
20 that Mr. Mason was truly trying to get is
21 to offer more background and specific kinds
22 of information to the group, the president,
23 chairman of the board and his
24 vice-presidents. He felt that I was
25 assuming they had all the background that I

1 had. So he felt it would help to bring out
2 specific examples of the kinds of
3 situations we were encountering, and also
4 share with them some of the activities that
5 we were conducting relating to
6 communicating with the authorities, various
7 laboratories. And he wanted me to give
8 them, really, status reports on Monsanto's
9 programs regarding toxicity testing and
10 analytical method development and the
11 search for alternative materials. And he
12 also, as I recall, was very interested in
13 conveying to these high level individuals
14 the reaction of the electrical equipment
15 manufacturers regarding the cessation of
16 the use of Aroclor 1254 and 1260 in
17 electrical equipment.

18 Q: On that point in particular were
19 you planning to recommend that Monsanto not
20 terminate sales of 1254 and 1260 to
21 electrical equipment manufacturers?

22 A: At what point in time?

23 Q: At this point in time.

24 A: At this point in time? As I
25 recall, by this time we had concluded --

1 because of assurances from the electrical
2 equipment manufacturers that they could
3 contain the equipment and handle the
4 material, PCB material properly, we
5 concluded that with that kind of assurance,
6 with reputable companies, that the safety
7 benefits more than outweighed the little
8 risk that might result from an occasional
9 mishap, and we were ready to go to bat and
10 recommend that we continue the use of 1254
11 and 1260, but limited to the electrical
12 industry.

13 Q: The "we" referred to in your answer
14 includes you and Mr. Mason?

15 A: Mr. Mason and Mr. Bergen, all of
16 those of us that were deeply involved.

17 Q: Did Mr. Mason indicate to you that
18 one of his goals was to maintain maximum
19 profitability for his group while
20 preserving a responsible image of Monsanto
21 as a company?

22 A: As businessmen, that is their
23 responsibility, yes.

24 Q: One other thing on your draft plan
25 while you have it before you, Mr.

1 Papageorge -- skip it. By the way, did
2 you attend the April 20, 1970 CMC meeting,
3 or was that the meeting for which you were
4 overseas?

5 A: That's the meeting where I made
6 the presentation.

7 Q: At that April 20, 1970 meeting did
8 the corporate management committee accept
9 parts of the plan that was presented to
10 them?

11 A: At that meeting top corporate
12 management accepted all parts except the
13 proposed dates of completion.

14 Q: The corporate management committee
15 wanted to accelerate the dates of
16 completion?

17 A: Accelerate the program, was their
18 objective.

19 Q: Let me show you a document which
20 looks like it has production numbers 300
21 0524 through 0526.

22 (Deposition Exhibit Number
23 1122 mark'd for identification).

24 A: I have reviewed the exhibit.

25 Q: Is that an excerpt from the

1 minutes of the corporate management
2 committee meeting of April 20, 1970 about
3 which you have been testifying for the past
4 few moments?

5 A: Yes.

6 Q: That is the meeting where you
7 rendered the presentation which we saw
8 earlier today?

9 A: Yes.

10 Q: Did you inform the corporate
11 management committee that the business
12 group had maintained an aggressive program
13 of customer education?

14 A: Certainly, yes.

15 Q: And before April 20, 1970, do you
16 have any personal knowledge of any
17 communications made between Monsanto and
18 Texas Eastern Transmission Corporation
19 relating to environmental pollution by
20 PCBs?

21 A: Can you help me with the
22 definition of personal knowledge?

23 Q: Do you know of any contacts
24 between Monsanto and Texas Eastern?

25 A: I was informed by the manager of

1 the business group that all of the
2 customers that his team related to for the
3 product line assigned to them had been
4 informed. That's the input I had. I was
5 assured that it was done as they were
6 instructed.

7 Q: I take it from that response that
8 the business people didn't single out Texas
9 Eastern in their discussions with you?

10 A: No.

11 Q: Or any other customer?

12 A: No more than any other, that's
13 right.

14 Q: Nor did they single out or refer
15 to Transwestern Pipeline Company more so
16 than any other customer?

17 A: That is correct.

18 Q: And did you ever see documentation
19 such as call reports which supported
20 customer contact by those business people
21 during this period?

22 A: I saw some call reports.
23 Certainly, not all of them.

24 Q: Was it the practice of that group
25 to maintain call reports with respect to

1 client communications on this issue, so far
2 as you know?

3 A: I don't know what the practice of
4 each group was.

5 Q: And you have not seen a call
6 report dated from this period indicating a
7 communication between Monsanto and Texas
8 Eastern Transmission Company on the PCB
9 environmental issues, have you?

10 A: I do not recall any.

11 Q: Nor one indicating communications
12 between Monsanto and Transwestern Pipeline
13 Company?

14 A: That is correct.

15 Q: Was it the direction of the
16 corporate management committee following
17 the April 20, 1970 meeting that Monsanto
18 should discontinue sales of PCB products by
19 June 1, 1970 for all uses except for
20 transformer and capacitor ballasts?

21 A: Can you help me locate that?

22 Q: Yes. I was looking particularly
23 at the bottom of page 2 of this three page
24 document and over to the top of page 3.

25 A: That reflects the conclusions of

1 this particular meeting on this subject.
2 However, that June 1 date was changed by a
3 meeting within a month on this same
4 subject.

5 Q: At a subsequent meeting the
6 business group requested an extension of
7 the June 1st date, right?

8 A: Several extensions, based on the
9 different applications.

10 Q: Right. But just to be clear, as
11 of the April 20, 1970 date, it was the
12 direction of the corporate management
13 committee that by June 1, 1970, sales of
14 all uses except for transformers, capacitor
15 ballasts and NCR should be discontinued?

16 A: That is correct.

17 Q: And it was a further direction of
18 the committee that a replacement product
19 should be developed on a crash basis for
20 the NCR application?

21 A: That is correct.

22 Q: Is it fair to say, Mr. Papageorge,
23 that this direction was not welcome to the
24 business group?

25 MR. PREUSS: I object as

1 argumentative and ambiguous, as to what you
2 mean by welcome.

3 A: I don't know that the word welcome
4 is appropriate. They just felt that there
5 was a misunderstanding among these
6 individuals regarding the complexity of the
7 issue and the ability to do what they said
8 in about two month's time. It was
9 unrealistic. So, I guess in that sense it
10 was unwelcome. But it was more a case of
11 they got to go back and explain it better,
12 because this is much more complex than it
13 appeared to be.

14 Q: Was there any surprise among
15 members of the business group with whom you
16 communicated about these directions from
17 the corporate management committee?

18 A: Certainly.

19 Q: Was it your reading of those
20 directions from the corporate management
21 committee that the corporate management
22 committee intended to put the division out
23 of business?

24 MR. PREUSS: Based upon what
25 happened at the meeting itself?

1 MR. TALLON: Yes, that's right.

2 A: No. My reading is that the
3 business groups would continue to exist,
4 but the PCB product line would be severely
5 reduced, and it was a hope among all
6 concerned that alternative materials could
7 be found or existed to replace the PCBs in
8 many of the uses. So, the business groups
9 would still continue selling a different
10 line of products.

11 Q: Was it your understanding that at
12 the April 20, 1970 meeting the corporate
13 management committee took the position that
14 by June 1, 1970, the division should be out
15 of the business of selling PCB products
16 except for capacitor ballasts, transformers
17 and NCR until a substitute product was
18 developed?

19 A: That was the conclusion of that
20 session, yes.

21 Q: Let me show you one other document
22 about which I have, I think, one question.
23 And that is a document which bears
24 production numbers Tran 021797 through
25 799.

1 (Deposition Exhibit Number
2 1123 mark'd for identification).

3 A: I have reviewed the exhibit.

4 Q: That's another version of the
5 minutes of the same meeting, correct?

6 A: It appears to be, yes, sir.

7 Q: Is the handwriting on the first
8 page recognizeable to you as Mr. Bergen's?

9 A: Yes.

10 Q: Did you have any meeting or
11 discussion with Mr. Bergen in late April or
12 May of 1970 about these minutes?

13 A: No, I don't recall any discussion
14 with Mr. Bergen regarding these minutes,
15 because we left for Europe and didn't come
16 back until May. There was no discussion
17 with me, anyway.

18 Q: Mr. Bergen did not accompany you
19 on that trip?

20 A: That is correct.

21 Q: He remained behind?

22 A: Correct.

23 Q: And is it your understanding that
24 he set about preparing to communicate
25 further with the corporate management

1 committee to explain that these directives
2 were not implementable?

3 A: It's my understanding that he
4 spoke to his supervisor, Mr. Mason, and
5 expressed his opinions to him. What they
6 were, I don't know. But I do know they
7 met. And Mr. Mason was chosen by his
8 superior to be the spokesman for the next
9 meeting.

10 Q: Do you remember Mr. Bergen doing
11 any talking on behalf of the organic
12 division at the April 20, 1970 corporate
13 management committee meeting?

14 A: No. Mr. Bergen did not speak.

15 (Recess).

16 MR. TALLON: Mr. Papageorge, by
17 April 1970 had you attempted to give any
18 content to the terms open system and closed
19 system?

20 A: This -- I'm assuming you're
21 talking about a definition of what we meant
22 by those?

23 Q: Yes.

24 A: You mean for my own understanding
25 or to --

1 Q: In order to fulfill your job
2 responsibilities.

3 A: I had my -- yes. I had an
4 understanding that -- what was meant by
5 the use of those terms.

6 Q: Were the use of those terms or the
7 definitions of those terms refined over
8 time after you took over your position?

9 A: Help me with the word refined.
10 You mean were they altered or changed?

11 Q: Not so much altered as made more
12 specific as different customer applications
13 became understood or known.

14 A: The basic definition of a closed
15 system remained constant. It was defined,
16 really, by the fact that the PCB liquid,
17 which is really why we addressed all this,
18 was contained in materials that would not
19 allow it to ooze out, leak out, drip out,
20 et cetera, and the -- with proper
21 maintenance of the facilities in which it
22 was found, wouldn't freely discharge into
23 places that eventually would allow it to go
24 out into the environment. These systems,
25 of course, had to be properly designed to

1 prevent such things as fumes going up
2 stacks without being trapped and returned.
3 They had to have the proper kinds of
4 gasketing, where pipe flanges were
5 connected so that that gasket could
6 withstand the PCB, otherwise it would
7 deteriorate and allow the PCB to dribble
8 out. In addition to the fact that the PCB
9 was in this system that did not allow it to
10 see daylight, in essence, the concept also
11 included the ability of the owner and
12 operator to detect any flaws in the system
13 quickly, to capture any released material
14 soon enough to prevent it from getting out
15 of control, using such things that we
16 talked about, sand and sawdust and clay.
17 Or to have collecting basins underneath the
18 equipment to collect any drippage and pump
19 the spilled material from the collecting
20 basin to something still under control,
21 whether it be a drum for disposal or a
22 storage tank for reuse. An open system was
23 one in which no matter how much control one
24 wished to exercise, the use was such that
25 it was impractical, next to impossible to

1 control. Obvious examples are the traffic
2 lane stripe that's painted on the highway.
3 There is no way to control that paint that
4 erodes with time and usage and to capture
5 each particle with the PCB in it and
6 properly dispose of it. It's out of
7 control. Or the caulking that's around the
8 windows of a skyscraper, when that caulking
9 either deteriorates from time and chips off
10 and drops off, there is no way --
11 practical way to control that. Or when the
12 building is dismantled, even, it's
13 difficult to segregate the PCB caulking
14 from the rest of the debris. Adhesives
15 that are used in so many applications,
16 again, once they're used, it's extremely
17 difficult to monitor exactly where that
18 adhesive is used and where it eventually
19 ends up. So, those fall under the
20 obviously open application concept. Those
21 basic understandings of the system prevail
22 throughout this whole situation. What did
23 change is our understanding of the ability
24 of the owner-user to do what's right, even
25 though he wanted to do what's right. And I

1 have in mind these high pressure, high
2 temperature systems, even by responsible
3 sophisticated companies, in which the hose
4 under pressure and use bursts, the material
5 ends up on the floor, and since they also
6 use water to cool the metal, the two mix
7 and they go down into a sewer. That makes
8 control extremely difficult. We learned
9 after a while that as much as all of us
10 wanted to be able to control this, this
11 became defined as impractical, almost
12 wishful thinking, and this is when we
13 arrived at the decision that wherever we
14 could find an acceptable substitute, and by
15 acceptable I mean even with some acceptance
16 of less than perfect performance, we were
17 going to withdraw from the PCB application
18 and offer the alternative. I've talked too
19 much, and maybe I lost the original
20 question, but --

21 Q: When did you personally have a
22 realization that there were closed systems
23 that were susceptible of leaking, even
24 under optimum conditions?

25 A: When did I personally? When we

1 first announced our program of withdrawal
2 from some of the businesses and retained
3 the closed systems we included in there
4 under closed systems, for example, the heat
5 transfer systems. It was in, as I
6 remember, the middle of '71 where an
7 incident occurred where PCBs got into an
8 animal feed additive, and that kind of
9 highlighted, at least to me and to others,
10 that although we sit back and think that
11 this is something that can be described as
12 a closed system, to use my expression, the
13 PCB shouldn't see daylight, well, in this
14 case it didn't see daylight, it saw animal
15 feed. It worked its way, instead of out,
16 it worked inward. That's an example of
17 something that is difficult to predict and
18 control. Another one was in spite of our
19 communications with these high pressure
20 diecasting machine customers, they were
21 still experiencing burst hoses in spite of
22 their concerted effort to find better hose
23 material and better couplings and try to
24 operate at lower pressures where they
25 could. In spite of all that effort, these

1 situations were still occurring. And the
2 decision was made in those cases where you
3 have an alternative, even with the
4 sacrifice of a few good properties, let's
5 go to the alternative.

6 Q: When was that decision made, as
7 best you recall?

8 A: As best I recall, the decision,
9 really, was based on the success in the
10 laboratory that influenced the availability
11 of alternates. Starting in late '70, early
12 '71, we started to evolve into the
13 different product lines. Every product
14 wasn't hit the same day.

15 Q: Were hydraulic systems considered
16 to be closed systems?

17 A: Yes.

18 Q: Yet, I take it you recognize that
19 hydraulic systems were susceptible of
20 failure, leakage?

21 A: After a while, yes. After we
22 tried everything we knew how.

23 Q: Were air compressors considered to
24 be closed systems?

25 A: Yes.

1 Q: Was the air compressor in use at
2 the Pensacola plant a closed system?

3 A: Yes.

4 Q: Did you undertake, I mean you,
5 undertake to learn more about customer
6 applications in order to classify them as
7 closed or open?

8 A: Well, I personally didn't. I
9 relied, again, on the people in Monsanto
10 who had the personal contact.

11 Q: But did you undertake a program to
12 speak to business people in order to
13 satisfy yourself that systems were open or
14 closed?

15 A: Oh, yes. That was my day-to-day
16 mode of operation.

17 Q: In considering whether a system
18 was open or closed, did you at all monitor
19 product consumption by a particular
20 customer?

21 A: Well, that thought was considered,
22 but we quickly found out from a few
23 examples that we tested out that the amount
24 of purchases did not correctly accurately
25 reflect the amount of loss to the

1 environment, and it depended on the ability
2 and willingness of the customer to collect
3 the material that was not usable and was
4 being replaced and properly dispose of it.
5 So, when we had, say, a large purchase,
6 we'd pursue that find out oh, yes, the
7 system was drained, the material was put in
8 drums and was sent to this incinerator
9 service, so that that large purchase didn't
10 mean anything. We found, too, that many
11 times it was the little purchase that was
12 insidious, that drum a month kind of thing
13 that we thought well, it was probably wiped
14 up with some rags and a little sawdust, it
15 turned out that drum a month went out to a
16 ditch. So, the amount of sales did not
17 help.

18 Q: Although it was also consistent
19 with -- it was consistent with continued
20 sales to a customer that fluids were being
21 used up in some fashion, either by
22 change-out or spills?

23 A: Well, okay. You say used up.
24 Well, all right, if we assume the same
25 definition for used up.

1 Q: Well --

2 A: They're not consumed in the
3 process, they're somewhere.

4 Q: To use an example that you just
5 used, you indicated that in the case of a
6 large order, for example, a customer could
7 have replaced the fluid and properly
8 disposed of the drained fluid, correct?

9 A: Right.

10 Q: Is it not also consistent with a
11 large order that the customer could have
12 had a large spill and had not cleaned it up
13 in the manner that you considered to be
14 proper?

15 A: Oh, that's possible, yes. I'm not
16 saying it's not possible. But I have no
17 evidence to indicate that operators of that
18 large of a piece of equipment were so
19 insensitive that they would treat any
20 industrial chemical with total abandon,
21 just dump it down the sewer. I don't know
22 that.

23 Q: Of course, some leaks and spills
24 would occur where, inadvertently, the PCB
25 material entered the environment, correct?

1 A: That happens on occasion, yes.

2 Q: And is it not the case that
3 customer orders for additional PCB fluids
4 is, among other things, consistent with the
5 possibility that they were losing fluid
6 through leaks and spills?

7 A: That is possible, yes.

8 Q: That is at least one of the
9 possibilities?

10 A: True. If a pattern of this kind
11 of thing was occurring at any location, the
12 field salesmen would drop by and talk and
13 try to get -- ascertain from the
14 customer's representatives what kinds of
15 situations were occurring.

16 Q: What is the basis for that
17 statement?

18 A: Well, one is that this is the kind
19 of coaching they were getting during their
20 sales meetings, et cetera. And I don't
21 have an example right at hand, but I do
22 recall seeing a few call reports made by
23 some of the salesmen saying I called on so
24 and so and we checked into this, and et
25 cetera, needs help, or has got it under

1 control, or -- so, I do have some inputs
2 that indicate that that has happened.

3 Q: Did you ever see a call report of
4 the type you just described that related
5 either to Texas Eastern Transmission
6 Corporation or Transwestern Pipeline
7 Company?

8 A: I do not recall any.

9 Q: Did you ever see such a call
10 report for Columbia Gulf Transmission
11 Company?

12 A: I don't recall any.

13 Q: And I'm referring to the Columbia
14 Gulf that you seemed to remember was a
15 customer for Turbinol 153.

16 A: Yes, I understand.

17 Q: Let me show you a document which
18 is a memo to which is attached a series of
19 presentation slides, for lack of a more
20 precise description, sequentially numbered
21 Tran 085281 through 85304, which we will
22 have marked.

23 (Deposition Exhibit Number
24 1124 mark'd for identification).

25 A: I've scanned the document.

1 Q: Did you receive the first page of
2 this exhibit from Mr. Mason in May or June
3 1970?

4 A: Yes.

5 Q: And was the series of pages
6 numbered 85282 through 85303 attached to
7 that memorandum when you received it?

8 A: It appears to be the collection of
9 pages, yes.

10 Q: On May 11th were you in Europe?

11 A: Yes.

12 Q: And was it your understanding that
13 there was a corporate management committee
14 meeting that day?

15 A: Yes.

16 Q: And at that meeting did Mr. Mason
17 present the view of the organic division
18 that the position previously adopted by the
19 corporate management committee should be
20 amended?

21 A: That was the intent of the
22 presentation. I don't know whether they
23 used quite those words.

24 Q: And the corporate management
25 committee adopted a different phased plan

1 than previously, correct?

2 A: Correct.

3 Q: And is that plan described on
4 pages 8530 and 02 of the attachment to Mr.
5 Mason's memo?

6 A: Yes.

7 Q: Into which point of this plan did
8 Turbinol 153 fit?

9 A: You asked this question already on
10 these very same --

11 Q: Is this the same plan?

12 A: It's the exact same plan.

13 Q: It's your belief that it doesn't?

14 A: It doesn't fit any of these
15 categories, therefore, sales will
16 continue. And that's all I can say
17 regarding this particular meeting.

18 Q: Were there other products in the
19 same category as Turbinol 153?

20 A: Certainly.

21 Q: Which were those?

22 A: Well, the one that comes to mind
23 immediately is vacuum pump fluids.

24 Q: Is that the Santovac line?

25 A: That's under the trademark

1 Santovac. All the other particular product
2 lines are covered by broad categories that
3 I see here, such as the dielectric use and
4 the heat transfer use and the hydraulic
5 applications are all mentioned. And they
6 are mentioned because of a particular
7 reference to a particular property that is
8 being monitored and controlled.

9 Q: Do you have an understanding as to
10 whether or not the corporate management
11 committee was specifically advised that
12 Turbinol 153 and the Santovac line of
13 products were not covered by the six point
14 plan?

15 A: I am in no position to know if
16 they were mentioned.

17 Q: Of course, you weren't there?

18 A: That's correct.

19 Q: Did Mr. Mason indicate to you at
20 any point after the meeting that the
21 corporate management committee sanctioned
22 the continued sale of Turbinol 153 and the
23 Santovac line of products as being outside
24 the six point plan?

25 A: Not to me.

1 Q: Did any member of the corporate
2 management committee ever tell you that the
3 committee believed that the six point plan
4 covered all products?

5 A: No.

6 Q: Did you ever have a discussion
7 with a member of the corporate management
8 committee as to what products were covered
9 by the six point plan?

10 A: No.

11 Q: Recognizing that you were not at
12 this particular meeting, Mr. Papageorge,
13 there is a page with the title
14 "Biodegradation". The number in the upper
15 right-hand corner of the page is 6, the
16 number at the bottom of the page is 85287.

17 A: I have it.

18 Q: Did Mr. Mason ever communicate to
19 you his belief that in terms of
20 biodegradation the critical product was
21 Aroclor 1242?

22 A: Yes, that was well understood by
23 all of us.

24 Q: And did that criticality relate to
25 the fact that large quantities of 1242 had

1 been sold by Monsanto?

2 A: Yes.

3 Q: And that a significant amount of
4 1242 was used in open applications?

5 A: Yes.

6 Q: By the way, did you attend
7 successful consideration trials at the John
8 Zink Company in Tulsa?

9 A: I was present.

10 Q: Did you ever review the
11 presentation slides or pages which are
12 attached to Mr. Bergen's -- excuse me, Mr.
13 Mason's May 11, 1970 meeting with him?

14 A: No. I was in Europe at the time.

15 Q: I understand. But later did you
16 do so?

17 A: I don't recall sitting down with
18 Mr. Mason and going over these transparency
19 copies. I just don't remember that kind of
20 discussion.

21 Q: Do you know if it was Mr. Mason's
22 view in May of 1970 that control of
23 spillage and pump leakage made the use of
24 non-degradable chlorinated biphenyls
25 undesirable in hydraulic fluid

1 applications?

2 A: Yes, I was aware of that.

3 Q: Let me show you a document which
4 at some point or another has been marked as
5 Plaintiff's Exhibit Number 152 in another
6 matter. It's a one page document which
7 we'll have marked.

8 (Deposition Exhibit Number
9 1125 mark'd for identification).

10 A: I have reviewed the exhibit.

11 Q: Did you see a copy of this
12 document sometime after May 11, 1970?

13 A: I did eventually, yes.

14 Q: And is this a portion of the
15 minutes of the meeting of the corporate
16 management committee for May 11, 1970?

17 A: It is.

18 Q: And is this the portion which
19 adopts the plan of the organic division as
20 presented by Mr. Mason at the meeting held
21 May 11, 1970?

22 A: It is.

23 Q: Was it your understanding that the
24 corporate management committee had directed
25 that no changes be made to this plan

1 without their express approval?

2 A: I understood that the changes
3 without the approval related to the dates.
4 Further activities to supplement these were
5 not covered.

6 Q: So, it was your understanding that
7 the division could not change any of the
8 effective dates reflected in this plan
9 without the prior approval of the corporate
10 management committee?

11 A: That is correct.

12 Q: I note that one of the directives
13 of the committee was that the sale of
14 Aroclor 1242 to NCR would be discontinued
15 in the United Kingdom, or was planned to be
16 discontinued in the United Kingdom by July
17 1, 1970 and in the U.S. by January 30,
18 1971. Was that your understanding of the
19 timetable?

20 A: At that time, yes.

21 Q: Yes. And at that time what
22 accounted for the difference between the
23 U.K. and the U.S.?

24 A: There were two different
25 technologies involved. I don't recall

1 which country had the plastic encapsulating
2 material and which country had clay, and as
3 I remember, the plastic material did not go
4 well with the proposed materials HB-40 and
5 MIBP. So, the research effort had to be
6 -- it just was prolonged because of that
7 difficulty, the incompatibility of the new
8 solvent with that plastic encapsulating
9 material.

10 Q: Were sales of the Santovac
11 products ultimately discontinued?

12 A: Yes.

13 Q: At what time?

14 A: About late '71, as best I can
15 recall.

16 Q: Do you have any present
17 understanding of the number of customers
18 for the Santovac products in May of 1970?

19 A: No, I don't. There weren't many.

20 Q: And do you know whether that
21 represented a fairly small portion of the
22 overall business of the organic division,
23 that is to say, sale of Santovac products?

24 A: It was amongst the smaller
25 businesses, yes.

1 Q: Let me show you a document
2 addressed to you from Howard Bergen dated
3 May 11, 1970, two pages, Tran 085305 and
4 5306, which we'll ask the court reporter to
5 mark.

6 (Deposition Exhibit Number
7 1126 mark'd for identification).

8 A: I have read the exhibit.

9 Q: Did you get this memo from Mr.
10 Bergen in May of 1970 while you were in
11 Europe?

12 A: Yes.

13 Q: Was it your impression that Mr.
14 Bergen and others were encouraged that the
15 corporate management committee would not
16 put the organic division out of business in
17 the spring of 1970?

18 MR. PREUSS: I object to the form,
19 the document speaks for itself.

20 A: More correctly, he was encouraged
21 that the corporate management committee
22 would not put the functional fluids group
23 out of business, and not the organic
24 division.

25 MR. TALLON: Have you seen this PCB

1 timetable which is attached to the memo
2 from Mr. Bergen before?

3 A: Yes, I have.

4 Q: Was it originally attached to Mr.
5 Bergen's memo?

6 A: Yes.

7 Q: There is an indication at the
8 bottom of the memo that non-electrical
9 Aroclors, specifically 1242, 1248, 1254 and
10 1260, that by May 15th all customers would
11 be notified by personal contact or letter
12 that we will no longer sell non-electrical
13 Aroclor after July 31, 1970. That deadline
14 was not met, correct?

15 A: I have no reason to believe it
16 didn't. It beats the August 30 date that
17 we committed to.

18 Q: Were all customers notified that
19 non-electrical Aroclors, those identified,
20 would not be sold after July 31, 1970?

21 A: As best I know.

22 Q: And were any non-electrical
23 Aroclors sold after that date?

24 A: To the best of my knowledge, no.

25 Q: Did those Aroclors continue to be

1 used in products sold after that date?

2 A: Certainly, inventories still
3 existed at our customer's plants, yes.

4 Q: Did Monsanto continue to blend
5 products including these Aroclors for sale
6 to customers after that date?

7 A: For certain of their blended
8 products, yes.

9 (Discussion off the record).

10 MR. TALLON: Let me show you a
11 document which has the sequential numbers
12 Tran 086384 through 6413, and is covered by
13 a note that says "From the desk of W.B.
14 Papageorge", with some handwritten
15 notations, which we'll have marked.

16 (Deposition Exhibit Number
17 1127 mark'd for identification).

18 A: I have reviewed the document.

19 Q: Is that your handwriting on the
20 first page of the exhibit?

21 A: Yes.

22 Q: And did you make a file note in
23 1971 with respect to the pages attached to
24 that handwritten note?

25 A: That was the intent of that note,

1 yes.

2 Q: And you described the pages that
3 comprise this exhibit as information used
4 by John Mason to report to the corporate
5 management committee in March of 1971?

6 A: Yes.

7 Q: Did you play any role in preparing
8 the individual pages which are attached to
9 your handwritten note?

10 A: Not a direct role. I recall Mr.
11 Mason dropping by with some notes that he
12 had prepared and reviewed those notes with
13 me to determine if I had any comments to
14 offer. And I don't recall anything unusual
15 about those notes. They were all
16 accurate. And it was my understanding that
17 he was going to use those notes to prepare
18 tranparencies to be projected for his
19 discussion.

20 Q: Did he give you those
21 tranparencies following the meeting?

22 A: This is it.

23 Q: And you filed them away after
24 reading them?

25 A: After reading them and studying

1 them I did file them away, yes.

2 Q: Did you study the page which is
3 captioned "Hydraulic applications? " It's
4 page number 86386.

5 A: I studied all of them. Yes, I did
6 study that.

7 Q: Okay. Did you note the reference
8 in numbered paragraph 2 that aroclor 1242
9 was then still present in two fluids used
10 in gas transmission, that is, closed
11 systems?

12 A: Yes.

13 Q: And what was your understanding of
14 what MCS 974 was, what kind of product?

15 A: It was a turbine type fluid. I
16 have forgotten today what ingredients it
17 contained, other than the 1242. And I have
18 forgotten, also, the particular customer
19 that was interested at that time. I sort
20 of vaguely recall it was intended for some
21 new piece of machinery, that the
22 manufacturer of that piece of equipment was
23 seeking some sort of fluid in that piece of
24 machinery, and this was an attempt to
25 satisfy that need.

1 Q: Did you take note of the phrase
2 that appears there, "Plan to try MCS 1016
3 when available?"

4 A: I did.

5 Q: Did you understand that to be a
6 reference to reformulating the two products
7 which are identified in that paragraph
8 numbered 2?

9 A: That was the intent, yes.

10 Q: Do you have an understanding as to
11 why Monsanto would want to reformulate a
12 product used in a closed system?

13 A: Well, as long as the more
14 degradable material is available, and would
15 test out properly when included in the
16 reformulated Turbinol, why not use it in
17 the event where occasionally a mishap might
18 happen even in transporting it, you could
19 feel a little more comfortable knowing that
20 the more degradable material was involved
21 rather than that which contained the more
22 difficult to degrade components.

23 Q: There is a specific -- rather,
24 not a specific, but an individual page
25 which I will find in a moment. Page 86379,

1 which is titled "Turbinol 153 sales", do
2 you see that?

3 A: I recall seeing it.

4 Q: 397.

5 A: 397. I have it.

6 Q: Did you look at that particular
7 page when you reviewed and studied Mr.
8 Mason's slides?

9 A: Along with all the others, yes.

10 Q: Did you take note of the fact that
11 sales of Turbinol were anticipated to
12 increase from 1970 to 1971?

13 A: I did. Yes.

14 Q: Did you solicit an explanation of
15 that from any member of the business group?

16 A: Yes. I recall talking to Mr.
17 Johnson. He expected to get another
18 customer.

19 Q: Was that other customer Columbia
20 Gulf?

21 A: I just don't remember. I do know
22 that he was hopeful that next year he could
23 sell a few more pounds to this customer.

24 Q: That is to say, during the course
25 of 1971?

1 A: Yes, '71.

2 Q: Because these slides date from
3 March of '71, correct?

4 A: Yes. But these numbers were
5 predicted earlier, just reported here.

6 Q: Did you ever hear the term
7 restricted sales in relation to PCB
8 products?

9 A: Yes.

10 Q: And how about the term
11 unrestricted sales?

12 A: I can't associate the expression
13 unrestricted sales. You're referring to
14 the chart?

15 Q: Yes.

16 A: Oh. In that context I have a
17 different understanding of those two words.

18 Q: What's your understanding?

19 A: The unrestricted sales chart is
20 the chart that would have probably been
21 prepared had Monsanto not withdrawn from
22 any markets for all the uses of PCBs. The
23 restricted sale chart reflects those
24 amounts that resulted from the self-imposed
25 restricted sales program.

1 Q: Okay. Are you familiar with the
2 term the east coast terminal incident?

3 A: Yes, sir.

4 Q: What does that mean to you?

5 A: This involves an incident in which
6 a heat transfer system, the one I mentioned
7 earlier, where the PCB-containing heat
8 transfer fluid leaked in the equipment --

9 (Recess).

10 MR. TALLON: Why don't you read
11 back the question and the answer so far.

12 (The requested portion of the
13 record read by the reporter).

14 A: And contaminated fish meal, which
15 was being dried in this system. The fish
16 meal, in turn, was incorporated in poultry
17 feed used by several poultry companies.
18 The chickens exhibited illnesses of various
19 kinds. There were problems with
20 hatchability of eggs. That's, in essence,
21 really, what happened. It created a
22 serious problem amongst some of the flocks
23 that were exposed to this feed.

24 Q: Do you know approximately when
25 that contamination occurred?

1 A: Yes. July '71.

2 Q: And did that incident have an
3 affect on the thinking of the business
4 group with respect to continued sales of
5 PCB-based products?

6 A: It had an affect on the sale of
7 PCB-based products in heat transfer
8 systems.

9 Q: And the affect was what?

10 A: It was decided that since
11 alternative materials, although not
12 fire-resistant, had been successfully used
13 in replacing PCB products in food related
14 applications, that same technology could be
15 used for other heat transfer applications,
16 therefore, Monsanto could withdraw the sale
17 of PCBs to heat transfer systems generally.

18 Q: Let me show you a document
19 entitled "Status Report, Polychlorinated
20 Biphenyls", dated November 12, 1971.

21 (Deposition Exhibit Number
22 1128 mark'd for identification).

23 A: I have scanned the exhibit.

24 Q: Is this a -- are these materials
25 prepared by Mr. Mason and others?

1 A: I don't know.

2 Q: Have you seen this before?

3 A: Yes, I have.

4 Q: Was a copy of this document in
5 your files, so far as you know?

6 A: I have seen it so often, I can't
7 place the exact time when I first saw it.
8 I just cannot say for sure that it was in
9 my files. But I'm aware of this document,
10 I'm very familiar with it.

11 Q: Do you think you saw it at or
12 about the time it is dated?

13 A: I think so, yes.

14 Q: Do you know whether in November of
15 1971 Congressman Ryan was proposing a total
16 ban on PCBs?

17 A: That's about the -- yes, late
18 '71. Yes.

19 Q: Do you know if a toxic substances
20 control act was being considered at about
21 the time that this particular document is
22 dated?

23 A: Yes.

24 Q: And do you know if PCBs were used
25 as an example in justifying that act?

1 A: Well, the need for a toxic
2 substance control act was perceived
3 strongly by representatives in the
4 Environmental Protection Agency. These
5 individuals with whom I communicated had
6 indicated that the PCBs was -- would serve
7 as a good example of the kind of industrial
8 chemical that must be regulated. In late
9 1971 I personally don't recall at the
10 moment any particular activity on the part
11 of Congress, but there was a desire on the
12 part of many in EPA and in staffs in
13 Congress to develop such an act in 1971.

14 Q: Were you ever part of any
15 discussion in 1970 or in 1971 as to what
16 the effect on Texas Eastern Transmission
17 Corporation would be if Monsanto withdrew
18 Turbinol 153 from the market?

19 A: No.

20 Q: Did you ever communicate with
21 others at Monsanto concerning whether
22 withdrawal of the Turbinol 153 product
23 could result in cessation of operations of
24 Texas Eastern?

25 A: I was never involved in such a

1 discussion.

2 Q: Let me show you a document that's
3 numbered sequentially Tran 002485 through
4 2491, and which we will have marked.

5 (Deposition Exhibit Number
6 1129 mark'd for identification).

7 A: I have reviewed the exhibit.

8 Q: Have you seen that exhibit before?

9 A: Yes, I have.

10 Q: And do you recollect when you
11 first saw it?

12 A: Late 1971, as best I can recall.

13 Q: Do you think it may have been
14 November 1971?

15 A: That's close, yes.

16 Q: Do you have knowledge as to the
17 circumstances for which this particular
18 exhibit was prepared?

19 A: I have an understanding that it
20 was prepared at Mr. Bergen's request to his
21 marketing teams.

22 Q: For what purpose?

23 A: As I understood it, it was really
24 to bring him up-to-date on where things
25 stood and where we were headed and how it

1 might impact the business.

2 Q: There is a note on the last page
3 under the caption "examples" referring to
4 Texas Eastern Gas Transmission Company, do
5 you see that?

6 A: I see that, yes.

7 Q: Had you read that?

8 A: Yes, I had.

9 Q: Do you remember reading it at the
10 time?

11 A: Yes.

12 Q: Does this refresh your
13 recollection as to any internal discussions
14 in which you participated regarding the
15 effects on Texas Eastern on withdrawing
16 Turbinol 153?

17 A: I was aware of this, but I was not
18 aware of any discussions, and I, to this
19 date, don't know what was meant by
20 disastrous.

21 Q: You're referring to the notation
22 "Immediate withdrawal of product would be
23 disastrous"?

24 A: Yes.

25 Q: Did you ever hear it said that if

1 Monsanto withdrew Turbinol 153 Texas
2 Eastern might have to shut down its
3 pipelines supplying gas to the northeast?

4 A: No, I hadn't heard that.

5 Q: Did you have any knowledge as to
6 who drafted this particular portion of the
7 document?

8 A: No, I don't.

9 Q: Did you know whether or not Texas
10 Eastern supplied all or a portion of east
11 coast natural gas needs?

12 A: East coast? Yes, I was aware of
13 that.

14 Q: Was it your understanding that at
15 the end of 1971 Monsanto was requiring
16 documentation from transformer and
17 capacitor customers which had the effect of
18 holding Monsanto harmless from legal
19 liability associated with the use of PCBs?

20 A: I was eventually made aware of
21 that program.

22 Q: Was there such a program?

23 A: Yes.

24 Q: Did Monsanto obtain such letters
25 from transformer and capacitor customers?

1 A: They did.

2 Q: Do you know whether at any time in
3 1971 or thereafter Monsanto accepted the
4 return of used or surplus PCBs from
5 transformer and capacitor customers?

6 A: Well, we certainly had used PCB
7 liquids returned for incineration as part
8 of an available disposal service. I'm
9 aware of that. Is that what you meant by--

10 Q: Was there a charge for that
11 service?

12 A: Yes.

13 Q: By the pound?

14 A: Yes.

15 Q: And where was the incineration
16 conducted?

17 A: It was conducted at the Krummrich
18 plant in Saujet, Illinois.

19 (Discussion off the record).

20 MR. TALLON: Let me show you a
21 document that's been previously marked as
22 Exhibit Number 174 in this case, and ask
23 you to take a moment and review it.

24 A: I have reviewed it.

25 Q: Have you seen that document

1 before?

2 A: I don't recall it at all.

3 Q: Have you ever kept in your files
4 information with respect to customer
5 applications of, or uses of PCB-based
6 products?

7 A: Could you repeat that? Do I have
8 in my file--

9 Q: Not currently. But keep in your
10 files in the early '70's information with
11 respect to the uses by customers of
12 Monsanto PCB products?

13 A: There was no deliberate attempt on
14 my part to accumulate such data, but I did
15 have in my file Monsanto product bulletins
16 that would describe uses of the various PCB
17 type products. That is about the extent of
18 my file information on that subject.

19 Q: Did you ever solicit any kind of
20 written explanation or information from Mr.
21 Johnson about the uses of Turbinol 153 by
22 Texas Eastern?

23 A: No.

24 Q: Did you ever solicit such
25 information from Roger Hatton?

1 A: No.

2 Q: Do you know if Mr. Mason ever did
3 so?

4 A: I do not know.

5 Q: Do you know if Mr. Mason ever
6 conferred with Mr. Johnson or Mr. Hatton
7 about the use to which Texas Eastern was
8 putting Turbinol 153?

9 A: I don't know that.

10 Q: Did you maintain any files in your
11 office related to Texas Eastern?

12 A: No.

13 Q: Is the information reflected in
14 this document information that you have any
15 awareness of?

16 MR. PREUSS: You mean at present or
17 did at the time?

18 MR. TALLON: Either.

19 A: Well, through that whole period of
20 time, eventually, I was aware of most of
21 what is here. I certainly knew about OS-81
22 and I knew about the use of turbines, I
23 knew about Transwestern. I had seen
24 numbers, but I didn't remember them until I
25 see them again, like the 325,000 pounds

1 mentioned here, and so on. I had an
2 impression that any change in that product
3 would require considerable technical
4 effort, just like it did on all these other
5 applications, in terms of finding a
6 suitable replacement, testing it, making it
7 in enough quantities and introducing it
8 into the system. I was aware of that
9 general kind of file. And most of that --
10 it really applies to almost any change, it
11 isn't unique to this particular
12 application. But I -- as I said earlier,
13 I had never seen this summary.

14 Q: What about the information
15 reflected in that paragraph that appears on
16 the bottom of the first page of that
17 exhibit, and particularly the reference to
18 knockout traps, have you ever heard that
19 expression before?

20 A: I've heard of knockout traps.

21 Q: You've heard of knockout traps in
22 connection with the use of Turbinol 153?

23 A: Yes.

24 Q: What do you recall having heard in
25 that regard?

1 A: Nothing highly technical, other
2 than that any Turbinol that is -- enters
3 the gas stream along with other condensates
4 that form in gas are collected and removed
5 from the pipeline system at intervals along
6 the transmission line, and the Turbinol
7 would be -- if any present, would be in
8 that liquid condensate.

9 Q: Does that suggest to you a
10 possibility that the Turbinol could enter
11 the gas stream in order for it to be
12 knocked out in the knockout trap?

13 A: It would have to enter the gas
14 stream to be there, yes. How often it
15 enters and under what conditions, I have no
16 way of knowing personally.

17 Q: Did you know whether the business
18 people who dealt with Texas Eastern had
19 that information?

20 A: Yes. That's where I got most of
21 that information.

22 Q: Did you ever discuss with the
23 business people the actual operation of a
24 gas compressor?

25 MR. PREUSS: You mean how it

1 operates?

2 MR. TALLON: Yes.

3 A: No. I didn't picture them as
4 experts in that.

5 Q: Did you ever hear the term
6 labyrinth seal?

7 A: I've heard it, but I forgot in
8 what context. I believe I first heard of
9 it when I was with Phillips Petroleum
10 Company.

11 Q: With Phillips?

12 A: Yes.

13 Q: In what context? I recognize that
14 dates back some years.

15 A: Yes, it does. I was not
16 personally involved, but I remember the
17 term because there were gas streams
18 collected in the oil fields, that's about
19 the extent of it. They had compressors and
20 they were sending it down systems to some
21 central point. That's all I know about it.

22 Q: Did there come a time when, to
23 your knowledge, Monsanto determined that it
24 would terminate sales of Turbinol 153 to
25 Texas Eastern?

1 A: Eventually, yes.

2 Q: Were you a participant in the
3 decision-making process that such sales
4 would be terminated?

5 A: No. I was told of the decision.

6 Q: By whom?

7 A: Mr. Bergen.

8 Q: And what, if anything, do you
9 recall Mr. Bergen saying to you in the
10 context of the termination of sales of
11 Turbinol 153 to Texas Eastern?

12 A: As best I recall, it resembled
13 quite a bit the approach taken with the
14 continued use in the dielectric
15 applications, where the user, the customer,
16 in this case Texas Eastern, was asked to
17 assume responsibility for the material
18 legally for continued supplies. That's the
19 gist of the information that I remember.

20 Q: Mr. Bergen indicated to you that
21 Texas Eastern would be asked to provide
22 documentation to Monsanto holding Monsanto
23 harmless from legal liability?

24 A: Yes.

25 Q: Did Mr. Bergen indicate to you

1 that it was -- that Monsanto's sales to
2 Texas Eastern of Turbinol were conditional
3 upon Texas Eastern furnishing such
4 documentation to Monsanto?

5 A: Yes, sir.

6 Q: And do you know whether or not
7 Texas Eastern furnished that documentation?

8 A: Do I know that today?

9 Q: Well, did you know it then?

10 A: No. At that time it was still in
11 discussion. And the discussion was tied
12 into the similar information relayed to the
13 electrical applications.

14 Q: What similar information was that?

15 A: The initial -- the discussion
16 initially started on the procedure Monsanto
17 was going to install in continued sales to
18 the dielectric uses, and during that
19 discussion Mr. Bergen says "Incidentally,
20 we're going to do the same sort of thing
21 with Turbinol", and that's how we got into
22 that brief discussion. And both of these
23 situations were in a state of flux where
24 the -- some customers hadn't been informed
25 yet, some were being informed, some were

1 considering what they had been proposed,
2 some had signed off. So it was the period
3 December '71, January '72, February '72, in
4 that period, when all this was taking
5 place.

6 Q: Do you know whether any other
7 customers aside from dielectric customers
8 were given the same sort of proposal at the
9 end of 1971 or the beginning of 1972?

10 MR. PREUSS: Other than Texas
11 Eastern?

12 MR. TALLON: Yes.

13 A: That's all I know. Just those two
14 types.

15 Q: Dielectric and Texas Eastern?

16 A: Correct.

17 Q: Were you invited to attend any
18 meeting with Texas Eastern regarding the
19 termination of sales of Turbinol?

20 A: No.

21 Q: Did you ever see call reports
22 relating to any meetings held with Texas
23 Eastern?

24 A: No.

25 Q: Were you ever informed as to the

1 reaction of Texas Eastern with respect to
2 Monsanto's proposal that Texas Eastern
3 furnish a hold harmless letter?

4 A: Not until many years later was I
5 aware of that reaction. I was not tuned
6 in, no.

7 Q: When you refer to many years
8 later, what are you referring to?

9 A: Here recently.

10 Q: Now?

11 A: Well, now, for example, yes.

12 Q: But before now, that is to say,
13 before this deposition, did you become
14 aware of Texas Eastern's reaction to
15 Monsanto's proposal?

16 A: No.

17 Q: When did you leave Monsanto, 1986?

18 A: The end of '86.

19 Q: While you were at Monsanto, did it
20 ever come to your attention that PCB
21 materials had been discovered in gas meters
22 in Long Island, New York?

23 A: No.

24 Q: Did it ever come to your attention
25 that federal regulators were requesting

1 testing of natural gas pipelines for the
2 presence of PCBs?

3 A: No.

4 Q: What was your job responsibility
5 between 1980 and 1984?

6 A: I was director of environmental
7 operations for two operating units in
8 Monsanto in that period of time.

9 Q: Did you have responsibility, then,
10 for PCB issues?

11 A: I had the individual who had the
12 firsthand responsibility reporting to me at
13 that time, yes.

14 Q: And who was that?

15 A: Dr. John Craddock.

16 Q: Dr. Craddock is still with
17 Monsanto today?

18 A: Yes.

19 Q: Was it part of Dr. Craddock's
20 responsibilities to keep abreast of
21 developments in the world relating to PCBs?

22 A: Yes.

23 Q: Other than the communication with
24 Mr. Bergen that you have described, did you
25 have communications with anyone else at

1 Monsanto concerning the termination of
2 sales of Turbinol 153 to Texas Eastern or
3 to any other customer?

4 A: No.

5 Q: By the way, there is just a bit of
6 handwriting at the top of Exhibit 174 which
7 says "Gas turbine fluids-Turbinol". Do you
8 recognize that handwriting?

9 A: I do not.

10 Q: Okay. Did you want to correct
11 something in your testimony, Mr.
12 Papageorge?

13 A: Yes. Counsel reminds me that I
14 said Transwestern.

15 Q: And you meant Texas Eastern?

16 A: I meant Texas Eastern.

17 MR. PREUSS: In the context of
18 Exhibit 174, when he was --

19 MR. TALLON: Right. Are you
20 familiar with the term topping off?

21 A: Certainly.

22 Q: To your knowledge, did Monsanto
23 ever advise customers with respect to the
24 compatibility of PCB fluids and non-PCB
25 fluids with respect to topping off?

1 A: In some instances, yes.

2 Q: And just so that we're clear, when
3 you use the term topping off, to what do
4 you refer?

5 A: I'm referring to adding a liquid
6 to a system which contains a liquid
7 already, whether it be the same type or
8 different, and the level in that system has
9 dropped to a point where it might affect
10 the system's performance, such as adding a
11 quart of oil to your car engine when you
12 check and note that it's low.

13 Q: Did Monsanto advise customers in
14 1970 or 1971 as to the compatability of
15 PCB-based functional fluids and
16 non-PCB-based functional fluids for
17 purposes of topping off?

18 A: In some situations, yes.

19 Q: Which situations do you recall?

20 A: I recall the systems that contain
21 Pydraul formulations, when the Pydrauls
22 were reformulated, one of the objectives of
23 the program was to get a reformulation that
24 was compatible with the previous, so that
25 they could be used as topping off materials

1 without creating gumming and thickening and
2 all kinds of other problems.

3 Q: Was the decision as to whether or
4 not to top off left up to the customer?

5 A: Certainly.

6 Q: Monsanto would advise as to the
7 compatability?

8 A: Yes.

9 Q: But the design was to make it
10 compatible?

11 A: Yes.

12 Q: The replacement fluid, that is?

13 A: Yes.

14 Q: After August 30, 1970, what PCB
15 products did Monsanto continue to sell?

16 A: After August 30 Monsanto still
17 sold the PCB type product for the NCR paper
18 application while it was undergoing change
19 in the laboratory. It continued to sell
20 the heat transfer fluids to non-food uses.
21 It continued to sell PCB type products to
22 the electrical industry, the transformer
23 and capacitor manufacturers. And it
24 continued to sell some of the hydraulic
25 fluids that contained PCB that had yet to

1 be altered. And it continued to sell
2 Turbinol.

3 Q: And Monsanto eventually cut off
4 sales to hydraulic applications?

5 A: Eventually, yes.

6 Q: Let me show you a document that is
7 a memorandum dated January 26, 1970 from
8 Howard Bergen to J.R. Durland in Tokyo.

9 (Exhibit Number
10 1130 mark'd for identification).

11 A: I have read the exhibit.

12 Q: Did you receive a copy of that
13 memorandum?

14 A: I did.

15 Q: Did you get it in January 1970?

16 A: On or about that time, yes.

17 Q: Is your understanding of the
18 business strategy of the functional fluids
19 group consistent with the statement of the
20 business strategy which appears on the
21 bottom of the first page of the memorandum?

22 MR. PREUSS: As of January 1970?

23 MR. TALLON: Yes, correct.

24 A: Yes, that is my understanding.

25 Q: Did you know Lou Shoeff while you

1 were at Monsanto?

2 A: I did.

3 Q: Do you know what position he had
4 in the early '70's?

5 A: Mr. Shoeff was a research chemist
6 involved with many studies, some of them
7 with the hydraulic fluids.

8 Q: Did Mr. Shoeff have responsibility
9 for product reformulations in any way, that
10 you know about?

11 A: Yes.

12 Q: Let me show you a set of pages
13 bearing production numbers STR 002157
14 through 2165, and we'll have these marked
15 and then give them to you to take a look
16 at.

17 (Deposition Exhibit Number
18 1131 mark'd for identification).

19 A: I have reviewed the exhibit.

20 Q: Have you seen that exhibit before,
21 Mr. Papageorge?

22 A: Yes, I have.

23 Q: Can you identify it?

24 A: It's a summary of someone's
25 opinion regarding the affects on our

1 customers of converting the Pydraul
2 formulations to avoid the use of PCBs.

3 Q: Do you recognize that handwriting
4 that's on, among other pages, pages 2 and
5 3?

6 A: That appears to me to be Mr.
7 Bergen's handwriting.

8 Q: Do you know whether this group of
9 pages constituted a presentation?

10 A: I do not.

11 Q: Do you know if this was something
12 created by Mr. Bergen?

13 A: I do not.

14 Q: Do you know if it's material
15 created by persons who worked for Mr.
16 Bergen?

17 A: I'd have to guess. I do not.

18 Q: Don't guess.

19 Q: Let me show you a document dated
20 October 6, 1970, which is a memorandum from
21 you to a group, bearing production numbers
22 Tran 003105 through 3117, which we'll have
23 marked.

24 (Deposition Exhibit Number
25 1132 mark'd for identification).

1 A: I have scanned the document.

2 Q: Is that exhibit your PCB
3 environmental problem September status
4 report?

5 A: It is.

6 Q: There is a reference commencing on
7 the first page to another corporate
8 management committee meeting on September
9 14, 1970, do you see that?

10 A: I do.

11 Q: It is suggested by this memorandum
12 that at the September 14th CMC meeting the
13 business group requested and was granted an
14 extension of three months, that is to say,
15 through the end of the first quarter of
16 1971, to attempt to achieve the goal of
17 reformulating products still containing
18 Aroclor 1242. Is that correct?

19 MR. PREUSS: It's on the first
20 page, you say?

21 MR. TALLON: It's actually on the
22 bottom of the first and over to the top of
23 the second page.

24 A: These products are the industrial
25 hydraulic fluids.

1 Q: Yes.

2 A: Yes.

3 Q: A first extension was requested?

4 A: That is correct.

5 Q: And granted?

6 A: Correct.

7 Q: Did the corporate management
8 committee emphasize that that would be the
9 last extension?

10 A: It did.

11 Q: Did the corporate management
12 committee indicate that it would be
13 necessary to discontinue the business if
14 the business group was not successful in
15 reformulating?

16 A: It did.

17 Q: On page 5, Mr. Papageorge, under
18 the caption "Industrial hydraulics".

19 A: I see it.

20 Q: There is a reference to the
21 removal of Aroclor 1242 from all Pydrauls,
22 and it references a series of products
23 starting with A-200 and ending with MCS
24 974?

25 A: I see that.

1 Q: Is the MCS-153 referred to there
2 also known as Turbinol 153?

3 A: Well, that's what it was
4 eventually designated as or labeled as.

5 Q: So MCS 153 is synonymous with
6 Turbinol 153?

7 A: It is. But it doesn't fit in this
8 compilation of Pydrauls. It's not a
9 Pydraul.

10 Q: Why is it here?

11 A: It's an error on somebody's part.

12 Q: Did you call someone and indicate
13 to them that that reference to MCS-153
14 should be omitted before this memo was sent
15 out?

16 A: I don't recall what I did with
17 that. I do know that it doesn't belong
18 there, because at that point in time the
19 expression MCS-153 wasn't even used. I
20 just don't know how it got in there.

21 Q: Is that your signature on page 13
22 of the memorandum?

23 A: Yes.

24 Q: And do you believe this to be an
25 actual copy of a memo as it was sent out to

1 the group of recipients noted on the first
2 page?

3 A: It appears, maybe, to be. I'm
4 puzzled by a slash mark on the bottom of
5 the first page. But other than that, it
6 looks like a true copy.

7 Q: Do you have a present recollection
8 of any of the recipients of this memo
9 calling you and telling you to remove the
10 reference to MCS-153 which appears on page
11 5 under the caption "Industrial hydraulics"
12 following the use of the word Pydrauls?

13 A: No.

14 MR. TALLON: Okay. Why don't we
15 stop there.

16 (Recess)

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DEPOSITION CORRECTION SHEET

In Re: *Transwestern Pipeline Company vs Monsanto Company, et al.*

Upon reading the deposition and before subscribing thereto,
the deponent indicated the following changes should be made:

Page Line Should read:
295 6 TAN Krummerich CDP, - - -
Reason assigned for change:
 spelling

Page Line Should read:
295 9 Krummrich CDP?
Reason assigned for change:
 Spelling

Page Line Should read:
307 10 Munch?
Reason assigned for change:
 Spelling

Page Line Should read:
417 23 Knew about ~~Texas~~ Eastern. - - -
Reason assigned for change:
 Incorrect name

Page Line Should read:
531 18 - - - to make them pourable and - - -
Reason assigned for change:
 Incorrect word

Page Line Should read:
549 9 I believe its the - - -
Reason assigned for change:
 Incorrect word

Page Line Should read:

Reason assigned for change:

Page Line Should read:

Reason assigned for change:

Page Line Should read:

Reason assigned for change:

William B. Papayorgis

Deponent

WATER_PCB-SD0000019838