

IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

THE CITY OF BLOOMINGTON, INDIANA;)
THE UTILITIES SERVICE BOARD OF)
BLOOMINGTON, INDIANA; and MONROE)
COUNTY, INDIANA,)

Plaintiffs,)

vs.)

Civ No.
IP 83-9-C

WESTINGHOUSE ELECTRIC CORPORATION,)
a Pennsylvania corporation; and)
MONSANTO COMPANY, a Delaware)
corporation,)

-----Defendants.-----)

The continued deposition of W. B. PAPAGEORGE,
called for examination by the Plaintiffs, pursuant
to notice and pursuant to the provisions of the
Federal Rules of Civil Procedure of the United
States District Courts, pertaining to the taking
of depositions for the purpose of discovery, taken
before Arnold N. Goldstine, a Notary Public and
Certified Shorthand Reporter within and for the
County of Cook and State of Illinois, at Three
First National Plaza, Chicago, Illinois, on
October 15, 1986, at the hour of ten o'clock a.m.

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APPEARANCES:

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Mr. James G. McConnell
Bell, Boyd & Lloyd
Three First National Plaza
70 West Madison Street
Suite 3200
Chicago, Illinois 60602

-and-

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Mr. Geoffrey M. Grodner
Law Offices of Geoffrey M. Grodner
One City Centre
Suite 100
Bloomington, Indiana 47401

appeared on behalf of the
Plaintiffs;

Mr. Michael R. Fruehwald
Barnes & Thornburg
1313 Merchants Bank Building
Indianapolis, Indiana 46204

appeared on behalf of Defendant
Monsanto Company.

1 I N D E X

2 WITNESS:

3 W. B. PAPAGEORGE

4 Direct Examination
By Mr. Mc Connell

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6 E X H I B I T S

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BLOOMINGTON DEPOSITION NOS.

8

Exhibit No.

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1 E X H I B I T S

2 BLOOMINGTON DEPOSITION NOS. (Continued)

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16	263	554
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1 E X H I B I T S

2 BLOOMINGTON DEPOSITION NOS. (Continued)

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1 MR. MC CONNELL: Let the record show this is
2 the continuation of the deposition of Mr.
3 Papageorge, pursuant to notice and the applicable
4 provisions of the Federal Rules of Civil Procedure
5 and the local rules of the United States District
6 Court for the Southern District of Indiana.

7
8 WILLIAM B. PAPAGEORGE,
9 having been previously duly sworn,
10 was examined and testified as follows:

11 DIRECT EXAMINATION (CONTINUED):

12 BY MR. MC CONNELL:

13 Q. Mr. Papageorge, in the course of the
14 Monsanto Company's pcb business, there came a time
15 when the company retained a laboratory called
16 Industrial Bio-Test to do some animal testing on
17 pcb's, do you recall that?

18 A. Yes.

19 Q. Before Industrial Bio-Test was retained
20 to do pcb animal testing by Monsanto, I take it
21 they had done other animal testing on other
22 Monsanto products?

23 A. That is my understanding.

24 Q. Okay.

1 Were you involved in any of those other
2 product test efforts?

3 A. No.

4 Q. Okay.

5 Do you know what the approximate annual
6 dollar volume of business was in 1967, '68, '69,
7 '70 between Monsanto and Industrial Bio-Test?

8 A. I do not.

9 Q. Were you involved in the decision-making
10 process at Monsanto that led to the decision to
11 use Industrial Bio-Test to do these animal studies
12 on pcb's?

13 A. No.

14 Q. Okay.

15 That was before you came into the role of
16 pcb coordinator?

17 A. Correct.

18 Q. Okay.

19 Before you took over, or took I guess is
20 better than took over, before you became the pcb
21 coordinator at Monsanto, had you been involved in
22 any kind of program on the animal testing on
23 Monsanto products?

24 A. No.

1 Q. Is there anything in your educational or
2 other background before Monsanto involving animal
3 testing of chemicals?

4 A. No.

5 Q. So this pcb testing at Industrial
6 Bio-Test was your first exposure to the area of
7 animal testing for health effects of chemicals, is
8 that a fair statement?

9 A. I don't know about fairness. But I need
10 a definition. I was aware of results of animal
11 testing.

12 Q. Okay.

13 A. On other products, in addition to the
14 pcb's.

15 Q. Other Monsanto products?

16 A. Yes.

17 Q. Okay.

18 Before you became involved with the
19 pcb's, as the pcb coordinator at Monsanto, were
20 you aware of the general scientific principles
21 that go into animal testing of chemicals?

22 A. In a very general way, yes.

23 Q. Okay.

24 In your earlier experience with Monsanto

1 before you were the pcb coordinator, had you been
2 called upon to convey animal testing information
3 or results from the company to customers?

4 A. No.

5 Q. Had you been involved at Monsanto before
6 you became pcb coordinator in any way with the
7 consideration of what meaning animal test results
8 on Monsanto products might have for the health of
9 Monsanto's own employees who worked with those
10 products?

11 A. To a very limited degree.

12 Q. Okay.

13 What was your involvement in that regard?

14 A. I was in a position to discuss with
15 members of the medical department the effects of
16 chemicals that my plant had to deal with. And in
17 those discussions I felt were involved with animal
18 studies.

19 Q. And this was in relationship to the
20 health of Monsanto employees, is that correct,
21 rather than customer employees or outsiders?

22 A. Yes.

23 Q. Okay.

24 Was there a particular product of that

1 plant that you can recall as involving discussions
2 with the medical department?

3 A. Oh, there were many. The one I recall
4 very vividly is an insecticide called Parathion.

5 Q. P-a-r-a-t-h-i-o-n?

6 A. Correct.

7 Q. Okay.

8 Any others that you can recall?

9 A. Chlorine. Mercury. Hydrochloric acid.
10 Those are the key chemicals.

11 Q. Okay.

12 What was the health concern with respect
13 to Parathion?

14 A. Parathion, I guess I better describe that
15 as a nerve damaging chemical, if humans are
16 exposed to some given amount which I have
17 forgotten.

18 Q. Okay.

19 In fact, that is the mechanism of action
20 on the insects as well, isn't it?

21 A. That is my understanding, yes.

22 Q. Does Monsanto still make Parathion?

23 A. I don't believe so, no.

24 Q. Do you recall what -- let's back up a

1 little bit.

2 In the context of Parathion, did you have
3 occasion to discuss animal studies on Parathion
4 with the Monsanto medical department?

5 A. Yes. They came up, the referenced animal
6 studies came up in the discussion, examples of
7 what effects could be noted in humans, possibly in
8 humans.

9 Q. When you say referenced animal studies,
10 you are referring to studies published in the
11 literature?

12 A. I don't -- let me think. Some of them
13 were published in the literature and some were
14 Monsanto results, as best I can remember.

15 Q. So at least some of the studies on
16 Parathion were commissioned by Monsanto?

17 A. Yes.

18 Q. Were any of those performed by Industrial
19 Bio-Test, to your knowledge?

20 A. I do not recall. I don't know.

21 Q. Did your involvement in these discussions
22 result from some expression of concern by
23 employees at the plant?

24 A. No.

1 Q. Okay.

2 How was that initiated, how were those
3 discussions initiated?

4 A. I was assigned the management of the
5 Anniston plant, that was one of the principal
6 products of the plant, and at my request the
7 discussions were held, so I could become more
8 knowledgeable of the chemical and what it can do.

9 Q. More on the order then of bringing
10 yourself up to date as you took over
11 responsibility for the plant that produced the
12 product?

13 A. Yes.

14 Q. Okay.

15 When you took over the Anniston plant,
16 were there any particular protective measures in
17 effect for the employees who worked in the
18 Parathion manufacturing process?

19 A. Certainly.

20 Q. Do you recall what they were?

21 A. They had access to complete changes of
22 clean clothing. And were required to wear the
23 proper type of gloves to protect their hands.
24 Safety spectacles, hard hats. And under some

1 conditions of operating or repairing the
2 equipment, they had to wear proper breathing
3 equipment. And there was easy access to showers
4 in the event that material got on their clothing
5 or bodies, they could wash quickly.

6 Q. Were any or all of these same safety
7 precautions recommended by Monsanto to customers
8 who were in the business of applying the
9 insecticide?

10 A. Yes, that is a requirement by the
11 regulatory agencies on pesticides.

12 Q. Okay.

13 Whatever they required you had on your
14 labeling, is that a fair statement?

15 A. Yes.

16 Q. Were any of those same protective
17 measures in effect for the people who worked in
18 the Anniston plant manufacturing pcb's?

19 A. Well, in different degrees. There were
20 showers, but not as many. Clean clothing was
21 provided. Gloves were provided, but they were of
22 different material of construction because the
23 chemicals are different.

24 And they, too, had to wear the safety

1 glasses for eye protection and the hard hats. And
2 there again on certain assignments, duties that
3 were to be performed, they had the proper
4 respiratory protection equipment.

5 Q. In the discussions you had with the
6 Monsanto medical department about animal tests on
7 Parathion, did you understand the medical people
8 to be drawing conclusions about the effects of the
9 chemical on human health, based on the
10 demonstrated effects on the animals?

11 A. Some of that, as well as some accidental
12 exposures to humans that were as I remember
13 documented at the time.

14 Q. So Monsanto's own medical people looked
15 at both whatever human data was available and had
16 the animal studies, advising you about the
17 potential health effects of Parathion?

18 A. Yes.

19 Q. Okay.

20 And was it your general understanding
21 that they did that same process with respect to
22 other Monsanto products; that is, they looked at
23 both the human data and the animal data?

24 A. Yes. Whatever was available.

1 Q. To your knowledge, had there been any
2 animal toxicology studies on pcb's before the
3 studies commissioned by Monsanto at Industrial
4 Bio-Test?

5 A. Yes.

6 Q. Okay.

7 Do you know by whom those had been done?

8 A. I recall a reference to a Younger
9 Laboratories. There is a reference to another
10 laboratory, at the moment the name escapes me, it
11 started with an "S," named after I believe the
12 owner or the investigator who made the studies.
13 Starts with an "S". It doesn't come to me at the
14 moment.

15 Q. Okay.

16 Take a look at what the court reporter
17 has marked as Deposition Exhibit 208 which is a
18 two-page letter to Dr. Hunt of Monsanto from
19 William Randolph at the Department of Health,
20 Education and Welfare.

21 Do you want to look at this?

22 (The document above-referred to
23 was marked Bloomington Deposition
24 Exhibit No. 208 for identification.)

1 A. I have looked at it.

2 Q. Does that letter indicate to you that Dr.
3 Hunt or someone at Monsanto had made a request of
4 the government for whatever information the
5 government had on animal studies on Aroclor
6 products?

7 A. That is what I would infer from the
8 wording of the first paragraph.

9 Q. Okay.

10 The particular product that is referred
11 to in that letter which is 5460, as I understand
12 it that is not a pcb product; is that correct?

13 A. That is correct.

14 Q. Would it be the usual practice at
15 Monsanto before commissioning animal studies on a
16 product to make an effort to find out what
17 information was already available from other
18 sources?

19 A. Yes.

20 Q. Do you know whether there were any
21 requests to any other outside sources other than
22 the Department of Health, Education and Welfare
23 for information on pcb animal testing before the
24 Industrial Bio-Test studies were launched?

1 A. No, I do not.

2 Q. Okay.

3 And, again, this was at a time before you
4 were the pcb coordinator; is that correct?

5 A. That is correct.

6 Q. Okay.

7 Did I read the date of that into the
8 record. January 5, 1967. I don't think I did.

9 MR. FRUEHWALD: I believe it is 9.

10 MR. MC CONNELL: Okay.

11 Q. Before you became the pcb coordinator,
12 did you have any general knowledge about the cost
13 involved in conducting this kind of animal study?

14 A. No.

15 Q. Okay.

16 Would you take you a look at Exhibit 209,
17 please.

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 209 for identification.)

21 A. I have looked at it.

22 Q. That letter commissions, or, rather, that
23 letter encloses the plans that Industrial Bio-Test
24 generated for three studies on Aroclor 5460, is

1 that correct?

2 MR. FRUEHWALD: Are you representing this is
3 an Industrial Bio-Test document? It doesn't say
4 so on the document itself.

5 MR. MC CONNELL: That is where we got it from.
6 So I assume it is their file copy. I know Dr.
7 Fancher to be affiliated with Industrial Bio-Test
8 at that time.

9 Would you read the question back. I
10 forgot what I asked.

11 (The record was read.)

12 A. Your use of the word plans is similar to
13 the word protocol, which is the methodology,
14 procedure followed in conducting the tests.

15 Q. Okay.

16 The protocol describes what animal is to
17 be used, how many and in each group, what the
18 dosage level is going to be and what the
19 investigator is looking for with respect to
20 examining the treated animals?

21 A. Correct.

22 Q. Okay.

23 Now, can you tell me as you sit here
24 today what the reason was that prompted the

1 company to look at the health effects on animals
2 of the 5460 product?

3 A. I cannot.

4 Q. Okay.

5 Would one thing that Monsanto would want
6 to do in beginning a program of animal testing of
7 pcb's be to determine whether its selected
8 laboratory could duplicate results of experiments
9 that had been reported elsewhere?

10 A. That could be a reason, yes.

11 Q. Okay.

12 Do you know why the particular animals
13 that are shown in Exhibit 209 were chosen for
14 those studies?

15 A. No, I don't.

16 Q. Okay.

17 As I understand the process of animal
18 testing, one of the first things that needs to be
19 determined before extensive testing can be
20 undertaken is what is the lethal dose; that is,
21 how much can you give before you kill the test
22 animals; is that a fair statement?

23 A. Yes.

24 Q. So that you don't plan a long test and

1 end up killing off all the animals early in the
2 test, because the dose is too high?

3 A. That is correct.

4 Q. Okay.

5 Take a look at Exhibit 210, which is a
6 memo dated June 23, 1967 from Richard Palazzolo
7 to G. Jackson.

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 210 for identification.)

11 A. I have looked at it.

12 Q. Does that describe the type of study that
13 we just discussed that would be done to determine
14 what dosage levels might reasonably be employed in
15 a longer term animal study?

16 A. I don't know that it suggests anything to
17 me, because I don't know what acute toxicity study
18 was actually conducted, and whether these numbers
19 were arrived at mathematically or by actual
20 observations.

21 Q. Okay.

22 A. But that is the intent of this letter.

23 Q. Acute toxicity refers to the level of
24 material which when administered, whether by

1 feeding or otherwise, produces immediate
2 observable effects or effects observable in a
3 relatively short period of time; is that a fair
4 statement?

5 A. Yes.

6 Q. As opposed to a chronic study, which
7 looks for effects that occur when the product is
8 administered over a comparatively longer period of
9 time?

10 A. Yes.

11 Q. Okay.

12 So the acute studies ordinarily come
13 first in the sequence of events, in order to
14 determine the appropriate dose range for the
15 chronic studies?

16 A. Yes.

17 Q. Okay.

18 Take a look at Exhibit 211, if you would,
19 please.

20 (The document above-referred to
21 was marked Bloomington Deposition
22 Exhibit No. 211 for identification.)

23 A. All right.

24 Q. 211 is a memo also from Richard Palazzolo

1 to G. Jackson dated July 28, 1967 subject chick
2 edema study Monsanto Aroclor.

3 Do you know why it was that those studies
4 were being rerun as reflected in that memo?

5 A. No, I don't.

6 MR. FRUEHWALD: Off the record.

7 (Discussion had off the record.)

8 BY MR. MC CONNELL:

9 Q. Do you know whether it had been the
10 practice between Monsanto and Industrial Bio-Test
11 before the pcb studies were commissioned by
12 Monsanto for Industrial Bio-Test to forward to
13 Monsanto draft reports of the results of animal
14 studies on Monsanto products for comment and
15 criticism?

16 A. No. I do not.

17 Q. Do you know whether it had been the
18 practice between Monsanto and Industrial Bio-Test
19 before the pcb studies were commissioned by
20 Monsanto for Industrial Bio-Test to occasionally
21 make revisions to its study reports and forward
22 pages to Monsanto to be inserted in the original
23 copies of the report or to replace pages from the
24 original copies of the report?

1 A. I do not know.

2 Q. Okay.

3 As your understanding was then of the
4 proper procedures, your general understanding you
5 you have described or testified to of the proper
6 procedures for animal studies, would such a
7 substitution of pages in a report be proper?

8 A. Yes. My understanding, yes.

9 Q. Okay.

10 And under what circumstances?

11 A. When the professional toxicologist is
12 managing the study for Monsanto's -- of Monsanto's
13 chemicals, he does get involved in a dialogue with
14 the toxicologists and technicians and others in
15 the laboratories. To this day that dialogue still
16 takes place as to what is observed and what
17 conclusions are drawn.

18 Q. Between the Monsanto toxicologist and the
19 outside laboratory?

20 A. Yes.

21 Q. Okay.

22 Does that dialogue commonly include the
23 exchange of draft reports and revisions to the
24 draft reports, if you know?

1 A. In every instance that I have been close
2 to since I was assigned pcb coordinator, that has
3 been my observation, yes.

4 Q. Okay.

5 Have you ever observed outside the pcb
6 studies a circumstance where after new pages were
7 substituted in a draft report, the old pages would
8 be destroyed?

9 A. I was never that close to the paper
10 handling, no.

11 Q. Okay.

12 According to your knowledge then, and I
13 will ask you about your knowledge now.

14 According to your knowledge then; that
15 is, back in the early seventies, would it have
16 been the preferred practice to keep the earlier
17 version as well as the later version of those
18 reports on file?

19 A. To my knowledge, the various drafts, can
20 be anywhere from one to a dozen, are discarded
21 when the final draft is published.

22 Q. And that is still the practice at
23 Monsanto?

24 A. To my understanding, yes.

1 Q. Do you know if that is also the practice
2 at the outside laboratories?

3 A. That is my understanding.

4 Q. Okay.

5 And is that the case even with respect to
6 those products where the tests are done in
7 compliance with government regulations?

8 A. Yes.

9 Q. Is it a common practice at Monsanto to
10 pay in advance for animal studies on its products
11 by outside laboratories?

12 A. Yes.

13 Q. Why is that?

14 A. I don't know.

15 Q. Take a look at what the court reporter
16 has marked as Exhibit 212 which is a letter dated
17 October 20, 1967 from J. C. Calandra to Dr. Hunt
18 at Monsanto,

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 212 for identification.)

22 A. I have seen it.

23 Q. Does that reflect one of the
24 substitutions of pages in a draft report that we

1 have discussed?

2 A. That is what I would assume from the
3 wording of this letter.

4 Q. And that refers to a 90-day sub-acute
5 oral toxicity study of Aroclor 5460 in albino
6 rats?

7 A. Yes.

8 Q. Take a look at Deposition Exhibit 213,
9 which is a document consisting of 26 pages,
10 including a cover memo, which is a report to
11 Monsanto Company, Industrial Bio-Test Number 5313,
12 90-day subacute oral toxicity of Aroclor 5460 -
13 albino rats, and I will ask you if you can
14 determine from reviewing 213 whether that version
15 of the report represents the report before or
16 after the substitution of the pages that is
17 referred to in 212?

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 213 for identification.)

5
21 A. I am looking through this multi-page
22 report. I find that page 29 is missing, which is
23 referred to in the previous exhibit we discussed.

24 Q. In fact, it ends on page 25, does it not?

1 A. That's correct.

2 Page 24 appears to be a transmittal --
3 not a transmittal so much as a reference to
4 tables, which -- one of which appears on page 25
5 and the second table referenced is missing.

6 As to whether the correction referred to
7 in the previous letter is included in this
8 document, the dates of the two would imply to me
9 that the document which is dated October 18 does
10 not have the correction referred to in the letter
11 dated October 20.

12 Q. Okay.

13 Would it ordinarily be the practice at
14 Monsanto in the case of such a correction or
15 substitution of pages in a report, to change the
16 date on the report to reflect the date of the
17 correction?

18 A. Yes.

19 Q. Take a look at what the court reporter
20 has marked as -- before we do this. It is 11:15.

21 (Discussion had off the record.)

22 Take a look at what has been marked as
23 Exhibit 214, which is a memo which looks like it
24 is dated September 9, 1967, although the month is

1 very unclear, to Dr. Kodras, K-o-d-r-a-s, from Al
2 Wolvin, W-o-l-v-i-n, subject: J5315.

3 (The document above-referred to
4 was marked Bloomington Deposition
5 Exhibit No. 214 for identification.)

6 One of the things that is referred to in
7 that document is transmission of blank pericardial
8 edema sheets.

9 Why would blank sheets of that nature be
10 transmitted to Monsanto, if you know?

11 MR. FRUEHWALD: To Monsanto?

12 MR. MC CONNELL: If they were.

13 That is not a fair question because it
14 just says they are transmitted, it doesn't really
15 say to whom.

16 MR. FRUEHWALD: Again, I don't think any of us
17 is familiar with these documents, but it appears
18 to me they are being transmitted within IBT.

19 MR. MC CONNELL: You are right, I will
20 withdraw the question.

21 Okay, I have a different question about
22 this, though.

23 Q. This refers again to a repeat study. Do
24 you know why the study, the chicken study on

1 Aroclor 5460 was repeated?

2 A. I do not.

3 Q. Let's just let the record show that we
4 have already marked as Exhibit 215 a document
5 which appears to me to be an identical copy of
6 what has already been marked as 212. Although the
7 copy that was marked as 212 is of somewhat better
8 quality. So we will not use it.

9 I am not going to try and renumber all of
10 these.

11 (The document above-referred to
12 was marked Bloomington Deposition
13 Exhibit No. 215 for identification.)

14 Q. I am going to show you a document that
15 has been marked as Exhibit 216, which is a memo to
16 Greenie Jackson from R. Kodras, dated October 23,
17 1967 and I direct your attention particularly to
18 the numbered paragraph 2.

19 It appears to me that the rest of this
20 document refers to studies IBT was doing for other
21 customers or on other substances, but paragraph 2
22 refers to J5314, Monsanto's Aroclor study.

23 Can you read that?

24

1 (The document above-referred to
2 was marked Bloomington Deposition
3 Exhibit No. 216 for identification.)

4 A. I have looked at it.

5 Q. Okay.

6 Can you tell whether the directions that
7 are included in paragraph 2 represent a change
8 from the original protocol of the study or whether
9 that is just carrying out what was originally
10 planned to be done?

11 A. I have no way of knowing.

12 Q. Okay.

13 During your experience at Monsanto
14 dealing with Industrial Bio-Test on the animal
15 studies, do you know whether it was a practice
16 from time to time to change the protocol of the
17 study in the middle of the course of the study
18 somewhere?

19 A. On certain occasions that would take
20 place, depending on the results that were being
21 observed as the study progressed.

22 Q. Why might such a change be made?

23 A. Oh, there are several reasons. One is
24 the animals might be dying off unexpectedly

1 because of the high dosage. Or an observation
2 might be made of an effect that could better be
3 studied under a different test. So you terminate
4 the old test and design a new one to pursue that
5 observation.

6
7 Sometimes the animals in the test
8 developed diseases that were not anticipated.
9 This includes not only those being exposed to
10 chemicals, but the controls. So the directors of
11 the study have to make decisions on how much of
12 the test can be salvaged and results be acceptable
13 or how much must be altered, how much must be
14 terminated.

15 Those are some examples of the kinds of
16 things that happen.

17 Q. Okay.

18 In the second example you gave, that is,
19 an effect is observed which could better be
20 studied under a different test. Would the
21 appropriate procedure be to terminate the
22 experiment that was underway and start the new
23 test with the new group of animals, or would it
24 ever be appropriate to use the animals who have
been on the old test for a period of time?

1 A. That is a judgment call of the study
2 director. But it has been my observation they
3 prefer starting with a new group of animals that
4 are exposed under controlled conditions, rather
5 than have animals that have been previously
6 exposed and an additional study be made, an
7 additional exposure be imposed which would
8 complicate the study.

9 Q. So it is less complicated to start over
10 with fresh animals?

11 A. Yes.

12 Q. I am going to show you a document that
13 has been marked as Exhibit 217, dated October 27,
14 1967 from R. Kodras to Greenie Jackson confirming
15 a telephone conversation of October 25, 1967. I
16 will ask you to review that.

17 (The document above-referred to
18 was marked Bloomington Deposition
19 Exhibit No. 217 for identification.)

20 A. I have reviewed Exhibit 217.

21 Q. In the last paragraph on that document
22 which is the paragraph numbered 3, I take that to
23 be a suggestion that the possibility exists that
24 inappropriate technique was used in creating the

1 blood smear slides in that dog study, too much
2 pressure was applied, it couldn't be read. Does
3 that agree with your understanding?

4 A. That is what I would infer from the
5 words.

6 Q. What steps, if any, could be taken to
7 correct that situation with respect to the -- let
8 me back up a little bit.

9 As I understand the studies that were
10 done with the dogs, blood samples were drawn at
11 different times of the study?

12 MR. FRUEHWALD: Excuse me, this is a 1967
13 study of some other product. I don't think this
14 has to do with any of our products, or it doesn't
15 indicate that it does.

16 Are you representing that it does?

17 MR. MC CONNELL: No.

18 I am interested in the techniques
19 employed by the people who did all of the dog
20 studies.

21 MR. FRUEHWALD: It not sure Mr. Papageorge is
22 the man to tell you about that, you but you can
23 ask the question.

24 MR. MC CONNELL: Let me ask the same question

1 a different way.

2 Q. During the time that you were dealing
3 with Industrial Bio-Test on the pcb studies, one
4 of the species of animals that was used was Beagle
5 dogs; is that correct?

6 A. That is correct.

7 Q. And they were housed at a farm in
8 Wisconsin?

9 A. Not the dogs that I saw, no.

10 Q. Okay.

11 Where were the dogs that you saw?

12 A. In the IBT laboratories in Northbrook.

13 Q. In Northbrook?

14 A. Yes.

15 Q. Okay.

16 One of the things that was done in the
17 course of the dog study was that blood was drawn
18 at different times and examined for various
19 characteristics; is that correct?

20 A. Yes.

21 Q. Okay.

22 Do you know who the Industrial Bio-Test
23 technicians were that were involved in the blood
24 tests on the dogs?

1 A. No.

2 Q. Okay.

3 Did anybody ever bring to your attention
4 problems with laboratory technique in the blood
5 cell counts in the Industrial Bio-Test dog
6 studies?

7 A. No.

8 Q. In the case of the paragraphs following
9 the numbered heading 2, J5314 Monsanto's Aroclor
10 study, that study was done on chickens; is that
11 correct?

12 A. It is not specific. But the chicken was
13 the typical bird used.

14 Q. Okay.

15 Take a look at Exhibit 218, which is a
16 letter to Dr. Hunt from Rudolph Kodras, dated
17 October 27, 1967.

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 218 for identification.)

21 Do you know whether the study that is
22 referred to in that letter was one of the studies
23 involving pcb products?

24 A. No, I don't.

1 Q. Why would Monsanto be interested in the
2 conditions under which the birds were housed and
3 the eggs incubated?

4 A. We are always interested in following
5 proper laboratory procedures, so that the results
6 obtained from the study are not affected by other
7 conditions in the laboratory which are brought
8 about by improper care, improper procedures.

9 Q. Okay.

10 The control animals, whether they be
11 chickens or rats or mice or fish, whatever, and
12 the animals being tested by exposure to the
13 chemical should all be housed under the identical
14 conditions, should they not, in order for the
15 experiment to be valid?

16 A. That is my understanding, yes.

17 Q. Okay.

7
18 Was it the fact that during these studies
19 on pcb's that Industrial Bio-Test did for Monsanto
20 that some of the tissues from the study animals
21 and the control animals were sent to Monsanto's
22 own laboratories for pcb residue analysis?

23 A. Yes.

24 Q. Why was that done?

1 A. This was done to determine if pcb's
2 accumulate in animals. If so, which of the pcb's
3 remain as residues.

4 It was part of the biodegradation study
5 that Monsanto had ongoing.

6 Q. Perhaps my question was inartfully
7 phrased.

8 What I am trying to get at is why that
9 was done at Monsanto rather than Industrial
10 Bio-Test?

11 A. At that point in time, Monsanto was one
12 of the -- had one of the few laboratories that had
13 the capability of analyzing pcb's at these low
14 levels. But Industrial Bio-Test laboratories did
15 not have that expertise.

16 Q. I am going to show you a memo that has
17 been marked as 219 dated November 16, 1967 to Dr.
18 Kodras from Al Wolvin. I will ask you to take a
19 look at that.

20 (The document above-referred to
21 was marked Bloomington Deposition
22 Exhibit No. 219 for identification.)

23 A. I have reviewed it.

24 Q. Why would the path sheets on the animals

1 and the actual tissue samples be sent separately,
2 if you know?

3 A. I don't know.

4 Q. Would it be a better practice to have the
5 documentation and the samples all packaged
6 together?

7 A. I don't know.

8 Q. Did there come a time in the course of
9 the Industrial Bio-Test studies when a great deal
10 of confusion arose about tissue samples that had
11 been transmitted to Monsanto but not received or
12 couldn't be located in Monsanto's laboratory?

13 A. There was an incident when that occurred,
14 yes.

15 Q. Okay.

16 Do you know if that was a result of the
17 fact that the documents were transmitted
18 separately from the samples?

19 A. No, I do not.

20 Q. Do you know if that situation was ever
21 resolved to Monsanto's satisfaction?

22 A. Yes.

23 Q. Was it?

24 A. We got other samples.

[1 Q. Okay.

2 Deposition Exhibit 220 is a memo from R.
3 Kodras to C. W. Berndt, dated December 6, 1967.

4 (The document above-referred to
5 was marked Bloomington Deposition
6 Exhibit No. 220 for identification.)

7 Do you know why the report on this study
8 J5314 was to be held?

9 A. No.

10 Q. To your knowledge, did Monsanto ever
11 terminate a study at Industrial Bio-Test and ask
12 for Industrial Bio-Test not to submit a report on
13 the study?

14 A. I am not aware of any.

15 Q. Was it ordinarily the practice then if a
16 study were terminated that there would be a report
17 on what had been done up to the point of
18 termination?

19 A. That has been my experience.

20 Q. So as far as you know, there should be no
21 Industrial Bio-Test animal study on pcb's which
22 went undocumented?

23 A. I am not aware of any.

24 Q. Okay.

1 Was it the practice during the time that
2 you were the pcb coordinator between Monsanto and
3 Industrial Bio-Test that all of the raw data from
4 the studies, in addition to the reports
5 themselves, was transmitted to Monsanto either on
6 paper or in the form of microfilm or microfiche?

7 A. I don't know if all of it was
8 transmitted, no. I don't know.

9 Q. Was there ordinarily some considerable
10 back up documentation that came along with or in
11 addition to the report, that came to Monsanto?

12 A. I know some data was sent forward. I
13 don't know if I can define it as considerable or
14 all.

15 Q. In the context of this dialogue which you
16 described between Monsanto's own toxicologist and
17 the outside laboratory, wouldn't it be important
18 for the Monsanto toxicologist who was evaluating
19 the draft of a report to also have the underlying
20 data that supported it?

21 A. It would be important and in many
22 instances this is done at the laboratory. The
23 Monsanto toxicologist goes to the laboratory.

24 Q. Okay.

1 And looks through their files?

2 A. Correct.

3 Q. At their laboratory notebooks and so
4 forth?

5 A. Right.

6 Q. Okay.

7 So one way or the other, he has access to
8 the raw data supporting the report?

9 A. Yes.

10 Q. Okay.

11 Is it the routine practice, then, for the
12 Monsanto toxicologist who is supervising or
13 coordinating the outside study to at least spot
14 check the raw data with the corresponding report?

15 A. That is my observation, yes.

16 Q. I will show you what has been marked as
17 Deposition Exhibit 221, which appears to me, to
18 the extent that it is possible to determine it, an
19 internal Monsanto memorandum from Elmer Wheeler to
20 W. R. Richard, with a long list of other people.
21 Subject minutes of our discussions with Dr.
22 Calandra dated December 9, 1968.

23 Take a look at that. But I want to
24 particularly direct your attention to the last

1 paragraph on the second page of the two-page
2 document which is numbered 11.

3 (The document above-referred to
4 was marked Bloomington Deposition
5 Exhibit No. 221 for identification.)

6 A. I have reviewed Exhibit 221.

7 Q. Okay.

8 My question is paragraph 11 on the second
9 page refers to monthly meetings during the course
10 of the studies. Did those monthly meetings
11 continue throughout the course of the Industrial
12 Bio-Test animal studies on pcb's to your
13 knowledge?

14 A. No. They did not.

15 Q. When did they stop being monthly?

16 A. I do not know.

17 Q. Did there continue to be periodic
18 meetings at some interval other than monthly
19 throughout the course of the pcb project?

20 A. Yes.

21 Q. So there were meetings, but they are less
22 frequent than monthly?

23 A. Correct.

24 Q. Okay.

1 I have marked as 222 another Monsanto
2 memorandum from W. R. Richard to E. Wheeler with a
3 list. The typed date on it is December 9, 1968
4 consisting of one page. I ask you to review that.

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 222 for identification.)

8 A. I have reviewed it.

9 Q. To your knowledge, was there ever a
10 written program objectives created for the pcb
11 animal studies at Industrial Bio-Test?

12 A. No.

13 Q. You don't know or there was not?

14 A. There was no program that I am aware of
15 prepared, a written.

16 Q. There was a program but it wasn't
17 written, is that what you are telling me?

18 A. That is my answer.

19 Q. Any particular reason why it wasn't
20 committed to writing?

21 A. I don't know.

22 Q. Did someone convey to you when you became
23 the pcb coordinator for Monsanto what the program
24 objectives were with respect to the IBT animal

1 testing?

2 A. Yes.

3 Q. What was the understanding that you were
4 given of the program objectives?

5 A. To determine the effects of pcb's on
6 mammals and birds, to determine the effect on the
7 reproduction of birds. The effect on egg shell
8 thickness, viability of the eggs. That was it.
9 Also reproduction of mammals.

10 Q. Were there some fish studies as well?

11 A. Fish studies were never initiated.

12 There was some discussion along those
13 lines, but the studies were not initiated because
14 the government laboratories were very active in
15 this area, and we felt that they were more
16 capable.

17 Q. More capable than Monsanto or more
18 capable than Industrial Bio-Test, or both?

19 A. More capable than any commercial
20 laboratories that Monsanto was familiar with.

21 Q. The first numbered paragraph 1 on Exhibit
22 222 refers to a determination whether Jensen and
23 company, I take that to be a reference to the
24 Swedish researcher; is that correct?

1 A. That is correct.

2 Q. Really have Aroclor on not in the tissues
3 of birds.

4 Do you know whether there was ever a
5 conclusion drawn as to whether or not the Jensen
6 studies did in fact find Aroclor?

7 A. Yes. We finally agreed with his
8 findings.

9 Q. The second paragraph of 222 refers to
10 running a material balance on Aroclor to find out
11 where it ends up.

12 Was that done in the course of the
13 Industrial Bio-Test animal studies?

14 A. No.

15 Q. What is a material balance?

16 A. It is a mathematical approach to
17 establish or equate the material introduced into
18 an animal or in the environment and what routes it
19 takes and where do the various parts of the
20 original material end up.

21 Q. Okay.

22 Is there some reason why that wasn't
23 done?

24 A. I don't know.

1 Q. Could that have been done in the course
2 of the tissue sample analysis that Monsanto did
3 perform at its own laboratories on the samples
4 that were supplied by Industrial Bio-Test, if you
5 know?

6 A. It could not be done, because all the
7 tissues had was the residual material. It did not
8 help explain where the rest of the material went
9 and what form it took.

10 Q. In order to do that, you would have to
11 collect the excreta during the course of the
12 study?

13 A. Excreta and as well as the exhalation
14 from the lungs, all outputs from the animal, and
15 you must also know what to look for, which was the
16 complicated part.

17 Q. In other words, what the metabolic
18 product is as well as what the initial material
19 is?

20 A. That is correct.

21 Q. Okay.

22 So it wasn't done because of the
23 complicated and expensive nature of the
24 undertaking, or is that a fair assumption?

1 A. I think complication was the obstacle.

2 Q. Okay.

3 Paragraph 3 in 222 refers to a
4 determination whether Aroclor is an enzyme inducer
5 which affects steroids and calcium metabolism, et
6 cetera. I really don't know what I am saying
7 here, but you can clarify.

8 Do you know whether that was ever done?

9 A. No.

10 Q. Either one of those things?

11 A. I do not know.

12 Q. What is the significance of the issue
13 whether Aroclor is an enzyme inducer, if you know?

14 A. I really don't know.

15 Q. Does that have something to do with
16 causation of cancer to your knowledge?

17 A. No.

18 Q. You don't know or it doesn't have
19 anything to do with that?

20 A. My limited understanding tells me that it
21 affects the liver in such a way that the enzymes
22 the liver produces are changed, either in amount
23 or type. That is all I can --

24 Q. And the liver is one of the body organs

1 that is involved in detoxification of whatever you
2 might take in, or the animal might take in; is
3 that correct?

4 A. That is my understanding.

5 Q. Paragraph 4 says keep track of what
6 government research labs are doing in the way of
7 testing, plus interpret their results for
8 Monsanto.

9 Was there a program put into effect to
10 follow the results reported by government labs?

11 A. Yes.

12 Q. Who was in charge of that?

13 A. Mr. Wheeler and Dr. Scott Tucker were the
14 principal Monsanto representatives.

15 Q. They were both in the medical department?

16 A. No. In the research department.

17 Q. In the research department. Okay.

18 A. I am sorry. Mr. Wheeler is medical and
19 Dr. Tucker is research.

20 Q. He was basically in charge of the
21 analytical laboratories in the research
22 department?

23 A. Yes.

24 Q. Paragraph 5 goes on to refer in some more

1 detail to following the government lab work.

2 I take it that Mr. Wheeler and Dr. Tucker
3 would have been responsible for that?

4 A. Yes.

5 Q. As well.

6 And finally the numbered paragraph 6
7 refers to contacts with Bayer in Germany and
8 keeping track of the Japan incident through KKK?

9 MR. FRUEHWALD: MMK.

10 MR. MC CONNELL: MMK.

11 Q. MMK is a Monsanto subsidiary in Japan, I
12 take it?

13 A. It is Monsanto/Mitsubishi joint venture
14 in Japan.

15 Q. Okay.

16 Let me ask you two different questions.

17 Was there contact with Bayer in Germany,
18 if you know?

19 A. Yes.

20 Q. Who handled that?

21 A. Mr. Wheeler was the principal contact,
22 although three of us paid a personal visit to the
23 Bayer offices.

24 Q. You and Mr. Wheeler and who else?

1 A. Dr. Keller. Robert Keller.

2 Q. Okay.

3 What did you find out in the context of
4 that visit to Bayer?

5 A. At that time they were aware of the
6 findings of pcb's, now this is in 1970.

7 Q. Okay.

8 The visit was in 1970?

9 A. Yes.

10 Q. What month, if you if you recall?

11 A. April-May, 1970. They had started some
12 limited activities in their analytical
13 laboratories. They sensed no particular reason for
14 having concerns and had no plans for conducting
15 any toxicity studies.

16 Q. By the time of that visit in April or May
17 of 1970, Monsanto's toxicity studies at Industrial
18 Bio-Test were already underway?

19 A. Correct.

20 Q. Who was responsible for the Japanese
21 contact through the affiliate in Japan?

22 A. That was Mr. Wheeler.

23 Q. Do you know what the results of that
24 were?

1 Let me ask the question a different way.

2 Didn't we already talk about a memorandum
3 from somebody in Japan that said -- and I am
4 paraphrasing now -- that it was curtains for pcb
5 or the end was coming near?

6 MR. FRUEHWALD: You were referring to one to
7 Mr. Benignus, much later in the game than any of
8 this discussion, as I recall. But it was not
9 during Mr. Papageorge's deposition. It was during
10 Mr. Benignus' deposition.

11 MR. MC CONNELL: You are probably right. It
12 all tends to run together in my brain. All right.

13 Q. Then tell me what your recollection is,
14 if any, of the results of the contact with Japan
15 as referred to in this December 1968 memo?

16 A. This refers to an accident that happened
17 where pcb's got into some rice brand oil.

18 Q. Is that the so-called Yu Sho incident?

19 A. This is the Yu Sho incident.

20 Q. And was Mr. Wheeler able to learn the
21 details of that incident in this follow up?

22 A. Our efforts through our MMK
23 representative were not productive.

24 Q. Okay.

1 Were other efforts made?

2 A. Yes.

3 Our primary source of information came
4 from Japanese representatives who attended
5 meetings in the United States.

6 Q. Were these specific meetings related to
7 pcb's or were these other meetings in which you
8 were able to contact the Japanese representatives?

9 A. These were meetings only to discuss
10 pcb's.

11 Q. Okay.

12 Take a look at the two-page letter that
13 has been marked as Exhibit 223 dated December 20,
14 1968 to Dr. Calandra from Elmer Wheeler.

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 223 for identification.)

18 A. I have reviewed it.

19 Q. Were those studies that are referred to
20 in Exhibit 223 among the efforts that were
21 undertaken to determine whether in fact it was pcb
22 rather than DDT or some other substance that was
23 found in the Swedish tissue analysis?

24 A. That is a part of the purpose.

1 Q. Okay.

2 What is the rest of the purpose?

3 A. To establish if pcb's themselves create
4 any effects.

5 Q. Would it be fair to characterize the
6 studies described in Exhibit 223 as short-term?

7 A. Yes.

8 Q. The DDT and toxaphane and chlorinated
9 naphthalenes that are referred to in Exhibit 223,
10 were those products that were produced by
11 Monsanto?

12 A. No.

13 Q. So they had to be obtained from from some
14 other source?

15 A. Yes.

16 Q. I will show a letter that has been marked
17 as Exhibit 224 dated February 10, 1969 to Dr.
18 Fancher from Elmer Wheeler.

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 224 for identification.)

22 A. I have reviewed it.

23 Q. It would be necessary I take it for Dr.
24 Tucker and his lab analysts to have samples of the

1 starting material that was mixed with the feed in
2 order to compare with the analysis of the tissues
3 that were received at the end of the study, to see
4 what they are finding. Is that a fair statement?

5 A. Yes.

6 Q. Showing you what has been marked as
7 Exhibit 225, which is an Industrial Bio-Test memo
8 from Richard J. Palazzolo to Al Wolvin dated
9 February 26, 1969 subject Monsanto J 7010, I will
10 ask you to take a look at that.

11 (The document above-referred to
12 was marked Bloomington Deposition
13 Exhibit No. 225 for identification.)

14 A. I have reviewed it.

15 Q. It is my understanding that according to
16 that memorandum, the way Monsanto wanted to
17 receive the tissues samples from sacrifice birds
18 was that the organs should be removed and packed
19 separately; that is, the individual organ from
20 each individual bird should come as a separate
21 sample.

22 Is that your understanding, with the
23 exception of fat?

24 A. I don't know that Monsanto asked for

1 that. This inter-office memorandum does not
2 indicate whose --

3 Q. Whose idea that was?

4 A. Whose idea that was.

5 Q. In your understanding of the analysis
6 that Dr. Tucker was going to do on the tissue
7 samples from these studies, would it be important
8 to use individual samples rather than a pooled
9 sample?

10 A. This is dependent on the purpose of the
11 study.

12 And pooled samples sometimes do serve a
13 purpose to get a good first look. Then you can
14 zero in in more detail later to the specifics.

15 Q. The difficulty or the difference, I
16 guess, between a pooled sample and individual
17 samples is that all you get when you analyzed a
18 pooled sample is an average figure?

19 A. True.

20 Q. It won't tell you whether one of the
21 animals had a higher level and another one had a
22 lower level?

23 A. That's right.

24 Q. So you would expect in the ordinary

1 sequence of events in a study of this nature that
2 the earlier studies might have involved pooled
3 samples and the later ones involved individual
4 samples, rather than the other way around?

5 A. That would be a normal approach.

6 Q. Exhibit 226 is a memo dated March 19,
7 1969 from J. Plank to MLK, subject Aroclor tissue
8 residue studies B7009 and J7010 - Monsanto.

9 I will ask you to look at that.

10 (The document above-referred to
11 was marked Bloomington Deposition
12 Exhibit No. 226 for identification.)

13 A. I have reviewed it.

14 Q. Do you know why it was that Dr. Tucker
15 was particularly interested in getting the chicken
16 tissue samples?

17 A. No, I don't.

18 Q. What is Halowax 1014, if you know?

19 A. It is a paraffin that has been
20 chlorinated, I don't recall the company but they
21 sell it under the trademark Halowax.

22 Q. It is not Monsanto product?

23 A. That is correct.

24 Q. Was the study that is referred to in

1- Exhibit 226 then also part of the comparative
2 analysis, that is, to see what the end products in
3 animal tissues were of feeding various chlorinated
4 organic compound?

5 A. Yes.

6 Q. Okay.

7 That ultimately led to the conclusion
8 that the Swedish researchers had in fact found
9 pcb's rather than the residue of something else?

10 A. That helped lead to that conclusion, yes.

11 Q. What else went into leading to that
12 conclusion, other than the results of these
13 comparative studies?

14 A. Discussions with government laboratories
15 using -- the laboratories used the methodology
16 that the Swedish investigators used.

17 We concluded that using the methodologies
18 developed by the Swedish investigators, one could
19 detect pcb's in tissue and samples out of the
20 environment.

21 Q. Were the techniques that the Swedish
22 investigators used different from the techniques
23 that were then in effect at Monsanto's laboratory?

24 A. Yes.

1 Q. Okay.

2 So Dr. Tucker was trying out something
3 that was new to him at that point?

4 A. Correct.

5 MR. MC CONNELL: Okay. Let's take a break.

6

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9 (Whereupon a recess
10 was taken.)

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IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

THE CITY OF BLOOMINGTON, INDIANA;)
THE UTILITIES SERVICE BOARD OF)
BLOOMINGTON, INDIANA; and MONROE)
COUNTY, INDIANA,)

Plaintiffs,)

vs.)

Civ No.
IP 83-9-C

WESTINGHOUSE ELECTRIC CORPORATION,))
a Pennsylvania corporation; and)
MONSANTO COMPANY, a Delaware)
corporation,)

-----Defendants,-----)

The continued deposition of W. B. PAPAGEORGE,
called for examination by the Plaintiffs, pursuant
to notice and pursuant to the provisions of the
Federal Rules of Civil Procedure of the United
States District Courts, pertaining to the taking
of depositions for the purpose of discovery, taken
before Arnold N. Goldstine, a Notary Public and
Certified Shorthand Reporter within and for the
County of Cook and State of Illinois, at Three
First National Plaza, Chicago, Illinois, on
October 15, 1986, at the hour of one o'clock p.m.

1

2

APPEARANCES:

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4

5

6

7

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-and-

8

9

10

Mr. Geoffrey M. Grodner
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11

appeared on behalf of the
Plaintiffs;

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16

Mr. Michael R. Fruehwald
Barnes & Thornburg
1313 Merchants Bank Building
Indianapolis, Indiana 46204

17

appeared on behalf of Defendant
Monsanto Company.

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1 MR. MC CONNELL: Back on the record.

2 WILLIAM B. PAPAGEORGE,
3 having been previously duly sworn,
4 was examined and testified as follows:

5 DIRECT EXAMINATION (CONTINUED):

6 BY MR. MC CONNELL:

7 Q. Mr. Papageorge take a look at Exhibit 227
8 which is a letter to Dr. Calandra from Elmer
9 Wheeler dated April 15, 1969 and also includes a
10 one page attachment.

11 As of the date of that letter, the first
12 two studies listed on the attachment had already
13 been done; is that correct?

14 (The document above-referred to
15 was marked Bloomington Deposition
16 Exhibit No. 227 for identification.)

17 A. I cannot tell from reading the
18 attachment.

19 Q. Well, we have already talked in some
20 earlier exhibits about the bird studies that
21 compared --

22 A. I am sorry, there is an expression
23 completed, the same as above. So I have to infer
24 that that, too, you are right.

1 Q. Okay.

2 The next two, numbers 3 and 4 are the
3 fish studies which you have already testified were
4 deferred; is that correct?

5 A. It is my understanding the fish studies
6 were deferred.

7 This document shows at least one of these
8 studies underway.

9 Q. Okay.

10 A. I do not understand that.

11 Q. And the letter which is the first page of
12 the Exhibit authorizes studies 5 through 9 to be
13 initiated?

14 A. Yes.

15 Q. And to your knowledge, were all of those
16 studies 5 through 9 ultimately done?

17 A. Study number 9 with reference to calcium,
18 Ca and P content. That was not done.

19 Q. Okay.

20 That is under the chicken reproduction
21 study?

22 A. Yes.

23 Q. There was a chicken reproduction study,
24 though, was there not?

1 A. Yes.

2 Q. With you it didn't involve calcium and?

3 A. Phosphorus.

4 Q. Phosphorus.

5 Q. And study number 9 was not done.

6 Q. The duck study wasn't done at all?

7 A. That's right.

8 Q. Why was that?

9 A. I am under the understanding that they

10 missed the egg laying season for Mallards and

11 could not get the young birds to conduct their

12 study.

13 Q. Ducks only have offspring once a year?

14 A. Yes.

15 Q. As opposed to chickens which lay eggs

16 everyday, I guess. Okay. That makes sense to me.

17 Take a look at Exhibit 228, which is a

18 letter from Dr. Fancher to Mr. Wheeler dated May

19 23, 1969.

20 (The document above-referred to

21 was marked Bloomington Deposition

22 Exhibit No. 228 for identification.)

23 A. I have reviewed it.

24 Q. The first paragraph of that letter refers

1 to adding animals to various groups in the study.

2 Do you see that reference?

3 A. Yes.

4 Q. I take it that that letter is referring
5 to a change in the protocol before the study was
6 begun?

7 A. Yes.

8 Q. Okay.

9 Rather than adding animals to the study
10 in the middle of the study?

11 A. That is correct.

12 Q. In your understanding of the way these
13 animal studies are done, would it ever be
14 appropriate to add animals, new animals, to a
15 study that had been underway for a period of time?

16 A. I don't know of any situation where it
17 would be appropriate.

18 Q. And as I understand Exhibit 228, the
19 reason for the suggested addition of additional
20 animals to the rat study was to allow for an
21 interim sacrifice?

22 A. Yes.

23 Q. Okay.

24 And still have an appropriate number of

1 animals left at the end of the study?

2 A. That is correct.

3 Q. Okay.

4 Take a look at 229, which is a memo dated
5 June 10, 1969 from Dr. Fancher to MLK, JP and CWB,
6 subject Monsanto Aroclor studies in rats.

7 I will ask you if that indicates to you
8 that the additions which were suggested in 228
9 were in fact made before the studies began?

10 A. This inter-office memo does suggest that,
11 yes.

12 Q. I show you a letter that has been marked
13 as Exhibit 230, which is dated June 12, 1969 to
14 Dr. Fancher from Elmer Wheeler.

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 229 for identification.)

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 230 for identification.)

21 A. I have reviewed it.

22 Q. I take it that Exhibit 230 is the written
23 authorization for adding the extra rats that are
24 discussed in Exhibits 228 and 229; is that

1 correct?

2 A. Yes, that's correct.

3 Q. It also refers to the procedures for
4 Industrial Bio-Test to bill Monsanto for these
5 studies.

6 Is there anything about the billing
7 procedures that are described in Exhibit 230 that
8 was different from your understanding of the
9 ordinary arrangements between Industrial Bio-Test
10 and Monsanto?

11 A. No. It strikes me as being rather
12 typical.

13 Q. Take a look at Exhibit 231, which is a
14 one-page report from the Wisconsin Animal Health
15 Laboratories dated June 24, 1969 from G. S.
16 Jacobsen, that is s-e-n, poultry epidemiologist,
17 to Dr. D. H. Jenkins.

18 I will ask you to review that.

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 231 for identification.)

22 A. I have reviewed it.

23 Q. Have you ever seen that document before
24 today?

1 A. No, sir.

2 Q. Did anyone ever tell you at any time
3 during the course of your involvement as pcb
4 coordinator for Monsanto that the chickens which
5 had been used in the Industrial Bio-Test study
6 were infested with Marek's disease?

7 A. No.

8 Q. Have you ever seen at any time any report
9 on any of the chicken studies done by Industrial
10 Bio-Test which reflects the fact that the chickens
11 used in the study were diseased?

12 A. No.

13 Q. Did anyone ever tell you at any time that
14 those Industrial Bio-Test chicken studies were
15 performed with diseased birds?

16 A. No.

17 Q. If you had known at the time you
18 received, Monsanto received the report of the
19 chicken studies that the study was performed with
20 diseased birds, would that have been an acceptable
21 study as far as you were concerned; as far as you
22 were concerned, you individually?

23 A. I would have to know more about the
24 extent of the disease and what impact it would

1 have on a study, and I would have to rely on the
2 judgment of the -- those that are expert in this
3 field.

4 Q. Meaning the toxicologists at Monsanto; is
5 that right?

6 A. Yes.

7 Q. In any event, if in fact the study which
8 was reported to you was done on a colony of
9 diseased chickens, you would expect the report to
10 reflect that fact, would you not?

11 A. Yes.

12 Q. Take a look at Exhibit 232, which is
13 dated July 21, 1969 to Dr. Fancher from D. H.
14 Jenkins.

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 232 for identification.)

18 A. I have reviewed it.

19 Q. Did any of the information that is
20 reflected on Exhibit 232 ever come to your
21 attention in the course of your work as the pcb
22 coordinator for Monsanto?

23 A. No.

24 Q. To your knowledge, was the information

1 known to anybody else at Monsanto?

2 A. Not that I know of.

3 Q. Who is Paul Wright?

4 A. Paul Wright is a toxicologist, a former
5 employee of Monsanto, and also former employee I
6 understand of Bio-Test Laboratories.

7 Q. Okay.

8 To your knowledge, did he work for
9 Monsanto before he went to work for Industrial
10 Bio-Test?

11 A. I know that he worked for both companies.
12 I don't know the sequence of which he
13 worked.

14 As best I recall, he was a Monsanto
15 employee, and then he joined the Bio-Test
16 Laboratories, and then returned to Monsanto in a
17 different position. That is the best of my
18 recollection.

19 Q. Okay.

20 Do you know how long he was with
21 Industrial Bio-Test?

22 A. No.

23 Q. Do you know whether he worked on any of
24 the Industrial Bio-Test studies on pcb's for

1 Monsanto?

2 A. I never saw his name associated with
3 those studies, no.

4 Q. Did you see all of the reports of studies
5 from Industrial Bio-Test?

6 A. I have no way of knowing what reports
7 were not shown to me.

8 I saw final reports for each of the
9 studies that I knew had been placed.

10 Q. Okay.

11 A. But I don't know about all of those.

12 Q. Including all of those on the list that
13 we just looked at?

14 A. Yes.

15 Q. And you don't recall seeing Mr. Wright's
16 name on any of those studies that you are
17 testifying about?

18 A. That's correct.

19 Q. Take a look at Exhibit 233, which is a
20 memo dated July 25, 1969 from Otis Fancher to J.
21 C. Calandra and others. Subject visit by Elmer
22 Wheeler and others from Monsanto.

23 (The document above-referred to
24 was marked Bloomington Deposition

[1 Exhibit No. 233 for identification.)

2 A. I have reviewed it.

3 Q. That visit that is described in that memo
4 I take it was at a time before you became the pcb
5 coordinator for Monsanto; is that correct?

6 A. That is correct.

7 Q. Were you one of the others who was
8 involved in that visit?

9 A. No.

10 Q. Do you know whether Mr. Benignus was?

11 A. Yes.

12 Q. Yes, he was, or yes, you know?

13 A. I am sorry. I thought you said Wheeler
14 was.

15 Q. Do you know whether he participated in
16 that visit?

17 A. No, I do not know.

18 Q. Did anyone who participated in that visit
19 ever discuss with you the subject of their
20 discussions with Industrial Bio-Test in July of
21 '69?

22 A. I don't remember any discussions specific
23 to that visit. No.

24 Q. Okay.

1 Do you remember discussing with anyone at
2 Monsanto problems in fish studies with the
3 material in the water -- material that was found
4 in the water by Monsanto analysts not being the
5 same as what the test material was supposed to be?

6 A. Not that specific comment. No.

7 Q. Okay.

8 Do you recall any comments in your
9 discussions with others at Monsanto about some
10 problems with fish studies initiated by Industrial
11 Bio-Test?

12 A. Yes.

13 Q. What comments do you recall?

14 A. I recall that they were having
15 difficulties in keeping the pcb's evenly dispersed
16 in the water so that the test fish could be
17 exposed. And that the pcb's appeared to be
18 plating out on the surface of the aquariums.
19 Therefore, becoming unavailable to the test fish.

20 And there didn't seem to be any practical
21 way of solving that particular problem. To the
22 best of my memory, that is the essence of what I
23 was told.

24 Q. And was that the reason that extensive

1 fish studies were not carried out by Industrial
2 Bio-Test?

3 A. That was one of the reasons.

4 And the other, as I mentioned earlier,
5 was the government through several laboratories
6 was starting fish studies and they seemed to be
7 more capable than we were.

8 Q. Okay.

9 And their information, of course, would
10 be made available to you?

11 A. Certainly.

12 Q. Showing you Exhibit 234 which is a
13 one-page memo dated August 1, 1969 from CM to Otis
14 Fancher, copies to others, subject A7204
15 conference, Monsanto.

16 I will ask you if you have ever seen that
17 before?

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 234 for identification.)

21 A. I have not seen this before.

22 Q. Had the problems with the Industrial
23 Bio-Test fish studies been described to you along
24 the lines of what is contained in that memo?

1 A. Not in this kind of detail. No.

2 Q. Is the detail that is included in Exhibit
3 234 consistent with the general understanding that
4 you received about the problems with the IBT fish
5 studies?

6 A. It is consistent. Yes.

7 Q. Do you know whether that kind of detail
8 was provided to Mr. Wheeler or Dr. Kelly or anyone
9 else at Monsanto?

10 A. I do not know.

11 Q. Take a look at Exhibit 235, which is a
12 letter dated September 4, 1969, no addressee,
13 signed by Ward R. Richter. And I will ask you if
14 you have ever seen that?

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 235 for identification.)

18 A. I have not seen this document.

19 Q. Who is Dr. Ward Richter, if you know?

20 A. I do not know.

21 Q. Do you know whether he was an employee of
22 Industrial Bio-Test or not?

23 A. I do not know.

24 Q. Take a look at Exhibit 236, which is a

1 one-page memo dated September 18, 1969 from J.
2 Plank to R. J. McCormick, and R. Greco.

3 I will ask you if you have ever seen that
4 before?

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 236 for identification.)

8 A. I have not seen this document before.

9 Q. Do you have any idea why a request would
10 be made for an additional bleeding of rats in
11 connection with the pcb study?

12 A. I do not know.

13 Q. Do you know what SAP stands for?

14 A. No, I don't.

15 Q. Have you ever heard of the term serum
16 alkaline phosphorylase?

17 A. Yes.

18 Q. That is a liver enzyme, is it not?

19 A. That I don't know.

20 Q. Okay.

21 Was serum alkaline phosphorylase to your
22 knowledge one of the tests or things being studied
23 in the Industrial Bio-Test rat studies on pcb's?

24 A. I don't recall that, no.

1 Q. Take a look at Exhibit 237, which is a
2 memo dated October 2, 1969 from Otis Fancher to
3 DHJ.

4 I will ask you if you have ever seen
5 that?

6 (The document above-referred to
7 was marked Bloomington Deposition
8 Exhibit No. 237 for identification.)

9 A. I have not seen this document.

10 Q. Does this memorandum suggest to you that
11 there were some changes being made in the protocol
12 of the chicken reproduction study?

13 A. I would have to see the protocol because
14 the protocol may have been written in such a way
15 to permit this kind of action at certain times.

16 Q. There would be a choice; in other words,
17 at this point we either will or will won't do X?

18 A. Yes. Some protocols are written that
19 way. So I cannot tell whether this is a change or
20 not.

21 Q. Okay.

22 Is it reasonable in your understanding to
23 not prolong the study until one hundred eggs have
24 been collected from groups showing obvious effects

14

1 of treatment?

2 A. I am not qualified to answer that.

3 Q. Okay.

4 According to this, the tissue samples
5 that were to be collected and sacrificed which is
6 referred to in paragraph 5 were composite samples;
7 is that correct?

8 A. That is what it says.

9 Q. Why, if you know, would it composite
10 samples taken in this study, when individual
11 samples were already taken from an earlier study?

12 A. I don't know.

13 Q. As we discussed before, if composite
14 samples are taken, it may conceal particularly
15 high levels in individual birds within a treatment
16 group, might it not?

17 A. That is is possible.

18 Q. Let's take a break for a second.

19 (Whereupon a short recess was had.)

20 Calling your attention back to Exhibit
21 234, which I will hand you again, according to
22 this internal Industrial Bio-Test memo the key
23 issue is, and I quote, "establish safety of the
24 Aroclors in the environment."

1 Is that something they came up with
2 themselves or was that a charge that was given to
3 Industrial Bio-Test by Monsanto?

4 A. I don't know.

5 Q. As I understand the approach of
6 scientists to this sort of testing, the
7 appropriate type of question would be to
8 investigate whether Aroclors are safe in the
9 environment rather than to establish that they are
10 safe.

11 MR. FRUEHWALD: I am not sure this says what
12 you are saying. Establish safety can be whether
13 it is safe or not to me. Establish that there is
14 safety, if it is safe.

15 MR. MC CONNELL: That's not what it says,
16 though.

17 MR. FRUEHWALD: That is the way you are
18 reading it. That can be read either way in my
19 book.

20 BY MR. MC CONNELL:

21 Q. My question to you is would you expect to
22 see that kind of phraseology in a study protocol
23 or would you expect to see something that said
24 establish whether or determine whether a

1 particular product is safe in the environment?

2 A. It is a matter of phraseology and
3 understanding, and I would interpret that as once
4 you conduct your studies, the answer may well be
5 no, it is not safe. Or the answer is yes, it is
6 safe. I cannot speak for the author of that
7 statement.

8 Q. Okay.

9 In any event, I take it from that
10 statement that the purpose of these studies was to
11 investigate safety of pcb's in the environment
12 rather than in the occupational setting?

13 A. That is correct.

14 Q. Take a look at the two-page memo that we
15 have marked as Exhibit 238, which is an internal
16 Industrial Bio-Test, I have it here, memo dated
17 October 8, 1969 to file from Otis Fancher.

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 238 for identification.)

21 A. I have reviewed it.

22 Q. One of the reasons for taking pooled
23 tissue samples, for example, in a chicken study is
24 that the size of the individual chicken liver or

1 heart or whatever organ is under study isn't large
2 enough for individual analysis at the levels that
3 you expect to find the material present in the
4 tissue. Is that a fair statement?

5 A. Yes.

6 Q. So you put four or five livers together
7 and you get a large enough sample to work up
8 appropriately and look for the pcb's; is that
9 correct?

10 A. Yes.

11 Q. In the case of dogs, do you know whether
12 that is a problem?

13 A. This is dependent on the amount of the
14 chemical that is present.

15 If it is in very, very low quantities,
16 you need a big enough sample to extract this
17 chemical.

18 Other than that, I don't know of any
19 other reason to pool, other than you are just
20 looking really for averages. And all these
21 studies are based, as you know, from averages of
22 groups rather than -- large enough groups so that
23 the average makes some sense.

24 Q. How do you determine whether the group is

1 large enough?

2 A. That is, again, you would have to go to a
3 toxicologist. But it is based on the state of the
4 art of that kind of test, and the experience of
5 the toxicologist regarding the numbers in a
6 particular population and the kinds of answers he
7 might expect, so on.

8 Q. But that is something that is taken into
9 consideration at the time the study is designed,
10 is it not?

11 A. Correct.

12 Q. And you plan for the appropriate number
13 of animals in each relevant group?

14 A. Correct.

15 Q. Do you know whether there was ever
16 individual tissue samples of organs from the dog
17 study analyzed for pcb content at Monsanto?

18 A. No.

19 Q. In the earlier chicken study that we
20 reviewed, where the samples were to be packaged
21 individually, did you ever learn that there was
22 any difficulty in the Monsanto laboratories with
23 Dr. Tucker and his people successfully analyzing
24 those individual tissue samples?

15

1 A. I don't recall of any difficulty.

2 Q. Does it strike you as unusual that the
3 only tissue samples which were to be analyzed
4 according to this document 238 would come only
5 from the highest no-effect level groups?

6 MR. FRUEHWALD: Let me see the document.

7 I don't believe that's what the document
8 says. It says it is probable that Monsanto
9 analyzed, is that what you are referring to?

10 MR. MC CONNELL: Right.

11 MR. FRUEHWALD: That is different than
12 actually being done or that Monsanto actually did
13 that. This is somebody's guess as to what
14 Monsanto might do in the future.

15 BY MR. MC CONNELL:

16 Q. Let me ask.

17 Do you know whether other groups were
18 analyzed, had tissue samples analyzed, other than
19 the highest no-effect level group?

20 A. I don't remember the specifics of those
21 tests, those analytical tests.

22 Q. Do you have any idea why the highest
23 no-effect level would be singled out?

24 A. I don't.

1 Q. Showing you Exhibit 239, which is a memo
2 dated October 20, 1969 from Otis Fancher to J. C.
3 Calandra. I will ask you if you have seen that
4 before?

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 239 for identification.)

8 A. I have not seen this before.

9 Q. According to that memo, one of the
10 purposes of Dr. Kelly's visit to Industrial
11 Bio-Test on that occasion was to discuss
12 Monsanto's strategy with respect to saccharin.

13 Was Industrial Bio-Test conducting animal
14 tests on saccharin for Monsanto in 1969?

15 A. I don't know.

16 Q. Was saccharin a product that Monsanto
17 manufactured?

18 A. Yes.

19 Q. To your knowledge, was there a Monsanto
20 strategy with respect to saccharin in 1969?

21 A. I was not aware of any, and am not.

22 Q. Ultimately products, food products with
23 saccharin content were required by the FDA to have
24 some kind of warning about the possibility of

1 cancer; is that correct?

2 A. I don't know if that is an FDA or a
3 Congressional act. FDA wanted to ban saccharin
4 and Congress overruled them.

5 Q. They said it is okay if you put it on
6 with a warning?

7 A. Yes.

8 Q. Do you know when that took place?

9 A. About roughly '77.

10 Q. Okay.

11 To your knowledge, in 1969 did Monsanto
12 have a strategy with respect to pcb's?

13 A. There obviously were business strategies,
14 commercial strategies.

15 I am not aware of any other strategies
16 related to pcb's in 1969, other than this
17 additional need to study them.

18 Q. Okay.

19 That would be the strategy that would
20 impact Industrial Bio-Test, would it not?

21 A. Yes.

22 Q. Okay.

23 Exhibit 239 refers to all other ongoing
24 projects.

1 Other than pcb's and saccharin, do you
2 know what other product testing was going on in
3 1969 at Industrial Bio-Test for Monsanto?

4 A. I do not know.

5 Q. Have you ever heard of a Monsanto product
6 called Naprisin?

7 A. No.

8 Q. Have you ever heard of a Monsanto product
9 called TCC?

10 A. Yes.

11 Q. That is used in deodorant soaps?

12 A. Yes.

13 Q. Was that being tested by Industrial
14 Bio-Test in 1969 and 1970?

15 A. I don't know.

16 Q. Earlier in your testimony you described
17 Paul Wright as a former Monsanto employee. When
18 did he leave the company?

19 A. I don't know that I can come close to the
20 first time he left Monsanto, because I didn't know
21 the man then.

22 Q. Okay.

23 I am looking for the last time.

24 A. The last time around, about 1980, '81.

1 Q. Do you know where he is now?

2 A. No.

3 Q. You are aware, I take it, that he was
4 indicted in connection with some animal studies
5 that were done on Monsanto products in other
6 products at Industrial Bio-Test?

7 A. Yes.

8 Q. That he was ultimately convicted of mail
9 fraud in connection with some of those studies?

10 A. I know he was convicted on some counts,
11 but I don't know what.

12 Q. And he was sentenced to prison?

13 A. I had heard that.

14 Q. Okay.

15 Did he leave Monsanto before or after he
16 was indicted, the last time he left?

17 A. I don't know.

18 Q. Have you ever discussed the pcb animal
19 studies with Paul Wright?

20 A. No.

21 Q. Have you ever discussed Paul Wright's
22 role in the pcb animal studies with anyone at
23 Monsanto other than company attorneys?

24 A. No.

1 Q. Did you know Dr. Calandra of Industrial
2 Bio-Test?

3 A. Yes.

4 Q. Did you know Dr. Fancher of Industrial
5 Bio-Test?

6 A. Yes.

7 Q. Who else at Industrial Bio-Test did you
8 ever meet or deal with?

9 A. Dr. Keplinger. Doctor -- starts with a
10 B, a black man, Doctor -- it escapes me at the
11 moment.

12 Q. You got me. I missed that one.

13 A. I don't recall the others.

14 Q. Maybe well run across it here.

15 Showing you what has been marked as
16 Exhibit 240, which is a one-page memo dated
17 December 3, 1969 from G. Kennedy to Otis Fancher
18 and M. Keplinger, I will ask you if you have ever
19 seen that?

20 (The document above-referred to
21 was marked Bloomington Deposition
22 Exhibit No. 240 for identification.)

23 A. I have never seen this.

24 Q. There is a reference in that memo to the

1 phrase "Monsanto still has hopes of maintaining
2 these products on the market."

3 I take it the products that are referred
4 to is pcb's, is that your understanding?

5 A. From this paragraph I can only infer he
6 is referring to the previously mentioned Aroclor
7 products and two triphenyls. I can only assume
8 that that is what the author here had in mind.

9 Q. Okay.

10 In December of 1969, did Monsanto still
11 have hopes of maintaining Aroclors on the market?

12 A. Yes.

13 Q. And the animal studies that are done at
14 Industrial Bio-Test, were in pursuit of that hope,
15 at least in part?

16 A. Yes.

17 Q. In other words, if the company didn't do
18 anything in an effort to demonstrate the safety of
19 pcb's, it faced the possibility that they would be
20 banned?

21 A. True.

22 But if, in turn, the results are
23 unfavorable, you withdraw.

24 Q. Industrial Bio-Test knew that when they

1 undertook these studies; is that right?

2 A. Knew what?

3 Q. That if the results were unfavorable,
4 Monsanto would withdraw the product from the
5 market?

6 A. I don't know if Bio-Test was in a
7 position to know Monsanto's business decisions.
8 They could only speculate.

9 Q. It wouldn't be terribly speculative to
10 conclude that if the studies showed it to be a
11 terribly poisonous substance in the environment,
12 that the company wouldn't have much choice but to
13 stop making it?

14 A. That is still speculation.

15 Q. Okay.

16 Take a look at Exhibit 241, which is
17 dated December 4, 1969 from Otis Fancher to Moreno
18 Keplinger and others. I will ask you if you have
19 ever seen that before?

20 (The document above-referred to
21 was marked Bloomington Deposition
22 Exhibit No. 241 for identification.)

23 A. I have not seen this document.

24 Q. Was there in fact as the document states

1 in December of 1969 some anxiety on Monsanto's
2 part about the continued viability of its pcb
3 products?

4 A. There was concern at that time and the
5 concern centered around the effects on the
6 environment by the pcb's.

7 I don't know that that concern as yet had
8 translated into viability of the entire product
9 line.

10 Q. Did it eventually?

11 A. Yes.

12 Q. When in your estimation was that line
13 crossed, from concern about environmental effects
14 over to anxiety about the viability of the product
15 line?

16 A. It is hard to pick any particular date.
17 I would suggest that it occurred about the time
18 our vice president spoke before an audience in
19 Washington, at which he said Monsanto is ready to
20 stop production when our customers have indicated
21 they have found alternative materials.

22 And this was 1975, as best as I recall.

23 Q. The man to whom you refer is John Mason?

24 A. No. This was F. J. Fitzgerald.

1 Q. Okay.

2 Would you characterize the phraseology
3 used by Dr. Fancher where he says great anxiety at
4 Monsanto about the whole Aroclor situation as
5 being stronger than what in fact Monsanto was
6 experiencing at the time of this memo in December
7 of 1969?

8 A. I have trouble with the definition of
9 anxiety, since it is a subjective-type word.

10 There was a growing awareness on
11 Monsanto's part that the evidence was mounting
12 against pcb's presence in the environment and
13 potential harm.

14 And at about that time, December '69,
15 there was the recommendation made that the job I
16 eventually was given be created. So if those are
17 symptoms of anxiety, yes, there was a growing
18 anxiety.

19 Q. But the diagnosis of anxiety is Dr.
20 Fancher's and not necessarily shared by you at
21 that time?

22 A. That is accurate. Yes.

23 Q. Okay.

24 Take a look at Exhibit 242, which is a

1 single-page memo dated January 13, 1970 from Dr.
2 Fancher to Moreno Keplinger, subject Monsanto
3 Aroclor studies.

4 (The document above-referred to
5 was marked Bloomington Deposition
6 Exhibit No. 242 for identification.)

7 A. I have reviewed it.

8 Q. Was that after you became pcb
9 coordinator?

10 A. Yes.

11 Q. Okay.

12 Who was Dr. Fitzhugh, who is referred to
13 in that memo?

17

14 A. Dr. Fitzhugh was at that time a member of
15 the Food and Drug Administration, located in
16 Washington, D. C.

17 Q. Did he subsequently join the staff of the
18 Environmental Protection Agency after that agency
19 was created?

20 A. No, no. Dr. Fitzhugh retired as I recall
21 in 1970, shortly after we visited with him in
22 early 1970.

23 Q. Okay.

24 Why was Dr. Fitzhugh following the

1 Industrial Bio-Test animal studies on pcb's?

2 A. As I recall, Mr. Wheeler had known Dr.
3 Fitzhugh from previous chemical discussions on
4 food additives and all, and Mr. Wheeler had
5 contacted Dr. Fitzhugh to determine if FDA had any
6 programs or interest in pcb's.

7 And from that contact, Dr. Fitzhugh
8 developed a personal interest, as well as a
9 professional interest, in pcb's and was attempting
10 to keep abreast of developments through Mr.
11 Wheeler.

12 Q. Okay.

13 The FDA's interest, I take it, would have
14 been sparked by its learning of the Yu Sho
15 incident among other things?

16 A. That is true.

17 But that didn't happen until to the best
18 of my knowledge -- FDA was aware of the Yu Sho
19 incident in about the third quarter 1970, summer,
20 fall of 1970.

21 Q. But Monsanto knew about it before that,
22 did they not?

23 A. Yes. Yes. Monsanto heard about it in,
24 as I recall, about 1969.

1 If I remember correctly, it appeared in a
2 San Francisco newspaper at about that time.

3 Q. Which time now, 1969?

4 A. '69.

5 Q. But the FDA didn't pick up on it for
6 almost a year after that?

7 A. They didn't pick up on it officially. I
8 don't know if individuals saw it or not.

9 Q. When Monsanto became aware of the Yu Sho
10 incident in 1969, it knew, it being Monsanto, knew
11 that it had customers in the United States who
12 were using its pcb fluids in heat exchange
13 applications in food processing?

14 A. Yes.

15 Q. Why was it that Monsanto didn't bring the
16 Yu Sho incident, which arose out of the same
17 application of pcb's in heat transfer in food
18 processing, to the attention of the FDA, when
19 Monsanto learned about it in 1969?

20 A. We, it is my understanding, we didn't
21 know -- we didn't know enough about the incident
22 to be able to determine that the health effects
23 noted among the consumers of this oil were due to
24 pcb's or to some other chemicals.

1. And that was the reason Monsanto
2 attempted to get more information and failed.

3 Q. Those other chemicals you are referring
4 to are dioxin and furans?

5 A. Later they were demonstrated to be the
6 dioxin, furans, yes. At that time --

7 Q. Nobody knew?

8 A. Nobody knew.

9 Q. Dioxins and furans are contaminants that
10 can be created by heat applied to the pcb liquids;
11 is that correct?

12 A. That is one source, yes.

13 Q. Okay.

14 So it could be, rather than something
15 that was originally in the pcb, it could result
16 from its use or abuse in that heat transfer
17 process?

18 A. In the presence of oxygen, yes.

19 Q. Okay.

20 Q. If it is not air-tight?

21 A. Yes.

22 Q. Okay.

23 And as I understand it, the current
24 thinking in 1986 on Yu Sho is that that is

1 probably how those materials came to be in the pcb
2 that was involved in that incident; is that
3 correct?

4 A. I don't know that I understood it quite
5 that way. The oil itself played, had a
6 contributory role. There is -- some of these
7 oils, some oxygen tied up chemically, and I don't
8 profess to know all the chemistry. But I have
9 learned from the Dr. Blumenthal of FDA who went to
10 Japan personally to investigate, he told me that
11 it is a combination of heat, stressed fluid, plus
12 the oil that created the right atmosphere to
13 create not only the dioxins and furans, but they
14 don't know what else.

15 They are suspicions that there are still
16 other toxic chemicals in addition. That is my
17 understanding.

18 Q. Okay.

19 When you say stressed fluid, you are
20 referring to the fact that the pcb liquid is under
21 pressure?

22 A. It is more a thermal stress. It is
23 heated to its upper limit, where it becomes
24 unstable.

1 Q. Okay.

2 A. In other words, it is not properly used
3 as prescribed.

4 Q. The actual operation of the heat transfer
5 application was not according to the prescribed
6 process, in other words?

7 A. Correct.

8 Q. All right. Whatever.

9 The reason that Monsanto didn't
10 communicate immediately with the FDA was you
11 couldn't find out any of the details about what
12 happened?

13 A. Correct.

14 Q. Okay.

15 Take a look at the exhibit that has been
16 marked as 243, let me back up. I don't know if I
17 ever asked you last question which I really
18 intended to about 242; which was, in January of
19 1970, was Dr. Fitzhugh in fact pressing Monsanto
20 for reports on the studies underway?

21 A. I would not use the word pressing. The
22 man contacted Mr. Wheeler and asked what is the
23 status.

24 Q. Do you know of any circumstances at

1 Industrial Bio-Test in January of 1970 which would
2 have made Industrial Bio-Test feel pressed when
3 Mr. Wheeler turned around and said can we have a
4 status report for the FDA?

5 A. I don't know of any reason.

6 Q. Looking at Exhibit 243, which is a letter
7 dated January 15, 1970 to Elmer Wheeler from Otis
8 Fancher, I will ask you if you have seen that
9 before?

10 (The document above-referred to
11 was marked Bloomington Deposition
12 Exhibit No. 243 for identification.)

13 A. I have not seen this before.

14 Q. Once you became the pcb coordinator, was
15 it Mr. Wheeler's practice or Dr. Kelly's practice
16 to provide you with copies of Industrial Bio-Test
17 progress reports as they were received?

18 A. I got some copies of progress reports. I
19 don't know that I got all copies.

20 Q. Did you at the time in January of 1970
21 and during 1970 have any reason to believe or
22 understand that you were being selectively copied
23 on these reports, rather than included in all of
24 the exchange?

1 A. I had no reason to believe that. No.

2 Q. Okay.

3 As far as you knew, you were getting
4 everything?

5 A. True.

6 Q. Was it the practice ordinarily that
7 reports from Industrial Bio-Test to Monsanto would
8 be transmitted by mail?

9 A. Yes.

10 Q. And to the extent that Monsanto passed
11 those reports along to the FDA or other government
12 agencies, would that routinely have been done by
13 mail as well?

14 A. The answer to by mail is yes.

15 But I don't know whether Mr. Wheeler sent
16 the agencies the Bio-Test reports.

17 I do know that Mr. Wheeler made Monsanto
18 summaries of these status reports, that he would
19 share with the agencies, as well as provide me
20 with a copy.

21 Those reports did not come out at
22 three-month intervals. They came out at roughly
23 six-month intervals. Sometimes six- to nine-month
24 periods, depending on what new information might

1 be included.

2 Q. So when you would receive a report or one
3 of these summaries from Mr. Wheeler, you would
4 also at that time have already received the
5 Industrial Bio-Test reports that were the basis of
6 that summary?

7 A. Yes.

8 Q. But you are saying you don't know whether
9 the underlying Bio-Test reports went to the
10 government agencies or not?

11 A. I do not know that.

12 Q. Presumably if the government agencies
13 felt a compelling need to see the underlying
14 Industrial Bio-Test reports, they had the power to
15 subpoena those reports?

16 A. That I don't know.

17 Q. Was the reason for the preparation by Mr.
18 Wheeler of these progress summaries on a periodic
19 basis to avoid submitting the actual Industrial
20 Bio-Test status reports to the government
21 agencies?

22 A. I have no reason to believe that. It is
23 just that Monsanto's summary reports, as I
24 remember, were more concise.

1 Let me back up. The few Industrial
2 Bio-Test summary reports I saw were fragmented in
3 terms of the rat studies would appear in a sheet
4 for, say, reproduction study, another sheet for
5 1254, another one for 1260.

6 Mr. Wheeler combined all that in rat
7 studies. Then he would summarize.

8 Then another sheet, chicken studies, and
9 he would summarize. So the format was rearranged,
10 and we found that to be easier to communicate with
11 and it didn't confuse the customers and the
12 agencies with too many pieces of paper, too many
13 reports.

14 Q. Better organized, in other words?

15 A. We thought so. Yes.

16 Q. At least from the point of view of
17 someone who wasn't dealing with the ongoing
18 studies on a regular basis?

19 A. That is correct.

20 Q. And these summaries that Mr. Wheeler
21 prepared, I understand from your last answer were
22 also shared with some of your customers?

23 A. Yes.

24 Q. Was Westinghouse one of those customers?

1 A. Yes.

2 Q. And when the information in these
3 summaries prepared by Mr. Wheeler were shared with
4 customers, would that ordinarily be done through
5 the mail?

6 A. Yes.

7 Q. Take a look at Exhibit 244, which is a
8 two-page letter to Otis Fancher from Elmer Wheeler
9 dated March 4, 1970.

10 I will ask you if you have ever seen
11 that?

12 (The document above-referred to
13 was marked Bloomington Deposition
14 Exhibit No. 244 for identification.)

15 A. I don't recall seeing this.

16 Q. Do you know whether the fish studies
17 referred to in Exhibit 244 were actually
18 completed?

19 A. I am not aware of any fish studies
20 completed by Bio-Test Laboratories for Monsanto.

21 Q. Take a look at Exhibit 245, if you would,
22 which is a memo dated March 19, 1970 from C.
23 Mastri, M-a-s-t-r-i, to Moreno Keplinger.

24 (The document above-referred to

1 was marked Bloomington Deposition
2 Exhibit No. 245 for identification.)

3 A. All right.

4 Q. Does that refer to the same fish studies
5 that are mentioned in Exhibit 244, if you can
6 tell?

7 A. It seems to.

8 Q. Take a look at Exhibit 246, which is a
9 letter dated March 31, 1970 in Otis Fancher to
10 Elmer Wheeler.

11 (The document above-referred to
12 was marked Bloomington Deposition
13 Exhibit No. 246 for identification.)

14 A. I have reviewed it.

15 Q. Exhibit 246 refers to the cost estimates
16 of the additional fish toxicity studies.

17 Is that the same as the studies as
18 referred to in 244 and 245, to the best of your
19 knowledge?

20 A. The numbers are the same.

21 Q. Okay.

22 There is also reference in the second
23 paragraph of 246 to a chick edema study. Do you
24 know whether such a study was ever done with

1 Aroclor?

2 A. Yes. In fact, some previous documents
3 talked about withdrawing the fluid from the
4 chicken, so on. The timing doesn't seem to fit.

5 Q. That was before this letter?

6 A. Right.

7 Q. Do you know whether any additional chick
8 edema studies were done after March of 1970?

9 A. I am not aware of any additional ones,
10 no.

11 Q. Okay.

12 That study what they are looking for is
13 the change in the volume of fluid in the sack
14 around the heart of the chicken?

15 A. I don't know if it is the heart, per se.
16 It is the chest cavity.

17 Q. Okay.

18 There is an estimate in the third
19 paragraph for the cost of repeating the chicken
20 study with Aroclor 1242.

21 Do you know whether that was ever done?

22 A. I don't know which study they are talking
23 about here. I don't know if it is the edema study
24 or the reproduction study or the long-term feeding

1 study.

2 Q. Okay.

3 So it makes it kind of hard to answer the
4 question, doesn't it?

5 A. Yes.

6 Q. All right.

7 The next paragraph refers to mutagenic
8 studies using the chick embryo technique.

9 Were those studies ever done, to your
10 knowledge?

11 A. Not to my knowledge.

12 Q. And the last paragraph refers to
13 inhalation study with the thermal decomposition
14 products of Skydrol.

15 Do you know if that was ever done?

16 A. No, I don't.

17 Q. I take it that was one of the hydraulic
18 fluid products?

19 A. It is a hydraulic fluid, but not a pcb.

20 Q. Okay.

21 Was that something that was to replace
22 the pcb hydraulic fluids?

23 A. No, this is the airliner, Skydrol.

24 Q. I should have been able to figure that

1 out.

2 A. This is what your airplanes are using.
3 Jet planes.

4 Q. Take a look at Exhibit 247, which is a
5 letter dated March 31, 1970 from Elmer Wheeler to
6 Dr. Keplinger with an attachment.

7 I will ask you if you have ever seen
8 either the letter or the attachment?

9 (The document above-referred to
10 was marked Bloomington Deposition
11 Exhibit No. 247 for identification.)

12 A. I believe I remember both the attachment
13 and the letter.

14 Q. Other than mutual professional interest,
15 was there any particular reason why Mr. Wheeler
16 was sharing that data with Dr. Keplinger at
17 Industrial Bio-Test?

18 A. I don't know of any other reason.

19 Q. The attachment is some of the fish
20 studies that were done by government laboratories
21 as you discussed in your earlier testimony; is
22 that correct?

23 A. Yes.

24 Q. Did Monsanto ever assist, either in

1 actual tissue analysis or in sharing analytical
2 techniques, in the government fish studies?

3 A. We provided material for their studies.
4 We shared analytical methodologies. We discussed
5 sharing tissue samples, but I don't recall if we
6 implemented that part.

7 Q. Was that discussion limited to fish
8 tissue or were you going to trade them some
9 chicken and dog and rat tissue for some of their
10 fish tissue?

11 A. It was limited to fish.

12 Q. Okay.

13 So if Monsanto never -- if Industrial
14 Bio-Test never completed fish studies, then there
15 wouldn't have been any fish tissue to share.

16 Is that a correct statement or is that
17 not correct?

18 A. No.

19 We would have shared fish tissue from the
20 government laboratory by sharing, they would send
21 us a split sample. Our laboratory would analyze,
22 their laboratory would analyze and compare the
23 answers.

24 Q. So what you are giving them in return for

20

1 the split sample is your results?

2 A. Correct.

3 Q. Not a sample of some fish that you fed
4 pcb's to?

5 A. I didn't mean to imply the other.

6 Q. I am not sure that you did.

7 (Whereupon a short recess was had.)

8 You don't know whether that ever actually
9 took place or not?

10 A. I don't recall.

11 Q. Take a look at Exhibit 248, which is a
12 letter dated April 8, 1970 to Herbert Blumenthal,
13 Food and Drug Administration, from Dr. Kelly, and
14 I will ask you if you have ever seen that
15 letter before?

16 (The document above-referred to
17 was marked Bloomington Deposition
18 Exhibit No. 248 for identification.)

19 A. I believe I recall this letter. There
20 were attachments, those summaries we have talked
21 about.

22 Q. Those were the summaries that Mr. Wheeler
23 prepared rather than the Industrial Bio-Test
24 summaries?

1- A. Yes.

2 Q. Who was it, if you know, at Monsanto that
3 determined that the three products to be tested
4 should be 1242, 1254 and 1260?

5 A. I believe that was a consensus opinion,
6 not any one person. That was based on the amount
7 of the material in commerce. This represented the
8 most popular types.

9 Q. You sold more of those three than the
10 other?

11 A. That is correct.

12 Q. Okay.

13 According to this letter, 300 rats were
14 added to the chronic studies after the original
15 2-year project had gotten underway. Do you know
16 how long after?

17 A. No, I don't.

18 Q. Okay.

19 Is that a reference back to the earlier
20 documents we discussed about adding 15 and 15 to
21 each group?

22 A. Could be.

23 Q. Do the numbers work out, if there is a
24 control group and three test groups that's four

1 times 30, times 3, comes out to a little more than
2 300 I guess?

3 A. That is rounded off.

4 Q. Roughly. In other words, the numbers
5 match up?

6 A. Pretty much. Pretty well. We all know,
7 and I don't recall how soon after the start up
8 these were added, what we don't know is whether
9 they added to the group before the exposure
10 started.

11 Many times they will bring in these
12 animals and acclimate them to the laboratory.

13 Q. For a period of a couple of weeks?

14 A. Several years. Then they start exposing.
15 Whereas, these additions might have been brought
16 in during an acclimation period. So we are
17 missing some details here.

18 Q. So to your knowledge was there any effort
19 made at Industrial Bio-Test to distinguish either
20 by markings or some other method of identification
21 the later-added animals from the original animals
22 on this study?

23 A. I don't know the details.

24 Q. Okay.

1 As I understand it, one common technique
2 of identifying the animals in a rat study is by
3 punching a code on their ears?

4 A. Yes.

5 Q. Do you know whether that was done in the
6 Industrial Bio-Test rat studies or not?

7 A. Yes, they had some kind of code that was
8 picked up by computer wands that identified the
9 animal.

10 Q. The last sentence on the first page of
11 Exhibit 248 says:

12 "Histopathology has
13 been completed on the
14 sacrificed animals and Dr.
15 Calandra has reported verbally
16 that there are no positive
17 pathological findings."

18 Do you know as of the date of the letter
19 whether Dr. Kelly himself had reviewed any of the
20 pathology slides from the study that is discussed
21 in the letter?

22 A. I am not aware of Dr. Kelly ever
23 reviewing slides pathologically.

24 Q. So, although he had access to the raw

1 data, either by means of copies or by actually
2 going to Industrial Bio-Test and looking at them,
3 to your knowledge he never actually read any of
4 the slides himself?

5 A. No.

6 Q. He just relied on the written report from
7 the pathologist?

8 A. Right. The experts.

9 Q. Either the Industrial Bio-Test employee
10 or an outside pathologist when they brought one
11 in?

12 A. Yes.

13 Q. Dr. Kelly I take it is a people doctor as
14 opposed to an animal doctor?

15 A. Correct.

16 Q. Do you know whether he would have
17 considered himself qualified to read animal tissue
18 slides?

19 A. I would be surprised if he would have.

20 Q. The last, the next to the last paragraph
21 of the letter says:

22 "If you have any
23 specific questions after
24 reviewing the enclosed status

1 summaries, please feel free to
2 call Dr. Calandra or Dr.
3 Fancher directly."

4 Do you know whether there was in fact at
5 any time direct communication between Dr.
6 Blumenthal and anybody at Industrial Bio-Test
7 concerning the pcb studies for Monsanto?

8 A. Yes.

9 Q. When did that first come to your
10 attention?

11 A. I first was made aware of that informal
12 correspondence between Dr. Blumenthal and the
13 Bio-Test people in I think near the end of 1970,
14 December of 1970, when we had a pcb conference in
15 North Carolina.

16 Q. Who are we?

17 A. Perhaps the wrong use of the word.
18 Monsanto was invited. It was called by the
19 director of the National Institute of
20 Environmental Health Sciences, NIEHS, Dr. Rahl,
21 and he had FDA people there and EPA and USDA and
22 the Japanese and the university people.

23 Q. And Monsanto people?

24 A. Yes.

1 Q. Did you go to that?

2 A. Yes.

3 Q. What is or was the National Institute of
4 Environmental Health Sciences?

5 A. It is one of the governmental scientific
6 agencies or groups, NIEHS.

7 Q. Part of Health, Education and Welfare?

8 A. Yes.

9 Q. Or what is now Health and Human Services,
10 I guess?

11 A. Yes.

12 Q. And they were the sponsor of this
13 conference?

14 A. Yes.

15 Q. Was anybody from Industrial Bio-Test at
16 the conference, to your knowledge?

17 A. Yes. Dr. Keplinger attended. And there
18 was another individual, but I don't recall his
19 name at the moment.

20 Q. Did they discuss what they were doing by
21 way of these Monsanto animal studies?

22 A. Yes. They were on the program.

23 Q. And that was with Monsanto's permission,
24 I take it?

1 A. Yes. In fact it was at our request that
2 they be invited and participate.

3 Q. I take it studies of this type that
4 Monsanto was paying for were deemed by Monsanto to
5 be proprietary?

6 A. Well, proprietary in the sense it is
7 Monsanto's property. But not in the sense that we
8 would not share that information freely.

9 Q. But it is up to Monsanto and not
10 Industrial Bio-Test to determine in any particular
11 instance whether to share it and with whom?

12 A. Right. Correct. That is normal.

13 Q. In other words, you might give things to
14 the government that you wouldn't give to your
15 competitors in Japan, for example?

16 A. That is an example. Yes.

17 Q. So, presumably, if a direct request for
18 information was received at Industrial Bio-Test,
19 they would check with someone at Monsanto before
20 giving out the details of the study?

21 A. Yes.

22 Q. Take a look at Exhibit 249, which is a
23 memo dated April 16, 1970, to Moreno Keplinger
24 from Otis Fancher, and I will ask you if you have

1 ever seen that before?

2 (The document above-referred to
3 was marked Bloomington Deposition
4 Exhibit No. 249 for identification.)

5 A. I have not seen this before. No.

6 Q. To your knowledge, was there a repeat
7 chicken study done with Aroclor 1242?

8 A. Yes.

9 Q. And was that at lower dosage levels than
10 had been included in the original study?

11 A. Yes.

12 Q. Why was it that 1242 was selected as the
13 material for the repeat study?

14 A. Of the three Aroclors tested, the 1242
15 version, somewhere between 1 and 10 parts per
16 million was affecting chicken reproduction. And
17 we wanted to establish is it 1 or is it 10, and we
18 repeated.

19 Q. You would use dosages between one and
20 ten?

21 A. Yes.

22 Q. Rather than 110 and 100?

23 A. That is correct.

24 Q. And was 1242 of the three products that

1 were studied the one that showed an affect in the
2 first study at the lowest level?

3 A. Yes.

4 Q. Okay.

5 Do you recall whether the repeat study
6 successfully established a low-effect level for
7 1242 on chicken reproduction?

8 A. Yes.

9 Q. Did it?

10 A. It did establish or help us understand
11 what level the effect would be noted at.

12 Q. And what level was that?

13 A. That was 3 parts per million or higher.

14 Q. So at 1 part per million there was no
15 effect; is that correct?

16 A. Correct. At 2 there was no effect.

17 Q. So the threshold presumably is somewhere
18 between 2 and 3?

19 A. Somewhere in there.

20 Q. Take a look at Exhibit 250, which is a
21 memo dated April 21, 1970 from Otis Fancher to
22 Moreno Keplinger, subject visit by Elmer Wheeler.

23 (The document above-referred to
24 was marked Bloomington Deposition

1 Exhibit No. 250 for identification.)

2 To your knowledge, were there any
3 biochemical or metabolic studies done in
4 connection with the repeat 1242 chicken study?

5 A. I don't remember any.

6 Q. Do you know why they weren't done?

7 A. I don't remember whether they were or
8 not. I just don't recall.

9 Q. Do you know what it was that they were
10 considering looking for in biochemical or
11 metabolic studies?

12 A. The intent was to establish the mechanism
13 that resulted in thinner egg shells and why these
14 eggs, some of them, would not hatch.

15 Q. In other words, the idea was to go beyond
16 observing what happened and try and find out why?

17 A. That's right.

18 Q. Okay.

19 To your knowledge was there ever an
20 answer established with respect to the why part?

21 A. No. I don't remember.

22 Q. Without regard to whether the studies
23 were carried out or not?

24 A. No.

1 Q. There was never an answer established?

2 A. That's right.

3 Q. Take a look at Exhibit 251, which is a
4 memo dated April 30, 1970 from D. Arnold, to
5 Moreno Keplinger, copy to Fancher and Calandra.

6 Do you recall ever being informed of the
7 difficulties with the rat study that are mentioned
8 in Exhibit 251?

9 (The document above-referred to
10 was marked Bloomington Deposition
11 Exhibit No. 251 for identification.)

12 A. No.

13 Q. Did you ever learn during the time you
14 were pcb coordinator at Monsanto that there had
15 been problems at Industrial Bio-Test in the animal
16 watering room with respect to the environment in
17 which the rats were living?

18 A. No.

19 Q. Did it ever come to your attention during
20 the time you were the pcb coordinator at Monsanto
21 that the Industrial Bio-Test rat studies on pcb's
22 as well as other materials for Monsanto and other
23 Bio-Test clients were plagued by a high rate of
24 animal deaths, both in the study groups and in the

1 control groups?

2 A. No.

3 Q. Did it ever come to your attention during
4 the time you were pcb coordinator at Monsanto that
5 the rats who died during the course of the pcb
6 studies decomposed so rapidly that their bodies
7 couldn't be recovered for purposes of dissection or
8 autopsy?

9 A. No.

10 Q. After you left the role of pcb
11 coordinator at Monsanto, did you ever become aware
12 of any of those things?

13 A. Not as it relates to pcb's.

14 Q. As it relates to other Industrial
15 Bio-Test studies?

16 A. I have heard allegations that they
17 related to other studies, yes.

18 Q. Other studies that were done around this
19 time period, '70, '69, '71?

20 A. There were other studies that were either
21 in place or just completed in about 1975 or
22 thereabouts.

23 Q. Was the reason that Paul Wright left
24 Monsanto, did it have anything to do with his

1 indictment in connection with his role at IBT?

2 A. I don't know.

3 Q. When did the Industrial Bio-Test criminal
4 indictments of Paul Wright, Marino Keplinger and
5 Dr. Calandra and whoever the fourth guy was first
6 come to your attention?

7 A. I don't recall the specific year. It
8 seems to me early eighties. 1980 or '81. That is
9 as close as my memory will help me here.

10 Q. When you learned about that, did it raise
11 any questions in your mind about the validity of
12 the pcb studies that Bio-Test had done for
13 Monsanto?

14 A. Yes.

15 Q. Did you pursue that at all?

16 A. Yes.

17 Q. What did you do in connection with that
18 inquiry?

19 A. I went to the toxicology department and
20 asked if the pcb studies were part of that group
21 of studies.

22 Q. What did they tell you?

23 A. They told me that they were not.

24 Q. Did you ask whether any inquiry as of

1 1980 or '81 was being made into the supporting
2 data of the pcb studies to determine whether the
3 same sort of problems existed in those studies?

4 A. Yes.

5 We had an auditing team looking at all of
6 Monsanto's studies conducted by Industrial
7 Bio-Test Laboratories and the pcb studies were in
8 that group.

9 Q. Did you ever see a copy of that auditing
10 team report?

11 A. No.

12 Q. Was there a written report?

13 A. I don't know.

14 Q. Did anyone at Monsanto ever tell you that
15 the auditing team concluded the pcb studies were
16 free of these problems, or did they just tell you
17 that the pcb studies were not part of the
18 indictments?

19 A. It was -- neither of those expressions
20 fit my understanding.

21 The impression I got, and this was a
22 verbal discussion, oral discussion, is that the
23 pcb studies, they audited the study, did not
24 reveal any gross discrepancies which would have

1 caused any concern for the validity of the test
2 results, the conclusions.

3 Q. Who was on the auditing team?

4 A. I don't know the individuals. As I
5 recall this was conducted by Booz, Allen &
6 Hamilton, consultants.

7 Q. Do you know if they are ordinarily in the
8 animal study business?

9 A. They have many areas of expertise. I am
10 not familiar with all of them. No.

11 Q. It wasn't Monsanto's own toxicologists in
12 that work, in that audit?

13 A. No. This was an outside consultant.

14 Q. Okay.

15 At that time that the IBT indictments,
16 Industrial Bio-Test indictments, came to your
17 attention, pcb's had already been banned; is that
18 correct?

19 A. Yes.

20 Q. And Monsanto some years prior ceased
21 manufacturing pcb's?

22 A. Yes.

23 Q. So in terms of the priority of Monsanto
24 products that could or might be affected by audit

1 of Industrial Bio-Test studies, pcb's were kind of
2 at the bottom of that list?

3 A. As far as affecting the product. It was
4 nonexistent any longer, therefore, yes, they were
5 low on the priority. Yes.

6 Q. Others of the studies of concern in the
7 audit involved products that were still being
8 produced by Monsanto at that time?

9 A. Yes.

10 Q. Was Monsanto ever required by the FDA or
11 the EPA or any other government agency to repeat
12 studies that had been done by Industrial Bio-Test
13 as a result of the investigation that led to the
14 indictments?

15 A. Yes.

16 Q. And which products were involved in those
17 repeat studies, if you can recall?

18 MR. FRUEHWALD: Let me interpose an objection
19 here and instruct the witness not to answer.

20 I don't see the relevance of this. And
21 this may be getting into proprietary information
22 that is really irrelevant to the pcb issues. And
23 I don't know the background to it.

24 But I think it is an area which maybe

1 Monsanto has some regulatory concerns about, that
2 doesn't need to be explored in this litigation.

3 Unless you can tell me some reason why an
4 inquiry into other products would be of relevance
5 to this issue. I don't understand the relevance
6 of it. Because this may be confidential for
7 Monsanto.

8 I would just as soon raise an objection
9 here and instruct the witness not to answer.

10 MR. MC CONNELL: It is only relevant to the
11 extent that it reflects the magnitude of the
12 problem that was presented by this whole thing to
13 Monsanto.

14 And I think that fits into the issue of
15 whether I am right or you are right about what it
16 was that was going on here.

17 Obviously, at the time of the indictments
18 pcb's had already been banned and neither Monsanto
19 nor the government was interested in repeating
20 those studies. They would have accomplished
21 nothing for anybody at that point. The ban was in
22 effect. Monsanto had stopped production.

23 Just to put that fact into perspective, I
24 wanted a list of the other products.

1 If you have a proprietary objection to
2 that or want some kind of protective order or
3 something, we can discuss it and we could cover
4 that by an interrogatory, rather than have the
5 witness answer the question.

6 MR. FRUEHWALD: I prefer to go that route
7 because I have not consulted with Monsanto on
8 their position on other products and this sounds
9 to me like it could be a sensitive area that I
10 wouldn't like to have explored without
11 consultation.

12 MR. MC CONNELL: I appreciate your concern and
13 your objection is noted and we will talk about it,
14 you and I. Certainly not a critical item to my
15 case in this lawsuit.

16 Q. Okay.

17 Take a look at 252 -- it just occurred to
18 me as a follow-up question, that is all -- which
19 is a memo from Otis Fancher to Marino Keplinger
20 dated May 5, 1970. And I will ask you if you were
21 aware that the study that is referred to in
22 Exhibit 252 was to be postponed?

23 (The document above-referred to
24 was marked Bloomington Deposition

1 Exhibit No. 252 for identification.)

2 A. This is the first I have seen of this.

3 I was not aware of any request for
4 delaying.

5 Q. Do you know why Mr. Wheeler wanted to be
6 back from Europe before the study was started?

7 A. No, I don't.

8 Q. Okay.

9 Could it have had anything to do with the
10 problems which we discussed earlier about Marek's
11 disease in the chicken colony at Industrial
12 Bio-Test,

13 A. I don't know.

14 Q. Do you know whether Mr. Wheeler was aware
15 in May of 1970 of the problems with disease in the
16 chicken colony?

17 A. I don't know.

18 Q. You don't know. Okay.

19 Exhibit 253 is a letter dated May 12,
20 1970 to Dr. Kelly from Dr. Keplinger. I will ask
21 you if you have seen that?

22 (The document above-referred to
23 was marked Bloomington Deposition
24 Exhibit No. 253 for identification.)

1 A. I had not seen this.

2 Q. Do you remember being advised of the
3 conclusion that there was no effect observed at
4 the 1 part per million level in the dog studies?

5 A. I do.

6 Q. This Exhibit 253, was that before the
7 final report of the study was issued?

8 A. Yes.

9 Q. Did you ever see the original body weight
10 data that is referred to as having been enclosed?

11 A. No.

12 Q. Would it have meant anything to you if
13 you did see it?

14 A. It all depends on how it is displayed.

15 Q. Exhibit 254 is a letter dated May 25,
16 1970 to Dr. Fancher from Elmer Wheeler.

17 I will ask you if you have ever seen
18 that?

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 254 for identification.)

22 A. I remember the substance of this letter.
23 But I don't recall the letter itself.

24 Q. How was the substance conveyed to you?

1 A. Discussions with Mr. Wheeler.

2 Q. Was that personal, face-to-face or by
3 phone?

4 A. This subject came up when we returned
5 from Europe and had a meeting of the Monsanto
6 individuals during which we reported on our trip
7 to Europe and then we covered the toxicity studies
8 and this repeat study.

9 Q. When you returned from Europe, was that
10 the trip to Bayer that we discussed earlier?

11 A. That was one of the customers we talked
12 to. Yes.

13 Q. Okay.

14 A. Not customer. Competitor.

15 Q. They are a European manufacturer of
16 pcb's?

17 A. Yes.

18 Q. Did the other business on that trip
19 relate to pcb's as well?

20 A. It was all pcb's.

21 Q. Okay.

22 Who else did you visit besides Bayer?

23 A. We visited the laboratory in Stockholm,
24 in which these analytical studies were first

1 started.

2 Q. Dr. Jensen's laboratory?

3 A. Yes.

4 Q. All right?

5 A. We saw his supervisor, Dr. Whitman. Mr.
6 Jensen was vacationing. We went to the University
7 of Utrecht in Holland. Spoke with representatives
8 of the other European competitors, the Italian and
9 the French, as well as Bayer representing the
10 German.

11 We went then to the Ministry of, I
12 believe it is, Wildlife, but I am not certain, in
13 the United Kingdom. They had to do with interest
14 in birds, wild birds.

15 We visited the government chemist in the
16 United Kingdom. That is the top analytical
17 laboratory in the UK. I believe that covers them
18 all.

19 Q. Okay.

20 When you returned and had this discussion
21 with others at Monsanto, did you specifically
22 discuss the clean up of impurities that is
23 referred to in Exhibit 254?

24 A. I don't know that that was the topic at

1 that particular meeting. This came up at sessions
2 of that group at previous times.

3 (Whereupon a short recess was had.)

4 BY MR. MC CONNELL:

5 Q. With respect to 254, it refers to a clean
6 up of impurities.

7 MR. FRUEHWALD: It doesn't refer to that. It
8 says some clean up.

9 MR. MC CONNELL: Some clean up.

10 Q. I assume that means that the material
11 that was used in the repeat study was purer
12 material than what had been used in the earlier
13 study. Is that a fair assumption?

14 A. Yes, sir.

15 Q. What was it that was cleaned up, if you
16 recall?

17 A. In the production process, the refining
18 step, which is a distillation, can be controlled
19 to make at that time two kinds of 1242. There is
20 the run-of-the-mill 1242, which was sold primarily
21 to heat transfer and the so-called plasticizer
22 applications.

23 They could fine tune the refining step
24 and produce a cleaner 1242 for the dielectric

1 application, which was a tighter specification.
2 This letter tells me that it was the electrical
3 grade 1242 that was sent the second time instead
4 of the typical 1242.

5 Q. Okay.

6 Before the time when Monsanto made the
7 decision to eliminate all of the nonelectrical
8 uses of pcb's, what was the relative proportion of
9 electrical versus nonelectrical grade of 1242 that
10 was sold?

11 A. You asked me what proportion of the 1242
12 was the dielectric grade. I honestly don't
13 remember.

14 Q. Was it more or less than half?

15 A. I think it was less than half of the 1242
16 on the dielectric, but I am not certain of that.

17 Q. I take it that the type that was sold to
18 Westinghouse-Bloomington was the electrical grade
19 or the dielectric grade?

20 A. Yes.

21 Q. In any event, was this exhibit dated
22 before that decision was taken to eliminate the
23 nonelectrical uses of pcb's or was it at about the
24 time that was under consideration?

1 A. This was right -- let me think of it.
2 This was at about the time that the decision had
3 been approved to withdraw from the other
4 applications.

5 Q. So in light of the decision not to sell
6 what you described as run-of-the-mill 1242
7 anymore, the substitution of the electrical grade
8 in the context of the experiment was not an
9 unreasonable thing to do?

10 A. That is what we thought.

11 Q. Okay.

12 I take it, then, that the statement
13 involves some clean up merely reflects the change,
14 the difference in the production quality; it
15 doesn't represent anything that was done to the
16 sample after it was taken to clean it up for the
17 purposes of the animal study?

18 A. No. This is the sample right out of the
19 production unit.

20 Q. Take a look at Exhibit 255, which is a
21 memo dated May 25, 1970, from Otis Fancher to
22 Moreno Keplinger.

23 I take it that reflects a telephone
24 authorization to proceed with the repeat chicken

1 study on 1242; is that correct?

2 (The document above-referred to
3 was marked Bloomington Deposition
4 Exhibit No. 255 for identification.)

5 A. Yes. This is the same date that the
6 letter was dictated so the letter confirmed the
7 telephone.

8 Q. They could go ahead without waiting for
9 the actual post office to deliver the letter?

10 A. Correct.

11 Q. Take a look at Exhibit 256, which is a
12 single-page memo dated May 25, 1970, no indication
13 of who it is to or who it is from. It is on
14 Industrial Bio-Test letterhead, subject is IBT
15 number P 7297, client Monsanto, test materials
16 Aroclor 1242, 1254 and 1260.

17 It appears to me that that exhibit refers
18 to the chicken reproduction study.

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 256 for identification.)

22 MR. FRUEHWALD: The number on the test matches
23 up to the number assigned to the three generation
24 rat study.

1 MR. MC CONNELL: Okay..

2 Q. That is the rat study?

3 A. That would indicate a mammal.

4 Q. You are right. Chickens don't do that as
5 far as I know.

6 Do you know, there is an indication on
7 there, did you ever see that, by the way?

8 A. No, I have not.

9 Q. There is an indication on there under the
10 1242 material at the 100 parts per million level,
11 that only 2 males survived, fill rest of level
12 with 1 and 10 part per million offspring.

13 Do you see where I am reading, right
14 here. Then that appears to be scratched out and
15 the word "discontinued" penned in there.

16 Do you know what that refers to?

17 A. No, I don't.

18 Q. Were you ever advised that animals from
19 the 1 and 10 part per million offspring were
20 substituted into the 100 part per million group in
21 the rat reproduction study?

22 A. No.

23 Q. Under the 1254 product, by the 100 parts
24 per million, it says 2 males and 7 females saved

1 from "a" litters to be replaced by "b" pups if
2 possible.

3 Do you know what that refers to?

4 A. No, I don't.

5 Q. Why would they want to replace pups from
6 one litter to another?

7 A. I don't know.

8 Q. Any valid reason that you can think of in
9 the context of this?

10 A. No.

11 Q. As I understand the way that two
12 generation or three generation study was done,
13 there were two mates at each generational level,
14 an "a" and a "b"; is that correct?

15 A. Yes.

16 Q. And I guess that is designed to tell
17 whether the effects, if any, that are observed are
18 enhanced in the second mating?

19 A. Correct.

20 Q. Okay.

21 A. The same parents.

22 Q. The same parents. It is like your first
23 child and your second child, only in the case of
24 rats they usually have more than one at a time, to

1 see if there is a greater effect on the second
2 mating at each level; is that correct?

3 A. Right.

4 Q. So a substitution of "a" for "b" would
5 make it difficult to interpret what the results
6 were?

7 A. It would seem to me it would complicate
8 it.

9 Q. Do you know whether that was in fact
10 done?

11 A. I don't know.

12 Q. Okay.

13 Did the low number of surviving males at
14 the 100 parts per million level in the 1242 affect
15 the validity of the results of the study, if you
16 know?

17 A. No. I don't.

18 Q. Okay.

19 Do you know if the fact that only two
20 males survived at the 100 parts per million level
21 of 1242 was due to the effects of the Aroclor in
22 the feed or to some other problem in the study?

23 A. I don't know.

24 Q. Was there anything in the report of the

1 three generation rat study that you recall that
2 would answer that question?

3 A. No.

4 Q. Was there a comment on the low survival
5 rate?

6 A. I don't recall any.

7 Q. Does the information that is contained in
8 Exhibit 256, was that brought to your attention at
9 any time before today?

10 A. No.

11 Q. Did you have occasion at any time to
12 discuss with anybody else at Monsanto the
13 existence of any problems with animal survival
14 rates in the three generation rat reproduction
15 study?

16 A. No.

17 Q. Did you ever have such discussion with
18 anybody at Industrial Bio-Test?

19 A. No.

20 Q. So as far as you knew, before I showed
21 you this document, there was nothing out of the
22 ordinary about that three generation rate study?

23 A. That is correct.

24 Q. Take a look at Exhibit 257, which is

1 dated June 11, 1970. Subject new study for
2 Monsanto Aroclors from Dr. Keplinger to DHJ.

3 Does this refer to the repeat chicken
4 study on 1242 that we have been discussing?

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 257 for identification.)

8 A. It appears to be, it implies that. It is
9 not specific.

6
10 Q. So the only thing about that study that
11 was changed from the previous study was the dosage
12 levels were reduced in order to refine knowledge
13 about where the no-effect level fell?

14 A. That is correct.

15 Q. Okay.

16 Was 1242 selected for that study because
17 it was the product that had the greatest effect on
18 the chicken reproduction?

19 A. Yes.

20 Q. Take a look at Exhibit 258 which is dated
21 July 8, 1970, from Otis Fancher to Moreno
22 Keplinger, subject Monsanto chicken study with
23 rogue metabolites.

24 Do you have any idea what that refers to?

1 A. Rogue is a trademark for one of
2 Monsanto's agricultural chemicals.

3 Q. So this has nothing to do with pcb's
4 then?

5 A. That is correct.

6 Q. I was looking around for some unexpected
7 pcb metabolite. Thank you.

8 MR. FRUEHWALD: The number of the job doesn't
9 match up with any of the numbers here.

10 MR. MC CONNELL: No. And I didn't see any
11 report in these files on such a study either, but
12 now I understand why. This apparently, this memo
13 was misfiled in the pcb chicken file where it
14 didn't belong.

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 258 for identification.)

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 259 for identification.)

21 Q. Take a look at Exhibit 259.

22 Take a look at Exhibit 259 which is a
23 two-page letter from Kent Davis to Walter Hanson
24 subject histological examination of livers from

1 rats fed Aroclor 1254 and Aroclor 1260 for ninety
2 days.

3 I will ask you if you have ever seen that
4 before?

5 A. I have not seen this before.

6 Q. To your knowledge, does that refer to a
7 study that was done by the government rather than
8 by Industrial Bio-Test?

9 A. It was not done by Industrial Bio-Test.
10 I don't know who performed it.

11 Q. Did you become aware at some point during
12 the time that you were the pcb coordinator at
13 Monsanto of a controversy among animal
14 pathologists about how to interpret certain things
15 that were seen on rat liver slides?

16 A. Yes.

17 Q. From rats that were fed pcb's?

18 A. Yes.

19 Q. Do you know if this Exhibit 259 relates
20 to that controversy?

21 A. Yes, I have read it and it seems to.

22 Q. Okay.

23 It has to do with interpretation and
24 possible use of electron microscopy to review

1 sections of the rat livers?

2 A. Yes.

3 Q. In the design of the two-year chronic
4 oral feeding study in rats with Aroclors, was the
5 purpose of the study to look for cancer?

6 The Industrial Bio-Test study test that
7 was done for Monsanto, as you understood it, was
8 the purpose of it to look for cancer in the rat
9 livers or was the purpose to look for any
10 pathological change in the rat livers?

11 A. Look for any pathological change, not
12 only in livers, but the whole animal.

13 Q. Can you tell how Industrial Bio-Test came
14 to be in possession of a copy of that government
15 memo that is Exhibit 259?

16 A. No, I cannot.

17 Q. Did I ask you if you had ever seen that
18 before?

19 A. Yes, I answered I have not seen it
20 before.

21 Q. You have not. Okay.

22 Take a look at exhibit --

23 Let me ask you, in the course of the
24 Industrial Bio-Test rat studies, to your knowledge

1 did they ever use electron mycroscopy to review
2 their rat liver sides?

3 A. No.

4 Q. Do you know why?

5 A. No, I don't.

6 Q. Do you know whether the controversy
7 surrounding interpretation or reading of the rat
8 liver slides was ever resolved to the satisfaction
9 of Monsanto and Industrial Bio-Test pathologists?

10 A. No. It has not been resolved.

11 Q. As of 1986, it still hasn't been
12 resolved?

13 A. That is correct.

14 Q. Take a look at Exhibit 260, which is a
15 one-page memo dated August 24, 1970 from C. Mastri
16 to Marino Keplinger, and calling your attention
17 particularly to the line that is marked A 8570,
18 Monsanto Aroclor fish.

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 260 for identification.)

22 The memo indicates the change in the
23 expected release date of that study.

24 To your knowledge, was that study in fact

1 ever completed and reported on?

2 A. The fish study referred to in the
3 document to my knowledge was never completed and I
4 have never seen it reported.

5 Q. Take a look at Exhibit 261, which is a
6 memo dated August 23, 1970 from Otis Fancher to
7 Mareno Keplinger and others.

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 261 for identification.)

11 Do you know why it was that there was a
12 need to get status reports on all the Aroclor
13 studies for Dr. Hunt by August 27, 1970?

14 A. I had asked Mr. Wheeler to provide me
15 with status reports on the studies that I could
16 share with customers and anyone else who
17 requested, researchers, government agencies and
18 the like.

19 This reflects the way that data was
20 accumulated, from the laboratory to Dr. Hunt to
21 Mr. Wheeler.

22 Q. To you?

23 A. To me eventually.

24 Q. So there is nothing particularly

1 significant that you can recall about the date of
2 August 1970?

3 A. No. But it seems to fit this six-month
4 or so intervals that I asked for.

5 Q. Did you have a specific request from
6 Westinghouse-Bloomington for updates on these
7 animal studies?

8 A. Not a specific request. But I had
9 committed to supplying updates when I got them.
10 So a request wasn't necessary.

11 Q. Who did you provide that information to
12 at Westinghouse?

13 A. I remember a Mr. T K Sloat, and Don, it
14 was an individual at the Bloomington in the
15 Indiana plant.

16 Q. McLain?

17 A. Don McLain.

18 Q. Where was Mr. Sloat?

19 A. Mr. Sloat was at the transformer plants,
20 I forget whether it is South Boston or Sharon.
21 Then there was an individual in Pittsburgh in the
22 research center for Westinghouse. His name
23 escapes me at the moment.

24 Q. But you do specifically recall providing

1 these periodic reports on the Industrial Bio-Test
2 studies to Don McLain at Bloomington?

3 A. Yes.

4 Q. Do you know about how many such reports
5 you supplied over the years?

6 A. Twice a year?

7 A. At least four, maybe six.

8 Q. All together or per year?

9 A. No, no. All together.

10 Q. All together.

11 A. Every six or eight months I would have a
12 revision. Most of them were distributed at
13 meetings of users of pcb's.

14 Q. Called for that purpose or perhaps for
15 some other purpose?

16 A. The general purpose of pcb update.

17 Q. Once again, these would be the reports or
18 the summaries of the reports that Mr. Wheeler had
19 prepared?

20 A. Yes. Monsanto letterhead.

21 Q. Take a look at Exhibit 262, which is a
22 memo dated September 17, 1970 from J. F. Vanruska
23 to J. C. Calandra and others, subject Monsanto
24 Aroclor dog studies.

1 I will ask if you ever saw that document
2 before today?

3 (The document above-referred to
4 was marked Bloomington Deposition
5 Exhibit No. 262 for identification.)

6 A. I have not seen this before.

7 Q. Did you become aware at or about the date
8 of that memo in September of 1970 that four dogs
9 on the pcb study had died?

10 A. No.

11 Q. Did you ever become aware that four of
12 the dogs had died during the course of that study?

13 A. I became aware of dogs dying but I don't
14 recall the number four.

15 Q. Okay.

16 When did you first become aware that any
17 of the dogs had died?

18 A. At a meeting in Chicago called by EPA on
19 pcb's in November 1975.

20 Q. And how did you learn of that at the
21 meeting?

22 A. I was in the audience and Dr. Calandra
23 was describing the status of the pcb studies and
24 he divulged that information during his

1 presentation.

2 Q. Did he say whether the deaths were
3 related to the fact of pcb treatment?

4 A. Not at that, no.

5 Q. He didn't say one way or the other?

6 A. No. He just reported that these effects
7 were noted.

8 Q. Before that November of 1975 meeting, had
9 you received periodic progress reports through Mr.
10 Wheeler on the Beagle dog study?

11 A. Yes.

12 Q. None of those reports had reflected any
13 deaths among the dogs; is that correct?

14 A. That's correct.

15 Q. So for a period of a little over five
16 years, after the dogs had died, nobody told you
17 about it?

18 A. That's right.

19 Q. How many dogs were in each of the
20 treatment groups in that Beagle study; was that a
21 three-year study?

22 A. Yes.

23 I don't remember the numbers.

24 Q. Less than ten was it not, if you recall?

1 A. I just don't recall.

2 MR. FRUEHWALD: Jim, don't you have the
3 reports of these final reports?

4 I don't think Mr. Papageorge has reviewed
5 these things for years and you are asking about
6 various matters which should be disclosed in
7 subsequent reports.

8 That is why I am noting in terms of some of
9 these questions as to what he recalls being told,
10 the reports will say certain things and they
11 haven't been reviewed prior to this deposition.
12 So there may be some inaccuracies in there.

13 MR. MC CONNELL: I will tell what you my
14 problem is with that, and I don't mean to belabor
15 it. Although I am entitled to test his
16 independent recollection before I show him the
17 documents.

18 The reports that I have, that I got from
19 Industrial Bio-Test, are the Industrial Bio-Test
20 reports. I do not have, or at least if I have
21 them, I haven't seen the Monsanto summaries that
22 he has mentioned which is what he saw as well as
23 the Bio-Test reports.

24 And so the only way I can get at what he

1 recalls being in those is by asking him.

2 MR. FRUEHWALD: For example, a question about
3 how many dogs were in the study. That should be
4 indicated in the report that you are going to have
5 later on.

6 Some of these questions about whether
7 deaths are reported, I mean this study may report
8 them or may not. If he hasn't read them for years
9 he may not recall that. So his recollection of
10 what the report says is probably not as good
11 evidence as the report itself, that you have
12 presently got somewhere in the pack.

13 Questions like that seem to me to be not
14 very productive, given that we have got a report
15 which presumably specifies that type of
16 information, and his recollection is a poor second
17 to that. But carry on.

18 MR. MC CONNELL: It seems pretty clear to me
19 Mr. Papageorge is fairly certain he didn't hear
20 about any dog deaths until November of '75.
21 Although they occurred sometime before September
22 of 1970. So, that is the point.

23 MR. FRUEHWALD: That's right, he doesn't
24 recall hearing about it. Perhaps it is in the

1 report. I just don't know.

2 The report is very lengthy and perhaps at
3 the back of the report or somewhere in the report
4 they have got a report of some decrease in the
5 populations which would be deaths. That is my
6 point.

7 These reports are coming up and they are
8 in most cases very lengthy. There may be some
9 information in them which is not currently
10 recalled but is, nonetheless, reported.

11 BY MR. MC CONNELL:

12 Q. Take a look at Exhibit 263, which is a
13 letter from Dr. Keplinger to Mr. Wheeler dated
14 September 17, 1970.

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 263 for identification.)

18 Do you recall seeing that letter?

19 A. I do not recall seeing this.

20 Q. The last paragraph of the letter refers
21 to a teratology study or studies. What animal was
22 that done on?

23 A. I don't know what animal.

24 Q. Okay.

1 Do you recall there being a rat
2 teratology study in connection with pcb's at some
3 point?

4 A. No.

5 Q. Teratology refers to the study of birth
6 defects; is that correct?

7 A. That's correct.

8 Q. And that is different from the
9 reproduction study that we have seen already?

10 A. That is correct.

11 Q. Do you know what the recommendation of
12 Dr. Fitzhugh was as referred to in the last
13 paragraph of that letter?

14 A. I do not.

15 Q. Take a look at Exhibit 264, which is a
16 letter dated November 5, 1970 from Dr. Keplinger
17 to Elmer Wheeler.

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 264 for identification.)

21 Does that refresh your recollection about
22 the possibility of rat teratology studies on
23 Aroclor?

24 A. No.

1 I just don't have any vivid recollection
2 of teratology studies. This letter does not help
3 refresh that recollection.

4 Q. It does refer to specific studies with
5 Aroclor 1242, 1254 and 1260, does it not?

6 A. Yes, it does.

7 Q. I show you what has been marked as 265,
8 which is a memo dated November 13, 1970 from Otis
9 Fancher to Mareno Keplinger.

10 (The document above-referred to
11 was marked Bloomington Deposition
12 Exhibit No. 265 for identification.)

13 Does that reflect a phone authorization
14 to proceed with the rat teratology studies that
15 are described in Exhibit 264?

16 A. That is what it says.

17 Q. Take a look at Exhibit 266, which is a
18 memo dated November 13, 1970 from Dr. Fancher to W
19 it looks like WCK, subject Monsanto billing.

20 (The document above-referred to
21 was marked Bloomington Deposition
22 Exhibit No. 266 for identification.)

23 Q. Do you recall that instance of an extra
24 or special out of the ordinary payment to

1 Industrial Bio-Test by Monsanto?

2 A. No.

3 Q. Do you know any reason why an extra 50 to
4 \$60,000 would have been paid in November of 1970?

5 A. I do not.

6 Q. Who would know that?

7 A. Mr. Wheeler.

8 Q. Was he the one who authorized
9 disbursements to Industrial Bio-Test for Monsanto?

10 A. Yes.

11 Q. Take a look at 267, which is a letter
12 dated November 17, 1970 from Elmer Wheeler to Dr.
13 Keplinger.

14 (The document above-referred to
15 was marked Bloomington Deposition
16 Exhibit No. 267 for identification.)

17 I will ask you if that appears to you to
18 be a written authorization to proceed with the rat
19 teratology studies on the Aroclors?

20 A. It appears to be an authorization to
21 start those studies, yes.

22 Q. Exhibit 268 is a memo dated November 20,
23 1970 from D. H. Jenkins to Moreno Keplinger,
24 subject J 8746 Monsanto Aroclor.

1 I will ask you if you have ever seen that
2 before today?

3 (The document above-referred to
4 was marked Bloomington Deposition
5 Exhibit No. 268 for identification.)

6 A. I have not seen this document before.

7 Q. Do you recall learning at or about the
8 time of that document, November of 1970, that
9 there was a delay in the schedule of the chicken
10 reproduction study as a result of the inability to
11 get the egg size up to the desired weight?

12 A. I do not recall that at all.

13 Q. Do you recall ever discussing with anyone
14 at Monsanto or at Industrial Bio-Test a change in
15 the protocol of the chicken study as a result of a
16 delay in reaching the desired egg size before
17 collecting eggs for sitting?

18 A. I do not recall that.

19 Q. Do you know what the protocol specified
20 initially before the change as to what the eggs
21 size was before collection was to begin?

22 A. No, I do not.

23 Q. Would you expect the survivability or
24 hatchability of the -- that is two different

1 things. Strike that.

2 Would you expect the hatchability of the
3 eggs to be affected by the fact that collection
4 for sitting began at a lower average weight?

5 A. I don't know personally the relationship
6 between weight of the egg and ability to hatch.

7 Q. Do you know whether there was ever in any
8 of the reports you saw on the chicken reproduction
9 study, whether the issue of -- strike that.

10 Do you recall whether any of the reports
11 you saw on the chicken study ever addressed the
12 issue of whether this delay in reaching the
13 desired egg size was attributable to the fact that
14 the chickens were being fed pcb's?

15 A. I do not recall any reference to egg
16 weight, and relating it to any exposure levels of
17 chemicals.

18 Q. Take a look at Exhibit 269, which is a
19 letter dated December 8, 1970, two-page letter
20 from Dr. Keplinger to Elmer Wheeler.

21 I will ask you if you recall ever seeing
22 that letter?

23

24 (The document above-referred to

1 was marked Bloomington Deposition
2 Exhibit No. 269 for identification.)

3 A. I do not recall seeing this document.

4 Q. Do you recall ever discussing with anyone
5 at Monsanto the suggestion that money could be
6 saved by using common control animals or groups of
7 common control animals in the various studies?

8 A. Yes.

9 Q. When did that first come to your
10 attention?

11 A. I think I recall this approach being
12 discussed sometime in the middle of 1970 as a
13 possibility.

14 Q. And that was ultimately put into effect,
15 was it not?

16 A. Yes.

17 Q. Do you recall ever talking with anybody
18 at Monsanto or Industrial Bio-Test about the
19 suggestion that the histology study and blood
20 chemistry study on animals in the lower feeding
21 levels could be eliminated from the animal
22 studies?

23 A. No.

24 Q. Do you know if that was ever done?

1 A. I do not know.

2 Q. If you only check the blood chemistry and
3 the pathology of the controls in the highest feed
4 level, how could you determine where the no-effect
5 level lies within the range of test groups?

6 MR. FRUEHWALD: Would you read that question
7 back, please.

8 (The record was read.)

9 Are you talking about the effect level on
10 blood chemistry?

11 MR. MC CONNELL: Or pathology.

12 MR. FRUEHWALD: It seems like that it would be
13 independent of blood chemistry being checked.

14 MR. MC CONNELL: Well, the letter suggests
15 that blood chemistry and pathology test be
16 eliminated on animals in the lower feed levels.

17 Q. My question is if you do that, how can
18 you tell whether there is an effect or not at
19 those lower levels?

20 You don't know whether that was ever put
21 into effect or not?

22 A. That is correct.

23 Q. Take a look at Exhibit 270, which is a
24 letter dated December 16, 1970 from Kathryn Lesiak

1 to Elmer Wheeler.

2 (The document above-referred to
3 was marked Bloomington Deposition
4 Exhibit No. 270 for identification.)

5 Do you recall ever seeing that letter?

6 A. I do not recall seeing this.

7 Q. Does that letter suggest that the rat
8 teratology study was in fact undertaken by
9 Industrial Bio-Test?

10 A. That is what it suggests.

11 Q. Take a look at Exhibit 271, which is a
12 letter dated January 26, 1971 from Dr. Keplinger
13 to Elmer Wheeler.

14 (The document above-referred to
15 was marked Bloomington Deposition
16 Exhibit No. 271 for identification.)

17 Do you recall seeing that letter?

18 A. I do not recall seeing this letter.

19 Q. Do you recall any discussion at Monsanto
20 about whether or not 10 parts per million was in
21 fact a no-effect level for 1242?

22 A. Yes.

23 Q. When were you first involved in any of
24 those discussions?

10 1 A. In about the early part of '71. As I
2 remember I was first aware of it when I received
3 one of those status reports.

4 Q. If the first paragraph of Exhibit 271,
5 Dr. Keplinger writes the 1 and 10 parts per
6 million levels of 1242 show no significant effect,
7 and in the last paragraph he writes that Dr.
8 Fitzhugh, he said he just wanted to make sure that
9 the 10 parts per million level of 1242 is a
10 no-effect level.

11 In your mind, is there a difference
12 between no significant effect and no effect?

13 A. No. There is no difference.

14 Q. This letter, Exhibit 271, does it suggest
15 to you that Dr. Keplinger had any doubt in his
16 mind whether 10 parts per million was a no-effect
17 level for 1242 in this particular study?

18 A. Yes.

19 Q. Yes, he did have doubt or no, he didn't
20 have doubt?

21 A. No. Your question said does this suggest
22 that Dr. Keplinger had no doubts. I agree, he had
23 no doubts.

24 Q. He had no doubts.

1 What was the particular significance, if
2 you know, to Dr. Fitzhugh, whether 10 parts per
3 million was a no-effect level?

4 A. I do not know.

5 Q. When you read the first paragraph where
6 it refers to a significant effect, do you take
7 that to refer to the concept of statistical
8 significance?

9 A. Yes.

10 Q. Okay.

11 So it is not the vernacular use but the
12 scientific use of the term significant?

13 A. That is my understanding. Yes.

14 Q. And Exhibit 271 refers to the
15 reproduction study; is that correct?

16 A. Yes.

17 Q. Do you recall a trip to Industrial
18 Bio-Test on February 16, 1971 in the company of
19 Mr. Wheeler?

20 A. I recall several trips. I don't know the
21 specific dates. I don't recall the specific
22 dates.

23 Q. Okay.

24 Let me show you Exhibit 272, which is a

1 memo dated February 15, 1971 from Dr. Fancher to
2 Dr. Keplinger.

3 I will ask if that refreshes your
4 recollection about a February 16, '71 visit by you
5 and Mr. Wheeler to Industrial Bio-Test?

6 (The document above-referred to
7 was marked Bloomington Deposition
8 Exhibit No. 272 for identification.)

9 A. I have a hard time recalling the specific
10 dates.

11 Q. Do you recall what the subject was of
12 that meeting?

13 A. Yes. This was a tour of the
14 laboratories. And a series of presentations by
15 Industrial Bio-Test people describing the status
16 of pcb studies being conducted at that laboratory.

17 Q. Okay.

18 Do you recall who in particular from
19 Industrial Bio-Test made those presentations?

20 A. I recall some of the people. Dr.
21 Calandra and Dr. Keplinger and Dr. Fancher and
22 there were two or three others whose names I don't
23 recall.

24 Q. Okay.

1 And did they cover the chicken studies
2 and the rat studies and the dog studies?

3 A. Dog studies and the problems with the
4 fish studies.

5 Q. Okay.

6 Anything else?

7 A. That covers it. I don't recall anything
8 else.

9 Q. At that meeting other than the ongoing
10 difficulties in getting a fish study successfully
11 completed, was there any indication to you from
12 any of the Industrial Bio-Test presenters that
13 there were any difficulties in successfully
14 completing any of the other ongoing studies?

15 A. No.

16 Q. Nobody said anything about Marek's
17 disease in the chickens?

18 A. Not in my presence.

19 Q. Nobody said anything about the fact that
20 four dogs had died?

21 A. No.

22 Q. In the dog study?

23 A. No.

24 Q. Nobody said anything about a high death

1 rate in the rats either in the two-year study or
2 the reproduction study?

3 A. No.

4 Q. Okay.

5 As far as you knew at the time of the
6 meeting that is referred to in Exhibit 272, in
7 February of 1971, were the studies with the dogs,
8 the rats and the chickens on schedule?

9 A. Yes.

10 Q. Was there any discussion of a teratology
11 study at that meeting that you recall?

12 A. I just don't recall teratology studies.

13 Q. To your knowledge, well, that is poor
14 form, strike that.

15 At any time during the period when you
16 were the pcb coordinator at Monsanto, was it ever
17 brought to your attention that there was a concern
18 about a connection between birth defects and
19 pcb's?

20 A. No.

21 Q. Okay.

22 Has such a concern come to your attention
23 since the time you were pcb coordinator?

24 A. I don't recall any.

11

1 Q. Well, this looks to me, 273 looks to me
2 to be exactly the same as 272. So we will just
3 pass over that, except for the numbers that are
4 stamped on it.

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 273 for identification.)

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 274 for identification.)

11 Take a look at a memo dated March 17,
12 1971 from J. Plank to JFV, whoever that is,
13 subject Monsanto Company IBT numbers P 7297 and
14 B 7298. I will ask if you have ever seen that
15 before?

16 A. I had not seen this document before.

17 Q. Do you know who Dr. Suckow, S-u-c-k-o-w,
18 is?

19 A. No.

20 Q. Do you have any idea why in March of 1971
21 there would be a second pathologist reading the
22 slides from the rat reproduction study?

23 A. No, I do not.

24 Q. Do you recall in about March 1971 a

1 concern being raised about urinary bladder tumors
2 in connection with the pcb's in the rats?

3 A. No.

4 Q. Do you recall ever learning that that was
5 an item of concern?

6 A. No.

7 Q. Okay.

8 Q. Do you recall in any of the rat study
9 reports that you saw there being any mention one
10 way or the other of findings in the urinary
11 bladder?

12 A. No.

13 Q. In the last line of that memo, Exhibit
14 274, the word autolysis appears, do you know what
15 that means?

16 A. No, I do not.

17 Q. Did you ever become aware at any time
18 before today that in the course of the rat study
19 on pcb's, that Industrial Bio-Test did for
20 Monsanto, that animals would die and decompose
21 before their bodies could be recovered by the
22 technicians?

23 A. I had not heard that, no.

24 Q. Okay.

1 In your mind, would the fact that that
2 happened on numerous occasions raise doubts about
3 the validity of the overall results of the study?

4 A. If that did occur, would it raise doubts?

5 Q. Yes.

6 A. Yes, in my mind, yes.

7 Q. And that is because there is no way to
8 tell what findings might have existed in the
9 tissues of those rats that died and decomposed
10 before they could be examined?

11 A. Correct.

12 Q. Would you have expected Industrial
13 Bio-Test to report the fact to Monsanto if it was
14 a fact that there was a number of rats who died,
15 which died and decomposed before they could be
16 examined during the course of a rat study on
17 pcb's?

18 A. Would I expect them to?

19 Q. Yes.

20 A. If that were a true happening, I would
21 expect that. Yes.

22 Q. Do you recall ever hearing or seeing the
23 term autolysis used in connection with any of
24 these IBT studies?

1 A. No.

2 Q. When you toured the Industrial Bio-Test
3 Laboratories, did they take you into the rooms
4 where the test animals were kept?

5 A. Yes.

6 Q. The rats as I understand it were kept
7 together in groups, in group cages; is that
8 correct?

9 A. Yes.

10 Q. And each dosage level would have one or
11 more group cages?

12 A. Yes.

13 Q. That is, there weren't any 10 parts per
14 million rats in with 100 parts per million rats?

15 A. No, they are segregated.

16 Q. So even if an animal died during the
17 night and was found by the technician in the
18 morning, you could tell what group it was from by
19 what cage the body was in?

20 A. Correct.

21 Q. Beyond that, you might not be able to
22 identify the individual animal depending upon the
23 state of his decomposition?

24 A. I don't understand the question.

1 Q. You mentioned the ear punching and this
2 wand phenomenon. I assume that when the animal
3 was decomposed --

4 A. The tags, or the clips, the hardware that
5 as I understood you could still identify the
6 corpse.

7 Q. Okay.

8 So the tag would be there even though
9 the --

10 A. Yes.

11 Q. Okay.

12 Take a look at Exhibit 275. We did it
13 again here.

14 Will you look at 275 and I will look at
15 276, which is the same document, which is a letter
16 or a memo dated April 23, 1971 from Otis Fancher
17 to Moreno Keplinger, subject Aroclor tissues.

18 And I will ask you if you have seen that
19 before?

20 (The document above-referred to
21 was marked Bloomington Deposition
22 Exhibit No. 275 for identification.)

23

24 (The document above-referred to

1 was marked Bloomington Deposition
2 Exhibit No. 276 for identification.)

3 A. I have not seen this memorandum before.

4 Q. Do you recall in April or about April of
5 1971 questions arising about missing tissue
6 samples from the twelve-month collection in the
7 rat studies, B 7298?

8 A. I recall missing tissues. I don't recall
9 which study these tissues came from. And the
10 timing is about on or about the early part of '71.

11 Q. Do you know why as the exhibit describes
12 these are considered to be of critical importance,
13 that is, the missing tissues from B 7298?

14 A. No. I do not.

15 Q. The paragraph immediately under the one
16 that is identified as J 7300 says:

17 "In the case of all
18 studies were any tissues
19 saved from animals which died?"

20 Up until the date of this document, April
21 23, 1971, were you aware of any animals that had
22 died in any of the studies?

23 A. Yes. I was aware of what I was led to
24 believe was a normal amount of death in this

1 in the animals in these studies?

2 A. No. He is an analytical chemist.

3 Q. So his concern was to get the appropriate
4 tissue samples for his analysts to work on; is
5 that correct?

6 A. Yes, for Dr. Tucker's group to work on,
7 yes.

8 Q. Was he above Tucker?

9 A. Yes.

10 Q. So this inquiry generally is directed to
11 find out what he can expect to be coming in for
12 the analysts to work on in the foreseeable future,
13 is that the gist of it?

14 A. Could be one of the reasons. The other
15 is to perhaps expedite, where are these samples.

16 Q. The ones that are unaccounted for?

17 A. Yes.

18 Q. Where are they and when can we get them
19 so we can finish up?

20 A. Right.

21 (Discussion had off the record.)

22 Q. Take a look at Exhibit 277, which is a
23 copy of what appears to me to be a page from a
24 laboratory notebook at Industrial Bio-Test.

1 Although, given the way they provided things to
2 us, I can't be sure that that is what it is, dated
3 April 30, 1971. And I will ask if you recall ever
4 seeing that?

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 277 for identification.)

8 A. I have never seen this document before.

9 Q. Do you recall ever being advised, through
10 a study report or otherwise, that some of the rats
11 in the study number P 7297 had histology, positive
12 histology findings in the urinary bladders?

13 A. I do not.

14 Q. You do recall that that question was of
15 concern during the course of that study?

16 A. No. I don't believe urinary problems
17 related to pcb studies.

18 Q. It was your understanding, though, that
19 if such a finding were observed during the course
20 of the pcb rat studies, that it would be reported?

21 A. Yes.

22 Q. Okay.

23 They weren't just focusing on the liver
24 exclusively?

1 A. No, no. Any positive findings.

2 Q. Look at Exhibit 278, which is a memo
3 dated May 3, 1971 from Dr. Fancher to Dr.
4 Keplinger subject visit to Monsanto.

5 Is the visit that is referred to in that
6 memo, one of the regular back and forth exchanges
7 during the course of these studies?

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 278 for identification.)

11 A. Yes.

12 Q. The only difference being on this
13 particular occasion Dr. Fancher came to Monsanto
14 in St. Louis rather than somebody from Monsanto
15 traveling to Industrial Bio-Test?

16 A. That is correct.

17 Q. Do you recall being a participant in that
18 meeting in May of '71 in St. Louis?

19 A. I recall being a participant in meetings
20 in which Dr. Fancher made presentations. I do not
21 recall the specific dates.

22 Q. Okay.

23 Do you recall one or more than one of
24 those being in St. Louis rather than at Industrial

1 Bio-Test?

2 A. Yes.

3 Q. Okay.

4 Take a look at Exhibit 279, which is a
5 memo dated May 13, 1971 from Dr. Fancher to Dr.
6 Keplinger and others, which purports to be a
7 summary of the meeting that is referred to in 278.

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 279 for identification.)

11 A. I do not recall seeing this document
12 before.

13 Q. Do you recall being at a meeting at which
14 those subjects that are described in the documents
15 were discussed?

16 A. Yes.

17 Q. The first paragraph numbered 1 refers to
18 the rat tissues from the two-year study and that
19 the samples should be pooled; is that correct?

20 A. Yes.

21 Q. Do you know at any point in that two-year
22 study whether there were individual, not-pooled
23 samples that were sent to Monsanto for analysis?

24 A. I do not recall.

13

1 Q. The second paragraph refers to
2 maintaining some of the animals from the three
3 generation rat study on Aroclor-free diets for
4 thirty days. I presume that means after the end
5 of the study?

6 A. Correct.

7 Q. And then submitting the tissues for
8 analysis to be compared with tissues from animals
9 who were sacrificed without a thirty-day clearing
10 period. Is that the gist of what is described in
11 paragraph 2?

12 A. Yes.

13 Q. And what is the purpose of that
14 comparison?

15 A. This is to determine if the animal can
16 clear itself of the pcb's or to what extent it can
17 clear itself of pcb's.

18 Q. To determine a half life or something of
19 that nature?

20 A.- That term was used. It is to determine
21 how long the pcb's stay within the animal after
22 the exposure is stopped.

23 Q. Okay.

24 Do you recall what the results of that

1- comparison were?

2 A. No, I don't.

3 Q. Paragraph 3 refers to the same sort of
4 clearing period of thirty days in connection with
5 the dog study. And was the same kind of
6 comparison done?

7 A. Yes.

8 Q. In connection with the dog study?

9 A. Yes.

10 Q. The samples, the tissue samples from the
11 dog study, were also to be pooled?

12 A. Yes.

13 Q. Paragraph 4 refers to an effort to
14 determine whether the pcb material was transferred
15 across the placenta in connection with the rat
16 study.

17 Was an attempt made to do that?

18 A. Yes.

19 Q. Were you able to determine whether or not
20 that took place?

21 A. I don't remember that. I don't recall
22 the results of those analyses.

23 Q. Okay.

24 Why is that of interest, if you know?

1 A. Whether the substance transfers across
2 the placenta?

3 There is always a general interest in the
4 transfer of chemicals through the placenta,
5 whether they be pcb's or any other. This could
6 explain in some instances the reproduction or
7 teratology or mutagenic changes that are noted.
8 It is just part of the information gathering, that
9 is important.

10 Q. One thing that might be helpful to know?

11 A. Yes.

12 Q. Take a look at Exhibit 280, which is a
13 letter dated May 17, 1971 to Elmer Wheeler from
14 Dennis Lindberg. Do you recall seeing that
15 letter?

16 (The document above-referred to
17 was marked Bloomington Deposition
18 Exhibit No. 280 for identification.)

19 A. No. I do not recall seeing this.

20 Q. At this date, May of 1971, do you know
21 why a 90-day subacute dog study was being
22 scheduled?

23 A. This material was a modification of the
24 previous Aroclor 1242.

1 Q. So you are beginning the same process
2 with a substitute material that you had earlier
3 done with the 1242?

4 A. Yes.

5 Q. That is, the 90-day study helps you home
6 in on the appropriate dosage levels for a
7 long-term study?

8 A. And it also helps to determine if this
9 material is significantly different than the
10 predecessor material from which it was derived.

11 Q. Okay.

12 Was there a significant difference that
13 you recall between 1242 and 1016?

14 A. No.

15 Q. Was that true throughout all of the
16 studies that were done on 1016?

17 A. I believe this was the study.

18 Since there was no difference, no further
19 studies were planned.

20 Q. So there were never any rat or chicken
21 studies with 1016 to your recollection?

22 A. I don't recall any. No.

23 Q. Take a look at Exhibit 281, which is
24 dated May 18, 1971 from Otis Fancher to Dr.

1. Keplinger.

2 To your knowledge, is the request in that
3 memo a request for additional tissues from the
4 chicken study or that there hadn't been early
5 tissues supplied before May of '71?

6 (The document above-referred to
7 was marked Bloomington Deposition
8 Exhibit No. 281 for identification.)

9 A. I would interpret this as a request for
10 tissues from studies made before the studies we
11 recently talked about, the chicken reproduction.
12 There were preliminary studies early on.

13 Q. So they are going back to the early
14 studies to look at those tissues?

15 A. To early '68, '69 era.

16 Q. Do you know if samples had been retained
17 so that that request could become applied with?

18 A. I understand, yes, I understand they
19 were. They were made available.

20 Q. Take a look at Exhibit 282, which is
21 dated May 3, 1971 from Dr. Keplinger to DHJ,
22 whoever that may be, subject Monsanto Aroclor
23 studies, IBT numbers J 8746 and J 9834, I guess.
24 This is a request for what would be a routine

1- interim report to be submitted to Monsanto, I take
2 it?

3 (The document above-referred to
4 was marked Bloomington Deposition
5 Exhibit No. 282 for identification.)

6 A. Yes.

14 Q. Take a look at 283, which is a memo dated
7 June 3, 1971, from Dr. Fancher to Dr. Keplinger
8 and others, subject visit by Mr. Wheeler, Dr. Hunt
9 of Monsanto.
10

11 Again I will ask you if you that meeting
12 that is referred to is one of the regular periodic
13 meetings to review the progress of these pcb
14 studies?

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 283 for identification.)

18 A. Yes.

19 Q. Exhibit 284 is a memo dated June 11, 1971
20 from Dr. Keplinger to DHJ re Monsanto study
21 J 9884, Aroclor 5432. That 5432, is that a pcb
22 product?
23

24 (The document above-referred to

1 was marked Bloomington Deposition
2 Exhibit No. 284 for identification.)

3 A. No.

4 Q. Okay.

5 What kind of material is that, just for
6 curiosity sake?

7 A. It is a chlorinated triphenyl.

8 Q. Exhibit 285 is a memo dated June 11, 1971
9 from Dr. Keplinger to Paul Wright, subject
10 Monsanto 90-day studies on Aroclor 1221, 1016,
11 5432 and 5442, and I will ask you if you have seen
12 that?

13 (The document above-referred to
14 was marked Bloomington Deposition
15 Exhibit No. 285 for identification.)

16 A. No, I have not.

17 Q. According to that memo, dosage levels
18 were to be changed in each of the studies
19 described on there.

20 The 1 part per million group was changed
21 to 30 parts per million, the 10 part per million
22 group was changed to 300 parts per million and the
23 100 parts per million group no change.

24 Do you recall ever discussing dosage

1 changes of that nature with anybody?

2 A. No.

3 Q. Do you have any idea why such a change
4 would be made in a 90-day study?

5 A. No.

6 Q. Is it possible because there is no effect
7 being seen at the 100 parts per million level?

8 A. Yes. It is possible.

9 Q. But the better practice would be to start
10 over with those different dosage levels?

11 A. You can't call it a 90-day study at 1
12 part per million, if you are going to change the
13 dose to 300.

14 Q. But if you change the dose to 300 and
15 feed for 90 days after having fed at 1 part per
16 million for some period every time, can you call
17 it a 90-day study at 300 parts per million?

18 A. It is made less clear because of the
19 initial exposure.

20 Q. Would it be correct that the better
21 practice would be to start a new group of animals
22 at the second set of dosage levels?

23 A. That would be my opinion, yes.

24 Q. Okay.

1 286 is a memo from Dr. Keplinger to JWG
2 dated June 16, 1971, subject Monsanto Aroclor
3 dynamic fish studies. And it refers to a visit
4 that you were going to make to some researchers in
5 Missouri.

6 Do you recall that visit?

7 (The document above-referred to
8 was marked Bloomington Deposition
9 Exhibit No. 286 for identification.)

10 A. I recall the visit. But they are
11 mistaken in associating the University of
12 Missouri. It is a federal laboratory located in
13 the same city that the university is located.

14 Q. Okay.

15 What is involved in what is described in
16 Exhibit 286 as a dynamic fish study?

17 A. These are test facilities in which the
18 test water flows through troughs and the fish are
19 exposed to that water that flows through, and the
20 water contains the material being tested. As
21 distinguished from aquarium, where the water is
22 stagnant and the chemicals are introduced into
23 this pool of water and it doesn't move.

24 Q. Okay.

1 One of the things that that might
2 accomplish is to overcome this problem of the
3 pcb's sticking to the sides of the tank and not
4 exposing the fish?

5 A. Yes.

6 Q. Okay.

7 To your knowledge, the dynamic fish
8 studies that are described as being put off in
9 that memorandum never were completed by Industrial
10 Bio-Test?

11 A. That's right.

12 Q. Okay.

13 Was that the type of study that had been
14 done at the federal laboratory in Missouri, the
15 dynamic type?

16 A. Yes. Either had been done or was
17 scheduled to be performed.

18 Q. Okay.

19 Exhibit 287 is a letter dated June 28,
20 1971 from Dr. Keplinger to Mr. Wheeler.

21 I will ask you if you have seen that
22 letter?

23

24 (The document above-referred to

1 was marked Bloomington Deposition
2 Exhibit No. 287 for identification.)

3 A. I have not seen this letter.

4 Q. Do the dosage changes that are referred
5 to in 287 match up with the levels that were
6 described in the memo that we marked as 285?

7 A. They do match.

8 Q. So as of the date that that letter was
9 received by Dr. Wheeler, sometime after June 28,
10 he was aware that the doses were changed rather
11 than new studies being initiated at different
12 doses?

13 A. He received notice. Yes.

14 Q. Right.

15 He may have known about it before he
16 received the letter, I take it?

17 A. Yes.

18 MR. FRUEHWALD: We are assuming in this
19 question that this feeding had started. I am not
20 sure that is clear from these documents that they
21 actually started this feeding before this change
22 of dosage. But --

23 MR. MC CONNELL: I don't know the answer to
24 that.

1 MR. FRUEHWALD: Document 280 indicates that
2 the feeding should start in May.

3 MR. MC CONNELL: The sequence of the documents
4 suggest to me that at least for a period of days
5 or a week or two the feeding had started, but it
6 doesn't really come right out and say that.

7 Q. You don't know the answer to that one way
8 or the other, do you, Mr. Papageorge?

9 A. Only from what is inferred here.

10 Q. You didn't participate in whatever
11 discussions were had around that time?

12 A. Not until I saw these documents, I was
13 not aware of a change in the dosage.

14 Q. Okay.

15 Exhibit 288 is a letter dated June 28,
16 1971 from Dr. Keplinger to Mr. Wheeler.

17 I will ask you if you have ever seen
18 that?

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 288 for identification.)

22 A. This is a duplicate of the previous
23 exhibit? No.

24 Q. I don't think so.

1 A. No. No.

2 Q. It is the same date, but I think it
3 refers to chickens, whereas the other one is about
4 the dogs.

5 A. It is not specific, except by reference
6 to a previous study the chickens are involved.

7 Q. Right.

8 The reference to hatchability and
9 survival of chicks?

10 A. Refers to another study. The implication
11 is that these studies were also referring to
12 chicks. I had not seen this before.

13 Q. Okay.

14 And 287, going back to that for a minute,
15 the reference in the last paragraph, the dog study
16 which was 5432, will need to be extended to allow
17 a full ninety days of feeding at 300 parts per
18 million, suggests that at least with respect to
19 that compound, feeding at some other level had
20 already started?

21 A. Yes.

22 Q. Okay.

23 The studies that are referred to in
24 Exhibit 288, which we take from the context to be

1 chicken studies, again is a refinement of the
2 earlier studies by reducing the dosage levels, to
3 try and home in on exactly where the no-effect
4 level would occur; is that correct?

5 A. It appears to be, yes.

6 Q. Okay.

7 Exhibit 289 is a four-page document dated
8 July 31, 1971 entitled memorandum for the record
9 to Dr. Leo Friedman from H. Blumenthal. And I
10 will ask you if you have seen that document before
11 today?

12 (The document above-referred to
13 was marked Bloomington Deposition
14 Exhibit No. 289 for identification.)

15 A. I have reviewed the exhibit.

16 Q. Have you ever seen it before today?

17 A. I have not.

18 Q. Were you were you aware of the Food and
19 Drug Administration's interest in the question of
20 pcb's around this time, 1971?

21 A. Yes.

22 Q. And the reason for that was, among other
23 things, that they were concerned about pcb
24 contamination of various types of food?

1 A. Yes.

2 Q. And were you aware that the FDA was
3 considering establishing acceptable levels of the
4 presence of pcb in various types of food?

5 A. Yes.

6 Q. What was your understanding of the
7 various mechanisms by which there might come to be
8 pcb in food?

9 We have already talked about one in
10 connection with Yu Sho.

11 A. It was found in dairy products, milk.

12 Q. Okay.

13 A. It was found in cereals. Because of the
14 package, the paperboard, the ink on the package.
15 And about this time I believe it showed up in
16 poultry. I believe that is about when it
17 happened. Where a poultry feed ingredient was
18 contaminated with pcb's.

19 I don't recall any other known
20 contaminations to FDA in the middle of 1971.

21 Q. Do you recall whether it was ever
22 determined what the source was in the milk?

23 A. Yes. There was a coating applied to
24 concrete silos to inhibit the degradation of the

1 concrete by the acid formed in the silage.

2 Q. And that had pcb's in it?

3 A. And the coating had pcb's as an
4 ingredient and found its way into the silage and
5 into the cattle and into the milk.

6 Q. All of the uses that you have described
7 that led to these various food contamination
8 episodes either had been or were in the process of
9 being discontinued by Monsanto at the time of this
10 memo; is that correct?

11 A. Yes.

12 Q. Did you ever determine what the source of
13 the contamination in the poultry feed was?

14 Was that some kind of a heat-transfer
15 problem?

16 A. This was the heat transfer of this
17 ingredient that was used in preparing poultry
18 feed.

19 Q. Having reviewed Exhibit 289, as you sit
20 here today is your understanding of the results as
21 they existed in July of 1971 of the various
22 Industrial Bio-Test studies the same as the
23 understanding that is reflected in this exhibit?

24 A. Yes. This information is very similar to

1 the summaries that I was receiving. It reflects
2 the summaries.

3 Q. So the information the FDA had was the
4 same, essentially, as the information you had, as
5 of July 1971?

6 A. Yes.

7 Q. It says on page 3 at the bottom of this
8 memo, quoting now from the memo:

9 "Our conclusions at
10 this time are that pending
11 completion of studies in
12 progress --"

13 I take it this refers at least in part to
14 the Industrial Bio-Test studies?

15 A. Yes.

16 Q. Continuing:

17 "-- we are in a poor
18 position to recommend
19 guideline levels for
20 contamination. This lack of
21 complete toxicologic data when
22 coupled with our essential
23 lack of information about
24 "background levels of

1 contamination in foodstuffs in
2 general, makes it all the more
3 imperative that we resist
4 setting guidelines on anything
5 more than a case-by-case basis
6 at this time."

7 Did the FDA or any individual at the FDA
8 ever convey the essence of the conclusion of this
9 memo that I just read to you?

10 A. Yes. Dr. Blumenthal conveyed those
11 thoughts to Dr. Kelly and Mr. Wheeler.

12 Q. Okay.

13 And they conveyed that back to you?

14 A. Yes.

15 Q. Was that at or about the July 30, 1971
16 date of that memo?

17 A. Yes.

18 MR. MC CONNELL: It is a quarter of.

19 (Whereupon, the deposition was
20 continued to October 16, 1986
21 at 8:30 o'clock a.m.)

22

23

24

IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

THE CITY OF BLOOMINGTON, INDIANA;)
THE UTILITIES SERVICE BOARD OF)
BLOOMINGTON, INDIANA; and MONROE)
COUNTY, INDIANA,)

Plaintiffs,)

vs.)

Civ No.
IP 83-9-C

WESTINGHOUSE ELECTRIC CORPORATION,)
a Pennsylvania corporation; and)
MONSANTO COMPANY, a Delaware)
corporation,)

-----Defendants.-----

The continued deposition of W. B. PAPAGEORGE,
called for examination by the Plaintiffs, pursuant
to notice and pursuant to the provisions of the
Federal Rules of Civil Procedure of the United
States District Courts, pertaining to the taking
of depositions for the purpose of discovery, taken
before Arnold N. Goldstine, a Notary Public and
Certified Shorthand Reporter within and for the
County of Cook and State of Illinois, at Three
First National Plaza, Chicago, Illinois, on
October 16, 1986, at the hour of 8:30 o'clock a.m.

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APPEARANCES:

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appeared on behalf of the
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Indianapolis, Indiana 46204

appeared on behalf of Defendant
Monsanto Company.

I N D E X

WITNESS:

W. B. PAPAGEORGE

Direct Examination

By Mr. Mc Connell 601

By Mr. Karaganis 632

By Mr. Mc Connell 701 - 747

E X H I B I T S

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1 E X H I B I T S

2 BLOOMINGTON DEPOSITION NOS. (Continued)

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1 MR. MC CONNELL: Back on the record.

2 Let the record show this is once again
3 the continuation of the deposition of Mr.
4 Papageorge.

5 WILLIAM B. PAPAGEORGE,
6 having been previously duly sworn,
7 was examined and testified as follows:

8 DIRECT EXAMINATION (Continued)

9 BY MR. MC CONNELL:

10 Q. Mr. Papageorge, I am going to show you a
11 one-page memo that has been marked as Exhibit 290
12 which is dated September 22, 1971 from K.
13 Mastalski to Moreno Keplinger, subject J 9884,
14 Monsanto Aroclor, 5432 final report, which appears
15 to me to be an animal study involving the product
16 5432, which I guess as we discussed before is not
17 a pcb product; is that correct?

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 290 for identification.)

21 A. That is correct.

22 Q. Okay.

23 Exhibit 291 is a one-page report dated
24 September 29, 1971, unsigned, subject IBT number P --

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1 7298, Monsanto.

2 I will ask you if you recall ever having
3 seen that document?

4 (The document above-referred to
5 was marked Bloomington Deposition
6 Exhibit No. 291 for identification.)

7 A. No. This is the first time I have seen
8 this.

9 Q. While you read that, let me see the
10 number on the bottom. It occurs to me that there
11 may be a second page, 8267. While you are reading
12 it, I am going to go look.

13 (Discussion had off the record.)

14 It appears that there may be in fact two
15 more pages, so let's withdraw this for the time
16 being because I can't find 68 or 69. I think they
17 will be page 2 and 3 of this report. So we will
18 put it on hold for the time being.

19 Exhibit 292 is a letter dated September
20 30, 1971 from Paul Wright who was then at
21 Industrial Bio-Test to George Levinskas at
22 Monsanto. And I will ask if you have seen that
23 before?

24

1 (The document above-referred to
2 was marked Bloomington Deposition
3 Exhibit No. 292 for identification.)

4 A. I have not seen this before.

5 Q. Were you ever advised either verbally or
6 by means of the summary reports that you received
7 from time to time either from Industrial Bio-Test
8 or from Mr. Wheeler of the findings of renal
9 caudal ectopia in the rat teratology study?

10 A. No, I was not.

11 Q. In fact, you testified yesterday you
12 didn't have any specific recollection of the rat
13 teratology study?

14 A. That is correct.

15 Q. Okay.

16 In that letter, there is apparently a
17 distinction made between what the author, Mr.
18 Wright, refers to as specific birth defects and
19 what he refers to as manifestation of general
20 toxicity.

21 Do you understand what the difference is
22 between those two things?

23 A. I think I do.

24 Q. Okay.

1 In the animal studies that were done on
2 pcb's, were you interested in both kinds of
3 effects, general toxicity and specific birth
4 defects, if any?

5 A. Yes.

6 Q. Okay.

7 So whether renal caudal ectopia falls
8 into one category or the other, it is a
9 significant finding as far as you are concerned?

10 A. I would have to rely on the experts to
11 determine significance.

12 Q. Let me -- as soon as that passed my lips,
13 I realized I should have phrased it differently.

14 It was a finding of concern, whether it
15 was statistically significant or not would depend
16 on the analysis by the experts?

17 A. Yes.

18 Q. Okay.

19 Do you recall whether that particular
20 finding was ever passed on by you to customers or
21 the government; by you, I mean by Mr. Papageorge?

22 A. No. I was not aware of this finding and,
23 therefore, I did not discuss it with anyone.

24 Q. Okay.

1 Exhibit 293 is a report by a Dr. Ward
2 Richter, R-i-c-h-t-e-r, dated October 10, 1971
3 consisting of one page, subject IBT 7298 Monsanto.

4 I will ask you if you have ever seen that
5 before?

6 (The document above-referred to
7 was marked Bloomington Deposition
8 Exhibit No. 293 for identification.)

9 A. I have not seen this before.

10 Q. Were you aware that the original
11 pathological conclusions in the Industrial
12 Bio-Test studies on the rat tissues were subject
13 to later review by different pathologists?

14 A. Yes.

15 Q. Okay.

16 And that was part of the general
17 controversy that we discussed yesterday about how
18 to interpret the pathological findings that were
19 being seen on the slides?

20 A. Yes.

21 Q. Was Dr. Richter to your knowledge one of
22 those pathologists that participated in reviewing
23 the slides at some point in the course of that
24 review?

1 A. I don't recall Dr. Richter. He could
2 well have been, but I just don't recall.

3 Q. The letter refers, or the report, Exhibit
4 293, refers to lesions in the liver that Dr.
5 Richter says some other pathologist might call,
6 might label them hepatoma.

7 Do you see that reference, another
8 pathologist might label them hepatoma?

9 A. Yes.

10 Q. Is that the subject or was that one of
11 the principal subjects of the controversy we
12 discussed in a general way yesterday?

13 A. Yes.

14 Q. Whether the liver lesions that were there
15 were cancerous or not cancerous?

16 A. Yes.

17 Q. Okay.

18 And I believe your testimony yesterday
19 was that that to this day has never been resolved
20 in the community of pathologists?

21 A. To my knowledge it hasn't, yes.

22 Q. To your knowledge, okay.

23 As I understand your earlier testimony,
24 however, the studies were designed to -- the rat

1 studies, in particular, were designed to find any
2 effects on the animals that were related to the
3 pcb's, whether or not it was a cancer-producing
4 effect?

5 A. Correct.

6 Q. Is that correct?

7 A. Yes.

8 Q. So the significant liver lesions that are
9 described in Exhibit 293 should be reported in the
10 report of the study even though the pathologist
11 concludes that they are not cancerous?

12 A. Yes.

13 Q. Okay.

14 In the reports from Monsanto that you
15 passed along to pcb customers, did those reports
16 disclose the pathological findings of liver
17 lesions related to the feeding of pcb's in the
18 rats?

19 A. I don't recall the exact words. But they
20 did disclose, as best I recall, that at the higher
21 levels of exposure, there was an effect noted on
22 the livers. I recall the words enlarged livers
23 and cell changes. These kinds of words. The
24 exact words I do not recall.

1 Q. Did Monsanto's reports to its customers
2 go on to conclude that the lesions were not
3 cancerous?

4 A. I don't believe that conclusion was
5 expressed. I don't recall it.

6 Q. Did you ever see an Industrial Bio-Test
7 report on the rat studies that concluded that the
8 Aroclors studied were not carcinogenic?

9 A. I believe I recall a summary report in
10 about 1975 that concluded that.

11 Q. Okay.

12 By the way, Exhibit 293 concludes that
13 whatever else Dr. Richter saw in the rats outside
14 the liver was not the result of the pcb exposure;
15 is that a fair paraphrase of the last portion of
16 that report?

17 A. There is no --

18 Q. I think you misunderstood my question.

19 His conclusion is that the other disease
20 processes that he saw outside the liver in the
21 rats were the result of spontaneous disease rather
22 than pcb exposure?

23 A. That is what it says, yes.

24 Q. Okay.

1 Exhibit 294 is a letter dated October 13,
2 1971 from Mr. Wheeler to Dr. Calandra. And I will
3 ask you if you have seen that?

4 (The document above-referred to
5 was marked Bloomington Deposition
6 Exhibit No. 294 for identification.)

7 A. I have not -- yes, I am shown as
8 receiving a copy. I don't recall it.

9 Q. Okay.

10 Do you recall the dominant lethal mouse
11 studies which are referred to in that letter,
12 Exhibit 294?

13 A. Yes.

14 Q. What is the purpose of a dominant lethal
15 mouse study as you understand?

16 A. It's my understanding it has something
17 some do with mutagenicity.

18 Q. Whether the Aroclors studied caused
19 mutations in the mouse chains?

20 A. Yes.

21 Q. Were those dominant lethal mouse studies
22 completed to your knowledge?

23 A. To my knowledge, they were, yes.

24 Q. Do you recall what the results were?

1 A. I believe the results indicated no
2 mutagenic activity.

3 Q. Exhibit 295 is a two-page memo dated
4 October 13, 1971 to the file from Dr. Levinskas,
5 subject of phone conversation with Dr. Renate
6 Kimbrough.

7 I will ask you if you have seen that memo
8 before?

9 (The document above-referred to
10 was marked Bloomington Deposition
11 Exhibit No. 295 for identification.)

12 A. I do not recall seeing this memorandum.

13 Q. Do you recall ever discussing with anyone
14 in the Monsanto medical department the question of
15 bladder tumors in the rats in the Industrial
16 Bio-Test study?

17 A. No.

18 Q. In the course of following what other
19 researchers were finding in their studies of
20 pcb's, did you run across this possible finding of
21 bladder tumors by Dr. Kimbrough?

22 A. No.

23 Q. Do you know how that came to Monsanto's
24 attention?

1 A. Only from inferring from what I read
2 here.

3 Q. This is the first you have heard about
4 the bladder tumor -- I would tend to characterize
5 it as a controversy, but maybe bladder tumor
6 discussions -- is your reading this document?

7 A. That is the first.

8 Q. Okay.

9 You were aware, were you not, during this
10 period of time, 1970 and '71, that Dr. Kimbrough
11 was also studying the effects of pcb's on various
12 animal species?

13 A. I was aware she was conducting studies
14 with rats. I don't know about other species.

15 Q. And you were aware that she reported a
16 finding of cancer in her female rats as a result
17 of exposure to Aroclors?

18 A. Cancer in the liver. Yes.

19 Q. Was that at this time in 1970, 1971, was
20 the liver cancer the only positive finding by Dr.
21 Kimbrough that you were aware of?

22 MR. FRUEHWALD: Let me interpose. You didn't
23 establish a foundation that this liver cancer
24 finding was in '71.

1 My recollection is it is much later than
2 '71. Your question assumes that the liver cancer
3 findings were back in '71.

4 MR. MC CONNELL: Okay. Let me ask a question
5 a different way.

6 Q. Have you ever before you saw this Exhibit
7 295 today been aware of any other positive
8 findings reported by Dr. Kimbrough other than the
9 liver cancer?

10 A. I was aware she was finding cell changes
11 in liver.

12 Q. Were you aware that she was finding any
13 changes in any organs other than the liver?

14 A. No.

15 Q. Okay.

16 Exhibit 296 is a memo dated October 19,
17 1971 from Dr. Keplinger to DHJ. I will ask you to
18 take a look at that.

19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 296 for identification.)

22 The last part of Exhibit 296 refers to
23 demyelination studies to be done by Industrial
24 Bio-Test on pcb's.

1 Do you know whether that was ever done?

2 A. I am aware of demyelination studies. I
3 don't vividly recall them associated with this
4 specific group of materials.

5 Q. Okay.

6 What materials do you recall them being
7 associated with, if any?

8 A. Nothing specific. Aroclors as a broad
9 category. But I don't recall just which Aroclors.

10 Q. Pcb Aroclors?

11 A. Yes.

12 Q. Okay.

13 A. As well as some of the terphenyl-type
14 Aroclors, yes.

15 Q. Demyelination is a phenomenon that
16 involves the nervous system, is it not?

17 A. That is my understanding.

18 Q. Do you know what the results of those
19 demyelination studies were?

20 A. I have the overall understanding that
21 nothing of significance was observed.

22 Q. What sort of animals were those performed
23 on, if you recall?

24 A. Chickens.

1 Q. Okay.

2 Exhibit 297 is a Monsanto memorandum to
3 R. E. Keller from E. S. Tucker dated October 25,
4 1971, consisting of five pages.

5 I will ask you if you have seen that
6 before?

7 (The document above-referred to
8 was marked Bloomington Deposition
9 Exhibit No. 297 for identification.)

10 A. I recall this memo, yes.

11 Q. Is this an example of the missing or
12 unaccounted for sample situation that we talked
13 about in a general way yesterday?

14 A. There is a reference to missing samples
15 in this document. Yes.

16 Q. Okay.

17 Do you know if the situation concerning
18 the missing samples reflected in 297 was ever
19 resolved to Dr. Tucker's satisfaction?

20 A. Yes.

21 Q. Was it resolved?

22 A. The best I can tell, there was -- I don't
23 recall if the samples were found or if alternate
24 samples were obtained. But the need for

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1 information was satisfied somehow.

2 Q. Did the question of missing samples
3 raise -- did the fact of missing samples, at least
4 as of the date of that memo, raise questions in
5 your mind as to the competency of the researchers
6 at Industrial Bio-Test?

7 A. No.

8 Q. Did anyone else at Monsanto discuss such
9 questions they had in their minds with you as a
10 result of the missing samples?

11 A. No.

12 Q. Did anyone at Monsanto discuss such
13 questions they had with you as a result of any
14 other thing that occurred in the course of dealing
15 with Industrial Bio-Test over the years?

16 A. No.

17 Q. Okay.

18 Were you part of any meetings that took
19 place with Industrial Bio-Test to discuss the
20 samples that are referred to as missing in Exhibit
21 297?

22 A. I don't recall attending such a meeting.

23 Q. Okay.

24 How were the samples shipped to your

1 knowledge from Industrial Bio-Test to Dr. Tucker?

2 A. I don't know.

3 Q. Exhibit 298 is a letter from Elmer
4 Wheeler to Dr. Keplinger dated October 28, 1971.
5 And I will ask you if you recall ever seeing a
6 copy of that?

7 (The document above-referred to
8 was marked Bloomington Deposition
9 Exhibit No. 298 for identification.)

10 A. No, I do not recall ever seeing this.

11 Q. Do you know whether Exhibit 297 is the
12 memo that is referred to in 298 as being attached?

13 A. No, I do not.

4
14 Q. Exhibit 299 is a letter dated November
15 12, 1971 from J. C. Calandra to Elmer Wheeler. I
16 will ask you if you have ever seen that document
17 before?

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 299 for identification.)

21 A. I don't recall seeing this document.

22 Q. Does Exhibit 299 suggest to you that the
23 report of the two-year chronic oral toxicity study
24 in rats was mailed from Industrial Bio-Test to

1 Monsanto?

2 A. I don't know if it is mailed or
3 personally delivered.

4 Q. Okay.

5 Was it customary in Monsanto's dealings
6 with Industrial Bio-Test for them to mail reports
7 to Monsanto?

8 A. That is the more frequent method, yes.

9 Q. Okay.

10 Personal delivery would take place if the
11 report was issued at or near a time when there was
12 a meeting scheduled for some other purpose?

13 A. Yes.

14 Q. Okay.

15 To your knowledge, there was never a
16 meeting scheduled for the sole purpose of handing
17 over a report?

18 A. No.

19 Q. Exhibit 300 is a correction sheet dated
20 January 31, 1972 subject IBT C 9887 for Monsanto.

21 Do you know which study was C 9887?

22 (The document above-referred to
23 was marked Bloomington Deposition
24 Exhibit No. 300 for identification.)

1 A. No, I don't recall.

2 MR. FRUEHWALD: I believe this document
3 indicates that was a 90-day doing study on 10/15,
4 as the previous exhibits assign that number to
5 that study.

6 MR. MC CONNELL: Okay.

7 Q. Do you know whether such correction
8 sheets were transmitted to Monsanto as part of the
9 documentation in connection with the Industrial
10 Bio-Test studies?

11 A. No, I do not.

12 Q. Did Monsanto keep a similar type of
13 correction sheet or record of revisions that were
14 made from one version of its reports on these
15 studies to the next?

16 A. I do not know.

17 Q. Exhibit 301 is a two-page handwritten
18 letter from Otis Fancher to Moreno Keplinger. The
19 handwritten part of the letter bears no date, but
20 there is a date stamp received at the top,
21 December 6, 1971, IBT.

22 I will ask you if you have ever seen that
23 document?

24

1 (The document above-referred to
2 was marked Bloomington Deposition
3 Exhibit No. 301 for identification.)

4 A. I have not seen this document.

5 Q. Dr. Fancher was one of the principals of
6 Industrial Bio-Test, was he not?

7 A. I don't know how the use of the word
8 principal applies. He was a key employee, to my
9 knowledge.

10 Q. Wasn't he also a director of the company?

11 A. That I don't know.

12 Q. Okay.

13 He was one of the researchers who was
14 involved in the performance of the pcb animal
15 studies for Monsanto?

16 A. Yes.

17 Q. And Dr. Keplinger was another?

18 A. Yes.

19 Q. Okay.

20 Do you know whether what Dr. Fancher
21 describes as discrepancies in the summary in the
22 first paragraph of his letter were ever corrected?

23 A. I do not know.

24 Q. 7300 refers to the chicken study, does it

1 not?

2 A. I don't remember.

3 Q. If you recall.

4 MR. FRUEHWALD: It appears to be a chicken
5 reproduction study.

6 MR. MC CONNELL: Okay.

7 Q. On the second page of Exhibit 301 there
8 is a reference to lymphomatasia, which as I
9 understand it is another name for the Marek's
10 disease that we talked about yesterday, do you
11 recall that?

12 A. No, I don't.

13 Q. Okay.

14 Did you ever have occasion to discuss
15 with Dr. Fancher the statement and I will read it
16 into the record from the bottom of the first page
17 and the top of the second page of Exhibit 301 and
18 I quote:

19 "This whole study -
20 mortality, and anorexia organ
21 changes, et cetera, was
22 undoubtedly complicated by the
23 lymphomatasia which was
24 rampant throughout the colony

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1 "during this study. This fact
2 is not mentioned in the
3 report. Perhaps it should be
4 mentioned in the paper but I
5 don't know how to do it
6 without stating that the study
7 was conducted using sick
8 animals."

9 Did you ever discuss that with Dr.
10 Fancher?

11 A. No.

12 Q. To your knowledge, was there ever a
13 version of any report on the chicken reproduction
14 study issued either by Industrial Bio-Test or by
15 Monsanto that reflected the fact that the chickens
16 were sick with this lymphmatasia or Marek's
17 disease?

18 A. Not any report that I recall seeing.

19 Q. Okay.

20 A. Or reading.

21 Q. And I believe you testified yesterday
22 that you were not aware of that problem until I
23 showed you the memos on the Marek's disease?

24 A. That is correct.

1 Q. If you had been aware of it in 1971,
2 would you have shared that information with your
3 customers who were receiving these progress
4 reports on these studies?

5 A. Very likely. Yes.

6 Q. I take it that is because you feel it
7 might have affected the weight they gave to the
8 conclusions of the study as it was reported?

9 A. Yes.

10 Q. Exhibit 302 is a letter from Dr.
11 Levinskas to Dr. Keplinger dated December 6, 1971.

12 I will ask if you recall seeing that
13 letter?

14 (The document above-referred to
15 was marked Bloomington Deposition
16 Exhibit No. 302 for identification.)

17 A. I do not recall seeing this letter.

18 Q. Were you aware in 1971 that Dr. Levinskas
19 and others from Monsanto were going to meet with
20 Dr. Kimbrough to discuss her rat research on
21 pcb's?

22 A. Yes.

23 Q. Okay.

24 But you weren't aware that one of the

1 specific subjects was bladder tumors in the rats?

2 A. That is correct.

3 Q. What was your understanding of the
4 subject of this discussion?

5 A. Liver damage was the subject.

6 Q. Did Dr. Levinskas discuss with you or did
7 you become aware in late 1971 or early 1972 that
8 Dr. Kimbrough had concluded in her own mind that
9 pcb's were carcinogenic in the rats?

10 A. I don't know that she concluded. I
11 sensed that she was suspicious.

12 Q. Was it Dr. Levinskas' job on the basis of
13 the Industrial Bio-Test studies to talk her out of
14 that suspicion?

15 A. No. That is not my understanding. No.

16 Q. What was the purpose of those meetings?

17 A. To arrive at a consensus, if possible,
18 regarding the interpretation of the observations.

19 Q. Okay.

20 And to your knowledge, that consensus was
21 never reached up to today?

22 A. That is correct.

23 Q. Exhibit 303 is a two-page handwritten
24 note from Dr. Fancher to Dr. Keplinger, it is dated

1 stamped December 9, 1971, subject IBT, B 7298,
2 which I believe is one of the rat studies.

3 I will ask you if you have ever seen that
4 document before?

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 303 for identification.)

8 A. I had not seen this document before.

9 Q. I believe you testified yesterday that as
10 far as you understood the survival rates of the
11 rats in all of the pcb studies at Industrial
12 Bio-Test were adequate for the purposes of the
13 studies?

14 A. That is my understanding, yes.

15 Q. Dr. Fancher never made you aware of his
16 disagreement with that, with the fact that the
17 survival rate was adequate?

18 A. That is correct.

19 Q. Okay.

20 Did he ever express to you, or did anyone
21 at Industrial Bio-Test ever express to you a
22 concern that all of the rat carcinogenic studies
23 would be judged inadequate because survival rates
24 were so low?

1 A. No.

2 Q. Did anyone at Monsanto ever discuss
3 a concern with you?

4 A. No.

5 Q. Did Dr. Fancher ever discuss with you his
6 statement on page 2 of Exhibit 303 that the tumor
7 incidence in females with 1254 is bothersome?

8 A. No.

9 Q. He goes on to say in the letter:
10 "If one tabulated and
11 reported these data it would
12 probably raise questions even
13 though most of these are
14 benign."

15 Did you ever discuss that fact with Dr.
16 Fancher?

17 A. No.

18 Q. Do you know whether in fact the tumor
19 incidence in females with 1254 was ever separately
20 tabulated and reported?

21 A. No.

22 Q. You don't know or it wasn't?

23 A. I do not know.

24 Q. Okay.

1 Did Dr. Fancher ever discuss with you any
2 questions he had in his mind about the conclusion
3 reported by Industrial Bio-Test that these tumors
4 are considered normal for a random population of
5 rats this age?

6 A. He did not.

7 Q. Did anyone at Monsanto ever discuss with
8 you any questions they might have had about
9 whether that was a valid conclusion?

10 A. No.

11 Q. Do you know whether copies of these
12 handwritten letters from Dr. Fancher to Dr.
13 Keplinger would have ordinarily been supplied to
14 Monsanto with the back-up materials supporting the
15 Bio-Test reports on these studies?

16 A. I do not know.

17 Q. Do you know whether they would have been
18 available to the Monsanto personnel during their
19 inspections or reviews of the files at Industrial
20 Bio-Test?

21 A. I do not know.

22 Q. Did Dr. Fancher retire at some time
23 during the course of your work as the pcb
24 coordinator at Monsanto?

1 A. Yes.

2 Q. Do you recall about when that was?

3 A. No. Not really. Sometime between '71
4 and '75 is as close as I can recall.

5 Q. Exhibit 304 is a one-page letter dated
6 December 15, 1971 from Dr. Fancher to somebody
7 named Don.

8 Do you know anybody named Don at
9 Industrial Bio-Test?

10 (The document above-referred to
11 was marked Bloomington Deposition
12 Exhibit No. 304 for identification.)

13 A. Yes. I was reminded that Don Gordon is
14 listed on Exhibit 302.

15 Q. That would be Dr. Donovan Gordon?

16 A. I have never heard Donovan Gordon before.

17 Q. Was he an animal pathologist of some
18 sort, do you recall?

19 A. Yes.

20 Q. I will ask you if you have ever seen
21 Exhibit 304 before today?

22 A. I have not seen this document before.

23 Q. Okay.

24 Were you aware of the general practice at

1 Industrial Bio-Test for Dr. Fancher to review the
2 reports of these studies before they were
3 released?

4 A. No. I was not aware.

5 Q. Did Dr. Fancher sign some or all of the
6 Industrial Bio-Test reports that you saw?

7 A. I don't recall.

8 Q. Presumably the senior research scientist
9 at Industrial Bio-Test who signed those reports
10 would review not only the reports but the back-up
11 raw data before signing the reports.

12 Do you know whether that was their
13 practice?

14 A. I do not know.

15 Q. Okay.

16 Would you have expected that they did
17 that before signing the reports?

18 A. Not necessarily.

19 Q. Would you have expected that Mr. Wheeler,
20 before he signed the summaries of the Industrial
21 Bio-Test reports that were sent out on Monsanto
22 letterhead, reviewed not only the Industrial
23 Bio-Test report but at least spot checked the
24 underlying data?

1 A. Yes.

2 Q. Okay.

3 And was that your understanding based on
4 the fact that he told you that?

5 A. I don't recall him specifically telling
6 me this.

7 It is the impression I had from the
8 numerous discussions regarding summaries, status.
9 I was of the impression that he had opportunity to
10 see some of the data as these summaries were
11 prepared.

12 Q. On occasion when he would come to
13 Industrial Bio-Test for meetings, he would at
14 least have the opportunity to go through the raw
15 data that was the subject of those studies under
16 discussion at those meetings?

17 A. Yes.

18 MR. MC CONNELL: All right, I am going to let
19 Mr. Karaganis cover what he wants to do and when I
20 get back from court, we will go back to the
21 Industrial Bio-Test documents.

22 This is a good time to take a five minute
23 break, if you need to do that.

24 (Whereupon a short recess was had.)

1 MR. KARAGANIS: Okay.

2 Let the record show that while Mr.
3 McConnell had to attend a motion before Judge
4 Parsons in the Federal District Court in Chicago,
5 I am going to resume my questioning in the areas
6 that I was examining Mr. Papageorge on, and that
7 Mr. McConnell will restart his examination with
8 respect to the Industrial Bio-Test materials upon
9 his return.

10 As a preliminary matter, Mike, we had
11 asked for several items during the course of Mr.
12 Papageorge's deposition and we haven't received
13 them.

14 We asked for all editions of Monsanto
15 documents entitled, "Proper handling of Aroclors
16 and their mixtures in the electrical industry;"
17 all editions of a document called, "The Aroclors
18 physical properties." I will not go through the
19 entire list, other than to say that the various
20 requests are listed in the deposition as we made
21 those requests.

22 I am wondering when we can expect copies
23 of those materials?

24 MR. FRUEHWALD: Those have all arrived at our

Longoria & Goldstine

236 1030

Chicago

1 office. It is about a foot and a-half stack of
2 documents. I have looked through them last week.

3 There appear to be several editions of
4 each of those documents which, from all
5 appearances that I can tell, appear to be a
6 complete set of multiple revisions. Those have
7 now arrived at our offices and will be available
8 for your examination, or we can make a copy,
9 whatever you want to do.

10 MR. KARAGANIS: We specifically wanted, so
11 that we can use them for exhibit purposes, the
12 originals.

13 MR. FRUEHWALD: I know you did that. But what
14 we have is copies.

15 MR. KARAGANIS: You have copies. You don't
16 have originals?

17 MR. FRUEHWALD: That's right. I don't know
18 how many originals there are in this day and age,
19 Joe, but we have got have legible, clean copies
20 that have multiple editions, multiple revisions of
21 those documents. They are now available. They
22 arrived in our office last week.

23 MR. KARAGANIS: And you indicated that there
24 are also some additional documents in your office ---

1 that were not examined under a prior document
2 request; is that right?

3 MR. FRUEHWALD: That is true.

4 MR. KARAGANIS: We will schedule a day next
5 week to go down and see them.

6 MR. FRUEHWALD: Fine.

7 DIRECT EXAMINATION

8 BY MR. KARAGANIS:

9 Q. Mr. Papageorge, during the course of your
10 earlier deposition testimony, we did not have a
11 available to us what has been now marked as
12 Bloomington Deposition Exhibit 174, which is a
13 memorandum dated April 7, 1970. I note that
14 counsel, your counsel, has shown you a copy of the
15 memorandum and the attachments.

16 Are you familiar with that document?

17 A. Yes.

18 I don't see -- oh, the attachment to the
19 cover letter.

20 Q. Yes.

21 A. Yes, I have that.

22 Q. Now, can you tell me who delivered this
23 plan, Exhibit No. 174 is referred to as a plan for
24 managing the pcb problem; who developed it?

1 A. It was developed by a group of Monsanto
2 individuals, and I was the author of the document.

3 Q. Who were the individuals that developed
4 the plan?

5 A. There was, as best I recall, Dr. Richard,
6 Mr. Wheeler, Dr. Keller, Mr. John.

7 Q. Mr. John, what is his first name?

8 A. Ed.

9 Q. J-o-h-n?

10 A. J-o-h-n.

11 Q. All right.

12 A. Mr. Park, attorney.

13 Q. What is Mr. Park's first name?

14 A. P-h-o-c-i-a-n, Phocian.

15 Q. P-h-o?

16 A. P-h-o-c-i-a-n.

17 Q. And his last name is Park?

18 A. Park.

19 Q. Okay.

20 A. Mr. Olson.

21 Q. Mr. Olson.

22 A. Mr. Schalk, S-c-h-a-l-k. I can't recall
23 any others.

24 Q. Now, just for purposes of recollection,

1 Dr. Richard was with what group?

2 A. Research.

3 Q. Research.

4 Mr. Wheeler was with medical?

5 A. Medical.

6 Q. Dr. Keller was with medical?

7 A. Analytical research.

8 Q. Dr. Keller was with analytical research.

9 I am sorry, it was Kelly who was in

10 medical?

11 A. Right.

12 Q. Mr. Ed John?

13 A. Public relations.

14 Q. Mr. Park was the attorney. Mr. Olson?

15 A. Marketing director.

16 Q. And Mr. Schalk?

17 A. Another marketing director.

18 Q. Now, what marketing director or what

19 product did Mr. Schalk market?

20 A. He had the plasticizer application of

21 pcb's.

22 Q. Now, document 174, were there meetings of

23 this group that you have identified in preparation

24 of the plan for managing the pcb problem?

1 A. Yes.

2 Q. Were there either minutes or memoranda
3 reflecting the deliberations that took place or
4 the communications that took place?

5 A. No.

6 Q. None at all?

7 A. No.

8 Q. Was there a policy statement that said
9 don't prepare any memoranda as to what was said?

10 A. No. It is a practice.

11 Q. Just no notes were kept?

12 A. It is the option of the chairman.

13 Q. And who was the chairman of this group?

14 A. I was.

15 Q. You were the chairman of the group.

16 And you directed that no notes be kept?

17 A. No.

18 Q. Did you --

19 A. They all kept notes.

20 Q. They all did keep notes?

21 A. Some of them.

22 Q. Well, as you were discussing items that
23 needed to be addressed, they took notes, didn't
24 they?

1 A. Some of them. Yes.

2 MR. KARAGANIS: I would at this time
3 specifically ask -- although I believe it is
4 included within the prior document request -- all
5 notes, memoranda or other documents relating to
6 the meetings of the working group that Mr.
7 Papageorge has described leading to the
8 preparation of the management plan for the
9 polychlorinated biphenyl environmental problem
10 referenced in or contained in Bloomington Exhibit
11 174.

12 Q. When did the group first meet?

13 A. I don't know.

14 I wasn't assigned the coordinator job
15 when they first started meeting.

16 Q. Well, to your knowledge, when did they
17 first start meeting?

18 A. Sometime in the late sixties. '68, '69.

19 Q. Who was the coordinator prior to you?

20 A. I don't know. They didn't have one.

21 Q. Did they have a chair at all?

22 A. No.

23 Q. In '69, from the period '69 until the
24 time you became a member of this committee, were

1 the members the same?

2 A. Pretty much so. Yes.

3 MR. KARAGANIS: My request for documents would
4 extend to from the inception of this group.

5 Q. Was there a name to the group?

6 A. No.

7 It was an informal discussion group.

8 Q. A discussion group that had as its focus
9 the management of the pcb problem; is that right?

10 A. That is correct.

11 Q. What specific events precipitated your
12 coming up with a management plan for the pcb
13 problem?

14 A. I don't know of any specific event that
15 precipitated the management plan. All I know is
16 that I was requested by my immediate supervisor to
17 develop such a plan.

18 Q. Who was your immediate supervisor?

19 A. Mr. Bergen.

20 Q. And when did he make that request?

21 A. Oh, sometime in February, March of 1970.

22 Q. Was that request made in writing?

23 A. No.

24 Q. Did he provide you with any materials at

1 the time he asked you to develop the plan?

2 A. No.

3 Q. Specifically to the best of your
4 recollection, what did he say to you at the time
5 he made the request?

6 A. Something along the lines that now that
7 you're in your assignment, you ought to prepare a
8 plan that the two business groups involved can
9 agree to and follow in its implementation.

10 Q. Now, the two business groups being the
11 plasticizer division and the organic chemical
12 division?

13 A. No. Plasticizers business group and the
14 functional fluids business group, both in the
15 organic division.

16 Q. Now, with respect to the content of the
17 management plan, were documents, memoranda, any
18 piece of paper given to you to use in your
19 drafting of the management plan?

20 A. Yes. There were contributions from
21 virtually everybody on that panel.

22 Q. Written contributions?

23 A. Written. Some were typed, some were
24 handwritten.

1 Q. All right.

2 A. That I used in putting together, as I
3 recall, several drafts of this document, before we
4 arrived at this final draft.

5 Q. Several drafts of what has been marked as
6 Bloomington Deposition Exhibit 174?

7 A. Yes.

8 MR. KARAGANIS: Again, I would request that
9 all drafts of Exhibit 174 as well as all
10 contributions by members of the working group be
11 produced.

12 Q. Now, this working group that had been
13 meeting since '69 and was obviously meeting in the
14 spring of 1970 to prepare Bloomington Deposition
15 Exhibit 174, how long did that group continue?

16 A. That group was never officially formed or
17 officially discontinued. The members were always
18 available to meet as appropriate, called for by
19 any participant.

20 Through the years, some members were
21 replaced by others. For example, Mr. Olson was
22 replaced by Mr. Gossage.

23 Q. When was that?

24 A. Oh, about 1971, '72.

1 Q. Well, to your recollection, how long did
2 the group meet? In other words, what year did
3 they disband or no longer meet?

4 A. They never did disband. It is just that
5 the need for meetings became less frequent.

6 I can't recall when the group met as a
7 group last. It was somewhere about 1973, '72,
8 '73.

9 Q. Was there any group of Monsanto employees
10 after 1972, 1973 that had a responsibility for
11 addressing the pcb problems and met as a group
12 following 1973?

13 A. There are individuals still involved with
14 the pcb situation in that period '73 and on.

15 Some of those individuals would meet on
16 occasion to address specific matters that would
17 come up. I don't recall that all of them met as a
18 group from that point on.

19 Q. During the period that you are aware of,
20 which is from 1970 on, other than the earlier
21 drafts and contributions to Bloomington Exhibit
22 No. 174, did the group produce either drafts or
23 suggestions or final documents other than 174?

24 A. At what point in time?

1 Q. After 174.

2 A. I am trying to recall. I just can't
3 recall at the moment.

4 Q. Now, 174 indicates that the management
5 plan was submitted to the corporate management
6 committee, is that what it was called?

7 A. Yes.

8 Q. When did the corporate management
9 committee approve the plan?

10 A. They did not approve this plan.

11 Q. They did not.

12 They did not approve the plan that is
13 listed in 174?

14 A. That's correct.

15 Q. What plan did they approve?

16 A. They approved a modification of this plan
17 which was presented at a subsequent meeting.

18 MR. KARAGANIS: Mike, can I get --

19 MR. FRUEHWALD: You got it. That is the next
20 meeting. You have got both the April meeting and
21 the May meeting in your documents.

22 MR. KARAGANIS: The document that I have here
23 references a May 11 --

24 MR. FRUEHWALD: Exhibit 175 is the minutes of

1 April 20, 1970.

2 MR. KARAGANIS: Yes.

3 MR. FRUEHWALD: Which was the meeting relating
4 to Mr. Papageorge's Exhibit 174.

5 MR. KARAGANIS: Right.

6 MR. FRUEHWALD: Exhibit 176 is Mr. Mason's
7 presentation of the modification to the next
8 meeting, and Exhibit 177 is the CMC's approval of
9 that plan.

10 BY MR. KARAGANIS:

11 Q. Maybe we can clarify these here.

12 Exhibit 174 is a textual document
13 indicating a series of program items that would
14 lead to the accomplishment of suggested
15 objectives, isn't that correct?

16 A. Yes.

17 Q. All right.

18 Now, in the documents that have been
19 referred to by Mr. Fruehwald, I don't see any
20 other drafts of a written presentation. I see
21 some charts, which are -- I will just go through
22 the package. I have the entire package that was
23 given to us.

24 MR. FRUEHWALD: They have all been marked as --

1 exhibits in the prior deposition.

2 MR. KARAGANIS: The 4/20 minutes, April 20
3 minutes are 175.

4 MR. FRUEHWALD: Right.

5 MR. KARAGANIS: The John Mason memorandum of
6 May 1 is 176. And the minutes of the corporate
7 management committee of May 11 are 177.

8 MR. FRUEHWALD: Correct.

9 BY MR. KARAGANIS:

10 Q. Now what I am asking is, is there a later
11 version of 174, which is a written document?

12 A. No.

13 Q. Did this written document 174 go to the
14 corporate management committee in any form?

15 A. Yes.

16 Q. In what form did it go to the corporate
17 management committee?

18 A. The form you see there in front of you.

19 Q. Okay.

20 Now, I continue to be confused. The
21 written document, 174 --

22 A. Yes.

23 Q. -- was transmitted to the corporate
24 management committee?

9

1 A. There were copies handed out at the
2 meeting.

3 Q. At which meeting?

4 A. The April 20 meeting.

5 Q. And what occurred at the April 20
6 meeting?

7 A. The members of the CMC accepted parts of
8 that proposed plan and wanted modifications made
9 to other parts. And asked that we go back and
10 review our plan and speed up some -- particularly
11 speeding up some of the target dates that we had
12 established, to accomplish some of those things
13 that we had suggested sooner.

14 Q. Directing your attention to Exhibit 175,
15 which is the minutes of the corporate management
16 committee meeting of April 20, 1970.

17 Can you tell me where they rejected parts
18 of the plan?

19 A. Under conclusions.

20 Q. Yes.

21 A. There is reference to the committee felt
22 the division had taken major steps to resolve the
23 problem, more affirmative action must be taken.

24 Q. So that would it be fair to say that the

1 committee felt what was outlined in Exhibit 174,
2 while being steps towards resolving the problem,
3 that additional action had to be taken?

4 A. That's right. And that is reflected
5 under conclusions of the minutes of that meeting.

6 Q. And what additional affirmative action
7 was required?

8 A. I don't know. The gist of your question,
9 it is just a more proactive stance on Monsanto's
10 part, seeking out audiences, sharing data.

11 Q. Can you tell me in the April 20 meeting,
12 did the corporate management committee approve the
13 actions that had been taken thus far?

14 A. Yes.

15 Q. Is that reflected in the minutes?

16 A. I see that implied in the first sentence
17 under conclusions.

18 Q. The fact that the committee expressed the
19 opinion that the division had taken major steps
20 was a statement of approval?

21 A. Yes.

22 Q. And would it be fair to say that the
23 minutes reflect the opinion and judgment of the
24 management committee?

1 A. Yes.

2 Q. Now, can you tell me, looking at these
3 minutes, it indicates that Mr. Springgate also
4 participated in the report. Did all of the
5 individuals shown under Exhibit 175, organic
6 division report on pcb status, were all those
7 individuals present at the meeting?

8 A. Yes.

9 Q. And who was Mr. Springgate?

10 A. He is the business director of the
11 plasticizers group.

12 Q. Now, was Mr. Putzel present at the
13 meeting?

14 A. He is a member of the committee.

15 Q. And Mr. Putzel was the general counsel?

16 A. Corporate general counsel.

17 Q. Corporate general counsel. And in
18 approving this, he was sitting in a capacity as a
19 member of the management committee, though, was he
20 not?

21 A. Yes. That is correct.

22 Q. So that the decision that was being made
23 was a management decision, was it not?

24 A. Yes.

1 Q. Is Mr. Putzel still with the company?

2 A. No.

3 MR. KARAGANIS: We would make a request for
4 the notes and records and other documents of all
5 members of the management committee as they relate
6 to consideration of pcb's, either at the April 20
7 or May meetings of the corporate management
8 committee, or any prior or subsequent meetings.

9 Q. Who is Mr. Eck?

10 A. At that time Mr. Eck was the president of
11 Monsanto and chief executive officer.

12 Q. And Mr. Eck was also obviously a member
13 of the management committee, was he not?

14 A. Yes.

15 Q. Who was Mr. Gillis?

16 A. At that time Mr. Gillis was a vice
17 president of the corporation.

18 Q. With what responsibility?

19 A. Marketing, administration.

20 Q. Given the structure that you described in
21 your earlier testimony, Mr. Gillis would have been
22 one of the vice presidents responsible for a
23 certain function. You had indicated that the
24 divisions were below corporate management and then

1 at the corporate management level there were vice
2 presidents in charge of given functions, isn't
3 that correct?

4 A. Yes, that's right.

5 Q. And the function of marketing would be
6 Mr. Gillis' responsibility?

7 A. Yes.

8 Q. And he reported directly to Mr. Eck?

9 A. Yes.

10 Q. To your knowledge did Messrs. Eck, Putzel
11 or Gillis recommend actions to demonstrate the
12 affirmative program being taken?

13 I am referring to page 2 of the minutes.

14 A. I am led to believe so. I was never
15 personally told so.

16 Q. Well, who led you to believe that they
17 had made such a recommendation?

18 A. My supervisor, Mr. Bergen, indicated to
19 me.

20 Q. And what specifically did they recommend?

21 A. Specifically, I just don't recall the
22 specifics.

23 Q. Now, how often did the corporate
24 management committee meet?

1 A. Monthly.

2 Q. What criteria, if any, formal or
3 informal, determined whether a given item of
4 business would be on the agenda for the corporate
5 management committee?

6 A. I do not know.

10

7 Q. Had you or anybody else involved with
8 pcb's to your knowledge reported to the corporate
9 management committee prior to April 20 of 1970 on
10 the pcb problem?

11 A. Yes.

12 Q. Who had done so?

13 A. I don't recall the individual. Someone
14 from the organic division management.

15 Q. And the nature of the reports in any
16 documents submitted would be reflected in the
17 prior minutes of the corporate management
18 committee, is that correct?

19 A. Yes.

20 MR. KARAGANIS: Again, I believe we have
21 already requested it, but to the extent of any
22 additional clarification, we would like all prior
23 minutes of the corporate management committee
24 relating to pcb's and any documents prepared or

1 submitted in relationship to the corporate
2 management committee, either by persons providing
3 information to the committee or by members of the
4 committee themselves.

5 Q. Directing your attention to 176, Exhibit
6 176, why was Mr. Mason the person selected to make
7 the presentation on May 11?

8 A. He was selected by his supervisor, Mr.
9 Minckler. I do not know why Mr. Minckler selected
10 Mr. Mason.

11 Q. Now, neither Mr. Minckler nor Mr. Mason
12 were part of the working group on pcb's, is that
13 correct?

14 A. That is true.

15 Q. Then how is it that Mr. Mason and Mr.
16 Minckler were involved in making the presentation?

17 A. Three of us from the working group had
18 made arrangements to travel to Europe and we were
19 out of the country when this second meeting took
20 place. Mr. Minckler then chose Mr. Mason to make
21 the presentation.

22 Q. Now, just for the record, excuse my
23 confusion on people's roles. Mr. Minckler and Mr.
24 Mason, what were their respective roles?

1 A. Mr. Minckler was the -- I don't know the
2 exact titles, but he was the managing director or
3 general manager of the organic division.
4 Reporting to him were two assistant general
5 managers, one of them was John Mason.

6 And reporting in to John Mason was Mr.
7 Bergen, who headed up the functional fluids
8 business group.

9 Q. Now, who briefed Mr. Mason to enable him
10 to make his presentation?

11 A. Well, I met with him just before we left
12 for Europe, but I do not know who else he talked
13 to following that discussion with me.

14 Q. Who prepared the charts that are attached
15 to Exhibit 176?

16 A. I do not know.

17 Q. Did you have any hand in preparing them?

18 A. Did I. No.

19 Q. Did any member of the working group have
20 any hand in preparing them?

21 A. I do not know.

22 Q. There is a reference in 176, there is a
23 statement, quote:

24 "The CMC gave its a

1 approval for us to implement
2 the plan as outlined on the
3 two sheets marked present
4 plan."

5 Can you tell me which sheets of Exhibit
6 176 are the present plan?

7 A. There are two sheets with the numbers at
8 the lower righthand corner, the last 4 digits
9 appear to be on one of them, 0560, and the second
10 one 0561.

11 Q. Now, 176 references the fact that a
12 progress report was required to be made around the
13 1st of August.

14 To your recollection, were there progress
15 reports made to the corporate management
16 committee?

17 A. I don't recall any reports with
18 specific -- in that area. I just don't recall.

19 Q. Well, was the subject of pcb's ever
20 raised with the corporate management committee
21 again?

22 A. I don't know.

23 Q. To your knowledge, you have no knowledge
24 as to whether the corporate management committee

1 was ever advised as to any further pcb actions?

2 A. That is correct.

3 Q. No one ever told you whether they had
4 been advised or not?

5 A. That is correct.

6 MR. KARAGANIS: To the extent we haven't
7 requested them again -- and we have -- we would
8 like any minutes of board of directors meetings,
9 the board of directors of Monsanto, the parent
10 company; or any meetings. I would assume the
11 parent company would cover that. But, to the
12 extent that pcb's were discussed at either
13 subsidiaries or division level, where boards of
14 directors might meet, we would ask for all
15 minutes.

16 Q. Just as an aside, you had indicated in
17 the post '71 reorganization, that the divisions
18 became named companies?

19 A. Yes.

20 Q. Did those companies have formal boards of
21 directors and officers?

22 A. No.

23 Q. So the boards of directors of the
24 companies would be the boards of directors of the --

1 parent?

2 A. I'm not --

3 Q. Were there any boards of directors of any
4 of the units of organization of Monsanto as
5 opposed to Monsanto Company?

6 A. No.

7 Q. Okay.

8 When we speak of board of directors, we
9 are talking about Monsanto Company; is that
10 correct?

11 A. Yes.

11

12 Q. Now, as of this time, at the time of
13 April 1970, you were in charge of the pcb problem
14 for the company, were you not?

15 A. I don't know that I was in charge of the
16 problem. I was coordinating the information
17 relating to the problem.

18 Q. And coordinating the activities with
19 respect to the company, were you not?

20 A. Yes.

21 Q. You had a title manager of environmental
22 control and your assignment was addressing your
23 total time to the then evolving pcb issue, was it
24 not?

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1 A. Correct.

2 Q. Who prepared the charts that are in
3 Exhibit 176?

4 A. I don't know.

5 Q. Who prepared the back-up material for the
6 charts, in terms of what the control program was
7 going to be?

8 A. I don't know.

9 Q. You had no hand in providing Mr. Mason or
10 Mr. Minckler any of the information used in these
11 charts?

12 A. Some of the information, for example,
13 that appears under the present plan documents we
14 just referred to came out of that report that I
15 used to make a presentation to the CMC on April
16 20, 1970.

17 Q. Now, directing your attention to the
18 Exhibit 176, slide 3, which is on page number
19 0543, it indicates that one of the objectives was
20 marketing biphenyls only for closed-system
21 applications where control was possible, isn't
22 that correct?

23 A. Correct.

24 Q. And where by control you meant control of...

1 release to the environment, did you not?

2 A. Yes.

3 MR. FRUEHWALD: You are speaking again of
4 using the term you there.

5 MR. KARAGANIS: As the corporation.

6 Q. When you said you didn't write this
7 chart.

8 But I am asking you now the question
9 where the term control is mentioned, you as a
10 representative of Monsanto are saying that
11 Monsanto meant controlling release to the
12 environment?

13 A. You mean controlled by us, the trucking
14 firms, the railroad delivery?

15 Q. Controlled by everybody.

16 A. Everybody involved with the material can
17 control it.

18 Q. Right.

19 To prevent its release into the
20 environment; isn't that right?

21 A. Right.

22 Q. Now, are you familiar with the term
23 closing the loop or closed loop?

24 A. Yes.

1 Q. Was it used in your discussion?

2 A. I didn't use it.

3 Q. Was it used in the discussions of the
4 working group?

5 A. No.

6 Q. Someone other than the working group came
7 up with the term a closed loop?

8 A. It was Mr. Mason's description of the
9 system that he visualized.

10 Q. He visualized a system, did he not, where
11 pcb's would not be released into the environment
12 from manufacture, to transportation, to use in
13 production, to recycled back to Monsanto; isn't
14 that right?

15 A. When you put it that way, you are talking
16 about down to a molecule.

17 At no time in an industrial setting can
18 you say none will escape. You control the escape
19 to a level where the harm is acceptable.

20 Q. All right.

21 Controlling the escape to a minimum
22 number; isn't that right?

23 A. Some acceptable number.

24 Q. To some acceptable minimum. Would that

1 be fair to statement?

2 A. That would be correct.

3 Q. Well, controlling the release through
4 some kind of mechanism that closed the loop. He
5 was talking about a loop, was he not, closing the
6 loop?

7 A. Describing loop as avoiding
8 indiscriminate discharges.

9 Q. But the loop included the elements of
10 production, usage?

11 A. Yes.

12 Q. Discharge?

13 A. Yes.

14 Q. Landfilling and incineration, did it not?

15 A. Yes.

16 Q. And recycle back to Monsanto, did it not?

17 A. Yes.

18 Q. So when we talk about the loop, we are
19 talking about the entire process of manufacture,
20 distribution, use?

21 A. Use.

22 Q. Disposal and recycle, isn't that correct?

23 A. Yes.

24 Q. Now, there is a reference here to a

1 target limit of 10 parts per billion, and I am now
2 referring to page 0553 of this exhibit that you
3 have it in front of you, the bar chart.

4 Who set the 10 parts per billion target
5 limit, how was that established?

6 A. That was established by consensus opinion
7 from the research representative, the
8 manufacturing representative and the analytical
9 chemist.

10 Q. Now, representatives on your committee?

11 A. Yes.

12 Q. So the 10 ppb was a consensus of which
13 individuals?

14 A. Let's see, that would be I didn't mention
15 previously a Mr. Savage would have been on that
16 group. And he would represent the manufacturing
17 function.

18 Q. All right.

19 A. And Dr. Keller would represent the
20 analytical.

21 Q. There was a third?

22 A. The third would be an engineering
23 representative. At that time it was Mr. Kuntz,
24 K-u-n-t-z. Robert Kuntz.

1 Q. And to your recollection, what was the
2 basic technology for achieving a 10 parts per
3 billion discharge limit?

4 A. Basic technology is avoidance of loss or
5 spillage.

6 Q. If you you had a stream, an effluent
7 stream in excess of 10 parts per billion, what
8 technology was suggested to achieve 10 parts per
9 billion as an effluent level?

10 A. I need a clarification of your question.

11 Q. Yes.

12 A. Does this mean that I have already
13 contaminated a waterstream?

14 Q. Yes.

15 A. To exceed that level?

16 Q. Yes.

17 A. What technology do I use to avoid it
18 happening again or do I clean up?

19 Q. To clean up.

20 A. To clean up. Several technologies were
21 tried. Entrapment in sand beds. Adsorption on
22 carbon beds, centrifuging. Each of those helped
23 to some degree.

24 Q. Would you describe what centrifuging is?

1 A. This is the exposure of a liquid to
2 high-speed rotating forces that separate the
3 heavier particles from the lighter particles.

4 Q. And the heavier particles are what,
5 settled, how do you get the heavier particles out
6 of the water stream?

7 A. They, the heavier settle and the lighter
8 float, brought about by this spinning action.

9 Q. How did you get the lighter particles out
10 of the stream?

11 A. You draw off the top of the unit where
12 the lighter particles find themselves and the
13 heavier particles are drawn off from the bottom.

14 Q. How do you dewater the liquid-phase
15 portion of the material that you draw off?

16 A. It is already -- in the case of pcb's,
17 they are heavier and they are obviously distinct
18 and different from the water layer.

19 Q. Were you able to get down to 10 parts per
20 billion with a centrifuge?

21 A. No.

22 Q. What additional equipment did you need to
23 get down to 10 parts per billion?

24 A. You are assuming we got to 10 parts per

1 billion.

2 I don't know of any situation where we
3 actually reached 10 parts per billion. That was
4 the target.

5 Q. At the three plants that are mentioned
6 here, what treatment technology was ultimately
7 used?

8 A. Gravity separation. Sumps to capture
9 material that didn't leak. And that is it.

10 Q. Flow filtration?

11 A. flow filtration.

12 Q. Directing your attention to Exhibit 176,
13 page marked 0554. Can you tell me, are you
14 familiar with that chart?

15 A. I have seen it. Yes.

16 Q. Had you seen any of the charts or any of
17 the materials in Exhibits 174 through 176 at the
18 time of your prior deposition with me?

19 A. Yes.

20 Q. They had been shown to you?

21 A. Yes.

22 Q. Directing your attention to page 0554 of
23 176, talking about the closed-loop strategy,
24 closing the loop as, Mr. Mason had referred to it.

1 This was talking about closing the loop for
2 various customer businesses, was it not?

3 A. Yes.

4 Q. It wasn't talking about closing the loop
5 for Monsanto plants; it was talking about closing
6 the loop for the various markets that you dealt
7 with; isn't that right?

8 A. That's right.

9 Q. Directing your attention to the hydraulic
10 fluids business, which is on 0557.

11 A. I see it.

12 Q. That was a recognition that since you
13 couldn't control the hydraulic fluids loop, that
14 you are going to phase out of the business; isn't
15 that right?

16 A. That is correct.

17 MR. FRUEHWALD: The you there, are you talking
18 about -- you said since you couldn't control it,
19 are you referring to Monsanto or are you referring
20 to the customers?

21 MR. KARAGANIS: No, I am referring to
22 Monsanto.

23 A. We had no control on any uses once it
24 leaves our plant gates.

1 BY MR. KARAGANIS:

2 Q. Excuse me.

3 The recognition here was that you were
4 getting out of -- you, Monsanto, when I use the
5 word you, I am talking about Monsanto -- that you
6 were getting out of the hydraulic fluids business
7 because you could not control its release; isn't
8 that right?

9 A. No.

10 None of us involved with hydraulic fluids
11 believed that that application could be controlled
12 adequately, the user as well as the supplier.

13 Q. Neither the supplier nor the user could
14 control the release, is that correct?

15 A. That's right.

16 Q. And that with respect to NCR, the sales
17 to NCR, what was the decision with respect to the
18 ability of the supplier and/or the user to
19 control?

20 A. There again, it was quite obvious that we
21 could not control the ultimate disposal of the
22 product and keep it out of the environment.

23 Q. So, when you say we there, this is a
24 combination of the supplier and the user; isn't

13

1 that right?

2 A. There is two types of users. There is
3 the person that makes the paper and then there is
4 the ultimate user like the bank teller.

5 Q. Yes.

6 A. So no one involved with that material.

7 Q. No one in the loop could control the
8 disposal; isn't that right?

9 A. That is correct.

10 Q. And as a matter of fact, as part of the
11 loop, you, being Monsanto, had a program where
12 you, Monsanto, could along with the user control
13 disposal; one of the elements was a recycle back
14 to Monsanto, was it not?

15 A. That is one of the options. But recycle
16 also implies Monsanto's customer has a recycling
17 system.

18 Q. There could be a customer recycle system?

19 A. Or Monsanto.

20 Q. Or Monsanto recycle system?

21 A. Yes.

22 Q. All right.

23 But part of controlling the loop or
24 closing the loop in some instances involved

1 Monsanto controlling the disposal and return to
2 Monsanto; isn't that right?

3 A. For a minor part of it.

4 Q. Now, as to plasticizers, your decision
5 there was that you, along with your customers,
6 could not control the disposal or release of pcb's
7 from the plasticizer market; isn't that right?

8 A. That is correct.

9 Q. Now, as to heat-transfer fluids and
10 transformer and capacitor dielectrics, the
11 decision there was to continue sales on the
12 premise that the loop could be controlled; isn't
13 that right?

14 A. Yes.

15 Q. And when we say the loop could be
16 controlled, it could be controlled by a
17 combination of the seller and the manufacturer and
18 the user; isn't that right?

19 A. Yes.

20 Q. Now, the deadlines that are contained in
21 the program, I am looking at the second page of
22 the two pages called the present plan, that is 560
23 and 561, you established a December 31, 1970
24 deadline on the capacitor industry, did you not?

1 A. Yes. That is shown.

2 Q. That deadline was to close the loop as
3 far as possible by December 31, 1970; isn't that
4 right?

5 A. That is one part of that sentence.

6 Q. As far as closing the loop goes?

7 A. Yes.

8 Q. The deadline was to close it as far as
9 possible by the end of 1970; is that right?

10 A. Yes.

11 Q. And you also had another program to
12 replace 1242 with what ultimately was called 1016;
13 isn't that right?

14 A. Right.

15 Q. So, would it be fair to say, directing
16 your attention back to the diagram that says the
17 closed loop, that for the capacitor industry by
18 the end of 1970, you hoped to -- you being
19 Monsanto -- hoped to close the loop as far as
20 possible from the standpoint of production, usage,
21 disposal and recycle; isn't that right?

22 A. Yes.

23 Q. Now, directing your attention to the
24 period, this is now May of 1970 is when this

1 decision was made; is that right?

2 A. Yes.

3 Q. What specifically did you do to close the
4 loop for the capacitor industry by the end of
5 1970, you being Monsanto?

6 A. Communication was the big activity.
7 Sharing Monsanto experiences with control with
8 customers. Offering an opportunity to our
9 customers to return unusable material to Monsanto,
10 where we would store it until the incinerator was
11 placed in service. That is all I can remember at
12 the moment.

13 Q. I am sorry. Let's go back over those.
14 One was information to customers. Two
15 was what?

16 A. I don't know what order I described them.
17 But another feature was offering our
18 customers the opportunity to ship to Monsanto
19 unusable pcb material, liquid material, for future
20 incineration.

21 Q. Well, as a matter of fact, as we
22 described the last time, sometimes it was
23 incinerated and sometimes you, Monsanto,
24 landfilled it; did you not?

1 A. We never landfilled liquid pcb's.

2 Q. Sometimes you landfilled materials that
3 weren't suitable for incineration; isn't that
4 right?

5 A. Solid material.

6 Q. From your customers?

7 A. Not from customers, no.

8 Q. For a while you had material that you
9 took back for distillation, did you not, before
10 you had it incinerated?

11 A. Yes.

12 Q. And is it your testimony that where that
13 material was not suitable for distillation, it was
14 never landfilled?

15 A. That is correct.

16 Q. It was stored?

17 A. That's right.

18 Q. Because it was your feeling that putting
19 liquid in landfills was not an appropriate
20 disposal mechanism; is that right?

21 A. That's right.

22 MR. KARAGANIS: Off the record.

23 (Discussion had off the record.)

24 Q. Directing your attention to Exhibit 77.

14 1 MR. FRUEHWALD: Those were in the first
2 deposition. I don't think I brought that.

3 (Whereupon a short recess was had.)

4 MR. KARAGANIS: Let's go back on the record.

5 Q. Directing your attention to what has been
6 marked as Bloomington Deposition Exhibit No. 77,
7 which is a sales contract with an acceptance date
8 of June 22, 1970.

9 Are you familiar with that document?

10 A. I have seen it before.

11 Q. Now, as part of the closing the loop
12 program, the contract term that is set forth
13 there, was that part of closing the loop, making
14 sure that there was a minimization of the release
15 of pcb's into the environment?

16 A. Yes.

17 Q. And who developed that strategy?

18 A. Which strategy are you talking about,
19 the --?

20 Q. The strategy of the contract terms that
21 would enable Monsanto to exercise some degree of
22 contract authority over the client's activities.

23 A. I don't know.

24 Q. It was somebody at Monsanto, was it not? --

1 A. Yes.

2 Q. Was it ever discussed with you?

3 A. No.

4 Q. Was it ever discussed among this working
5 group, the people addressing the pcb problem?

6 A. Always. Many times, yes.

7 Q. The use of the contract, the use of the
8 contract term?

9 A. No.

10 Q. Directing your attention specifically to
11 the language that says that Monsanto can terminate
12 the contract. I am referring now to the language,
13 quote:

14 "Buyer agrees to use
15 its best efforts to prevent
16 such products from entering
17 into the environment through
18 spills, leakage, use,
19 disposal, vaporization or
20 otherwise. In the event
21 seller determines that, in
22 "order to prevent
23 contamination of the
24 environment, it is necessary

1 to discontinue the sale to
2 buyer of polychlorinated
3 biphenyls for the applications
4 contemplated by buyer, seller
5 may terminate this agreement
6 at any time by giving buyer at
7 least ninety days prior
8 written notice."

9 Now, was that language ever discussed in
10 your presence?

11 A. No.

12 Q. Was that concept ever discussed in your
13 presence, the idea of the seller terminating?

14 A. No.

15 Q. This contract clause just came from
16 somebody at Monsanto, and you don't know from
17 whom?

18 A. That is correct.

19 MR. FRUEHWALD: As was his prior testimony
20 when you asked him those questions a couple months
21 ago.

22 BY MR. KARAGANIS:

23 Q. You are saying that the June '70 contract
24 clause was not part of the program that was

1 reflected and approved by the corporate management
2 committee?

3 A. I am not saying that.

4 Q. Was it part of the program that was
5 approved by the corporate management committee in
6 May of 1970?

7 In May of 1970, you testified that the
8 corporate management committee adopted a program
9 for controlling pcb's. Isn't that correct?

10 A. That is correct.

11 Q. Now, was the contract clause that I have
12 shown you in Exhibit 77 part of that program?

13 A. Yes.

14 Q. Okay.

15 Now, had that contract clause concept
16 ever been presented to the management committee?

17 A. No.

18 Q. So it was a decision by someone below the
19 management, the specific use of a contract clause?

20 A. Yes.

21 Q. All right.

22 Who would that person have been?

23 A. Well, it could be any one of several
24 people. It could be Mr. Minckler, general manager

1 of the division. It could be Mr. Bergen, the
2 director of the business group, or it could be
3 let's see in 1970, it could have been Mr. Olson,
4 the director of marketing.

5 Q. Was there ever any discussion with you
6 regarding procedures for making the determination
7 as to whether the customer was preventing the
8 release of pcb's into the environment?

9 A. No.

10 Q. Directing your attention badge to 174,
11 Mr. Papageorge, in the last sentence of the last
12 full paragraph on page 0531 of that exhibit you,
13 Monsanto, and you as the author of this document
14 state, and I quote:

15 "We are deliberately
16 assuming an aggressive posture
17 and working closely with
18 customers, co-producers and
19 regulatory agencies to prevent
20 precipitous action."

21 What do you mean by "precipitous action"?

22 A. I am referring to action that reflects an
23 overreaction to misunderstandings, emotions and is
24 unwarranted, if compared to the facts that are

1 available.

2 Q. Was the precipitous action you were
3 concerned about a ban on the sale or use of pcb's?

4 A. The precipitous action varies with the
5 groups addressed. If a ban is considered, that,
6 of course, would affect the regulatory agencies
7 and their ability to create bans.

8 Q. Let's take the term ban. In effect, in
9 the plasticizer industry, you banned the use of
10 pcb's by refusing to sell it to the plasticizer
11 industry; isn't that right?

12 A. That is a definition of the word ban,
13 yes.

14 Q. And it is correct that you, by your
15 unilateral action, you being Monsanto, you
16 prevented the use or banned the use of pcb's in
17 the plasticizer industry by cutting off sales;
18 isn't that right?

19 A. Not really. They could still get it
20 imported or another company could start making it.
21 So it is not a true ban in that sense.

22 Q. It was a ban in the sense that nobody was
23 going to get Monsanto pcb's anymore; isn't that
24 right?

1 A. Correct.

2 Q. Now, directing your attention to page 2
3 of the memorandum, you state, and I am
4 paraphrasing the sentence, quote, "In those uses
5 where control of spillage and disposal can be
6 rigidly exercised," the manufacture of pcb's
7 should be continued.

8 I am directing your attention to the
9 third sentence on that page.

10 A. I see it.

11 Q. And directing your attention to the
12 second to the last sentence, quote, "Uses of
13 Aroclors which lead to environmental contamination
14 and cannot be controlled will be discontinued."

15 Do you see that sentence?

16 A. Yes, I do.

17 Q. So again, and you have described this
18 before, basically where the control of the
19 spillage and disposal can be, where it can be
20 controlled, you were going to continue the sale;
21 but where you couldn't control it, it was going to
22 be discontinued; isn't that right?

23 A. If you is a generic, applies to anybody
24 involved. That is your question, you used the

1 word you.

2 Q. How would Monsanto control the disposal
3 of pcb's in the capacitor industry for a customer
4 who was engaged in independent discriminate
5 dumping of pcb's?

6 A. Monsanto can't control it.

7 Q. Would Monsanto continue sale to such a
8 person?

9 A. Yes. Under certain conditions.

10 Q. If they were dumping all their waste pcb
11 down a sewer, without taking care to collect it
12 and send it back, the liquid pcb was going down a
13 sewer, would you continue sale under those
14 circumstances?

15 A. Yes. We would be forced to, I think. I
16 am not a lawyer, so I can't tell you all the
17 ramifications of indiscriminate discontinuation of
18 sales.

19 Q. Now, Mr. Papageorge, I am going to ask
20 you a hypothetical question.

21 If you found that a customer of
22 dielectric pcb's instead of sending liquid pcb's
23 off for storage and/or incineration was depositing
24 those liquid pcb's into a landfill containing sink

1 holes or a gravel pit, would you continue to sell
2 pcb's to that customer under the terms of the
3 contract identified as Exhibit 77?

4 A. Yes.

5 Q. Even though that customer had available
6 to it storage and/or incineration?

7 A. I find it difficult to answer your
8 question because I did not have the authority
9 to --

10 Q. I am asking you now as the official
11 corporate representative of Monsanto, Mr.
12 Papageorge, would Monsanto continue --

13 A. Representing Monsanto in what matter,
14 sir?

15 Q. In this deposition, on all matters
16 covered in this deposition.

17 Would Monsanto continue to sell to a
18 customer pcb's under the terms of Deposition
19 Exhibit 77?

20 A. I don't know. I honestly don't know the
21 answer to that.

22 Q. You don't know the answer to that?

23 A. No. I don't.

24 Q. All right.

1 Mr. Papageorge, I am going to ask you to
2 assume that you have the decision-making
3 authority, whether to continue to sell to a
4 customer that you know is dumping liquid pcb's
5 into a landfill containing sink holes; instead of
6 sending them off for storage and disposal.

7 Would you continue to sell to that
8 customer under the terms of Exhibit 77?

9 MR. FRUEHWALD: This is a hypothetical?

10 MR. KARAGANIS: This is a hypothetical
11 question.

12 MR. FRUEHWALD: It doesn't follow the facts in
13 this case, but it is a hypothetical. Right.

14 A. I would need much more information than
15 you are able to give me in a short sentence.

16 I would need to know the true conditions
17 of that disposal site. Whether there would be any
18 migration of material.

19 BY MR. KARAGANIS:

20 Q. I am going to ask you to assume migration
21 of material.

22 A. Assume migration.

23 Then I would have to know what harm would
24 that migration create. Would it be contaminating

1 fish? Would it be contaminating drinking water?
2 I would have to know the effects of that
3 migration.

4 Q. So, Mr. Papageorge, if you were asked to
5 testify in this case, and again I am asking, let's
6 just take Monsanto, let's forget the customers for
7 a minute; would you as manager of environmental
8 control at Monsanto continue to dispose of liquid
9 pcb's in a landfilling containing sink holes in
10 lieu of the option of storage and incineration?

11 A. Monsanto would store and incinerate.

12 Q. It would not put it in sink holes, would
13 it, or put it in landfills containing sink holes,
14 isn't that right?

15 A. That is correct.

16 Q. It would not do so because that was
17 considered a risk to the environment; isn't that
18 right?

19 A. Yes.

20 Q. Now, as the official representative of
21 Monsanto in this deposition, you have testified
22 you don't know what Monsanto would do if a
23 customer were dumping in a landfill with sink
24 holes; isn't that right?

1 A. That is correct.

2 Q. And you personally, if you had the
3 authority to cut off a contract, cut off sales, do
4 not know whether you would cut off a contract with
5 a customer who was dumping liquid pcb's into a
6 landfill with sink holes?

7 A. It depends on the kinds of information I
8 am able to gather in a broad, very broad context
9 before I would take the action no more sales.

10 Q. All right.

11 Let me put the following hypothetical to
12 you, then.

13 Let's assume that the landfill contains
14 sink holes, is underlain by fractured limestone
15 geology, and that it is known to be leaking pcb's
16 into the groundwater.

17 Under those circumstances, would you
18 require the customer as a condition of sale to use
19 either storage and/or incineration in lieu of
20 dumping liquids?

21 A. I would strongly recommend that. I would
22 also I need to know is this groundwater brackish
23 water or does it have potential for use as potable
24 water.

1 Q. Assume that it has potential for use as
2 potable water. Would you still continue to allow
3 the customer to take pcb's from you and dispose of
4 them in such a landfill?

5 A. Only until I have exhausted all appeals
6 to the higher management of that company.

7 Q. And after you have exhausted all appeals
8 and higher management says we are going to
9 continue dumping there, what would you do?

10 A. Then I would seriously consider
11 terminating. That is a personal opinion.

12 Q. And if again, after all appeals, the
13 customer continued to dump, would you terminate,
14 as a personal opinion?

15 A. I would. Yes.

16 Q. Would you agree as a layman, as someone
17 who is familiar with the sales relationship of
18 Monsanto, I am not asking for a legal opinion, I
19 am asking for as part of your program, if Monsanto
20 found that a customer was failing to prevent
21 contamination of the environment, Monsanto had the
22 right to terminate, did it not?

23 MR. FRUEHWALD: I am going to interpose the
24 objection and instruct the witness not to answer.

1 You are asking him as a layman to give an
2 answer to a legal opinion question. He is not
3 qualified to do that and not to speak on behalf of
4 the company in that respect.

5 So I am going instruct the witness not to
6 answer and object to the question on the grounds
7 that it is asking a layman for legal opinion which
8 is beyond his capability to answer.

9 BY MR. KARAGANIS:

10 Q. Mr. Papageorge, without waiving the
11 question that has been instructed not to answer --
12 and we will deal with that in front of the court;
13 the jurors who will be in this case will not be
14 lawyers -- when you personally sell an item of
15 goods, be it a used car or a garage sale, the role
16 of seller and buyer doesn't necessarily involve a
17 lawyer, does it?

18 A. I involve attorneys personally.

19 Q. Let's put it to you this way. I asked
20 you who would have initiated the provision that
21 says we can terminate the sale of pcb's, we being
22 Monsanto; you indicated that it came from either
23 Mr. Minckler, Mr. Bergen, or who was the third?

24 A. And Mr. Olson.

17

1 Q. Mr. Olson.

2 A. Those were possibilities. There still
3 may be a party I didn't mention.

4 Q. None of those three gentlemen are layers,
5 is that correct?

6 A. That is correct.

7 Q. Now, from the perspective of the seller
8 of a product, as a seller would it not be correct
9 that the non-lawyers inside Monsanto believed they
10 had the right to terminate the sale of the product
11 if the customer did not control the release into
12 the environment?

13 MR. FRUEHWALD: I interpose an objection to
14 the question and instruct the witness not to
15 answer.

16 Mr. Papageorge has testified he has no
17 personal knowledge of discussions with anybody in
18 Monsanto about this termination clause or what
19 anybody else thought about it.

20 You are asking him for pure speculation
21 about other people's ideas, and that is improper,
22 and I am going to object.

23 MR. KARAGANIS: I will ask you to produce a
24 non-lawyer in the company who had knowledge of the...

1 sales termination clause as to what they intended
2 and what they meant.

3 MR. FRUEHWALD: We have already produced Mr.
4 Gossage. He is the best person we have currently
5 employed by Monsanto who dealt with this.

6 You had your opportunity to question him
7 at length and you have done so. He was the person
8 who negotiated this thing after it was initially
9 proposed. You have asked the questions of that
10 person.

11 Mr. Papageorge is not the person for
12 those questions.

13 BY MR. KARAGANIS:

14 Q. Mr. Papageorge, directing your attention
15 to the first paragraph under objectives. Were you
16 the author of the first sentence in that
17 paragraph, this is in Exhibit 174?

18 A. No. I can't recall. But someone
19 contributed that thought and I included it in the
20 write up.

21 Q. The write up then became the official
22 position of the working group, did it not?

23 It was the adopted position of the
24 working group, was it not?

1 A. It was the recommendation of the working
2 group.

3 Q. So would it be fair to say, then, that
4 your approach to the pcb pollution problem, your
5 overall objective to the pcb pollution problem,
6 was to prevent the problem from affecting,
7 adversely affecting your return on investment
8 objectives?

9 A. And other things. Yes.

10 Q. And subsidiary objectives listed on page
11 2 and page 3 included offering assistance to
12 customers on reclamation, substitute products and
13 proper disposal; is that correct?

14 A. Yes.

15 Q. And another subsidiary objective was to
16 determine the effect of pcb's on humans; is that
17 correct?

18 A. Yes.

19 Q. And how was the effect of pcb's on humans
20 determined?

21 A. An assessment of the medical records of
22 our employees who had been exposed to these
23 materials for years and years.

24 Q. Was the effect of pcb's on humans also

1 determined by means of animal studies?

2 A. Yes. Not so much the effect on humans,
3 but the potential effect.

4 Q. The health risk?

5 A. The risk involved, extrapolating animal
6 data which was accumulating and predicting how it
7 might affect humans.

8 Q. That is in part because if you have a
9 suspected toxin or carcinogen, it is normal
10 research practice to inject them into test animals
11 as opposed to humans; isn't that right?

12 A. Yes.

13 Q. Off the record.

14 (Discussion had off the record.)

15 Back on the record.

16 Mr. Papageorge, we talked in the last
17 deposition about plant visits that you had to the
18 Bloomington plant and other Westinghouse
19 facilities after the pollution control program had
20 been established by the corporate management
21 committee.

22 Do you recall those discussions?

23 A. Yes.

24 Q. And I believe we identified in Exhibit

1 125, do you have that, Exhibit 125, that you had
2 visited the Bloomington facility on July 22, 1970.

3 Do you recall that?

4 A. Yes.

5 Q. And I believe at that time you had
6 inspected the Bloomington facilities with regard
7 to how they handled pcb's and made recommendations
8 regarding the clean up; is that right?

9 A. Yes.

10 Q. I believe I have asked you this, but I
11 will ask it again.

12 Do you have any recollection of following
13 up with correspondence to the Bloomington plant
14 regarding the clean up?

15 A. I recall that question and I do not
16 recall whether -- I had intentions of following up
17 with correspondence. I don't recall that I did
18 so.

19 Q. Were you ever shown such correspondence
20 in preparing for this deposition?

21 A. No.

22 Q. Now, again, my recollection is that apart
23 from the July 22 meeting, you didn't have
24 recollection of any subsequent inspection of the

18

1 plant or discussion of pollution control at the
2 Bloomington plant; is that correct?

3 A. That's correct.

4 Q. Now, I want to direct your attention to
5 the period of November 1970. I am sorry. Let's
6 go back to July.

7 The visit to the Bloomington plant in
8 July was part of a kind of a round-robin tour of
9 other Westinghouse facilities, was it not. You
10 also went to South Boston?

11 A. Yes.

12 Q. You made recommendations there as well;
13 is that correct?

14 A. Yes.

15 Q. Do you recall making a similar
16 round-robin tour in November of 1970?

17 A. I was making plant tours throughout most
18 of 1970. When you say similar, are you talking
19 again back to Westinghouse?

20 Q. Back to Westinghouse, the three plants.

21 A. No. I didn't do that.

22 Q. Directing your attention to 132, Exhibit
23 132, which says Monsanto personnel associated
24 within Inerteen control are visiting Westinghouse

1 on Tuesday, November 10. They wish to tour the
2 F 30 area and see control conditions at
3 Bloomington.

4 Does that refresh your recollection with
5 respect to a visit?

6 A. Yes. There were other Monsanto people
7 that did go back to the Westinghouse plants. I
8 was not included in that.

9 Q. Would you mark the following document as
10 132 A.

11 (The document above-referred to
12 was marked Bloomington Deposition
13 Exhibit No. 132-A for
14 identification.)

15 For the record, Exhibit 132 A is a set of
16 handwritten notes produced by Westinghouse
17 reflecting a visit to the Bloomington facility.
18 It indicates, I apologize for the quality of the
19 text, that Mr. Papageorge and Mr. Graham and Mr.
20 Benignus visited plant on 11/10/70. I would show
21 you 132 A.

22 MR. FRUEHWALD: Where are you reading that
23 description, Joe?

24 MR. KARAGANIS: The visit?

1 MR. FRUEHWALD: Yes.

2 MR. KARAGANIS: The names Papageorge, Graham
3 Benignus are on the front of the cover. There is
4 a card with Randall Graham's business card on the
5 second cover, or on the second page. There are
6 notes with respect to running a carbon filtration
7 system.

8 There is a third page which says Monsanto
9 then it has tower clay system. There is a fourth
10 page with respect to vapors and water effluent
11 indicating facilities at Sauget, Illinois. There
12 is a reference to Randall Graham and Tom Gossage.
13 Reference to 1232 is still a pollution problem.
14 Last page also references Monsanto visit and it
15 talks about a proposed article by Papageorge in
16 Electrical World in September 1970.

17 MR. FRUEHWALD: I see those type of things,
18 but you represented there was something about a
19 visit. Does this document indicate a visit by
20 Papageorge on November 10th? I didn't see the
21 language which indicated that.

22 I see Gossage and Graham being referred
23 to as having been there.

24 MR. KARAGANIS: There is a reference on the

1 top, on the first page to Papageorge, Graham and
2 Benignus.

3 MR. FRUEHWALD: All right. That is what you
4 are referring to. I was unable to determine what
5 the introduction to that was.

6 MR. KARAGANIS: Yes.

7 MR. FRUEHWALD: What is the question?

8 BY MR. KARAGANIS:

9 Q. To the best of your recollection, you
10 were not at Bloomington in November of 1970; is
11 that right?

12 A. That is correct.

13 Q. Do you recall going to the other
14 Westinghouse facilities in November of 1970?

15 A. I did not go to the producing plants at
16 that time of the year. I may have gone in to
17 Pittsburgh at about that time.

18 Q. I am going to close off this area of
19 questioning. I may have asked you this
20 previously.

21 Mr. Papageorge, assuming you were not on
22 the visit, directing your attention to the
23 November 10 visit, 132 A, there is discussion in
24 those notes, is there not, of a carbon filtration --

1 system for water effluent?

2 A. I see the word carbon written here. And
3 there is a sample sketch, then the note again
4 carbon or sand.

5 Q. The references to carbon or sand are
6 based on your knowledge referencing carbon or sand
7 filtration, are they not?

8 A. It is more than adsorption, yes.

9 Q. Adsorption to a filter bed made up of
10 either carbon or sand, right?

11 A. Yes.

12 Q. The reference to 10 parts per billion in
13 132 A, that's the same 10 parts per billion that
14 you were talking about in your corporate
15 management report, right?

16 A. That is the target concentration, yes.

17 Q. That was the target concentration
18 established by the corporate management committee
19 at Monsanto; is that correct?

20 A. Accepted by the management committee.
21 Established by Monsanto's technical people.

22 Q. So that is what Monsanto was telling
23 Westinghouse in the visit of 11/10/70; is that
24 right?

19

1 A. It seems so from these notes.

2 Q. Now, again to avoid confusion and keep
3 with the timeframe, would you mark the next
4 document as 132 B.

5 Let me identify 132 B as a letter dated
6 November 23, 1970 from Papageorge to Kelly.

7 (The document above-referred to
8 was marked Bloomington Deposition
9 Exhibit No. 132-B for
10 identification.)

11 Mr. Papageorge, do you recall writing
12 Exhibit 132 B?

13 A. Yes, I do.

14 MR. KARAGANIS: I would ask, I believe I have
15 requested this before, it may be in the package,
16 is the set of instructions or recommendations
17 referred to in 132 B.

18 MR. FRUEHWALD: Right. We produced those for
19 you after your last deposition by letter. We
20 identified those. I sent them up by letter. I am
21 sure I have done that.

22 I have another copy with me, if you want
23 it.

24 MR. KARAGANIS: Yes, I would like a copy and

1 we can mark it.

2 So there is no confusion, Mike, on our
3 part, do you have a list of the transmittals you
4 have made to us and documents?

5 MR. FRUEHWALD: I don't have a list, I have
6 copies of my transmittal letters back home.

7 MR. KARAGANIS: Would you be kind enough to
8 send us up a set of your transmittal copies.
9 Because I don't want to be arguing that we haven't
10 received documents that we have received.
11 Conversely, I want to make sure if we demand
12 documents that they have been produced.

13 MR. FRUEHWALD: There are many documents that
14 were requested several years ago that were
15 collected and never looked at. This was one of
16 them that we figured was important to Mr.
17 Papageorge's deposition. So we went ahead and
18 sent it to you for that purpose.

19 I said there are other documents that
20 were collected long ago that you have never been
21 down to look at. We did send that one.

22 MR. KARAGANIS: I will be honest with you,
23 other than being handed a copy of the management
24 committee reports at the beginning of Mr.

1 Gossage's deposition, I don't recall being sent
2 any documents relative to the Papageorge
3 deposition.

4 Mark this as 132 C.

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 132-C for
8 identification.)

9 Q. Directing your attention to Exhibit
10 132 C, is 132 C the attachment to 132 B?

11 A. Yes.

12 Q. And who prepared 132 C?

13 A. I did.

14 Q. And was that prepared with anybody's
15 assistance or was that basically your engineering
16 and technical work-up?

17 A. This represents my thinking on the
18 subject.

19 Q. And it is your thinking as of November
20 23, 1970; is that right?

21 A. Yes.

22 Q. Now, again, just from the standpoint of
23 dates and times, directing your attention to these
24 recommendations, liquid control, the concept of

1 curbing and proper drainage to avoid release into
2 the sewers, calling for collection. That is what
3 you were talking about, were you not, curbing and
4 collection?

5 A. Yes.

6 Q. That is a technology that didn't come
7 forth full-blown in 1970, that could have been
8 done many years previously, could it not?

9 A. Yes.

10 Q. It is a technology, the concept of
11 building curbs and drainage has been around well
12 before the turn of the century; isn't that right?

13 A. It's been available. Yes.

14 Q. Now, the concept on page 2, you mention
15 pcb's are present in wastewater streams, the
16 streams must be treated prior to release. You
17 talk about detergent emulsions must be broken,
18 free pcb must be removed after phase separation,
19 dissolved pcb can be reduced by adsorption.

20 You say "absorption," is it adsorption?

21 A. It is really a "d".

22 Q. A "d".

23 A. It is a surface phenomenon.

24 Q. So that the term "absorption" here is

1 something that I usually do which is mix the two
2 up?

3 A. Right.

4 MR. FRUEHWALD: It is a rough draft.

5 BY MR. KARAGANIS:

6 Q. So it should be adsorption on
7 activated-carbon?

8 A. Yes.

9 Q. Your recommendation for treatment of
10 wastestreams containing soluble pcb's was
11 adsorption on activated-carbon, was it not?

12 A. That is an approach. Right.

13 Q. That was your recommendation, was it not?

14 A. If you will note, those are suggestions
15 and guidelines. They are not hard
16 recommendations.

17 Q. They were suggestions of yours, your
18 personal technical suggestions for control of
19 pcb's, were they not?

20 A. To be considered as each reader of that
21 document considers his local conditions.

22 There may be other circumstances at each
23 site that would not lend themselves to following
24 many of those suggestions. So it is a starting

1 point.

20

2 Q. Let's go back to the liquids.

3 The idea of curbing and collection as
4 opposed to letting it leak out of a drain could be
5 employed virtually anywhere, could it not?

6 A. Could be. Yes.

7 Q. It is technically feasible to employ
8 curbing and drainage in any location, is it not?

9 A. Sure.

10 Q. So it is a choice whether or not to put
11 it in; isn't that right?

12 A. Yes.

13 Q. Your recommendation was to put it in
14 rather than let it go out into the environment,
15 was it not?

16 A. Right.

17 Q. Just by way of background, under no
18 circumstances were your recommendations that
19 liquids be taken to landfills; is that right?

20 A. That's right.

21 Q. You were strongly recommending against
22 liquids going to landfills; is that right?

23 A. Yes.

24 Q. Your concept was that liquids should be

1 stored or incinerated; isn't that right?

2 A. Or recycled.

3 Q. Or recycled.

4 Which would have meant distillation and
5 use of the product again?

6 A. Or use it in, well, at that point in time
7 it had to be distillation. Yes.

8 Q. But under no circumstances was the waste
9 liquid supposed to go to a landfill; is that
10 right?

11 A. That was my belief. It still is.

12 Q. Again, the concept of avoiding sending
13 liquids to the landfill was not a new technology,
14 you could have done that many years previous to
15 this time; isn't that right?

16 A. Well, that could be said for all of those
17 statements.

18 Q. For all of the recommendations?

19 A. All those recommendations. It is a
20 matter of awareness for the need to apply these
21 actions.

22 Q. So all of corrective actions that are in
23 Exhibit 132 C were not limited to the year 1970
24 and beyond, they could have technically been

1 applied many years previously; isn't that right?

2 A. Certainly.

3 MR. KARAGANIS: I am going to break here and
4 let you go on.

5 MR. MC DONNELL: Okay.

6 (Discussion had off the record.)

7 DIRECT EXAMINATION

8 BY MR. MC CONNELL:

9 Q. Now, before I had marked a document as
10 291 and it appears now that there is a second page
11 to that document, so I put them together.

12 291 is a two-page report dated September
13 29, 1971 and it is signed on the second page by
14 Dr. Ward Richter, reference IBT B 729.

15 And I would ask if you saw that report
16 before?

17 A. I had not seen this before.

18 Q. Okay.

19 Showing you again Exhibit 293, which is
20 another pathology report of one page by Dr.
21 Richter on the same study, I will ask you to
22 compare those and tell me if it appears that those
23 are two reviews of two separate sets of slides
24 from the same study?

1 MR. FRUEHWALD: Do you expect that Mr.
2 Papageorge is going to have some insight into this
3 that the rest of us do not from reading the
4 documents? Is that what you are saying? If they
5 are there, I don't know how Mr. Papageorge would
6 know that.

7 MR. MC CONNELL: I don't either. But if he
8 doesn't know, he can tell me.

9 MR. FRUEHWALD: All right. A lot of these
10 questions seem to be asking a person who has no
11 reasonable basis for knowing and as a result seem
12 to be a useless exercise.

13 A. I have not seen either document. But the
14 one dated October 10 does start off with reference
15 to additional series of tissues from the same
16 study.

17 BY MR. MC CONNELL:

18 Q. Did anyone at either Monsanto or
19 Industrial Bio-Test discuss with you the plan or a
20 plan in the context of the rat studies to have a
21 second set of slides made up for pathology review
22 of the rat livers?

23 A. No.

24 Q. Did the reports that you received on the ...

1 rat studies, either copies of the Industrial
2 Bio-Test test reports or the Monsanto summary
3 reports that were passed to you, reflect that
4 there had been two sets of slides reviewed by
5 pathologists in the rats study?

6 A. No.

7 Q. Showing you what you has been marked as
8 Exhibit 305, which is an undated -- I guess it is
9 undated. Anyway it is a one-page memo or note
10 handwritten document from Dr. Fancher to Dr.
11 Keplinger, reference IBT C 7299.

12 I will ask if you have ever seen that
13 before?

14 (The document above-referred to
15 was marked Bloomington Deposition
16 Exhibit No. 305 for identification.)

17 A. I have not seen this report before.

18 Q. Did Dr. Fancher ever discuss with you his
19 information that is reflected on Exhibit 305 that
20 weight gain data for UC females do not agree with
21 data for the same animals in other reports?

22 A. No, he did not.

23 Q. Did anyone else at Industrial Bio-Test or
24 Monsanto ever discuss that apparent disagreement

1 with you?

2 A. No.

3 Q. Did Dr. Fancher ever discuss with you the
4 next statement which is on Exhibit 305:

1

5 "It is difficult not
6 to conclude that there may
7 be an affect on body weights
8 for T-III males and T-II and
9 T-III females with 1254 and
10 T-III males and females with.
11 1260."?

12 A. No.

13 Q. Did anyone else at Monsanto or Industrial
14 Bio-Test ever discuss that with you?

15 A. No.

16 Q. Did Dr. Fancher ever discuss with you the
17 statement on Exhibit 305:

18 "I question whether
19 one has the right to discount
20 animals that show low gains
21 particularly T-II or T-III
22 animals."?

23 A. Was the first part of your question did
24 anyone discuss?

1 Q. Did Dr. Fancher in particular ever
2 discuss that with you?

3 A. No.

4 Q. Did anyone at Bio-Test or Monsanto ever
5 discuss that with you?

6 A. No. These are discussions now?

7 Q. Right.

8 A. As distinguished from a summary report?

9 Q. Right.

10 A. That is handed to me?

11 Q. Right.

12 A. All right.

13 Q. Did anybody in a document ever convey to
14 you the thought that Dr. Fancher disagreed with
15 any of the conclusions or opinions that were
16 stated in the report on C 7299?

17 A. No.

18 Q. Okay.

19 Did anybody in a written report of any
20 kind ever convey to you the thought that Dr.
21 Fancher disagreed with any of the conclusions that
22 were drawn in any of the Industrial Bio-Test
23 studies?

24 A. No.

1 Q. Okay.

2 Did anybody in a discussion ever convey
3 to you the thought that Dr. Fancher disagreed with
4 any of the Bio-Test study conclusions or opinions?

5 A. No.

6 Q. Okay.

7 Is it a fact, as reflected in Exhibit
8 305, that nothing is said anywhere in the report
9 of study C 7229 about recover periods?

10 MR. FRUEHWALD: Why don't we just look at the
11 record to be able to tell that, rather than asking
12 Mr. Papageorge to recall fifteen years ago what a
13 multi-page document said.

14 We do not know whether this handwritten
15 document is before or after the final report
16 submitted. We don't know anything about how this
17 relates to what report in particular.

18 So I think it is unfair to ask Mr.
19 Papageorge to recall fifteen years ago a
20 multi-page document which you probably have
21 somewhere in your office here to -- that will
22 actually give the answer to that question.

23 MR. MC CONNELL: Okay.

24 Q. Let's look at Exhibit 306 which is a

1 letter dated December 17, 1971, appears to be in
2 Dr. Fancher's handwriting, consisting of one page.
3 Signed Otis, addressed to, "Dear Don."

4 (The document above-referred to
5 was marked Bloomington Deposition
6 Exhibit No. 306 for identification.)

7 Have you ever seen that before?

8 A. I have not seen it before.

9 Q. I don't recall if I asked you.

10 Did you ever have occasion yourself on
11 any of the times that you were at Industrial
12 Bio-Test to review any of the underlying data in
13 any of these study reports?

14 A. Some of that data was used in some of the
15 formal presentations made to Monsanto people and I
16 was present.

17 Q. So you reviewed it in the sense that
18 whatever they selected to use in their
19 presentation was what you saw?

20 A. Yes.

21 Q. You weren't going through their files
22 spot checking the underlying lab work that went
23 into these studies?

24 A. I did not do so, no.

1 Q. Did you know in December of 1971 that
2 there were plans to publish some of these Aroclor
3 animal studies by Industrial Bio-Test in
4 scientific journals?

5 A. Yes.

6 Q. When were you first told about that?

7 A. At about that time, on or about the dates
8 we have mentioned.

9 Q. Okay.

10 Who told you?

11 A. Elmer Wheeler.

12 Q. Did he say what the purpose was for that
13 publication?

14 A. I don't know that a purpose was
15 mentioned. I don't recall.

16 Q. Is that another way of communicating this
17 information or sharing it with other people who
18 might be interested in the findings?

19 A. Yes.

20 Q. Okay.

21 Was it your understanding when you were
22 told that the studies were to be published that
23 they would be published over the names of
24 Industrial Bio-Test scientists who actually worked

1 on the studies, rather than Monsanto scie

2 A. My understanding was that Mr. W
3 name would also appear and perhaps Dr. Levinskas.
4 It was not very clear at the time exactly. But
5 some Monsanto people would also be listed as
6 authors.

7 Q. Have you ever authored a scientific or
8 professional engineering study for a publication?

9 A. No.

10 Q. Are you familiar with the process of peer
11 review that those manuscripts go through before
12 their being published?

13 A. Yes.

14 Q. If Dr. Levinskas or Mr. Wheeler were to
15 appear as an author, listed as an author in a
16 published study, would it be expected that they
17 would be familiar not only with the report but
18 with the underlying data?

19 A. Yes.

20 Q. Was it ever brought to your attention
21 that weight data for chickens in J 8746 were
22 unable to be located?

23 A. No.

24 Q. Okay.

1 Take a look at Exhibit 307, which is a
2 one-page letter from Dr. Fancher to "Dear Don,"
3 December 21, 1971.

4 Have you ever seen that letter before?

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 307 for identification.)

8 A. No, I have not seen this before.

9 Q. Under the heading on that page errors
10 found, the first listing is page 74, control
11 figures don't add up.

12 During the course of your involvement
13 with pcb's and Monsanto and your work with
14 Industrial Bio-Test on these studies, did anybody
15 ever call to your attention to the fact that the
16 numbers of animals shown in the reports didn't
17 agree from one part of the report to another?

18 A. No.

19 Q. Do you know whether any of these
20 handwritten documents that we have shown you in
21 the course of this deposition by Dr. Fancher were
22 made available to Booz, Allen and Hamilton in the
23 course of their audit of the Industrial Bio-Test
24 pcb studies?

1 A. I do not know.

2 Q. Were the chicken studies done at
3 Industrial Bio-Test in Northbrook or were they
4 done at another location, if you know?

5 A. They were done at another location.

6 Q. That was called the Wedge's Creek
7 Research Farm?

8 A. Yes. In Wisconsin.

9 Q. In Wisconsin.

10 Q. Take a look at Exhibit 308, which is a
11 one-page letter dated December 22, 1971 to Dr.
12 Fancher from Donald H. Jenkins. Have you ever
13 seen that document?

14 (The document above-referred to
15 was marked Bloomington Deposition
16 Exhibit No. 308 for identification.)

17 A. I have not.

18 Q. Do you have any knowledge of what Mr.
19 Jenkins, the author of the document, is referring
20 to in the statement in the next to the last
21 paragraph, "I had hoped this snake wouldn't be
22 exhumed"?

23 A. No, I do not.

24 MR. FRUEHWALD: Let me also indicate

1 apparently Mr. Jenkin's first name is Don. So we
2 had a previous speculation as to who the Don was
3 in some of these letters and we speculated it was
4 Dr. Richter.

5 MR. MC CONNELL: Dr. Gordon.

6 A. Dr. Gordon, there is another Don.

7 MR. MC CONNELL: There is another Don.

8 Q. It could be Don Jenkins.

9 Did you know Don Jenkins?

10 A. No.

11 Q. Okay.

12 Do you know what Don Jenkins is referring
13 to in Exhibit 308 when he says, "The conduct of
14 this project (J 7300) finally led to the demise of
15 Jim Stevens"?

16 A. I do not.

17 Q. Do you know who Jim Stevens was?

18 A. No.

19 Q. Did anybody ever convey to you the ideas
20 Mr. Jenkins writes in Exhibit 308 that he, that
21 is, Dr. Jenkins, was not happy with the way the J
22 7300 study was done?

23 A. No one conveyed that to me, no.

24 Q. On the occasions when you would visit

1 Industrial Bio-Test in the company of other
2 Monsanto employees who working on these studies,
3 were you ever there at the same time as Mr.
4 Wheeler was?

5 A. Yes. Everytime.

6 Q. Okay.

7 Were you ever there at a time when Dr.
8 Levinskis was also present?

9 A. I don't recall whether Dr. Levinskis
10 joined us on any of those visits.

11 Q. Okay.

12 On any occasion when you were at -- well,
13 let me back up one step.

14 Did you ever visit any Industrial
15 Bio-Test facility other than the one in
16 Northbrook, Illinois?

17 A. No.

18 Q. Okay.

19 On any of the occasions --

20 A. Correction.

21 Q. Okay.

22 A. That answer relates to pcb's studies
23 only.

24 Q. Okay.

1 You had been to their other facilities in
2 connection with some work on other products?

3 A. Yes.

4 Q. Had you ever been to the Wedge's Creek
5 Research Farm?

6 A. No.

7 Q. Okay.

8 What other facility had you visited?

9 A. They had a facility in Decatur, Illinois.

10 Q. Is that also a chicken facility?

11 A. Yes, poultry.

12 Q. Chickens and ducks, other birds of that
13 nature?

14 A. Yes.

15 Q. All right.

16 That was not in connection with pcb's?

17 A. That's correct.

18 Q. On any of the occasions when you visited
19 the Industrial Bio-Test facility in Northbrook and
20 toured through the research facility rather than
21 just sitting in an office, listening to a
22 presentation, did anyone else from Monsanto ever
23 point out anything to you as raising in their mind
24 problems with the way the research was being

1 conducted or things that needed to be corrected in
2 order to get the studies back on track?

3 A. No.

4 Correction. It was pointed out to me
5 that the fish studies were not being conducted
6 quickly enough, adequately.

7 I recall being shown a room which was
8 designated for this study in which equipment had
9 been accumulated, and I was told that this would
10 be the site for the fish studies. And Mr. Wheeler
11 expressed disappointment that nothing had been
12 accomplished yet.

13 Q. He didn't point to any specific thing and
14 say this is the source of the problem why we
15 haven't finished the fish study?

16 A. No.

17 Q. To your knowledge there never was a
18 successfully completed fish study by Industrial
19 Bio-Test?

20 A. No.

21 Q. Exhibit 309 is a letter dated December
22 28, 1971 to Dr. Fancher signed regards, but no
23 name. And there is a handwritten indication on it
24 that it came from file J 8746.

1 I will ask you if you you have ever seen
2 that document?

3 (The documents above-referred to
4 were marked Bloomington Deposition
5 Exhibit Nos. 309 and 310 for
6 identification.)

7 A. I have not seen this document.

8 Q. What was the interest, the reason, if you
9 know, for the interest in measuring the specific
10 gravity of the chicken eggs?

11 A. I don't know.

12 Q. Was that part of the reproduction study?

13 A. I would assume so.

14 Q. Exhibit 310 is a undated -- no, it is
15 not, it is dated 12/29/71, it comes from the file
16 on J 900. And it includes the statement these
17 birds were wormed on December 22, with a feed
18 additive, vaccinated for Marek's.

19 Do you know if there is any reason why
20 birds used in the Industrial Bio-Test studies
21 before that date were not vaccinated for Marek's
22 disease?

23 A. I do not.

24 Q. I believe it was your previous testimony --

1 that until this portion of your deposition you
2 hadn't heard any mention of Marek's disease in the
3 chickens that were used in these studies?

4 A. That is correct.

5 Q. Exhibit 311 is a letter dated December
6 29, 1971 from Dr. Raymond Loan to Donald Jenkins.

7 Have you ever seen that?

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 311 for identification.)

11 A. I have not seen this before.

12 Q. Do you know why it was that industrial
13 Bio-Test had to go outside for information on
14 Marek's disease in their chickens?

15 A. I do not.

16 Q. I am going to show you what has been
17 marked as Exhibit 312, which is a letter,
18 handwritten letter of two pages dated January 14,
19 1972 from Dr. Fancher to "Dear Don" on Industrial
20 Bio-Test letterhead. And it is marked in
21 handwriting J 7300.

22 I will ask you if you have ever seen
23 that?

24

1 (The document above-referred to
2 was marked Bloomington Deposition
3 Exhibit No. 312 for identification.)

4 A. I have not seen this before.

5 Q. Okay.

6 As the person who was passing on reports
7 of these studies or summaries of these Industrial
8 Bio-Test animal studies to Westinghouse customers,
9 would it have been important to you to know in
10 January of 1972 that Dr. Fancher had a notion, as
11 he refers to in the first paragraph of the letter,
12 that much of the data are either fudged or
13 collected with carelessness or incompetence?

14 A. Yes. That would have been significant.

15 Q. Nobody ever told you that, did they?

16 A. No.

17 Q. Dr. Fancher didn't tell you?

18 A. No.

19 Q. Nobody at Monsanto told you?

20 A. No.

21 Q. If they had, would you have passed that
22 information along to the customers to whom you had
23 been supplying these progress reports as the
24 studies went on?

1 A. I would have established the impact on
2 the previous information I had relayed and if that
3 would have changed that information, I would have
4 informed the customers.

5 Q. If you had seen, okay.

6 I am sorry, were you finished?

7 A. If, however, inspite of these defects,
8 the conclusions were still valid, I would suggest
9 that not immediately, but eventually I would say
10 the data was sort of questionable, but the
11 conclusions are still valid.

12 Q. The data was questionable but the
13 conclusions are valid. Okay.

14 If you had seen this letter that has been
15 marked as 312 on or about the date it bears,
16 before you concluded whether or not to share that
17 information with your customers, you would have
18 wanted to talk to Dr. Fancher about it, wouldn't
19 you?

20 A. I would go to Mr. Wheeler.

21 Q. Okay.

22 A. It is Mr. Wheeler's responsibility to
23 talk to Dr. Fancher.

24 Q. Did you ever talk directly to Dr.

1 Fancher?

2 A. Only in group sessions.

3 Q. But you knew him and he knew you, and if
4 you picked up the phone and called Dr. Fancher, he
5 wouldn't have refused to take your call, would he?

6 A. No.

7 Q. Does it bother you as you sit here today
8 that you were handing out information on behalf of
9 Monsanto without knowing that one of the senior
10 scientists involved in the project thought the
11 data were fudged?

12 A. Yes.

13 Q. Did anyone ever share with you the
14 thought in the numbered paragraph 3 in Exhibit 312
15 that it is difficult not to conclude that chick
16 body weights at day one are adversely affected for
17 some treatment groups?

18 A. No one.

19 Q. Okay.

20 Or the thought as it goes on to say that
21 thirty days survival is generally lower for chicks
22 from treated groups?

23 A. No one talked with me.

24 Q. On about the middle of the second page of --

4 1 Exhibit 312 there is a statement by Dr. Fancher in
 2 his own handwriting:

3 "I am ashamed to
4 publish the work done in these
5 studies."

6 Did he ever tell you that?

7 A. No.

8 Q. Did anybody ever tell you that Dr.
9 Fancher was ashamed to publish the work done in
10 those studies?

11 A. No.

12 Q. Were they ultimately published?

13 A. No.

14 Q. They were submitted for publication but
15 they never got published, is that a fair synopsis
16 of the sequence of events?

17 A. I'm not aware that they were submitted to
18 any publication.

19 Q. Okay.

20 Did anybody ever share with you the idea
21 that is expressed by Dr. Fancher in the next
22 sentence of his letter?

23 "This is perhaps the
24 most significant of the

1 "Aroclor studies and some of
2 my conclusions are not in
3 agreement with those of the
4 reports (which I signed
5 without detailed analysis)."

6 A. No one discussed that with me, no.

7 Q. Would it have been important to you to
8 know that as you were passing along the
9 conclusions from these reported studies to the
10 customers?

11 A. Yes.

12 Q. He also states with respect to "my
13 conclusions are not in agreement..." "or with
14 statements which have been made by Kep --" I
15 presume that refers to Dr. Keplinger "-- and by
16 Monsanto in discussions with the FDA and
17 environmental groups."

18 Did anybody ever express to you the idea
19 that Dr. Fancher was in disagreement with
20 conclusions that Monsanto was advancing to the FDA
21 and environmental groups?

22 A. No.

23 Q. Would it have been important to you to
24 know that at or about the date of Exhibit 312?

1 A. Yes.

2 Q. What would you have done if you had known
3 that Dr. Fancher's opinions and conclusions about
4 the results of these studies, and in particular
5 the chicken study, were different from the
6 conclusions that Monsanto was using to support its
7 position with the Food and Drug Administration?

8 A. I would immediately go back to Mr.
9 Wheeler and Dr. Kelly and ask for total review.
10 And a rewriting, if necessary, of the summaries
11 that I had been giving to others.

12 Q. A review of the type that Booz, Allen and
13 Hamilton was ultimately called upon to do?

14 A. Since I don't know exactly what Booz,
15 Allen and Hamilton did, I am at a loss as to
16 comparing. But it had to be thorough enough to
17 convince Monsanto that the right information was
18 being shared with others.

19 Q. Okay.

20 That would at least involve going through
21 all of the raw data rather than just spot checking
22 it, would it not?

23 A. I don't know about all. But it would
24 have to be representative to pick up any defects.

1 Q. A thorough audit rather than a spot
2 check, whether that means looking at every entry
3 or not?

4 MR. FRUEHWALD: An audit involves usually spot
5 checking in an account sense. I am not sure those
6 are two different terms.

7 BY MR. MC CONNELL:

8 Q. Well, if you are looking at something
9 less than all the data, how do you decide how much
10 less than all the data to look at; particularly in
11 light of a senior scientist's statement that it
12 looks to him like it was phony?

13 A. I don't know what others would have done,
14 but I would have looked at enough data without
15 leaving any data gaps or date gaps to see what
16 patterns were being followed in the accumulation
17 of the data results reported.

18 Q. Okay.

19 When I see Exhibit 312 and Dr. Fancher
20 says he thinks the data were fudged, I take that
21 to mean he thinks that it was made up rather than
22 on the basis of actual observations. Is that the
23 same as your understanding?

24 A. That is my understanding of the word

1 fudged.

2 Q. Okay.

3 Exhibit 313 is a one-page letter dated
4 January 31, 1972 to Dr. Wheeler from J. C.
5 Calandra.

6 I will ask you if you have seen that
7 letter?

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 313 for identification.)

11 A. I don't recall seeing it.

12 Q. Do you know whether that report that is
13 referenced in that letter on the 90-day subacute
14 dog study on 10/16 was mailed to Monsanto or
15 whether it was handed to Mr. Wheeler?

16 A. I do not know.

17 Q. Presumably Mr. Wheeler would know that?

18 A. I am sorry?

19 Q. Mr. Wheeler would be the one who would be
20 able to answer that question?

21 A. I would think so. Yes.

22 MR. FRUEHWALD: If he has a 15-year memory of
23 such matters.

24

1 BY MR. MC CONNELL:

2 Q. Or Mr. Wheeler's files might tell us if
3 there is an envelope with the document.

4 Exhibit 314 is a one-page memo dated
5 February 1, 1972 from Keplinger to Dale Fletcher.

6 Do you know who Dale Fletcher was?

7 (The document above-referred to
8 was marked Bloomington Deposition
9 Exhibit No. 314 for identification.)

10 A. I have heard the name.

11 Q. Was he somebody who worked at Industrial
12 Bio-Test?

13 A. Yes.

14 Q. I will ask you if you have ever seen that
15 314 before?

16 A. I have not seen this before.

17 Q. Do you know whether there was ever a
18 problem at Industrial Bio-Test in measuring
19 specific gravity of eggs because of evaporation of
20 the test solutions that were used for the
21 measurements?

22 A. No, I do not.

23 Q. Does that Exhibit 314 suggest to you that
24 that they are trying to correct that sort of a

1 problem?

2 A. It is hard to tell from this document
3 whether a problem existed. I do sense a
4 precautionary statement, don't let it evaporate,
5 which says don't let it evaporate, which implies
6 that problems could have been experienced.

7 Q. Are you familiar with the techniques for
8 measuring specific gravity?

9 A. Yes.

10 Q. If you have a series of solutions of any
11 water solutions, of any particular substance that
12 you are using for that purpose, and you leave them
13 all uncovered, eventually all of those solutions
14 will evaporate to a concentration where they have
15 the same specific gravity; is that correct?

16 A. Well, this assumes you started with the
17 same materials, such as salt in water.

18 Q. I am assuming a series of solutions that
19 are made up to be 1.0, 1.1, 1.2, whatever, all
20 with the same solute.

21 A. Okay. Eventually they would all
22 evaporate to dryness. Some would have more solid
23 in them than others.

24 Q. Exhibit 315 is a letter from Dr.

1 Keplinger to Peggy Calvert of US Borax Research
2 Corporation dated February 22, 1972.

3 I will ask if you you have ever seen
4 that?

5 (The document above-referred to
6 was marked Bloomington Deposition
7 Exhibit No. 315 for identification.)

8 A. I have never seen this.

9 Q. It appears to me that Peggy Calvert was
10 asking for some information about the chicken
11 study or studies. And Dr. Keplinger writes back
12 and says you can't have it, it is proprietary, but
13 we are getting it ready for publication.

14 Do you know whether, since the study was
15 never published, Mrs. Calvert was ever provided
16 with copies of the Industrial Bio-Test reports on
17 that study?

18 A. I do not know.

19 Q. Do you have any knowledge of any kind
20 that would indicate why US Borax Research
21 Corporation would be interested in the effects of
22 pcb's on birds?

23 A. I do not.

24 Q. Did you ever receive any communications

1 from Peggy Calvert of US Borax regarding any of
2 these pcb animal studies?

3 A. I don't recall at this time.

4 Q. Was it your understanding in February,
5 January and February of 1972, that Monsanto
6 considered these studies to be proprietary?

7 A. Not in the sense that we would not share
8 them.

9 Q. In other words, if Peggy Calvert had
10 written to you at the same time, you would have
11 given her whatever you had given your other
12 customers up to that date on those studies?

13 A. As a minimum.

14 Q. As a minimum.

15 A. If she needed more, I would refer her to
16 Mr. Wheeler and then a further dialogue would have
17 taken place.

18 Q. Either Wheeler would have provided her
19 with additional information or perhaps referred
20 her back to IBT?

21 A. It is possible.

22 Q. 316 is a one-page memo dated May 16, 1972
23 from Keplinger to PLW, which I believe to be Paul
24 Wright.

1 I will ask if you have ever seen that?

2 (The document above-referred to
3 was marked Bloomington Deposition
4 Exhibit No. 316 for identification.)

5 A. I have never seen this.

6 Q. Why would Monsanto want to make advance
7 payment or receive advance billing on some of the
8 Industrial Bio-Test studies and not others, if you
9 know?

10 A. I do not know.

11 Q. Was there some effort to get a certain
12 amount of payments within the budget for one year,
13 even though the studies might not have been
14 completed, and then use next year's budget to pay
15 for other work, or would you know about that?

16 A. Some of that, I am aware of some of that
17 happening. I don't know the reasoning behind it.

18 Q. Could be like congress, they have
19 appropriated the money, if you don't spend it this
20 year, you get less next year.

21 Have you ever had that experience at
22 Monsanto?

23 A. I had that personally.

24 Q. That is one possible explanation for that

1 kind of advance billing on some things and not
2 others?

3 A. In my case, not for animal studies, but
4 where I have committed for a service, which is
5 going to cost Monsanto, it is encouraged that we
6 pay for it. Once we have made the commitment, we
7 have to pay for it.

8 Q. You mentioned that in connection with
9 service. Is that also done in connection with the
10 purchase of goods?

11 A. No. There we wait for the invoice.

12 Q. In your experience did the invoice arrive
13 usually before or usually after the goods?

14 A. After.

15 Q. What is the reason for the distinction
16 between goods and service in that regard, if you
17 know?

18 A. I do not.

19 Q. Exhibit 317 is a two-page letter dated
20 June 2, 1970 to Dr. Tucker from James B. Plank.

21 Have you ever seen that letter?

22 (The document above-referred to
23 was marked Bloomington Deposition
24 Exhibit No. 317 for identification.)

1 A. I haven't seen this before.

2 Q. Again this refers to the taking of pooled
3 samples from the chicken study in 1970.

4 Do you know if after the date of this
5 letter, June 2, 1970, there was ever the return to
6 the procedure of individual samples with respect
7 to chickens as to liver, muscle or kidney tissue?

8 A. No. There was no return.

9 Q. Okay.

10 Exhibit 318 is a letter in Elmer Wheeler
11 to Herbert Blumenthal dated June 16, 1972 and it
12 is stamped on the bottom received June 21, 1972.

13 I will ask you if you have ever seen
14 that?

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 318 for identification.)

18 A. I don't recall it.

19 Q. Do you know whether that letter and the
20 enclosures it refers to were mailed or delivered
21 to Dr. Blumenthal?

22 A. I do not know.

23 Q. Were some of the reports, either
24 Industrial Bio-Test study reports or the Monsanto

1 interim summaries of those reports, mailed by Mr.
2 Wheeler or others at Monsanto to the Food and Drug
3 Administration?

4 A. Both types on occasion have been mailed.
5 Summaries as well as reports.

6 Q. Mailed to the FDA; is that correct?

7 A. Yes.

8 Q. Exhibit 319 is a one-page letter dated
9 November 17, 1972 from Dr. Calandra to Elmer
10 Wheeler with an attached report consisting of 19
11 pages.

12 I will ask you if you have ever seen
13 either the letter or the report that is a attached
14 to it?

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 319 for identification.)

18 A. No..

19 Q. Exhibit 320 is a -- I didn't ask you
20 about 319.

21 Have you seen that before today?

22 A. I don't recall seeing this document.

23 Q. That Exhibit 319 at least suggests that
24 there was one set of fish studies that were

1 completed to the point where a final report was
2 made, does it not?

3 A. It appears so.

4 Q. At least as of November of 1972?

5 A. Yes.

6 Q. You were still in the pcb coordinator job
7 at that time, right?

8 A. Yes.

9 Q. Did you see anything in Exhibit 319 that
10 differed from the conclusions you are aware of
11 that other researchers were finding with respect
12 to fish?

13 A. No. I don't see anything that is
14 unexpected.

15 Q. Exhibit 320 is a letter dated May 4,
16 1973, one page, with a one-page enclosure to Dr.
17 Keplinger from George Levinskas.

18 Have you ever seen that before,
19 (The document above-referred to
20 was marked Bloomington Deposition
21 Exhibit No. 320 for identification.)

22 A. I have not seen this before.

23 Q. Were you aware in 1973 that there were
24 still some difficulties with reconciliation of

1 what samples had been sent to Dr. Tucker versus
2 the ones he had expected to receive?

3 A. Yes.

4 Q. Did that continue throughout the course
5 of these animal studies?

6 A. Yes.

7 Q. To your knowledge, did the type of
8 problem we see reflected in Exhibit 320 and some
9 of the earlier exhibits we have discussed
10 concerning the shipment of samples from Industrial
11 Bio-Test to Monsanto occur in the case of animal
12 studies on products other than pcb's or was it
13 just limited to the pcb studies?

14 A. This exhibit shows many products that are
15 not pcb's.

16 Q. Okay.

17 I wouldn't know. Which ones on the list
18 are pcb's?

19 A. The last two are pcb's.

20 Q. Aroclor 1221 and MCS 1016?

21 A. Yes, the others on page 2 of that
22 document are non-pcb's, not pcb's.

23 Q. They are chemical products, though,
24 rather than pharmaceuticals?

1 A. That is correct.

2 Q. Okay.

3 Q. Exhibit 321 is a letter dated April 3,
4 1975 from Dr. D. E. Gordon to George Levinskas and
5 I will ask you if you have ever seen that letter?

6 (The document above-referred to
7 was marked Bloomington Deposition
8 Exhibit No. 321 for identification.)

9 A. I have not seen this before.

10 Q. Okay.

11 That is another letter enclosing some
12 substitute pages for insertion in a report?

13 A. It appears to do so. Yes.

14 Q. Okay.

15 When such substitute pages were received
16 by Monsanto, were copies of the substitute pages
17 supplied to you for insertion in the reports that
18 you had in your files?

19 A. If it was revised pages for a final
20 report. Yes.

21 Q. You wouldn't see the report until it had
22 been put out by Bio-Test as a final report?

23 A. That is correct.

24 Q. Okay.

1 So you weren't one of the participants in
2 the exchange of drafts and revisions to reach the
3 so-called final report stage?

4 A. That is true.

7 Q. Exhibit 322 is a letter, a one-page
6 letter dated April 18, 1975 from Dr. Calandra to
7 Dr. Roush, R-o-u-s-h, and it has attached a memo
8 of five pages signed by Dr. Calandra, also dated
9 April 18, 1975.

10 Who is Dr. Roush?

11 (The document above-referred to
12 was marked Bloomington Deposition
13 Exhibit No. 322 for identification.)

14 A. Dr. Roush was Monsanto's medical
15 director; succeeding Dr. Kelly, who had retired.

16 Q. The cover page of Exhibit 322 shows that
17 you received a copy of this document and I will
18 show it to you and ask you if you recall receiving
19 a copy of the letter and the memo that is
20 attached?

21 A. I recall this set of documents.

22 Q. Were you a participant in the meeting
23 that is reflected in Exhibit 322?

24 A. Yes.

1 Q. Where was the meeting held?

2 A. In St. Louis.

3 Q. At Monsanto's offices?

4 A. Yes.

5 Q. Where in particular?

6 A. Dr. Roush's office.

7 Q. Okay.

8 Who was there as best you can recall?

9 A. Elmer Wheeler and Dr. George Levinskas,
10 Dr. Roush, Dr. Calandra and I.

11 Q. How long did the meeting last?

12 A. Oh, a couple, three hours, less than half
13 a day.

14 Q. Was anything discussed at the meeting
15 other than the IBT animal studies on pcb's?

16 A. We discussed what we understood Dr.
17 Kimbrough had reported.

18 Q. With respect to her animal studies?

19 A. Her studies, yes.

20 Q. Okay.

21 Was the meeting devoted to discussion of
22 work regarding any Monsanto product other than
23 pcb's?

24 A. No.

1 Q. So it was a pcb meeting?

2 A. Yes.

3 Q. Okay.

4 The covering letter from Dr. Calandra --
5 When was the meeting, by the way, do you
6 recall?

7 A. I don't recall. It is about that time.
8 Today.

9 Q. Today, it says presumably --

10 A. The date of the memo.

11 Q. The date of the letter, April 18, or
12 within a day or two, one way or the other?

13 A. Yes.

14 Q. To the best of your recollection.

15 In the covering letter Dr. Calandra says
16 and I quote:

17 "I fully appreciate
18 that the meeting on pcb's
19 today was not completely
20 satisfy and that many nagging
21 questions remain."

22 Was this meeting the first time that you
23 became aware that the situation with respect to
24 the IBT animal studies on pcb's was not entirely

1 satisfactory?

2 A. No. Not at this meeting, or any meeting.

3 Q. So are you telling me you don't agree
4 with the characterization in the letter?

5 MR. FRUEHWALD: The characterization in the
6 letter doesn't match your question.

7 The question says a meeting was not
8 satisfactory and you are saying the IBT studies
9 were not satisfactory.

10 BY MR. MC CONNELL:

11 Q. What was it about the meeting that was
12 unsatisfactory?

13 A. As I recall, Dr. Calandra was asked to
14 come to St. Louis and discuss with the Monsanto
15 representatives in the health medical field his
16 understanding of Dr. Kimbrough's findings and the
17 findings out of his own laboratory. And to try to
18 tutor the Monsanto people regarding the
19 differences in the interpretations that
20 pathologists were giving to what they are seeing
21 under the microscope.

22 So the nagging questions, at least as far
23 as I was concerned, was the one we had talked
24 about earlier, the interpretation of the

1 observations by different scientists of the same
2 slides.

3 Q. Or, in shorthand, whether what they were
4 seeing in the rat livers was cancer or not cancer?

5 A. That is it. Yes.

6 Q. That was the primary concern?

7 A. Yes.

8 Q. Because, of course, if pcb's were labeled
9 as a cancer-causing chemical, that was the end of
10 the road as far as Monsanto was concerned with
11 continued production of that product?

12 A. Probably.

13 Q. And at least as of the date of this
14 Exhibit, 322, as of that date at least Dr.
15 Kimbrough had reported her findings that there
16 were cancerous lesions in the rats that she was
17 working with and feeding pcb's?

18 A. Yes.

19 Q. Is that correct?

20 A. Yes.

21 Q. The covering letter on 322 says the
22 enclosed is a brief summary of my personal views
23 and I would appreciate any open and frank comments
24 that you all may have.

1 Did you make any comments at all back to
2 Calandra in response to the letter and enclosed
3 memorandum?

4 A. No.

5 Q. Do you know whether anyone else at
6 Monsanto did?

7 A. No.

8 Q. No, you don't know, or, no, they didn't?

9 A. I do not know.

10 Q. Okay.

11 The flaw is in my question, not your
12 answer.

13 Was there, as the letter suggests there
14 might be, any additional pathologists brought into
15 look at the either the Industrial Bio-Test slides
16 or Dr. Kimbrough's slides in an effort to resolve
17 the impasse?

18 A. Yes, that was discussed thoroughly.

19 Q. Was somebody else brought in?

20 A. I don't know.

21 Q. The letter closes with the statement it
22 is my feeling that we need to get together again
23 within the next few weeks to continue our
24 discussions.

1 Was there a meeting within a few weeks
2 after April 18, 1975?

3 A. There was another meeting. I have
4 forgotten the time span between meetings.

5 Q. That you attended?

6 A. Yes.

7 Q. Where was that second meeting?

8 A. St. Louis.

9 Q. Also in Dr. Roush's office?

10 A. The area near Dr. Roush's office.

11 Q. And were the same people in attendance?

12 A. Yes.

13 Q. How long did the second meeting last?

14 A. A little over half a day.

15 Q. To your knowledge, was there ever a memo
16 committed to writing by anyone about the second
17 meeting in the same sense that there is a memo
18 attached to Exhibit 322?

19 A. No. I don't recall any.

20 Q. You didn't make any written notes of that
21 second meeting?

22 A. No.

23 Q. As best you can recall, what was
24 discussed at the second meeting that was different--

1 from what is summarized in the memo attached to
2 Exhibit 322?

3 A. The principal topic of discussion was
4 contacting of the appropriate federal agencies and
5 sharing with them Calandra's opinions and our
6 understanding of Dr. Kimbrough's work and how it
7 all appeared to Monsanto.

8 Q. Monsanto wanted to make sure that the
9 government had both sides of the story, not just
10 Dr. Kimbrough's side. Is that a fair statement?

11 A. That is fair.

12 Q. There had already been an attempt through
13 meetings or among Monsanto scientists, Dr.
14 Kimbrough and Industrial Bio-Test scientists, to
15 resolve it among themselves and they had not
16 succeeded?

17 A. Yes.

18 Q. Is that correct?

19 A. Yes.

20 Q. Let's break for lunch now that it is
21 here.

22 (Whereupon a short recess was
23 had.)

24

IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

THE CITY OF BLOOMINGTON, INDIANA;)
THE UTILITIES SERVICE BOARD OF)
BLOOMINGTON, INDIANA; and MONROE)
COUNTY, INDIANA,)

Plaintiffs,)

vs.)

Civ No.
IP 83-9-C

WESTINGHOUSE ELECTRIC CORPORATION,)
a Pennsylvania corporation; and)
MONSANTO COMPANY, a Delaware)
corporation,)

-----Defendants.-----)

The continued deposition of W. B. PAPAGEORGE,
called for examination by the Plaintiffs, pursuant
to notice and pursuant to the provisions of the
Federal Rules of Civil Procedure of the United
States District Courts, pertaining to the taking
of depositions for the purpose of discovery, taken
before Arnold N. Goldstine, a Notary Public and
Certified Shorthand Reporter within and for the
County of Cook and State of Illinois, at Three
First National Plaza, Chicago, Illinois, on
October 16, 1986, at the hour of 1:30 o'clock p.m.

APPEARANCES:

Mr. James G. McConnell
Bell, Boyd & Lloyd
Three First National Plaza
70 West Madison Street
Suite 3200
Chicago, Illinois 60602

-and-

Mr. Geoffrey M. Grodner
Law Offices of Geoffrey M. Grodner
One City Centre
Suite 100
Bloomington, Indiana 47401

appeared on behalf of the
Plaintiffs;

Mr. Michael R. Fruehwald
Barnes & Thornburg
1313 Merchants Bank Building
Indianapolis, Indiana 46204

appeared on behalf of Defendant
Monsanto Company.

1 WILLIAM B. PAPAGEORGE,
2 having been previously duly sworn,
3 was examined and testified as follows:

4 DIRECT EXAMINATION (Continued)

5 BY MR. MC CONNELL:

6 Q. Returning to Exhibit 322, the second
7 page, which is the first page of the enclosed
8 memorandum, it leads off with a sentence:

9 "The central issue in
10 question is whether pcb's are
11 carcinogens or not."

12 Was that the central issue of the
13 meeting, or did you understand that to be the
14 central issue of the entire Industrial Bio-Test
15 research effort?

16 MR. FRUEHWALD: Back in '75?

17 MR. MC CONNELL: As of the date of that
18 meeting.

19 A. I can't apply this thought to the total
20 Industrial Bio-Test research effort. Because some
21 of the tests were not designed to address
22 carcinogenicity. But it does apply to parts of it.

23 Q. Okay.

24 So Monsanto as a company and the research

1 program they commissioned, they had Industrial
2 Bio-Test undertake with respect to pcb's, were
3 both concerned not only with carcinogens but also
4 possible adverse health effects from exposure to
5 pcb's?

6 A. Yes.

7 Q. And it was your understanding that
8 Industrial Bio-Test was to include in its reports
9 any findings of any kind of potential adverse
10 health effect, not just findings concerning
11 cancer?

12 A. That is correct.

13 Q. And that was true with respect to the
14 two-year rat oral toxicity study in particular?

15 A. Yes.

16 Q. That study was not limited solely to the
17 question of cancer?

18 A. That's right.

19 Q. Okay.

20 The memo goes on to say:

21 "The long-term
22 studies conducted at Bio-Test
23 indicate that the answer is
24 "no. Drs. Ward Richter and

1 Donovan Gordon are of this
2 opinion which is shared by M.
3 L. Keplinger and J. C.
4 Calandra."

5 All of the people mentioned in that first
6 paragraph are Industrial Bio-Test people; is that
7 correct?

8 A. That's correct.

9 Q. The memo goes on to discuss Dr.
10 Kimbrough's work, in the second paragraph. In the
11 third paragraph it refers to some studies of pcb
12 products manufactured by people other than
13 Monsanto, Kanechlor-300, -400 and -500. Those
14 were not Monsanto products?

15 A. That's right.

16 Q. Okay.

17 Is there some comparability, if you know,
18 between the Kanechlor series of products and the
19 Aroclor series of products in the sense, I mean we
20 know they are all pcb's.

21 My question is can you say that
22 Kanechlor-300 is equivalent to Aroclor something
23 or other, in the sense that they are essentially
24 the same mixture of the various components or do

1 you know the answer to that?

2 A. I wouldn't quite describe them as
3 equivalent in having the same components. But
4 they were equivalent in attempting to have the
5 same percentage chlorine.

6 Q. By weight?

7 A. By weight.

8 Q. Okay.

9 Differences in the manufacturing process
10 would lead to a different gas chromatograph
11 pattern even though the two mixtures had the same
12 percentage of chlorine by weight?

13 A. That is correct.

14 Q. Okay.

15 So research findings on the Kanechlor
16 products might not reach the same conclusions as
17 the same experiment done with the Aroclor product
18 with the same weight, percent chlorine by weight?

19 A. That is possible.

20 Q. That is possible.

21 Q. On page 2 of the memo, which is the third
22 page of Exhibit 322, in the second paragraph Dr.
23 Calandra goes on to say:

24 "The evidence to date

1 indicate that male rats are
2 more resistant than females to
3 the formation of nodular
4 hyperplasia as as well as
5 hepatocellular carcinoma.
6 Rats are also more resistant
7 to the induction of these
8 lesions than mice."

9 To your knowledge, did either Monsanto or
10 Industrial Bio-Test at any time go back to the raw
11 data that already existed with respect to the
12 Industrial Bio-Test rat studies and try to
13 segregate out the numbers of liver lesions and the
14 types of lesions by sex of the animals?

15 A. There was a study to distinguish between
16 sex. I don't know about whether it was centered
17 on numbers. I know that they tried to separate
18 the combinations.

19 Q. The males from the females?

20 A. The males from the females.

21 Q. Had that been done by Industrial Bio-Test
22 prior to Exhibit 322?

23 A. Yes.

24 Q. Did Industrial Bio-Test or anyone else on

1 behalf of Monsanto ever study carcinogenesis of
2 pcb's in mice?

3 A. Did Monsanto conduct carcinogenesis
4 studies, no.

5 Q. Or did IBT on its behalf?

6 A. No.

7 Q. Okay.

8 Why was that?

9 A. It is my understanding that mice were not
10 perceived by Monsanto and its consulting
11 laboratories, including Industrial Bio-Test, as
12 being a reliable test animal for carcinogenesis.

13 Q. Were you ever advised of the basis
14 for that conclusion?

15 A. Not in a scientific way.

16 The comment that I recall is that mice
17 very easily will show cancer effects on many
18 chemicals.

19 Q. Whatever you give to the mice causes
20 cancer?

21 A. Not whatever, but many chemicals that do
22 not have the same effect on other animals seem to
23 affect the mice.

24 Q. Did anybody discuss with you the

1 comparability of cancer data for mice and people,
2 as to whether -- in your last answer you indicated
3 that mice wouldn't be a good model for other
4 species of animals.

5 My question is did anybody look at the
6 question of whether the mouse experience and the
7 human experience was reasonably related?

8 A. It is my understanding that is even more
9 controversial and less reliable.

10 Q. You can go ahead and take your time and
11 review it if you haven't had a chance to read the
12 whole memorandum.

13 The third paragraph on page numbered 2 of
14 the memo of Exhibit 322 says:

15 It should be noted
16 that the liver sections which
17 were read by the pathologist
18 and reported in IBT number
19 641-06672 and dated March 24,
20 1975 were not the same slides
21 or sections as those reported
22 on originally."

23 Was there any explanation given to you at
24 that meeting or at any other time, for that

1 matter, as to why new sections had to be taken for
2 this later review by the various pathologists?

3 A. Yes.

4 I was told by Mr. Wheeler that sometimes
5 when they slice an organ, there may be parts of
6 that organ that are affected that your sampling
7 didn't pick up. So the intent here is to see more
8 of that liver, see if other slices of the organ
9 show these effects.

10 Q. If that were the case, wouldn't you want
11 the reviewing pathologist to look at both the old
12 slides and the new slides to get a total picture
13 of what was going on?

14 A. It seems so.

15 MR. FRUEHWALD: Page 3 of the memo says there
16 are no slides in the possession of FDA since June
17 of '73. Could be that they just were not
18 available. That is just what the memo says.

19 MR. MC CONNELL: I would come to that in due
20 course.

21 Q. But let me just ask you. Do you know
22 whether any effort was made before this meeting or
23 after it to get those slides back from FDA, so
24 that they could be included in a review as well

1 as the new slides?

2 A. All I can recall is that we continued our
3 effort to get the slides back. I do not know if
4 they were viewed by others after the return.

5 Q. After this, was there ever a third
6 meeting?

7 We have mentioned the first meeting that
8 is reflected in the date of 322. Then there was a
9 second meeting some days or weeks after that.

10 Was there ever a third meeting that you
11 attended on this subject of rat carcinogenesis by
12 pcb's?

13 A. No.

14 Q. Okay.

15 Some of the partial sentence on the
16 bottom of page 2, carrying over to page 3 says:

17 "Serial sections of
18 the liver would eliminate some
19 of the covariants."

20 Referring to the reason why you don't get
21 the same answer when you look at a different set
22 of slides.

23 In either of those two meetings, was
24 there any discussion about going back and doing

1 serial sections of the remaining liver samples to
2 see if the covariants could be eliminated?

3 A. I don't recall that detail.

4 Q. Page 3 of the memo goes on to describe
5 the differences in the terminology among the
6 various pathologists that are looking at these
7 slides, as Dr. Squires' view as opposed to the
8 view of Monsanto and Industrial Bio-Test with
9 respect to what is or isn't a "carcinogenic
10 response."

11 Does that summary comport with what your
12 understanding was before this meeting of the areas
13 of dispute amongst the various pathologists?

14 A. Yes.

15 Q. That portion of the discussion at the
16 meeting wasn't new information to you?

17 A. That is correct.

18 Q. Okay.

19 Beginning near the bottom of page 4 there
20 is a list of several additional things that need
21 to be done by Bio-Test.

22 Can you tell me which of the things on
23 that list were done after this meeting?

24 A. I really don't know.

1 Q. In particular was there ever an
2 experiment designed to develop information on the
3 reversibility of the liver changes that were
4 observed?

5 A. Not to my knowledge.

6 Q. Okay.

7 Was there any discussion at the follow-up
8 meeting after April 18, 1975 about other health
9 effects other than cancer that were seen or not
10 seen in the rat studies?

11 A. No.

12 Q. Those two meetings focused strictly on
13 the cancer question?

14 A. Yes.

15 (The documents above-referred to
16 were marked Bloomington Deposition
17 Exhibit Nos. 323 through 328, both
18 inclusive, for identification.)

19 Q. Exhibit 328 is a two-page letter from Dr.
20 Levinskas of Monsanto to Dr. Calandra at Bio-Test
21 dated July 18, 1975 stamped received July 21, 1975
22 and a single page chart attached to the letter
23 referred to as the attached table.

24 I will ask you if you have seen that

1 Exhibit before today?

2 A. I do not recall seeing this document.

3 Q. Did you discuss with Dr. Levinskas at
4 either of those two meetings we just talked about
5 or any other time the fact that he was going to
6 make a request of Industrial Bio-Test to change
7 the conclusions on the three 2-year oral rat
8 toxicity study reports?

9 A. No.

10 Q. Had you sign any draft versions of those
11 reports before the two meetings that we just
12 talked about?

13 A. No.

14 Q. Did you know before -- well, take your
15 time and finish reading that before I ask you.

16 A. That is all right.

17 Q. At either of those two meetings or at any
18 other time, did Dr. Levinskas say that he was
19 going to ask Industrial Bio-Test to change the
20 wording of his conclusions?

21 A. No.

22 Q. Did you receive copies of the three
23 reports on the three 2-year rat studies that
24 contained the conclusion phrase "does not appear."

1 to be carcinogenic"?

2 A. Yes.

3 Q. Before today, were you aware that there
4 were earlier versions of those reports which said
5 that the conclusion was that each of the
6 substances was slightly tumorigenic?

7 A. Yes.

8 Q. When did you first become aware of that?

9 A. I think in preparing for this deposition.

10 Q. And in preparing for the deposition, did
11 you review the final reports of some of the
12 Industrial Bio-Test study?

13 A. No.

11

14 Q. Did you review any of the Industrial
15 Bio-Test documents before coming here to testify?

16 A. No.

17 Q. Did you talk to somebody at Monsanto in
18 preparation for your deposition who told you that
19 the wording of those three reports had been
20 changed?

21 A. I don't recall if it was a Monsanto
22 person or outside counsel.

23 Q. Well, I am not permitted to ask you about
24 your conversations with outside counsel. So I

1 won't do that.

2 But it wasn't until you were preparing
3 for the deposition that you learned of the changes
4 in the wording of the three 2-year rat study
5 reports; is that correct?

6 A. That is correct.

7 Q. Did it surprise you to learn of those
8 particular changes?

9 A. No.

10 Q. In your view, does the change from
11 slightly tumorigenic to does not appear to be
12 carcinogenic reflect a substantive difference in
13 the conclusions?

14 MR. FRUEHWALD: Let me interpose an objection
15 here.

16 Without the context of the entire report,
17 it is hard to say whether one word in a particular
18 sentence is a substantive change.

19 I think the question can't be answered
20 without showing the report.

21 As I recall the report, the entire page
22 was on tumors. We are talking about one sentence
23 on a full page discussion and, therefore, I think
24 it is impossible to answer the question as phrased...

1 as to whether in the context of the report this is
2 a substantive change.

3 MR. MC CONNELL: Well, my question wasn't
4 whether in the context of the report it is a
5 substantive change. My question was in the
6 context of the conclusion is that a substantive
7 change.

8 MR. FRUEHWALD: You have a whole page of
9 conclusions that I am talking about.

10 Can you show the witness the report or is
11 there some reason you won't do that to let him
12 answer the question?

13 MR. MC CONNELL: I could do that, but I would
14 like him to tell me rather than you telling me
15 whether he can answer the question without seeing
16 the report before I do that, now that you have
17 thoroughly coached him.

18 MR. FRUEHWALD: I raised an objection which I
19 think it is an unfair question, Jim, to ask if
20 this is a significant change out of context, when
21 you can provide the context very easily. I think
22 it is a trick question.

23 MR. MC CONNELL: I didn't ask him if it was a
24 significant change. I asked him if it was a

1 change in the meaning.

2 Now, he told me before that there was no
3 difference between significant findings and no
4 significant findings and effects and no effects,
5 which were the two terms in a letter. He was able
6 to do that without looking at the back-up report
7 that was attached to that letter. And I want to
8 find out if he can do it in this instance without
9 looking at the report. If not, he can tell me
10 that.

11 You don't need to prompt him.

12 MR. FRUEHWALD: I don't think that the analogy
13 you have drawn to the prior exhibit is a correct
14 one.

15 The question that is pending I have
16 raised my objection to it. And if the witness
17 feels he can answer it, he can go ahead.

18 A. I have forgotten the question.

19 BY MR. MC CONNELL:

20 Q. The question was in your view, is the
21 change from the phrase slightly tumorigenic to the
22 phrase does not appear to be carcinogenic change
23 the meaning of the conclusion?

24 A. Yes, it does.

1 Q. In fact, if it didn't change the meaning
2 of the conclusion, there wouldn't be any reason
3 for Monsanto to press for that change in the
4 wording of the final report by Industrial
5 Bio-Test, would there?

6 MR. FRUEHWALD: I object to the question,
7 pressing for changes, things of that nature. It
8 is a very argumentative question, Jim, as to what
9 was going on here. It is not supported by this
10 exhibit.

11 MR. MC CONNELL: I will withdraw that
12 question. Let me ask a different series of
13 questions.

14 Q. The report as it was originally sent and
15 called a final report from Industrial Bio-Test to
16 Monsanto contained the conclusion that was phrased
17 for all three substances that were the subject of
18 that study that they were slightly tumorigenic.

19 Monsanto had two meetings with people
20 from Industrial Bio-Test and then wrote a letter
21 that says we want you to change that, so that it
22 says does not appear to be carcinogenic.

23 MR. FRUEHWALD: Can you show me the letter
24 that says change all three reports?

1 This letter says you have already changed
2 two of the reports, why don't you make the third
3 one coincide with what you have done on the other
4 two.

5 There is no letter that I know of telling
6 them to change all three reports.

7 MR. MC CONNELL: There were two meetings that
8 led up to that.

9 MR. FRUEHWALD: Your making a lot of
10 argumentative assumptions here, there is no
11 factual basis for. That is why I object to your
12 questions.

13 MR. MC CONNELL: There is a factual basis in
14 the letter, I believe.

15 MR. FRUEHWALD: You are talking about this
16 letter, you are talking about a request of a
17 change in one report to coincide with two other
18 reports already change by Industrial Bio-Test.
19 There is no evidence that the change on the other
20 two reports was requested or otherwise caused by
21 Monsanto.

22 BY MR. MC CONNELL:

23 Q. To your knowledge was that change
24 requested by Monsanto on the two reports that were

1 changed when that letter was written?

2 A. At this moment I am confused as to which
3 change was being recommended here. I see a
4 reference to two reports, a number 1 and a number
5 2, with the wording that we have expressed here.
6 I don't know what Monsanto's position, other than
7 in the write-up up front.

8 Q. According to the attachment, there was a
9 supplemental report number 1 mailed, it says here,
10 and under each substance the conclusion is listed
11 as slightly tumorigenic.

12 Supplemental report number 1, the column
13 headed supplemental report number 2, which is
14 noted JCC delivered. Two of the three substances,
15 the conclusion is does not appear to be
16 carcinogenic. The third one remains slightly
17 tumorigenic as a conclusion.

18 I take the letter to be a request by Dr.
19 Levinskas to change the 1255 conclusion, so that
20 it matches the conclusions for the other two
21 products; that is to say, that all three of them
22 will say does not appear to be carcinogenic.

23 Does that agree with your understanding
24 of what is going on in that set of exhibits?

1 A. Yes. By reading the letter and looking
2 at these charts, yes.

3 Q. All right.

4 At whose instance, if you know, was the
5 change that occurred with respect to 1260 and 1242
6 between supplemental report number 1 and
7 supplemental report number 2 made?

8 A. That I don't know.

9 Q. Was that change discussed at either of
10 those two meetings you attended?

11 A. No. The reports were not discussed at
12 the meetings.

13 Q. At meetings that you attended?

14 A. Correct.

15 Q. Okay.

16 May I see that.

17 Dr. Levinskas says in his letter, that it
18 does not appear to be carcinogenic is preferable.

19 Do you know why he preferred that phrase?

20 A. Since the issue of carcinogenicity became
21 quite important, it was considered that a
22 reference to whether or not it causes cancer was
23 more important than the fact that tumors were
24 observed in some instances.

1 Tumors and cancer are not the same
2 subject.

3 So the reports as revised emphasized no
4 cancer rather than say slightly tumor forming.

5 There is a different thrust in the
6 conclusions.

7 Q. And it was Monsanto's preference that the
8 emphasis be on what didn't happen rather than on
9 what did happen in those studies?

10 A. Yes. To answer a very important
11 question. Yes.

12 Q. In other words, without an Industrial
13 Bio-Test study report that said the substances did
14 not appear to be carcinogenic, there was nothing
15 that could be put head to head with Dr.
16 Kimbrough's study as reaching an opposite
17 conclusion?

18 A. At that time. Yes.

19 Q. The letter in 328 goes on to comment
20 about lack of agreement in animal numbers between
21 the various versions of the report, does it not?

22 A. Yes, it does.

23 Q. Was there any discussion at the two
24 meetings you attended about the lack of agreement

1 in the animal numbering?

2 A. No.

3 Q. Before I showed you Exhibit 328, had you
4 been aware of that problem at all?

5 A. No.

6 Q. From what you know about the other
7 Monsanto products that led up to the indictment of
8 Paul Wright and Moreno Keplinger and Dr. Calandra,
9 that is one of the same problems that existed in
10 those other studies, wasn't it, that they couldn't
11 track the animal from start to finish?

12 A. I don't know.

13 Q. Do you know if the issues about animal
14 numbering that are raised in Exhibit 328 were ever
15 resolved to Monsanto's satisfaction?

16 A. I understand they were eventually
17 resolved.

18 Q. Did anybody after the time of this July
19 18, 1975 letter that we have marked as Exhibit
20 328 -- did anybody from Monsanto go back to
21 Industrial Bio-Test and go through the raw data,
22 that is, the lab notebooks, the body weight books
23 and other original laboratory records, to
24 determine whether in fact there was or was not

1 substitution of animals in mid-study in those
2 three studies?

3 A. I don't know that.

4 Q. You don't know, in fact, whether that was
5 done in connection with the Booz, Allen and
6 Hamilton review either?

7 A. That is correct.

8 Q. Did you ever hear of or perceive any
9 resistance on the part of Industrial Bio-Test to
10 making the change that is requested in Exhibit
11 328?

12 A. I heard nothing.

13 Q. I show you what has been marked as
14 Exhibit 323, which is a one-page letter originally
15 typed with a date of July 25, and scratched out
16 and redated August 4, from Dr. Calandra to Dr.
17 Levinskas. And on the front of it there is a
18 handwritten note signed by somebody named Adele.

19 I will ask if you ever saw either of
20 those documents before?

21 A. I have not seen either document.

22 Q. Exhibit 324 is a handwritten document
23 which appears to me to be a rough draft of the
24 typed version of 323.

1 Would you recognize the handwriting of
2 Dr. Calandra?

3 A. No.

4 Q. Okay. Never mind about that exhibit,
5 then.

6 Exhibit 325 is a one-page letter typed
7 with a date of August 4, 1975 from Dr. Calandra to
8 Dr. Levinskas.

9 I will ask you if you ever saw that
10 version of the other preceding two exhibits?

11 A. No, I had not.

12 Q. 325 reflects an acquiescence in the
13 request to Industrial Bio-Test that they change
14 the conclusion of the one report that was
15 requested by Monsanto?

16 A. It does that, yes.

17 Q. It also responds to the questions about
18 discrepancies in animal numbering?

19 A. Yes.

20 Q. Do you know whether there was any further
21 dialogue either by way of correspondence or phone
22 conversations, or face-to-face meetings between
23 Monsanto and Industrial Bio-Test on the subject of
24 the disagreement in animal numbering?

1 A. I have no knowledge at all on that.

2 Q. Exhibit 326 is a letter dated August 5,
3 1975 in Dr. Calandra to Dr. Levinskas.

4 Have you ever seen that letter?

5 A. No. I have not.

6 Q. Do you know whether that was mailed or
7 hand delivered?

8 A. I do not know.

9 Q. This letter refers to a revised page 2.

10 Is that the changed conclusion that is
11 referred to in the previous Exhibit, dated August
12 4?

13 A. It appears to be.

14 Q. Okay.

15 So they didn't send a new report. They
16 just sent the page with the revision on it?

17 A. That is what is implied here.

18 Q. To your knowledge, that was the same
19 procedure that had been followed on other
20 occasions?

21 A. That is very typical. Yes.

22 Q. Okay.

23 Did you at some time after August 5,
24 1975, receive copies of these three rat study

1 reports?

2 A. Eventually I did. I don't recall just
3 when, though.

4 Q. Okay.

5 But the only copies you received had the
6 dose not appear to be carcinogenic conclusion?

7 A. Yes.

8 Q. So it would have had to have been after
9 August 5, 1975?

10 A. Yes.

11 Q. Exhibit 327 is a letter dated August 14,
12 1975 stamped received August 18, 1975 to Dr.
13 Calandra from Dr. Levinskas and I will ask you if
14 you have ever seen that document?

15 A. I don't recall ever seeing this document.

16 Q. Apparently as of the date of Exhibit 327,
17 the matter of discrepancies in animal numbering
18 among the various versions of the two-year oral
19 rat study reports had not been resolved to Dr.
20 Levenskas' satisfaction. Is that a fair
21 statement?

22 A. That appears to be correct.

23 Q. As I understand your earlier testimony,
24 this whole question of problems with the animal

1 numbering in these studies was never brought to
2 your attention?

3 A. True.

4 Q. Based on what you have seen here in these
5 exhibits today, does that continuing inability to
6 resolve the discrepancies in animal numbering
7 raise a question in your mind about the validity
8 of the results in that study?

9 A. Not truly. Because of what Booz, Allen
10 Hamilton reported. At least what I was told they
11 reported.

12 So from that information, I am led to
13 believe that the study and conclusions are still
14 valid.

15 Q. To your knowledge, did Booz, Allen and
16 Hamilton people actually go to Industrial Bio-Test
17 and review the complete Industrial Bio-Test file
18 on all these studies?

19 A. That is my understanding, yes.

20 Q. So, presumably, they would have seen this
21 correspondence that we have before us here today?

22 A. I don't know what they looked for.

23 Q. You don't know what kind of people they
24 used to do the looking either, do you?

1 A. No.

2 Q. What their training was?

3 A. I do not know.

4 Q. Okay.

5 Booz, Allen and Hamilton as I understand
6 it is a management consulting company.

7 Is that correct?

8 A. Well, I don't claim to know all about
9 Booz, Allen and Hamilton. They also have the
10 Arthur D. Little group which is a subsidiary which
11 is technically oriented, so they do have access to
12 technical skills of various types. I don't know
13 exactly what they have.

14 Q. Was Arthur Little group involved in this
15 review, if you know?

16 A. I don't know.

17 Q. All you know is that somebody at Monsanto
18 told you that you they got a clean bill on the pcb
19 studies done by Industrial Bio-Test?

20 A. That is correct.

21 Q. I may have asked you this before, but do
22 you know even though you haven't seen it whether
23 there was, in fact, a written report on that
24 review from Booz, Allen and Hamilton?

- 1 A. No, I don't know.
- 2 Q. Before the Industrial Bio-Test
- 3 indictments were returned, had Booz, Allen done
- 4 other work for Monsanto?
- 5 A. I understand they have, yes.
- 6 Q. Have you ever worked with them before?
- 7 A. No.
- 8 Q. Do you know in the course of the earlier
- 9 work that Booz, Allen did for Monsanto, whether
- 10 they customarily submitted their reports in
- 11 writing?
- 12 A. That is the custom, yes.
- 13 Q. So you would expect that there should be
- 14 a written report of this pcb study review that
- 15 they did?
- 16 A. I would expect one, yes.
- 17 Q. I don't think we have asked you, Mike,
- 18 but if you have got such a report I would sure
- 19 like to see it.
- 20 MR. FRUEHWALD: I will note the request. I
- 21 have not seen the document so I don't know whether
- 22 one exists.
- 23 MR. MC CONNELL: All right.
- 24 Let's see if we can turn to a different

1 subject. Let's take five minutes.

2 (A short recess was taken.)

3 MR. MC CONNELL: Back on the record.

4 Do you want to mark this whatever our
5 next number is.

6 (The document above-referred to
7 was marked Bloomington Deposition
8 Exhibit No. 329 for identification.)

9 Q. Exhibit 329 is a letter you wrote on
10 October 17, 1975 to Larry it looks like Wapensky
11 of the you USEPA.

12 Do you recall what that refers to?

13 A. Yes, I do.

14 Q. What was the samples that were sent?

15 A. Mr. Wapensky asked for a sample of
16 Aroclor 1016. And by that time we had a
17 preprinted form that we asked the requestors to
18 fill out.

19 Q. So that you would know what it was they
20 proposed to do with the stuff?

21 A. It was primarily one of their
22 understanding that they were to handle it
23 properly. Don't dispose to the environment.
24 Precautionary kinds of statements. That was

1 returned, and this acknowledges the return of that
2 form.

3 In the meantime, I offered to enclose
4 with this letter some information I had on the
5 Aroclor 1016, which was the specifications, how it
6 compared with Aroclor 1242.

7 Q. With respect to physical and chemical
8 characteristics?

9 A. Right.

10 Q. Was this in connection with some EPA
11 research or do you recall what it was he wanted to
12 use it for?

13 A. This was involved with EPA studies. I
14 don't know specifically what for.

15 Q. At this time the EPA wasn't very old, was
16 it, a couple years?

17 A. This is about five years old now.

18 Q. Had you dealt with people at the EPA
19 before this with respect to pcb's?

20 A. Oh, yes. But this is the first contact
21 with the field office.

22 Q. You had been dealing with Washington
23 before that?

24 A. Correct.

1 Q. Do you want to mark that 330.

2 (The document above-referred to
3 was marked Bloomington Deposition
4 Exhibit No. 330 for identification.)

5 Exhibit 330 is a letter dated also
6 October 17, 1975 from you to Dr. Raymond Shapiro
7 of the Food and Drug Administration.

8 I take it you were forwarding that paper
9 to him in the spirit of information sharing which
10 existed throughout the course of your role as pcb
11 coordinator; is that correct?

12 A. Yes, that's correct.

13 Q. That wasn't something that he had
14 specifically requested from you?

15 A. No.

16 Q. By October 17, 1975 had the FDA set
17 specific guidelines for pcb levels in a various
18 foodstuffs?

19 A. Yes, it had.

20 Q. Mark this.

21 (The document above-referred to
22 was marked Bloomington Deposition
23 Exhibit No. 331 for identification.)

24 Was there ever an effort by Monsanto to

1 get the if FDA to make a distinction between 1016
2 and its other products with respect to those
3 examination guidelines?

4 A. No.

5 Q. Exhibit 331 is a letter dated October 31,
6 1975 from you to you Dr. David Brown of the
7 National Institute for Occupational Health and
8 Safety.

9 Do you recall writing that letter?

10 A. Yes. I wrote this letter.

11 Q. What was the nature of the customer
12 information that he requested?

13 A. He wanted to know who our customers were
14 and the types of pcb's that we sold them and how
15 much.

16 Q. Was that the kind of information that
17 prompted -- strike that.

18 Was that the same kind of information
19 that had initially been requested of Monsanto by
20 Congressman Ryan that John Mason initially refused
21 to provide to Congressman Ryan without some
22 assurance of confidentiality.

23 Do you recall that exchange of
24 correspondence?

15

1 A. Yes.

2 No, that earlier request was in broader
3 terms and not related to specific customers and
4 their locations. This request, the customer by
5 name and address and the amount.

6 Q. So the National Institute of Occupational
7 Health and Safety wanted more detail than what
8 Congressman Ryan had asked for?

9 Q. That's right.

10 Q. When did the policy change at Monsanto
11 from not providing the information without
12 assurances of confidentiality as reflected in
13 Mason's correspondence with Ryan to your
14 indication in Exhibit 331 that NIOSH already had
15 that detailed information?

16 A. This information was given to the
17 agencies with the stipulation that it be treated
18 confidentially.

19 Q. Okay.

20 Not shared with your competitors, in
21 other words?

22 A. That's right.

23 Q. All right.

24 A. The previous information was eventually --

1 given to the inter-agency taskforce that put out
2 the March 1972 report, and at that point we did
3 not ask for confidential treatment.

4 Q. But the information which was given to
5 the task force didn't identify specific locations?

6 A. No. But it identified Monsanto's share
7 of the market amounts, types of applications,
8 other types of confidential information.

9 Q. But there was a distinction still being
10 made by Monsanto between protecting information
11 that was proprietary only to Monsanto and
12 information that was proprietary to Monsanto and
13 its customers?

14 A. Correct.

15 Q. The company felt it had to be a little
16 more careful with its customers' proprietary
17 information than it did with its own?

18 A. Yes.

19 Q. That is not an unreasonable position to
20 take, I guess.

21 Do you want to mark this.

22 (The document above-referred to
23 was marked Bloomington Deposition
24 Exhibit No. 332 for identification.)--

1 332 is a letter to you from Harvey Stein
2 of the Department of Health, Education and Welfare
3 dated November 4, 1975.

4 I will ask if you recall receiving that
5 letter?

6 A. I recall this, yes.

7 Q. What was the information that is referred
8 to in the letter that you supplied to the
9 Department of Health, Education and Welfare?

10 A. It is primarily the last three pages,
11 three sheets.

12 Q. Which he had incorporated into the larger
13 document that is attached to the letter; is that
14 correct?

15 A. Yes.

16 Q. So in essence he is writing back to you
17 to let you know what it was he did with the
18 information you gave him?

19 A. Yes.

20 Q. And to share the rest of that compilation
21 with you; is that correct?

22 A. Right.

23 Q. What at the time of November 1975 was the
24 role of the office of Occupational Health,

1 Surveillance and Biometrics with respect to pcb's,
2 was that part of NIOSH?

3 A. Yes.

4 Q. Okay.

5 So their concern was with worker
6 exposure, principally?

7 A. Yes.

8 Q. And the FDA's concern was with exposure
9 through food contamination?

10 A. Yes.

11 Q. And the EPA's concern was with exposure
12 through other environmental contact?

13 A. Yes.

14 Q. Does the summary of the various studies
15 that is contained on pages numbered pages 6, 7,
16 and 8 of the report that is attached as part of
17 Exhibit 332, to your knowledge as of the date of
18 the letter include all of the reported Industrial
19 Bio-Test studies?

20 A. I don't see the Bio-Test studies listed.

21 Q. Do you know why they were not?

22 A. No, I don't.

23 Q. Presumably they had been made
24 available -- well, let me ask that as a question.

1 Had the Industrial Bio-Test report been
2 made available to the National Institute of
3 Occupational Safety and Health?

4 A. I don't think so. I really don't
5 remember clearly, but I don't think this
6 particular agency got a copy of their own.

7 Q. Okay.

8 They went to the Food and Drug
9 Administration?

10 A. Yes.

11 Q. And they went to the Environmental
12 Protection Agency?

13 A. EPA. Yes.

14 Q. Okay.

15 A. And USDA.

16 Q. Department of Agriculture?

17 A. Yes.

18 Q. That was as a result of the prior use in
19 pesticides, as a medium for pesticides, or why was
20 it supplied to the USDA?

21 A. They were involved with pesticides, as
22 well as their interest in meat and grain.

23 Q. They are at the other end of the food
24 chain from the Food and Drug Administration?

1 A. That is correct.

2 MR. FRUEHWALD: Let me note that the document
3 hasn't been studied by the witness, but there does
4 appear to be a footnote to a Keplinger/Fancher
5 report cited as the chicken study, as one of the
6 things that is included here.

7 MR. MC CONNELL: Does this indicate that it
8 was published or not?

16

9 MR. FRUEHWALD: Yes, toxicol-something
10 pharmacology, in 1971. So it is a very --

11 MR. MC CONNELL: The chicken study did get
12 published.

13 MR. FRUEHWALD: It appears to be a chicken
14 study by Keplinger at that period in '71, as
15 indicate by a footnote in this report.

16 MR. MC CONNELL: In that document.

17 Q. So if that were published, it would have
18 been available to them other than having been
19 supplied by Monsanto?

20 A. That is true.

21 Q. To your knowledge, did the National
22 Institute of Occupational Health and Safety ever
23 request from you, Mr. Papageorge, copies of the
24 Industrial Bio-Test study reports that were not

1 published?

2 A. Yes. Through me to Dr. Levinskas. In
3 about 1975 or thereabouts, NIOSH was putting
4 together a criteria document and they were talking
5 with Dr. Levinskas regarding toxicology effects.

6 I do not know what Dr. Levinskas shared
7 with them.

8 Q. Presumably since all of those reports had
9 already been supplied to two other federal
10 agencies, there wasn't any particular reason not
11 to share them with NIOSH?

12 A. There wouldn't appear to be any reason.

13 Q. Do you want to mark that.

14 (The document above-referred to
15 was marked Bloomington Deposition
16 Exhibit No. 333 for identification.)

17 Is it possible that, I know this happens
18 with legal journals, maybe it also happens with
19 scientific journals, that the 1971 issue of the
20 journal would actually not be out as of February
21 1972?

22 A. What I don't know is what this 19 means.

23 MR. FRUEHWALD: Probably a volume number.

24 MR. MC CONNELL: Volume number I would assume.

1 A. I just don't know about that publication,
2 whether it is published quarterly or when ready.

3 Q. In any event, it does appear that some
4 Bio-Test chicken study was ultimately published.

5 Exhibit 333 is a memo consisting of five
6 pages, dated November 17, 1975 from J. Coleman
7 Webber to a list including yourself.

8 I will ask you if you recall receiving
9 that document?

10 A. Yes, I recall this document.

11 Q. Were you a participant in the discussions
12 that are reflected in the later pages of that
13 document?

14 A. Yes, I was.

15 Q. Over how long a period of time did they
16 take place?

17 A. Two days.

18 Q. Two days. Okay.

19 And that it was November 13 and 14, 1975?

20 A. Yes.

21 Q. And the memo was circulated on November
22 17, so it was shortly after the conclusion of the
23 discussions?

24 A. Right.

1 Q. Where did those discussions take place?

2 A. In Washington, D.C. and the surrounding
3 area in the offices of the agencies that are
4 listed here.

5 Q. In other words, you and Dr. Roush and Mr.
6 Webber -- was he a Monsanto employee?

7 A. Yes.

8 Q. And Mr. Easley, he has also a Monsanto
9 employee?

10 A. Yes.

11 Q. And Dr. Calandra from Industrial Bio-Test
12 made a tour during that two-day period of various
13 agency offices in Washington, D.C. to take the
14 story of the Bio-Test animal studies to the
15 government, so to speak?

16 A. Yes.

17 Q. Who made the arrangements for those
18 various visits to the government agencies?

19 A. Mr. Easley.

20 Q. Did he work for you at that time?

21 A. No. He was Monsanto's representative
22 located in Washington, D.C.

23 Q. Would it be fair to describe him as a
24 lobbyist?

1 A. I don't know if he meets the total
2 definition of lobbyist, but he did represent
3 Monsanto and arrange for meetings for those of us
4 out of St. Louis.

5 I don't know that he participated in
6 legislative issues.

7 Q. You don't know whether he was actually
8 registered as a lobbyist or not?

9 A. I do not know that.

10 Q. All right.

11 A. He was more related to regulatory
12 agencies.

13 Q. But he was a full-time Monsanto employee?

14 A. Yes.

15 Q. He didn't represent any other companies?

16 A. That is correct.

17 Q. Okay.

18 According to the memorandum in the
19 paragraph on the second page, the numbered
20 paragraph number 1, the purpose of the discussions
21 was to show that positive action was taken by
22 Monsanto in response to Dr. Kimbrough's report
23 that Aroclor 1260 caused malignant tumors in the
24 liver of the rat and, number 2, to report the

1 recent review by Industrial Bio-Test and Eppley
2 Institute Consultants.

3 Who is Eppley Institute Consultants?

4 A. That is a medical institute in Omaha,
5 Nebraska that Monsanto approached, retained to
6 help in the impartial analysis of the pcb livers
7 and damaged cells.

8 Q. They looked at the slides?

9 A. Yes.

10 Q. Did they look at both sets or just the
11 second set, to your knowledge?

12 A. I don't know.

13 Q. In any event, the object of the trip was
14 to try and convince the government agencies that
15 in fact that pcb's, in particular the three
16 Aroclors that were studied by Industrial Bio-Test
17 were not carcinogens, is that a fair summary?

18 A. Yes.

19 Q. And you met with the various government
20 employees that are listed?

21 A. Yes.

22 Q. Did all of the Monsanto people and Dr.
23 Calandra meet with each of those government
24 employees or did you break up into groups and go

1 around?

2 A. We went as a team and met with these
3 individuals.

4 Q. Okay.

5 Did you feel, you personally as a result
6 of these two days of meetings, that you made any
7 progress in addressing the problem that is stated
8 in the last paragraph on the second page of the
9 Exhibit; that is, that people concerned with pcb's
10 treat them as one chemical and do not recognize
11 the difference between the different mixture
12 numbers?

13 A. Yes. I personally felt that we made
14 considerable progress, at least in getting
15 receptivity to further discussions, and better
16 understandings.

17 Q. Okay.

18 Was part of the purpose of this trip to
19 keep the 1016 product and other electrical grade
20 products alive as long as you could you?

21 A. Yes.

22 Q. Who initiated the idea of a mortality
23 study at Westinghouse's Bloomington, Indiana
24 capacitor plant?

1 A. I don't know.

2 Q. It wasn't Monsanto?

3 A. No.

4 Q. Okay.

5 The document refers to our, Monsanto's,
6 review of causes of death of employees associated
7 with the production of pcb's over the past 25
8 years.

9 Are you familiar with that study?

10 A. Yes.

11 Q. Was it completed?

12 A. Yes. And there was a report published or
13 completed also.

14 Q. The memo goes on to say that NIOSH is
15 concerned that there is poor control and
16 containment in plant practices once the pcb leaves
17 our plant, meaning Monsanto's plant.

18 Did you discuss with the NIOSH
19 representatives you met with engineering practices
20 that could be used to control pcb release by your
21 customers?

22 A. Yes, in a general way. Yes.

23 Q. Would it be fair to say that the NIOSH
24 concern reflected the same concern that Monsanto

1 had about sloppy customer practices based on your
2 visit and other Monsanto employees' visits to
3 various customer facilities?

4 A. Yes.

5 Q. So they weren't telling you anything you
6 didn't already know?

7 A. Correct.

8 Q. Did the NIOSH people that you talked to
9 at these meetings indicate that they had, any of
10 them had visited the Bloomington Westinghouse
11 plant?

12 A. No. In fact as I remember none had
13 visited an industrial site, the NIOSH people.

14 Q. So, whatever they were talking about
15 doing was still in the raw idea stage?

16 A. Correct.

17 Q. None of them really had any field
18 experience with pcb use?

19 A. Right.

20 And earlier you talked about their
21 concern being equivalent to Monsanto's. I said
22 yes. What I meant is the concern was equivalent
23 but timewise our concern in 1970 equaled their
24 concern in 1975.

1 Q. Did NIOSH tell you that they were not
2 recommending the banning of pcb's but, rather,
3 restricted practices, or is that a conclusion that
4 the Monsanto team drew on the basis of the
5 discussions?

6 A. No, this came up in the discussion and
7 they came out with that thought.

8 Q. They were recognizing, in other words,
9 that no effective substitute had been successfully
10 developed as of the time of these meetings?

11 A. That is correct.

12 Q. On the third page of Exhibit 333 there is
13 a reference to the McAllister bill in the House on
14 toxic substances, is that reference to the bill
15 that ultimately became the Toxic Substances
16 Control Act?

17 A. Yes.

18 Q. You also visited with some congressional
19 committee representative?

20 A. Yes.

21 Q. Was it your conclusion or was it their
22 statement to you, that is, Representative Daniels
23 and his staff, that they can use pcb's as a
24 political tool?

1 A. It was our conclusion.

2 Q. Unlike NIOSH, they didn't come right out
3 and tell you that is what they were planning to
4 do, I take it?

5 A. That is correct.

6 Q. Did the subcommittee on manpower
7 compensation, health and safety ultimately conduct
8 hearings on pcb problems?

9 A. Not to my knowledge.

10 Q. Is that because you all talked them out
11 of it?

12 A. I don't know.

13 Q. You also visited the National Cancer
14 Institute?

15 A. Yes.

16 Q. That is NCI?

17 A. Correct.

18 Q. And NCI was already in tune with the
19 ongoing dispute in the pathological community
20 about how to interpret these findings?

21 A. Yes.

22 Q. That was Dr. Kimbrough's agency, was it
23 not?

24 A. No. She used pathologists from that

18 1 agency. She was down in Georgia with the --

2 Q. Center for Disease Control?

3 A. She transferred to the Center for Disease
4 Control.

5 Q. In any event, the National Cancer
6 Institute would have been familiar with her work,
7 at least to the extent that it related to cancer?

8 A. Yes. Because their pathologists were
9 involved with Dr. Kimbrough's work.

10 Q. Who is Dr. David Rall?

11 A. He was -- he was and I believe still is
12 the director of the National Institute of
13 Environmental Health Sciences.

14 Q. That's the same outfit you mentioned
15 yesterday?

16 A. Located in North Carolina.

17 Q. Is he a medical doctor?

18 A. Yes.

19 Q. Where does he come out, if you know, on
20 the question of interpretation of liver lesions?

21 A. I don't know.

22 Q. Was the fact that the committee, Health
23 Education and Welfare's toxicology coordinating
24 committee was chaired by Dr. Rall of some

1 significance in the context of how that dispute
2 might be resolved by that committee?

3 A. I am not able to evaluate the
4 significance. He is a respected medical man and
5 knows his way within government and is well known.

6 So he makes a good chairman for such a
7 group.

8 Q. If the group were able to reach a
9 consensus, the fact that he was chairman of it
10 would give that consensus some significant weight
11 in the general scientific community, is that a
12 fair statement?

13 A. Not necessarily. He is in some regards
14 controversial.

15 Q. Okay.

16 The principal concern of the FDA as you
17 discussed it with them at these two days of
18 meetings was food levels of pcb's and in
19 particular levels in fish; is that correct?

20 A. Fish was certainly high on their priority
21 list and they were also concerned about dairy
22 products and about animal feed.

23 Q. Okay.

24 There is a statement contained in page 3

1 of the memo, of the exhibit here that says Kolbye,
2 I take it that is referring to Dr. Al Kolbye?

3 A. Yes.

4 Q. Kolbye's concern is body burden. Is that
5 a reference to animal body burden or human body
6 burden?

7 A. Human.

8 Q. And body burden is a way of measuring the
9 total amount of pcb's that is accumulated in the
10 body; is that correct?

11 A. That is correct.

12 Q. That is one of the things in the context
13 of animals that Dr. Tucker's analysis was aimed at
14 learning or is it?

15 A. No.

16 Dr. Tucker's analyses were aimed at
17 determining whether there is a chemical change,
18 whether there is any retained or any metabolized,
19 discarded. His data would not lead to body burden
20 because he would be lacking distribution of pcb's
21 throughout the body and the total weight of that
22 body.

23 He was looking at specific organs, points
24 of concentration.

1 Q. Okay.

2 Rather than?

3 A. Whole animal, fish or whatever.

4 Q. According to the last page of Exhibit
5 333, it says and I will read it, quote:

6 "In general this
7 group of EPA --" referring to
8 the listed names I take it "--
9 was not receptive to our
10 concept that pcb's are not
11 cancer-causing agents."

12 Do you recall any reasons they gave for
13 differing with the conclusions you were presenting
14 that pcb's do not cause cancer?

15 A. No. I don't recall them giving any
16 reasons. They just disagreed with the
17 interpretation that --

18 Q. They came out on the Kimbrough side
19 rather than the Bio-Test side?

20 A. Yes.

21 Q. It says here EPA most probably will treat
22 pcb's as such.

23 I take that to be as a cancer-causing
24 agent, which appears to be consistent with their

1 desire to have a toxic substances act.

2 Does that reflect the view of the
3 Monsanto team that the EPA was also using pcb's as
4 a political tool?

5 A. Yes.

6 Q. Is that still your view?

7 A. Yes.

8 Q. Do you want to mark this.

9 (The document above-referred to
10 was marked Bloomington Deposition
11 Exhibit No. 334 for identification.)

12 Are you familiar with an organization the
13 initials of which are CIGRE? I can't pronounce
14 it, it is in French.

15 A. CIGRE. Yes. I am familiar with the
16 acronym.

17 International conference on large
18 high-voltage electric systems, that is how they
19 translate it on their letterhead.

20 A. It is and electrical association.

21 Q. Something equivalent to the National
22 Electrical Manufacturers Association in the United
23 States?

24 A. Yes. Except that it is an international...

1 Yes.

2 Q. Okay.

3 Is it a standard-setting body?

19

4 A. I don't associate it as a
5 standard-setting. But that doesn't mean --

6 Q. That doesn't mean that it is not?

7 A. That's right.

8 Q. All right.

9 Let me show you this document, Exhibit
10 334, which consists of a total of five pages.

11 The first page is a handwritten note
12 which has been cut off in the copying here and I
13 can't tell you what you it says. Second page is a
14 letter from E. H. Reynolds to Dr. T. W. Dakin of
15 Westinghouse, dated December 11, 1975.

16 Take a look at that and tell me if you
17 have ever seen that before?

18 A. I have reviewed it.

19 Q. You are referred to in that letter as
20 being Dr. Munch's assistant. Was that an accurate
21 description?

22 A. No.

23 Q. Who was Dr. Munch?

24 A. Dr. Munch was a research chemist working

1 on applications of dielectric fluids reporting to
2 Dr. Richard, who was the director of research.

3 Q. Did Dr. Munch have something to do with
4 CIGRE as part of the his job responsibilities?

5 A. I don't know.

6 Q.. In any event, he had some acquaintance
7 with these European people?

8 A. It appears to be so, yes.

9 Q. They made a request of him and he passed
10 it on to you, because you were the guy who was
11 supposed to respond for requests for information
12 on pcb's; is that correct?

13 A. That is what happened, yes.

14 Q. So that led the author of this letter
15 apparently to conclude that you were his
16 assistant?

17 A. I was assisting him.

18 Q. Not an unreasonable interpretation. It
19 didn't happen to be the correct one, I guess.

20 Do you know what the SC 16 and W G 1502
21 meetings in Budapest had anything to do with?

22 A. I do not know.

23 Q. Do you know without particular reference
24 to CIGRE whether there was a European

1 standard-setting body that was working on a set of
2 standards for pcb use in electrical equipment
3 similar to what the ANSI C 107 committee did in
4 the United States?

5 A. I was not aware and am not aware of any
6 such group.

7 Q. Do you agree with the statement in the
8 second paragraph on the third page of the exhibit
9 which is a letter from E. H. Reynolds to Dr.
10 Kimbrough, that the use of pcb's in electrical
11 equipment could be easily and completely
12 controlled to avoid contamination even at the
13 lowest detectable levels?

14 A. At that time we believed that. Since
15 then we found out it is not as easy as we thought
16 it would be.

17 Q. Theoretically possible, but it doesn't
18 seem to be practically possible, is that a fair
19 summary of the 1986 state of the knowledge?

20 A. That is what our experience has taught
21 us.

22 Q. Do you know whether there was ever any
23 action taken by any European country to ban pcb's
24 in electrical equipment?

1 A. Yes. Scandinavian countries banned it.
2 I don't recall, the Netherlands were considering,
3 but I don't recall whether they actually banned
4 it. That is it.

5 Q. As far as you know it is still at least
6 legal, whether or not they are still in use in
7 other European countries?

8 A. To the best of my knowledge, yes.

9 Q. Would you mark this, please.

10 (The document above-referred to
11 was marked Bloomington Deposition
12 Exhibit No. 335 for identification.)

13 Exhibit 335 is a memo from you to D.
14 Wood, dated December 19, 1975. Do you recall
15 sending that memo?

16 A. Yes. I do.

17 Q. Were the samples that Mr. Wills was
18 requesting Monsanto to analyze sewer effluent
19 samples?

20 A. I don't know. They might have been
21 effluents from individual units within a plant
22 instead of the final effluent.

23 Q. Depending on where the sample was taken
24 within the plant sewage system?

1 A. Yes.

2 Q. Monsanto had done this on isolated
3 occasions for Westinghouse in the past, had it
4 not?

5 A. Yes.

6 Q. Would you mark that.

7 (The document above-referred to
8 was marked Bloomington Deposition
9 Exhibit No. 336 for identification.)

10 336 is a two-page letter from Roger
11 Hatton to Roger Wills dated January 19, 1976. A
12 copy to you.

13 Is that the ultimate response of Monsanto
14 to the request as reflected in Exhibit 335?

15 A. Yes.

16 Q. You turned him down on that occasion?

17 A. That's what they did.

18 Q. To your knowledge, did Westinghouse ever
19 share with Monsanto what the EPA findings were on
20 the sewer or effluent samples that were taken
21 where they had asked you to analyze the split
22 samples for them?

23 A. Not to my knowledge.

24 Q. So as far as you know, one result of the

20

1 refusal was that Monsanto wasn't able to find out
2 what the effluent levels were as of that time in
3 the Bloomington plant?

4 A. No. I don't know that. I left this job a
5 month later.

6 Q. So there may have been some information
7 that came in after you had gone?

8 A. That I didn't know about.

9 Q. Okay.

10 As of the time you left the pcb
11 coordinator job, you knew, did you not, that the
12 Westinghouse plant in Bloomington was still -- to
13 use a phrase that showed up in earlier
14 documents -- not, "bone dry," is that correct?

15 A. True.

16 Q. And you had been in that position a total
17 of about six years?

18 A. Yes.

19 Q. A little over six years?

20 A. Yes.

21 Q. Had there been steady progress at the
22 Westinghouse-Bloomington plant over that period of
23 six years or was it kind of sporadic?

24 A. It was reported to me as steady progress.

1 Q. I am going to show you a document that
2 was previously marked as Exhibit 207 and ask if
3 you recall receiving that, a copy of that memo, on
4 or about the date it bears?

5 A. I recall this memo, yes.

6 Q. Up to the time you left the job of pcb
7 coordinator at Monsanto, was there ever a
8 satisfactory explanation uncovered for the
9 difference in the ability to recover pcb's from
10 distilled water as opposed to river water?

11 A. I don't know about the adjective
12 satisfactory explanation. There were explanations
13 offered. The difficulty in extracting from river
14 water was attributed to the presence of other
15 materials in the water, which interfered with the
16 extraction process and also with the presence of
17 particulate matter, invisible to the naked eye but
18 still present, to which the pcb's would adhere.

19 Q. Adsorption as you and Mr. Karaganis were
20 discussing earlier today?

21 A. Yes.

22 Then when the sample was processed by
23 filtration or passage through the capillary tubes
24 used in the analytical procedure, the pcb's would

1 go with the particulate matter and would not be
2 detected in the water itself.

3 Q. So that is the same phenomenon that was
4 relied on or one of the phenomena that was relied
5 on in the technology of removing the pcb's from
6 the water?

7 A. Yes.

8 Q. That is, you put it on a particle and you
9 filter the particle out?

10 A. Correct.

11 Q. Would you mark this, please.

12 (The document above-referred to
13 was marked Bloomington Deposition
14 Exhibit No. 337 for identification.)

15 Exhibit 337 is a memo dated February 10,
16 1976 consisting of three pages. That is all I can
17 say about it because that is all I know.

18 Referring to a membership list of
19 something called the pcb ad hoc committee
20 membership.

21 What was the pcb ad hoc committee?

22 A. This is a committee within the -- I
23 believe it is the EEI.

24 Q. Edison Electric Institute?

1 A. Let me be sure here that I am not
2 confusing my groups. There is Edison Electric
3 Institute. Then there is another group Electronic
4 Industries Association, EIA. I believe it was the
5 EIA. This is a committee of that organization,
6 Electronic Industries Association.

7 Q. Okay.

8 Is that a standard-setting body?

9 A. Not to my knowledge.

10 Q. What was it that the ad hoc pcb committee
11 was doing within the context of the EIA?

12 A. They were preparing a statement that they
13 were going to share with legislative bodies, state
14 and federal, supporting the continued use of pcb's
15 because of their safety features.

16 Q. Is EIA an organization that sends
17 delegates to NEMA or to ANSI?

18 A. No, there are companies that belong to
19 both, NEMA and EIA. And it is the companies that
20 send the delegates.

21 Q. Was Arrow Box industries a pcb customer
22 of Monsanto?

23 A. Yes.

24 Q. Was Cornell Dubilier Electronics a pcb

1 customer of Monsanto?

2 A. Yes.

3 Q. Everybody on this list other than
4 Monsanto was a pcb customer of Monsanto?

5 A. I would have to see it again.

6 Q. All right.

7 See if there is anybody on there who is
8 not.

9 A. There is a representative of EIA listed.

10 Q. A staff of the association?

11 A. A staff vice president.

12 A. Other than the staff vice president of
13 EIA, and the Monsanto representatives, all other
14 members do represent Monsanto customers of pcb's.

15 Q. Who was Cole Weber?

16 A. He replaced me in my pcb coordinator
17 assignment.

18 Q. Is he still with Monsanto?

19 A. No.

20 Q. Do you know where he is now?

21 A. He is retired and the last I heard he is
22 residing in the St. Louis area.

23 Q. What part of the Monsanto organization
24 did he come from when he replaced you as pcb

1 coordinator?

2 A. He was my counterpart within the same
3 operating unit, Industrial Chemicals Company,
4 responsible for a different set of products than
5 the set I had.

6 Q. His set didn't include pcb's?

7 A. Pcb's were kept out of his set and I
8 retained those. But then they rejoined the
9 appropriate set when they were given to him.

10 Q. When he took over for you?

11 A. Yes.

12 Q. When you say the appropriate set, you are
13 describing the chemical relationship to each
14 other?

15 A. I was thinking of the functional fluids
16 group of products.

17 Q. Would you mark that, please, 338.

18 (The document above-referred to
19 was marked Bloomington Deposition
20 Exhibit No. 338 for identification.)

21 Exhibit 338 is a three-page document
22 which consists of a one-page memo from you to J.
23 C. Weber and attached letter of one page dated
24 October 12, memo is dated October 18, 1978, the

1 attached letter is dated October 12, 1978 to you
2 from William A. Wallace of the EPA and attached to
3 the letter, although I can't say why, another one
4 of these phantom attachments here. Now, it is a
5 two-page exhibit. I took off a page of
6 Westinghouse analytical results October 20, 1978
7 from Analytical Biochemistry Laboratories, Inc.,
8 which bears no apparent relationship to the other
9 two pages that I can determine.

10 Let's do this. Let's mark this as 339.
11 I think maybe we can get rid of this quickly.

12 (The document above-referred to
13 was marked Bloomington Deposition
14 Exhibit No. 339 for identification.)

15 At the time that Monsanto declined to do
16 those water sample analysis for Westinghouse, did
17 you recommend some commercial laboratories to
18 them?

19 A. Yes.

20 Q. Was Analytical Biochemistry Processes,
21 Inc. one of those labs if you recall?

22 A. Yes.

23 Q. Okay.

24 339 is a one-page analysis, results of

1 Westinghouse Electric Corporation water analysis
2 for pcb's dated October 20, 1978. Which, of
3 course, is after you left the pcb coordinator
4 role.

5 Do you know whether this report was ever
6 shared with Monsanto?

7 A. I do not.

8 Q. Now, back to 338, which is now a two-page
9 exhibit, do you recall receiving the letter and
10 writing the memo?

11 A. I recall receiving the letter from Mr.
12 Wallace of EPA and recall forwarding it to Mr.
13 Cole Weber for a response.

14 Q. Do you know if he ever responded?

15 A. I do not know.

16 Q. Okay.

17 The second paragraph of Mr. Wallace's
18 letter says:

19 "Our principal
20 concern is to identify
21 feasible commercial routes for
22 the disposition of pcb's that
23 are available to persons who
24 are disinclined to pay the

1 cost of proper storage and
2 disposal."

3 Do you understand what that means?

4 A. I think I do.

5 Q. What does it mean to you?

6 A. The way I interpret it is there ways of
7 proper disposal other than just storing it. That
8 word disposal is all-encompassing. The way I
9 interpret it was is there a commercial service
10 that is less costly than the storage and on-site
11 incineration, other means of disposal.

12 Q. Okay.

13 As of the date on exhibit -- what is the
14 number of that, 338?

15 A. 338.

16 Q. Chemical hazardous waste disposal
17 facilities or incineration were the only two
18 acceptable ways to get rid of pcb or
19 pcb-contaminated waste; is that correct?

20 A. That is correct.

21 Q. And this gentleman's inquiry to you, both
22 of those are comparatively expensive as ways of
23 getting rid of garbage go. He is asking is there
24 some other way to do it?

1 A. Is there a cheaper way to do it is the
2 way I read that.

3 Q. Okay.

4 As far as you knew at that time the
5 answer was no?

6 A. That's correct.

7 Q. At least not to do it safely, correct?

8 A. Correct.

9 Q. I mean, obviously, there are cheaper ways
10 to do it, but Monsanto wasn't advocating them at
11 that time, I take it.

12 Had you stopped selling pcb's in October
13 of 1978?

14 A. Oh, yes.

15 Q. Long since?

16 A. Yes.

17 Q. Wou were a member of a subcommittee of
18 the American National Standards Institute called
19 C 107?

20 A. Yes.

21 Q. Okay.

22 As I understand it, the American National
23 Standards Institute is a organization that is in
24 the business of establishing minimum standards for

1 various industrial processes, product performance
2 and the like, is that a fair description of what
3 it does?

4 A. Yes.

5 Q. To your knowledge, is that a
6 government-sponsored organization?

7 A. No.

8 Q. Okay.

2 9 Mr. Benignus seemed to be of the opinion
10 that it was. He and I argued a lot about that.

11 It is an industry-sponsored organization;
12 is that correct?

13 A. Yes.

14 Q. And its membership consists of companies
15 in the various industries that are covered by the
16 standards it promulgates?

17 A. Yes.

18 Q. Okay.

19 And the subject, the work of the C 107
20 subcommittee of ANSI as I understand it was use
21 and controls of pcb's, is that a fair statement?

22 A. And dielectric applications..

23 Q. Transformers and capacitors?

24 A. Yes.

1 Q. Which at the time that C 107 began was
2 about all that was left in the United States?

3 A. Yes.

4 Q. By Monsanto's action in refusing to sell
5 pcb's for other purposes?

6 A. Yes.

7 Q. When was the C 107 committee formed, if
8 you recall?

9 A. The committee was originally formed under
10 the auspices of the National Electrical
11 Manufacturers Association, so as a group they
12 existed starting in 1970.

13 Q. Under the auspices of NEMA?

14 A. NEMA. I am trying to recall, sometime
15 either late '70, early '71, it requested and got
16 sponsorship under ANSI and at that time it became
17 known as ANSI C 107.

18 Q. Okay.

19 C 107 is a form of numbering that is
20 employed by ANSI to designate various standards
21 that it promulgates?

22 A. I thought that C 107 was assigned to this
23 group for this subject.

24 Q. Okay.

1 A. Other numbers were assigned to other
2 groups.

3 Q. Right.

4 Did this group ultimately come up with a
5 standard that was approved by ANSI?

6 A. Yes.

7 Q. Was that standard also number C 107?

8 A. Yes.

9 Q. NEMA is also a standard-setting
10 organization, is it not?

11 A. Yes.

12 Q. Within the electrical industry?

13 A. Yes.

14 Q. And primarily sets standards with respect
15 to fire protection and performance of electrical
16 machinery and equipment?

17 A. Yes.

18 Q. National Electrical Code is one of the
19 big things that comes out of NEMA, isn't it?

20 A. I don't know if NEMA is on that. I can't
21 speak for that.

22 Q. Okay.

23 A. By they do have standards for electrical
24 equipment of all kinds, both safety, fire and

1 performance.

2 Q. Why was it that NEMA sought ANSI
3 sponsorship for the pcb standard-setting effort?

4 A. Well, it was perceived very early on that
5 the pcb's in transformers and capacitors involved
6 more than the manufacture of electrical equipment,
7 it involved the users, the utility companies, that
8 generated power. It involved government agencies.

9 So it was perceived to require a broader
10 umbrella, if you will. And ANSI seemed to be the
11 logical unit.

12 Q. Was it perceived that a NEMA standard
13 regulating pcb's would have less persuasive force
14 with government agencies than an ANSI standard?

15 A. Oh, I don't know how to measure the
16 persuasive ability. I don't know that that was
17 really the intent.

18 The intent was to interest the users of
19 the equipment in addition to the manufacturers of
20 the equipment.

21 Q. Building owners, substation operators,
22 and large industrial facilities, people like that?

23 A. Yes.

24 Q. Did that effort succeed?

1 A. We think it did. Yes.

2 Q. You got some people from companies of
3 that nature involved in the C 107 committee
4 process?

5 A. I remember some utility representative
6 and a service company that went around and
7 repaired and overhauled or refilled transformers.

8 We did get some federal government
9 representation.

10 Q. Was the government participation in this
11 C 107 process as much as had been hoped for by the
12 industry members?

13 A. Not really, no. It was a disappointment.

14 Q. Do you want to mark this.

15 (The document above-referred to
16 was marked Bloomington Deposition
17 Exhibit No. 340 for identification.)

18 Had you been active in NEMA or ANSI or
19 both before the C 107 effort commenced?

20 A. No.

21 Q. Were you familiar with the ANSI standards
22 that applied to chemical industry before you
23 became the pcb coordinator?

24 A. Some of them.

1 Q. Those are related to the plant that was
2 under your supervision?

3 A. Some of them. Primarily the labeling
4 standard.

5 Q. Okay.

6 In that context, were you familiar with
7 the phenomenon that government regulatory agencies
8 often adopt or adopt in some modified form the
9 ANSI standards as their own regulatory standards?

10 A. I was aware of that. Yes.

11 Q. Was it the intent of those electrical
12 industry people who participated in ANSI C 107
13 that ANSI would come up with a pcb standard that
14 would be adopted by the EPA and NIOSH?

15 A. I don't perceive it as an intent. It was
16 a desired objective that if the standard was a
17 good one, it could be adopted.

18 Q. The best way for individual companies to
19 have an impact on the government standard setting
20 process was through something like ANSI C 107
21 rather than individual lobbying of the regulators?

22 A. That is what we thought. Yes.

23 Q. Okay.

24 It turned out it didn't work?

1 A. That's right.

2 Q. Is that correct, in terms of adoption?

3 A. Yes.

4 Q. Ultimately the EPA banned pcb's?

5 A. That's right.

6 Q. Rather than taking the C 107 approach to
7 attempt at control?

8 A. That is correct.

9 Q. I am handing you a document we have
10 marked as Deposition Exhibit 340, which is
11 entitled Monsanto pcb program dated September 14,
12 1971.

13 I will ask you if you recognize that?

14 A. I recognize it.

15 Q. Is that a written presentation that you
16 made to one of the early meetings of the ANSI
17 C 107 group?

18 A. Yes.

19 Q. Did you actually draft that document
20 either alone or in conjunction with some other
21 people at Monsanto?

22 A. Oh, I ended up doing the drafting, yes,
23 with reviews and inputs from others.

24 Q. Who reviewed it before you presented it

1 to the C 107 group?

2 A. Oh, the group of Monsanto's people we
3 discussed earlier, research representative,
4 manufacturer representative, business
5 representative. PR man, lawyer.

6 Q. So as this document 340 was presented to
7 ANSI C 107, it was a statement of the company's
8 position and not just Bill Papageorge's
9 interpretation of what Monsanto was doing; is that
10 correct?

11 A. That is correct, yes.

12 Q. On the page numbered 4 of this document
13 there is a statement:

14 "There is growing
15 concern that we should be
16 considering to a greater
17 degree chronic effects of all
18 these materials rather than
19 relying on the old acute
20 studies that used to serve as
21 a screening for many, many
22 chemicals."

23 Do you see that statement?

24 A. Yes.

1 Q. Is that a reference to the type of skin
2 patch testing that we saw in the late forties and
3 early fifties, way back in the beginning of your
4 deposition?

5 A. Which part of the sentence?

6 Q. The reference to the old acute test
7 screening methods?

8 A. Yes.

9 Q. That was one of the old acute screening
10 methods?

11 A. Yes.

12 Q. As of the date on the exhibit, what is
13 it, 339?

14 A. 340.

15 Q. 340.

16 Had Monsanto itself undertaken any such
17 chronic studies in the human populations that had
18 been exposed to pcb's as opposed to animals?

19 A. No. No human studies were made.

20 Q. Okay.

21 Such a human epidemiological study could
22 have been done on Monsanto's own workforce of
23 those employees who worked with pcb's, could it
24 not?

1 A. Yes.

2 Q. Okay.

3 Is there some particular reason why that
4 wasn't undertaken?

5 A. That was undertaken eventually. I
6 believe if memory serves me right it was underway
7 in '71.

8 Q. But not completed?

9 A. Not completed.

10 Q. Was it eventually completed to your
11 knowledge?

12 A. Yes.

13 Q. And in fact some other studies were done
14 by others on worker populations of your customers,
15 who were exposed to pcb in the occupational
16 setting; is that correct?

17 A. I have heard of at least one more.

18 Q. On page 6 of the memo you refer to the
19 only widespread use that I could find was a
20 limited trial to help prevent or curtail the dutch
21 elm disease and that proved to be a failure. That
22 is a reference to a use of pcb's as a pesticide
23 extender?

24 A. Yes.

1 Q. You describe it in the same phrase as
2 extensive and limited.

3 What specific information can you give me
4 about the nature of that dutch elm disease trial?

5 A. I don't recall the specifics but it was
6 limited in area and limited in time of
7 application.

8 Q. It was an experiment to see if adding
9 pcb's to the mixture would enhance its
10 effectiveness?

11 A. Correct.

12 Q. And it didn't?

13 A. It didn't.

14 Q. Okay.

15 On page 11 you refer to the Toxic
16 Substances Act and the legislative proceedings
17 pending with respect to that bill.

18 Did Monsanto ultimately present testimony
19 to the congressional committee on the Toxic
20 Substances Act?

21 A. Not to the committee that considered the
22 Toxic Substances Act, but to another committee in
23 Congress.

24 Q. Which committee did Monsanto present to,

1 do you recall who?

2 A. I don't recall the title, but I recall
3 the reference to maritime in the title. It is a
4 subcommittee on several things including maritime.

5 Q. How did that committee get interested in
6 pcb's?

7 A. The chairman of the subcommittee
8 represented a part of Massachusetts, where several
9 of Monsanto's pcb customers were located and he
10 agreed to conduct hearings.

11 Q. Did this committee ever take any action
12 on the subject of pcb's?

13 A. Not as a committee. I am not aware of
14 any.

15 Q. Do you still agree with the statement on
16 page 14 of your paper on Monsanto's pcb program
17 and I will read it to you?

18 "We have got to live
19 with the pcb's we have
20 introduced into the
21 environment for the past forty
22 years. They have not
23 disappeared overnight. They
24 will not disappear overnight.

1 We do not have any test to
2 tell us how long it will take.
3 We can only make an educated
4 guess and we might say they
5 will be out there for another
6 generation, 25 to 30 years
7 yet. Hopefully it will be a
8 decreasing amount as time goes
9 on."

10 A. Yes, I still believe that.

11 Q. Do you think they will really be gone in
12 30 years if we don't do anything?

13 A. I have no information to indicate
14 otherwise. So that is as good a guess as I come
15 up with.

16 Q. What is the basis for that 30 year
17 figure?

18 A. It is subjective. There is no scientific
19 basis.

20 Q. Do you think they will all be gone from
21 Bloomington, Indiana in 30 years?

22 MR. FRUEHWALD: If the consent decree is
23 implemented?

24 BY MR. MC CONNELL:

1 Q. If nobody does anything?

2 A. I don't know. I don't know the
3 conditions there. I don't know if any bacteria
4 are present. I don't know anything about it.

5 Q. When you say in this exhibit on page 14
6 of Exhibit 340, you don't really say they will be
7 gone. You say they will be out there for 25 to 30
8 years.

9 Do you mean to say at that end of that
10 period, whatever it is, that they will through
11 some chemical process have been changed into some
12 other material, or are you saying that they will
13 have moved to some other location?

14 A. I don't know that I could be that
15 specific. It reflected a hope that science
16 eventually would be able to help within a
17 generation.

18 Q. One way of getting them gone within
19 twenty years is to dig up all of the contaminated
20 material and incinerate it over the next twenty
21 years?

22 A. That is an economic problem, not a
23 technical problem.

24 Q. Right.

1 It is possible to do that?

2 A. If society can afford the cost.

3 Q. The question is who is going to pay for
4 it. That is what this lawsuit is all about, I
5 guess.

6 On page 15 of this Exhibit 340 you wrote
7 as of the date September 14, 1971:

8 "Studies today would
9 indicate that these pcb's are
10 not and cannot be classified
11 as highly toxic."

12 Do you still agree with that conclusion?

13 A. Yes.

14 Q. But they are toxic in some degree?

15 A. Yes.

16 Q. To human beings?

17 A. Yes.

18 Q. You go on to say:

19 "There is still a lot
20 of information that is needed
21 to help us determine the
22 long-term effect on human
23 beings."

24 Do you still agree with that statement?

1 A. That's right.

2 Q. We don't have enough information now to
3 make a definitive determination one way or the
4 other?

5 A. Definitive, you are right.

6 Q. Can we make a preliminary determination?

7 A. We can make a preliminary or a practical
8 one.

9 Q. What is your view of the preliminary
10 determination concerning the long-term effect of
11 pcb exposure on humans?

12 A. That at the normally low levels of
13 potential exposure, no problem would be
14 anticipated with human beings.

15 Q. What level do you define as normally low
16 levels of potential exposure?

17 A. It is the kind of levels one would find
18 in changing a ballast unit out of a light fixture,
19 or --

20 Q. Can you put a number on it in terms of
21 parts per million body burden or parts per billion
22 body burden?

23 A. That would take more scientific data.

24 Q. What about, let's work down the scale.

1 I suppose the most exposed group of
2 people would be those who in the past worked with
3 pcb's, either at Monsanto or at a Monsanto
4 customer facility, where they came in contact with
5 it on a daily basis?

6 A. The potential for great exposure existed
7 under those conditions, yes.

8 Q. What is the preliminary determination of
9 the long-term effect on those people, if you know?

10 A. I haven't heard of any adverse health
11 symptom associated with that exposure.

12 Q. You haven't heard of chloracne in people
13 working with pcb's?

14 A. Yes, I have, but I was thinking of a long
15 term. I am aware of the total situation of
16 chloracne due to a high exposure. Then it clears
17 up.

18 I don't know of any continuing chloracne
19 problem to human beings that at one time worked
20 with pcb's.

21 Q. Do you know of any continuing liver
22 disease problem?

23 A. I don't know of any.

24 Q. What about, do you know of any continuing

1 problem of birth defects in the pcb worker
2 population?

3 A. I don't know of any.

4 Q. What about the population of people who
5 live at or near a dump where pcb's wastes were
6 buried, do we have enough information to determine
7 the long-term health effects on those people?

8 A. No. We don't.

9 Q. What about the population of people in
10 Bloomington, Indiana who spread pcb contaminated
11 sewage sludge on their gardens, do we have enough
12 information to determine whether they are at risk
13 in your view?

14 A. No.

15 Q. Do you still agree with the statement
16 that begins on page 15 of this Exhibit 340:

17 "We also believe that
18 under the proper conditions we
19 can control the amount of
20 these that do enter the
21 environment to the point where
22 the adverse effects are not
23 great and that the benefits we
24 derive far outweigh the minor

1 adverse effects that we might
2 notice."?

3 A. Yes. I believe that's possible.

4 Q. Was it ever achieved at any time before
5 Monsanto finally went out of the pcb business at
6 any particular facility that you are aware of?

7 A. Yes.

8 Q. Where was that?

9 A. Certainly at the manufacturing site that
10 I am aware of.

11 Q. In Anniston?

12 A. No. Anniston was shut down by then.

13 Q. Okay.

14 A. In Illinois.

15 Q. Sauget?

16 A. Sauget.

17 And I don't know of any of Monsanto's
18 customer sites where the adverse effects have been
19 demonstrated without question.

20 Those are differences of opinion, there
21 are allegations.

22 Q. My question concerns control, controlling
23 the amount that would enter the environment.

24 A. But it also had the adverse effects.

1 Q. You are measuring the degree of control
2 by the existence or nonexistence of adverse
3 effects?

4 A. All control is based on effects.

5 Q. Not if it goes away, that is complete
6 control, whether there is an effect or not.

7 A. That is ideal. Certainly.

8 Q. The idea was never achieved?

9 A. It never will be.

10 Q. Do you want to mark that.

11 MR. FRUEHWALD: Wait a minute.

12 Off the record.

13 (Discussion had off the record.)

14 MR. MC CONNELL: Let's go back on the record,
15 please.

16 Q. I will show you a document that has
17 previously been marked as November 18, 1971, it is
18 a multiple page document.

19 MR. FRUEHWALD: Start over again, Jim.

20 BY MR. MC CONNELL:

21 Q. I am going to show you a document that
22 has previously been been marked as Exhibit 197,
23 dated November 18, 1971, on the letterhead of the
24 American National Standards Institute and I will

1 ask you if you recognize that document?

2 A. Yes. I recognize the document.

3 Q. Is that the first ANSI document that was
4 generated after the group moved from the auspices
5 of NEMA to the auspices of ANSI, if you can
6 recall?

7 MR. FRUEHWALD: The previous Exhibit 340 is
8 calling it ANSI committee C 107 in September.

9 MR. MC CONNELL: Right. I am not suggesting
10 that that fixes the date of the change. I am
11 asking if that is the first document to come out
12 of ANSI after that, after the change took place.
13 If there was something before that.

14 A. I don't know.

15 There were documents representing
16 correspondence between NEMA and ANSI before I
17 first became involved. I don't know what
18 happened.

19 So I don't know if this represents the
20 first document.

21 Q. To your knowledge was Exhibit 340 the
22 first Monsanto presentation to the group, whether
23 under NEMA or under ANSI?

24 A. As best I recall, I made an informal

1 presentation before a NEMA group covering many of
2 the areas which I later covered in a more formal
3 fashion in this document, Exhibit 340.

4 Q. Okay.

5 Now, according to Exhibit 197, the
6 membership list on the front, you and Mr. Benignus
7 were members of both the transformer subcommittee
8 and the capacitor subcommittee; is that correct?

9 A. Yes.

10 Q. Why was that?

11 A. Well, I don't know that I have a reason,
12 other than that neither Benignus nor I nor
13 Monsanto were members of NEMA or of this ANSI
14 group.

15 We were invited initially as guests and
16 shortly thereafter I was asked to be chairman of
17 the committee.

18 So in accepting the chairmanship, I found
19 myself as ex officio member of the full committee
20 and a participant in each of the subcommittees, as
21 ex officio.

22 Q. So you went from being a nonmember of
23 ANSI to chairman of an ANSI committee skipping
24 over the phase of being a member of ANSI?

1 A. That's right.

2 Q. Is it fair to say you were drafted into
3 that capacity by the Monsanto customers who were
4 members of the group?

5 A. I guess one could use that expression,
6 yes.

7 I was asked, and as part of the customer
8 relations I accepted.

9 Q. How come it was you rather than Mr.
10 Benignus that was asked, if you know?

11 A. I don't know.

12 Q. One of the interesting things that --
13 this is totally off the subject of that document
14 now, but I want to ask you before I forget, that
15 if I recall correctly it was Mr. Gossage who said
16 at his deposition that your job was to protect the
17 environment from the pcb's, and his job was to
18 protect the pcb's from the environment.

19 MR. FRUEHWALD: Mr. Benignus.

20 MR. MC CONNELL: Was it Benignus who said
21 that?

22 Q. Would you agree with that statement?

23 A. Well, I will accept the part where I was
24 supposed to protect the environment. I cannot

1 speak for Benignus' perceived role.

2 Q. The whole object of setting the C 107
3 standard was to protect the environment from the
4 pcb's, was it not?

5 A. It was to serve both purposes. Protect
6 the environment and continue the use of these
7 materials which we were led to believe were
8 required because of their safety features and we
9 wanted to have both.

10 Q. Okay.

11 But C 107 as I understand it is not a
12 standard that is desired to protect the pcb's from
13 contamination with water or dust or anything like
14 that?

15 A. Oh, that, I see what you mean. No. No.

16 Q. That's what I took Mr. Benignus to mean
17 when he said to protect pcb's from the environment
18 was if a tankcar dome was loose, your concern was
19 that the pcb's would spill out; his concern was
20 that junk from the air would get in.

21 Okay. I think we would agree on what
22 this process was about.

23 Is it fair to say that other than the --
24 well, I see a gentleman from the Department of the

1 Army listed on the transformer working group, but
2 according to this November 18, 1971 list, he is
3 the only person with a government connection on
4 either one of those groups. Is that correct?

5 A. He is the only one listed in '71.

6 Q. Others were added later, as I understand?

7 A. Yes. Invitations were sent by the NEMA
8 executives to many government agencies.

9 Q. The Army uses pcb transformers, does it
10 not?

11 A. Yes.

12 Q. Did they at this time buy pcb's directly
13 from Monsanto?

14 A. I don't recall seeing a Department of
15 Defense listed on the customer list. This does
16 not mean -- I take it back. I am confusing the
17 Corps of Engineers, which is sort of between the
18 Army, and I am not too sure of its standing.

19 But, anyway, the Corps of Engineers were
20 listed as customers.

21 MR. FRUEHWALD: Let me interpose that you have
22 been referring to the first page which is the
23 working groups. The subcommittees are actually
24 listed later on in the documents and they did

1 include other governmental officials on
2 subcommittees. The working groups is what you are
3 referring to.

4 MR. MC CONNELL: I stand corrected.

5 Q. The two working groups that are listed on
6 the first sheet of Exhibit 197 then all consisted
7 of either Monsanto employees or customer
8 employees; is that correct?

9 A. Yes.

10 Q. Okay.

11 That is what it looks like. Except for
12 the Department of Army representative.

13 Well, if that covers the Corps of
14 Engineers, then they are also if not a customer,
15 certainly a user of pcb's, rather than having only
16 a regulatory interest in the matter, right?

17 A. Yes.

18 Q. Turn back to the page that lists the
19 subcommittees which are listed on attachment 1,
20 are they not?

21 A. Yes.

22 Q. Okay.

23 And those are broken down by the
24 organization supplying the individual

1 representative?

2 A. Yes.

3 Q. Okay.

4 Who are the government employees that are
5 on the subcommittees?

6 A. I see a member of the Department of the
7 Army, a member of the Environmental Protection
8 Agency, the Rural Electrification Administration,
9 which is part of the Department of Agriculture.
10 Tennessee Valley Authority. A second member of
11 the Department of the Army.

12 Q. Okay.

13 The TVA is in as a utility?

14 A. Yes.

15 Q. That was is its interest in the issue, is
16 it not?

17 A. Yes.

18 Q. The Department of Agriculture was
19 interested I take it both as a utility in the form
20 of the Rural Electrification Administration and as
21 a regulator in its interest in keeping pcb's out
22 of the food chain?

23 A. Yes.

24 Q. Okay.

1 The Environmental Protection Agency
2 obviously is in it in its interest as a regulator
3 in connection with environmental release; is that
4 correct?

5 A. Yes.

6 Q. And the Department of the Army, do we
7 have any information about what capacity either of
8 those two particular individuals had?

9 A. Not specific. But they were interested
10 in power distribution and the equipment associated
11 with it.

12 Q. In the same sense as the TVA would be?

13 A. Yes.

14 Q. Okay.

15 Nobody from the FDA is listed as
16 participating as of the date of this Exhibit; is
17 that correct?

18 A. That is correct.

19 Q. Was there ever a Food and Drug
20 Administration representative to the C 107
21 committee that you recall?

22 A. I don't recall any.

23 Q. Did the EPA representative or
24 representatives participate actively in the work

1 of the committee or subcommittees?

2 A. To the extent of their ability to. In
3 terms of committee actions, they are part of the
4 groups.

5 Q. They showed up for meetings?

6 A. Yes.

7 Q. Participated by contributing their
8 thoughts, always with the disclaimer that this is
9 what I think and not what the government thinks?

10 A. In most cases they took the position of
11 the inter-agency taskforce. Which was reflected
12 later on in the March 1972 or May 1972
13 publication.

14 Q. Okay.

15 A. That is their posture.

16 Q. So without regard to what agency they
17 came from, they were in essentially the same
18 position?

19 A. Correct.

20 Q. And they were sharing with the other
21 members of the committee the thinking of the
22 agencies in terms of impending regulatory actions;
23 is that correct?

24 A. Yes.

1 Q. So there was an ongoing dialogue within
2 the context of C 107 between industry and the
3 regulatory authorities as to what ought to be done
4 about this problem of pcb's in the environment?

5 A. Right.

6 Q. The same dialogue was also continuing
7 through different avenues outside C 107 such as
8 the round of meetings that we discussed earlier in
9 Washington, D.C., direct 101 contact by Monsanto
10 with individual agency employees?

11 A. By Monsanto and some of our customers did
12 this also.

13 Q. GE in particular?

14 A. Yes. And Westinghouse.

15 Q. Westinghouse.

16 And you talked to them and they talked to
17 you about what each of you was doing with respect
18 to contacting the government; is that correct?

19 A. As often as we could, yes.

20 Q. Exhibit 341 is a three-page memo from R.
21 D. McClain of Westinghouse to T. Dakin and L.
22 Mandelcorn, dated December 29, 1971, subject ANSI
23 C 107 working group meeting Chicago, December 15,
24 1971.

1 (The document above-referred to
2 was marked Bloomington Deposition
3 Exhibit No. 341 for identification.)

4 I will ask you to take a look at that and
5 I recognize that that being a -- well, let me ask
6 you.

7 I recognize that this is a Westinghouse
8 internal document. Have you ever seen it before?

9 A. I do not recognize it. I don't recall
10 seeing it.

11 Q. Look it over and just tell me briefly
12 whether there is anything in there relating to
13 that meeting which doesn't agree with your
14 recollection of what transpired at the meeting?

15 A. It appears to be a fairly accurate
16 summary of my comments.

17 Q. The exhibit that has previously been
18 marked as 199 consisting of three pages and dated
19 December 15, 1971, meeting ANSI C 107, use and
20 disposal of askarel and askarel-soaked materials,
21 consisting of three pages, signed by T. K. Sloat,
22 I will show you that document and ask if these are
23 the ANSI official minutes of that meeting?

24 A. I don't believe these are the official

1 minutes, primarily because they are not signed by
2 the secretary, Mr. Salazar, who would be the one
3 who issued the official set.

4 Q. Mr. Sloat was a Westinghouse employee,
5 was he not?

6 A. Yes.

7 Q. Document 341 and Exhibit 199 are
8 referring to the same meeting, are they not?

9 A. Yes.

10 Q. Two different people's summaries of what
11 took place?

12 A. Yes.

13 Q. Is there anything in 199 that you don't
14 agree with?

15 Is there anything in 199 that you find to
16 be an inaccurate summary of what took place at the
17 meeting?

18 A. I don't see anything in here that does
19 not appear to be fairly accurate.

20 Q. Okay.

21 In the course of the work of the C 107
22 committee and its subcommittees and working
23 groups, different individuals as I understand it
24 were assigned to prepare first drafts of different

1 portions of what ultimately would become ANSI's
2 proposed standard for action by the organization
3 as a whole; is that correct?

4 A. Well, they were asked to undertake
5 assignment. Some of them put it in writing,
6 others just came back with oral reports.

7 Q. Okay.

8 And the ANSI staff took all those pieces
9 and put them together into a rough draft of the
10 standard?

11 A. Yes.

12 Q. Then that was circulated among all the
13 members of the committee for their comments and
14 criticism?

15 A. Well, in turn, all the members of the
16 subcommittee and finally a composite document was
17 sent to all members of the total committee.

18 Q. Okay.

19 The transformer people worked on the
20 transformer standard, part of the standard, until
21 they were satisfied with it?

22 A. Yes.

23 Q. And the capacitor people worked on the
24 capacitor part of the standard until they were

1 satisfied with it?

2 A. Yes.

3 Q. And then they were exchanged to see what
4 the people who didn't know anything about it
5 thought about it?

6 A. Correct.

7 Q. Okay.

8 A. So that they were consistent in terms of
9 referring to certain services, incinerator
10 services, analytical services and the like.

11 Q. And organizationally consistent with each
12 other?

13 A. That's right.

14 Q. That's kind of a function that the ANSI
15 staff provides, do they not, when they put these
16 things together?

17 A. The ANSI staff did not participant to
18 that extent. They just supplied the letterhead
19 and the umbrella.

20 Q. Okay.

21 So all the hard work was done by the
22 committee members?

23 A. And the NEMA staff did the typing, the
24 mailing, the arrangements for meetings and the

1 like were done by NEMA.

2 Q. ANSI was lending its seal of approval?

3 A. Yes.

4 Q. And, of course, once the C 107 committee
5 was satisfied with its work product, then it was
6 up to the ANSI to decide whether they were going
7 to promulgate that as an ANSI standard or not?

8 A. Yes.

9 Q. There is a formal procedure for that?

10 A. Review panel, yes.

11 Q. At that point the process is out of the
12 hands of the people on the committee?

13 A. Correct.

14 Q. But it was ultimately adopted?

15 A. Yes.

16 Q. Was there any effort to your knowledge in
17 the course of the drafting process of the C 107
18 standard to put it together in such a way that it
19 would not call for drastic engineering changes in
20 the existing plants of those people who were
21 participating in the process?

22 A. I didn't sense that that was the
23 direction the committees took.

24 They looked at what was the desired end

1 result and then worked back, what would it take to
2 achieve it.

3 Q. But they weren't starting with a clean
4 slate, so to speak?

5 A. True.

6 Q. The process wasn't in an ideal world
7 where pcb has never been used before, how can we
8 build a plant that will achieve maximum control,
9 or was that the starting point?

10 A. There were elements of that in the
11 process.

12 The best technology available was
13 considered, and that is the very technology you
14 would use to build a new plant.

15 The introduction of this curbing we
16 talked about and the sumps underneath an operating
17 unit, all the other devices used to contain and
18 control and direct. They could just as well be
19 used in a totally new installation as well as
20 added onto an existing.

21 Q. What my question I guess is, in
22 considering two alternative ways of achieving the
23 same result, that is, containment of the pcb's,
24 was there consideration given to which is more

1 readily put into place in an already existing
2 facility, as opposed to if you are building a new
3 plant you can choose on economic reasons or
4 feasibility reasons or completeness of
5 containment, the economics are going to be
6 different in an existing plant?

7 A. Certainly.

8 Q. Was that taken into consideration in the
9 deliberative process?

10 A. I don't recall that the intent of the
11 ANSI standard setting groups was to supply
12 engineering standards, so much as to point out the
13 objective and, where known, to point out alternate
14 ways of achieving the objective. Allowing the
15 individual company to choose whichever fit his
16 situation.

17 As our example, it says something like
18 avoid getting it on your skin, it talks about
19 gloves and it talks about barrier creams and it is
20 up to the individual company then to decide do I
21 want to use barrier creams, do I want to use
22 creams and gloves, or cream is something I don't
23 want because it will affect my product and I can't
24 paint it later.

1 So the objective overall was to point out
2 the things we wanted to achieve and the how to
3 part where known was described and in some cases
4 it wasn't known. It was left up to each company
5 then to come up with their solutions.

6 Q. Which might be application specific?

7 A. Yes.

8 Q. I might be able to do something you
9 couldn't do because of differences in our
10 processes?

11 A. Yes.

12 Q. It was the hope of those who were
13 participating in the C 107 process that if they
14 could come up with a standard, and if by following
15 the standard the people in the electrical industry
16 could reduce or eliminate environmental release of
17 pcb's, that then pcb's would continue to be
18 available for their use in manufacturing
19 capacitors and transformers?

20 A. Yes.

21 Q. And there was a strong feeling I take it
22 in 1971 and '72 as this process was going on that
23 if they couldn't achieve that result, either
24 through an ANSI standard or otherwise, eventually

1 regulators were going to take their product away?

2 A. Yes.

3 Q. And as of '71 and '72 there was yet no
4 substitute that had been developed?

5 A. That is correct.

6 Q. So it would have meant going back to
7 mineral oil and taking the risk of the fires that
8 pcb's were designed to prevent?

9 A. Yes.

10 Q. Let's look at 342, Exhibit 342, which is
11 a letter dated January 12, 1972 with attachments
12 including a note stapled to the front in A.
13 Pozefsky's handwriting and then the typed letter
14 and then a draft of the guidelines for transformer
15 manufacturing and repair.

16 Do you recognize that early draft?

17 (The document above-referred to
18 was marked Bloomington Deposition
19 Exhibit No. 342 for identification.)

20 A. Yes. I recognize this.

21 Q. Do you agree with the assessment on the
22 third page of the exhibit, which is the first page
23 of the standard, that care must be taken to avoid
24 unnecessary contact with pcb liquid or vapors?

1 A. Yes.

2 Q. Other than the four methods or I am
3 searching for the word, the four routes of contact
4 that are listed immediately under that statement,
5 that is, breathing, swallowing, skin contact and
6 what it says is eye protection, I presume that is
7 a reference to eye contact. Is there any other
8 way that pcb's can get into the human body that
9 you know of?

10 A. No, I don't.

11 Q. Okay.

12 Was there a similar statement in the
13 capacitor draft about routes of human contact?

14 A. I don't recall.

15 Q. Take a look at 343, which is dated
16 January 17, 1972, the first page is a cover letter
17 by A. Pozefsky of General Electric to the members
18 of the capacitor working group. And with this
19 draft attached.

20 (The document above-referred to
21 was marked Bloomington Deposition
22 Exhibit No. 343 for identification.)

23 A. I have reviewed it.

24 Q. Although the language about human

1 exposure in the capacitor draft isn't the same as
2 in the transformer draft, I take it that whatever
3 human health risks might exist would be the same
4 without regard to whether the material was being
5 used in capacitors or transformers; is that
6 correct?

7 A. Yes.

8 (The document above-referred to
9 was marked Bloomington Deposition
10 Exhibit No. 344 for identification.)

11 Q. Exhibit 344 is a document dated April 28,
12 1972 entitled pcb's - allowable discharge from
13 producing/using plants, minutes of meeting 4/13/72
14 in EPA Offices Washington, D. C.

15 Do you recall attending that meeting in
16 April of '72?

17 A. Yes.

18 Q. That was something different from the
19 C 107 committee, was it not?

20 A. That's right.

21 Q. Who called that meeting?

22 A. As I recall, this meeting was requested
23 by me through Mr. Easley to discuss with Dr.
24 Buckley the status of EPA's activities regarding

1 preparing a standard, control standard for pcb
2 effluents.

3 Q. Sewer effluents?

4 A. Yes. Water effluents.

5 Q. That was under the statutory authority of
6 the Water Pollution Control Act?

7 A. Yes.

8 Q. Was that the first regulatory effort on
9 pcb's that came out of the EPA?

10 A. Yes.

11 Q. As of the date of that meeting in April
12 of '72, the Toxic Substances Control Act hadn't
13 yet been passed; is that correct?

14 A. That is correct.

15 Q. So that the only authority at this time
16 the EPA had with respect to regulating pcb's was
17 under the Water Pollution Control Act?

18 A. Yes.

19 Q. And that was the direction they were
20 headed in as of that meeting?

21 A. Yes.

22 Q. Now, the meeting that is reflected in 344
23 was limited to EPA people and Monsanto people; is
24 that correct?

10

1 A. That is correct.

2 Q. And it was at Monsanto's request that the
3 meeting took place?

4 A. Yes.

5 Q. What was the purpose of that meeting from
6 Monsanto's point of view?

7 A. To avoid getting a standard that was
8 unrealistic and unachievable.

9 Q. In other words, if the EPA water effluent
10 standard were low enough, it would effectively
11 amount to a ban on pcb's?

12 A. Yes.

13 Q. Because your customers couldn't possibly
14 achieve it with the available technology?

15 A. Our customers as well as Monsanto.

16 Q. As well as you at your production
17 facility?

18 A. Yes.

19 Q. Although at that point in 1972 I gather
20 you were generally doing better at your plant than
21 your customers were doing at their plant in terms
22 of water quality?

23 A. We were doing better than some of our
24 customers and as well as others.

1 So I don't know that I could use the word
2 generally doing better.

3 Q. Okay.

4 Nobody was doing better than you, in any
5 event?

6 A. There might have been a couple.

7 Q. Who do you have in mind?

8 A. There was an operation in near here, near
9 Chicago, I am trying to remember the city.

10 Q. It wasn't Waukegan, was it?

11 A. I am sorry?

12 Q. Waukegan.

13 A. No. This was a capacitor manufacturer.

14 There was a company in the northeast, I
15 forgot their name. JARD, I believe, or some such
16 acronym.

17 Q. Does that Exhibit 344 accurately reflect
18 what you recall as having taken place at that
19 meeting?

20 A. Yes. Very accurately.

21 Q. Who prepared the memo?

22 A. Mr. Paul Hodges.

23 Q. Is he a Monsanto person?

24 A. He was a Monsanto employee.

1 Q. GO refers to what?

2 A. General offices.

3 Q. St. Louis location, in other words?

4 A. Yes.

5 Q. The EPA was recommending before this
6 meeting standards at .01 parts per billion for
7 rivers and lakes and zero detectable discharges
8 from the plants?

9 A. That was the --

10 Q. That was what they came in with?

11 A. Yes.

12 I don't know that they were convinced
13 that that was it. But at least --

14 Q. That was their starting point coming into
15 the meeting?

16 A. Yes.

17 Q. And your starting point was that neither
18 one of those could be feasibly achieved?

19 A. Right.

20 Q. According to this, your objectives were
21 to induce EPA to recommend .1 parts per billion or
22 10 times what their initial thinking was for the
23 river and lake water and 5 pounds per day
24 discharge from manufacturing facilities, with a

1 reasonable time to achieve those levels?

2 A. Yes.

3 Q. Did you tell them up front that is what
4 your goal was?

5 A. Yes.

6 Q. Okay.

7 So the negotiating that took place was
8 between those positions, your goal and their
9 coming-in position?

10 A. Yes.

11 I don't know that I would describe it as
12 negotiating. It is a statement of our positions.

13 Q. They backed up, they told you what
14 information they had that backed up their position
15 and you told them what information you had that
16 you thought backed up your position?

17 A. Yes.

18 Q. And you parted company at that point?

19 A. Yes.

20 Q. Was there a further dialogue with the EPA
21 as time went on?

22 A. Yes.

23 Q. Were there any further minutes that
24 reflect that, if you know?

1 A. No. It was not that type of meeting.
2 The dialogue took place in a more public-type
3 forum.

4 Q. They published a proposed regulation
5 ultimately in the Federal Register?

6 A. Yes.

7 Q. And you submitted some comments on it,
8 you being Monsanto?

9 A. Yes.

10 Q. Okay.

11 Did those go out over your signature,
12 didn't we talk about those already?

13 MR. FRUEHWALD: Some of those were shown up in
14 Mr. Gossage's deposition and they may have been in
15 Bill's other deposition.

16 MR. MC CONNELL: We didn't discuss those in
17 your testimony. I can't remember that.

18 A. I don't recall.

19 BY MR. MC CONNELL:

20 Q. Just without getting into those documents
21 right now, there were some comments to the
22 proposed regulation by Monsanto and by some of its
23 customers?

24 A. Yes the regulation, the proposal was

1 withdrawn and held in abeyance. There were many,
2 many delays, it was never promulgated.

3 Q. There never was a water quality standard
4 because the ban under the Toxic Substances Control
5 Act intervened, is that a fair statement?

6 A. Yes.

7 Q. So the regulatory process as it proceeded
8 informally in the context of this April '72
9 meeting, informally once an initial proposed
10 regulation was published in the Federal Register
11 dragged on until it became moot, because action
12 was taken under a different statute?

13 A. Yes.

14 Q. The thought being that once the
15 production and use of pcb's was eliminated, the
16 problem of water effluents would eventually take
17 care of itself?

18 MR. FRUEHWALD: Let me object here.

11

19 We are going down a road that is
20 obviously contrary to the public record. And
21 these are events that occurred after Mr.
22 Papageorge left his position as pcb coordinator.

23 I think you know that there was an
24 effluent standard promulgated in '76 and '77. But

1 that is after Mr. Papageorge left his
2 responsibilities.

3 So his testimony about what the EPA did
4 is probably based on his experience during his
5 role. But the leading questions that this was
6 never done is contrary to the fact. There was an
7 effluent standard promulgated in '76.

8 MR. MC CONNELL: That was after he was out of
9 the job. I am only asking him about the period of
10 time --

11 MR. FRUEHWALD: I want to make sure that's
12 clear.

13 BY MR. MC CONNELL:

14 Q. Up until you left, there was no water
15 quality standard?

16 A. That's right.

17 Q. After you changed jobs, you didn't
18 particularly care what happened, you had other
19 things on your mind?

20 A. Correct.

21 Q. You weren't following what the EPA was
22 doing with pcb's with any interest in the details
23 of it?

24 A. Not closely, no.

1 Q. Okay.

2 It came to your attention at some point
3 that they were ultimately banned, I take it?

4 A. Yes.

5 Q. During the time now up until you left,
6 which was in '75, '76?

7 A. '76.

8 Q. Beginning of '76?

9 A. February of '76.

10 Q. Okay.

11 During that period of time from April of
12 '72 to '76, there was a proposal, a proposed water
13 quality, water effluent standard promulgated,
14 comments were received and it was withdrawn, to
15 the best of your recollection?

16 A. As best I recall. Yes.

17 Q. Okay.

18 And Monsanto did submit comments in
19 response to that proposed standard?

20 A. Yes.

21 Q. And you shared those comments with your
22 customers?

23 A. Yes.

24 Q. So they new what you were saying and they...

1 also put in their comments to the EPA?

2 A. Yes.

3 Q. And they told you what their comments
4 were?

5 A. Yes.

6 Q. And the gist of all the comments I gather
7 was that the initial proposal wasn't feasible?

8 A. Yes.

9 Q. Couldn't be achieved?

10 A. Yes.

11 Q. And that it would effectively amount to a
12 ban on the use of pcb's?

13 A. I don't know that those words were used.

14 Q. I mean that wasn't a mystery to the pcb
15 people and it wasn't a mystery to the EPA?

16 A. Yes.

17 Q. Once it became apparent that it couldn't
18 be achieved, they said don't put out .01 parts per
19 billion and you couldn't use pcb's without
20 releasing more than that, you can't use pcb's?

21 A. Then you are in violation, all the
22 problems.

23 Q. Or you had to pay all the fines and you
24 get dragged into court?

1 It is probably not worth the headache.
2 You get bad publicity for your company and all the
3 attendant things that go with violating EPA
4 standards, right?

5 A. Yes.

6 Q. The objective of Monsanto and its
7 customers during this period of four years, a
8 little less than four years, from April of '72
9 through February of '76, when you stepped out of
10 that role, was to do whatever could be done to
11 control environmental release, while still keeping
12 the product available for capacitor transformer
13 use.

14 Is that a fair summary of what all of
15 this activity was about?

16 A. Yes.

17 Q. Did there come a time before you left the
18 pcb coordinator role where somebody developed a
19 substitute dielectric fluid?

20 A. I was not made aware before I left that
21 someone had. But it appeared to be an alternate
22 with some shortcomings.

23 Q. It was always Monsanto's position during
24 this period that should a safe and effective

1 alternate become available, pcb production would
2 be stopped?

3 A. That was a stated policy, yes.

4 Q. So that was the hang up so to speak,
5 finding an alternative?

6 A. Yes.

7 Q. Monsanto was not the company that
8 ultimately ended up doing that?

9 A. That is correct.

10 Q. Take a look at the document that has
11 previously been marked as Exhibit 204, which is a
12 memo from you to Benignus and others dated May 2,
13 1972, with two letters attached. And I will ask
14 you if you recognize that?

15 A. I recall these documents.

16 Q. The pcb taskforce was an internal
17 Monsanto group or was that something that that
18 involved others?

19 A. No, this was the inter-agency taskforce.

20 Q. Okay.

21 There was going to be a meeting of
22 Monsanto people with the taskforce to review the
23 topics that are included in the two letters
24 attached to the memo, is that correct?

1 A. Yes.

2 Q. And that meeting was to be scheduled on
3 May 15, 1972?

4 A. Yes.

5 Q. Did you attend the meeting?

6 A. Yes.

7 Q. Did you attend the full dress rehearsal
8 on May 8?

9 A. Yes.

10 Q. That was at Monsanto in St. Louis?

11 A. Yes.

12 Q. And you had a number of overhead slides
13 and script that was used in your presentation to
14 the inter-agency taskforce?

15 A. Yes.

16 Q. Did that presentation -- we marked that
17 as an exhibit before.

18 Did that presentation include some
19 information that was excerpted or summarized from
20 the Industrial Bio-Test animal studies as they
21 stood in May of 1972, do you recall?

22 A. I don't believe that we covered that.

23 MR. MC CONNELL: Well, I am not done but we
24 have to stop.

1 MR. FRUEHWALD: All right. So be it.

2 MR. MC CONNELL: I am physically incapable of
3 continuing, I think.

4 (Whereupon the taking of the
5 deposition was continued sine
6 die.)

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