

1988

1 THE COURT: Well, we will be having a recess in 20, 30
2 minutes. Why don't we do it then.

3 MR. KARAGANIS: Okay.

4 WILLIAM B. PAPAGEORGE, PLAINTIFF'S WITNESS, SWORN

5 DIRECT EXAMINATION

6 QUESTIONS BY MR. KARAGANIS:

7 Q. State your full name.

8 A. William B. Papageorge.

9 Q. Mr. Papageorge, where do you reside?

10 A. In the western part of St. Louis County, the suburbs of St.
11 Louis.

12 Q. And by whom are you employed, sir?

13 A. I am retired.

14 Q. When did you retire?

15 A. January 1st, 1987.

16 Q. And prior to your retirement, by whom were you employed?

17 A. Monsanto Company.

18 Q. Are you currently engaged in employment for pay, either
19 consulting or otherwise?

20 A. Yes.

21 Q. And for whom do you work on a consultant basis?

22 A. I have an agreement with Monsanto Company to help them.

23 Q. Is that an hourly rate?

24 A. Yes, sir.

25 Q. And could you tell us what that hourly rate is?

1 A. \$100.00 an hour.

2 Q. And you say you retired in 1987?

3 A. Yes.

4 Q. Would you tell the jury where you worked when you first
5 came to Monsanto? In other words, give your work history.

6 A. My first assignment in Monsanto was as a design engineer in
7 a plant located in St. Louis, working on the design of
8 equipment that was used later to make chemicals. The second
9 assignment --

10 Q. When was that?

11 A. That was from 1951 until about 1953. I was then made a
12 supervisor of a unit in the plant that produced chemicals, and
13 that lasted for about a year or year and a half. Following
14 that I was assigned as a maintenance supervisor in the
15 department at the plant that repaired and built chemical
16 equipment. That lasted about two years, or so. I think that
17 takes me up to about 1956. I was then made the superintendent
18 of that maintenance department, whereby the entire maintenance
19 operation reported to me. Following that -- and that
20 assignment lasted about two years. I returned back to the
21 Engineering Department as a superintendent responsible for the
22 activities of anywhere from six to a dozen engineers, and that,
23 I believe, would terminate about 1963. At that point in time I
24 was made the general superintendent of utilities, warehousing,
25 distribution. In other words, the miscellaneous kinds of

1 operations in this plant in St. Louis.

2 Q. Okay. Then what did you do?

3 A. I was then assigned to the plant in Illinois, in Sauget,
4 Illinois, as a general superintendent of manufacturing. I was
5 one of four such positions responsible for the manufacture of a
6 given set of chemicals at that plant. That assignment lasted
7 until 1965. I was then assigned as a plant manager to the
8 Monsanto plant in Anniston, Alabama, and that assignment lasted
9 until the end of 1969.

10 Q. What did you do then?

11 A. In January of 1970 I was assigned to a new position
12 entitled Manager Environmental Control, with the responsibility
13 for coordinating the activities that were arising from an issue
14 that was associated with PCBs.

15 Q. What was your title?

16 A. It was Manager Environmental Control initially.

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1 A It was manager, environmental control initially.

2 Q And that was manager, environmental control for PCBs?

3 A Correct.

4 Q So you were in charge of environmental control for single
5 chemical product line; is that correct?

6 A For a period of time, yes.

7 Q How long was that?

8 A Until about 1973, where I maintained the responsibilities
9 related to PCBs. But I also was assigned other chemicals so
10 that I could overview what activities where appropriate for
11 those additional chemicals.

12 Q Then after -- from 1973, how long did you stay in charge of
13 environmental control for PCBs?

14 A My association with PCBs ended in February of 1976.

15 Q And then what did you become in terms of your occupation at
16 Monsanto?

17 A In 1976 I was still -- I still had the title of manager of
18 product acceptability, but I was associated with a whole new set
19 of Monsanto products. No longer PCBs.

20 Q Now, when you came aboard in St. Louis in 1970 as manager of
21 environmental control, isn't it correct that Monsanto Company
22 had been aware of a problem of contamination of certain
23 environmental media by PCBs for some time?

24 A Yes.

25 Q And when you came to St. Louis as manager of environmental

1 control, wasn't one of your tasks to kind of coordinate and
2 manage the various aspects of the PCB problem, to have one
3 person in charge?

4 A Responsibility was defined as one of coordination. I was
5 never given the total management of the product lines.

6 Q Were you given the ability to say to a customer if the
7 customer was not complying with your pollution control requests
8 or directives, we're not selling you the product?

9 A No.

10 Q You didn't have that authority?

11 A That is correct, sir.

12 Q Now, with respect to your work when you came there in 1970
13 as coordinator of various PCB efforts, did you have occasion to
14 review the files of Monsanto with regard to PCBs and
15 environmental problems?

16 A I had occasion to review several files. I don't know that I
17 saw all of the files.

18 Q All right. Mr. Papageorge, I would like to direct your
19 attention to Exhibit 238 in evidence. That's the September 27,
20 '67 visit to Anniston, Alabama.

21 Mr. Papageorge, I show you what's been marked as Plaintiffs'
22 Exhibit 238 in evidence which is a cover memorandum enclosing a
23 memorandum by Mr. Benignus indicating a visit by Mr. Pickett and
24 **. McNally to the Anniston plant. Have you seen that document?

25 A Yes, I have.

1 Q Were you present when Mr. McNally and Mr. Pickett visited
2 the plant?

3 A Yes.

4 Q Were you aware at the time that they visited the plant that,
5 quoting Mr. Benignus, "Westinghouse admits to not being as
6 careful as they should be. Frankly, I believe there are
7 elements of sloppiness such as allowing the Inerteen to spill
8 and soak into workmen's shoes and clothing without then changing
9 the shoes and clothing"?

10 A I was aware after I had read Mr. Benignus's note.

11 Q Did you read that at the time of the visit or shortly
12 thereafter?

13 A I read that before the visit.

14 Q All right. So, you're not reading it recently, you read it
15 roughly about the time of their visit in 1967?

16 A Yes.

17 Q Okay. So would it be a fair statement that you knew that in
18 1967 that the practices at Westinghouse were "sloppy"?

19 A Yes.

20 Q Now, directing your attention to -- excuse me for a moment.

21 Directing your attention to Plaintiffs' Exhibit 314 in
22 evidence, Plaintiffs' Exhibit 314. Strike that. Plaintiffs'
23 Exhibit 313 in evidence. I'm sorry. The instructions for the
24 disposal of Inerteen at Westinghouse.

25 Were you aware in 1968 that there were instructions by

1 Westinghouse as to the dumping of Inerteen and, I quote, "It is
2 permissible to dump Inerteen and paint thinner out of containers
3 in the approved location so long as the liquid dumped soaks
4 completely into the ground leaving no pools. When the ground is
5 saturated, this location must be backfilled to a minimum depth
6 of one foot."

7 Were you aware that that was the policy and practice of the
8 Bloomington plant at Westinghouse?

9 A As best I remember, I first recall that paragraph read here
10 in previous testimony in this trial.

11 Q That's the first time you heard it?

12 A Yes, sir.

13 Q I see. Mr. Papageorge, when you gave a deposition in this
14 case, is it not correct that you were tendered to the plaintiff
15 as what's known as a 30(B)(6) witness? Do you recall?

16 A Yes.

17 Q A representative of the corporation?

18 A Yes, sir.

19 MR. KARAGANIS: All right. Judge, I wonder if I could
20 ask the Court to instruct the jury as to what a 30(B)(6) witness
21 is.

22 THE COURT: I'm not sure I know what is a 30(B)(6).

23 MR. KARAGANIS: Your Honor, it's a witness that is
24 tendered by a corporate defendant as a representative of the
25 corporation.

1 THE COURT: Corporations, members of the jury,
2 obviously can only speak through their officers, agents and so
3 on. And for purposes of taking depositions of corporations, the
4 Federal Rules provide that the corporation in question upon
5 request designate someone to speak on its behalf. And that was
6 done in this case. Mr. Papageorge is being designated by the
7 defendant.

8 Q Mr. Papageorge, you do recall that you in previous testimony
9 in deposition spoke as a representative of the corporation
10 having knowledge of the corporation's acts; is that correct?

11 A Yes, sir.

12 Q Now, to your knowledge when did the Westinghouse plant in
13 Bloomington open up?

14 A 1957.

15 Q And what period of time did Monsanto sell PCBs to the plant?

16 A Starting in 1957, terminating in September 1977.

17 Q Now directing your attention from the period 1957 to 1968,
18 to your knowledge did Monsanto Company ever inspect the
19 Westinghouse Bloomington plant as to either its landfill
20 disposal practices or as to its procedures for dumping of any
21 polychlorinated biphenyls down the sewer?

22 A I do not have any information that informs me that such
23 inspections did take place.

24 Q Now directing your attention to Plaintiffs' Exhibit 328 --
25 I'm sorry -- Plaintiffs' Exhibit 4592, have you ever seen that

1 document before?

2 MR. FRUEHWALD: Is that document in evidence?

3 MR. KARAGANIS: Yes, that is in evidence.

4 MR. FRUEHWALD: What's the date on it so we can find it
5 in the books?

6 MR. KARAGANIS: That date is 11-4-68.

7 A I have never seen this document before.

8 Q Mr. Papageorge, I show you what's been marked as Plaintiffs'
9 Exhibit 424 for identification. Have you ever seen that
10 document before?

11 MR. FRUEHWALD: Would you want to give the the date so
12 we can look it up?

13 MR. KARAGANIS: Certainly. That is dated July 24th,
14 1969.

15 A I have seen this document before.

16 Q Let's see if we can go through this document for the Court
17 and jury together. Isn't it correct that the title of the
18 document is "Scrap Aroclor Disposal?" Now, what was meant by
19 scrap disposal in Monsanto in customer terminology was waste PCB
20 materials; is that correct?

21 A I need some help with your definition of the word waste.

22 Q Material that was otherwise disposed of by customers.

23 A No. The word scrap in use at that time referred to material
24 that had a potential for cleanup and recycle. It did not
25 include waste until it was demonstrated to be unusable.

1 Q If the customer didn't send it back to Monsanto for recycle,
2 the customer had been treating it as waste prior to this time,
3 had it not?

4 A I don't know what the customer called it at his plant.

5 Q Let's go back to the period prior to the scrap disposal
6 program, Mr. Papageorge. Isn't it correct that as part of the
7 scrap disposal program the two major sources of Aroclor, General
8 Electric and Westinghouse Bloomington, began sending waste PCBs,
9 PCBs from their factory that they weren't going to use back to
10 Monsanto?

11 A That is correct.

12 Q All right. And where had they been disposing of the
13 material that they were now sending to Monsanto prior to 1969?

14 A Landfills.

15 Q Directing your attention to the Plaintiffs' Exhibit 424 for
16 identification, isn't it a fact that Monsanto was actually
17 paying Westinghouse for the liquid?

18 A Monsanto was reimbursing Westinghouse for that liquid which
19 was usable. It was not paying for material that could not be
20 recovered.

21 Q So for the material that used to go, up until 1969 used to
22 go out in the local landfills by Westinghouse, as of 1969 some
23 of that material was coming back to Monsanto and if Monsanto
24 could use it, Monsanto was paying Westinghouse for the reusable
25 material; is that correct?

1 A That is correct.

2 Q And as to the material that Monsanto could not reuse, what
3 was Monsanto doing with that?

4 A At that point in time it was sent to chemical landfills.

5 Q So let me get this straight. As of 1969, Monsanto was
6 taking what Westinghouse used to dump out in landfills, at least
7 some of it, taking it back to Monsanto, that material which they
8 could clean up and reuse they did so, that material which they
9 couldn't, Monsanto then arranged for the disposal of that
10 material; is that correct?

11 A That is correct.

12 Q Directing your attention to the notation as to the status of
13 the scrap, Westinghouse Electric was generating about 15,000
14 pounds a month of this material; isn't that right?

15 A That's what the document says.

16 Q 15,000 pounds of liquid PCB material; isn't that right?

17 A Yes.

18 Q That's 15 thousand pounds that prior to the initiation of
19 this program was going into landfills; isn't that right?

20 A I don't have enough information to tell me exactly where all
21 of it went. And I don't know whether the collection system
22 changed to account for more or less of the material.

23 Q Mr. Papageorge, based on your experience in this area, isn't
24 it a fact that it either went to landfills or down the sewer?

25 A Or up the stack.

1 Q Or up the stack. All right. Most of the liquid was going
2 to either the landfills or to sewers, was it not?

3 A I can only speculate, yes.

4 Q What did you call the stuff that you -- I shouldn't use the
5 word stuff -- what did you call the material that you sent to
6 the toxic dumps? What was your term?

7 A My personal term was waste PCBs.

8 Q Did Monsanto call it junk?

9 A Some individuals in the company referred to it as junk, yes.

10 Q As a matter of fact, let's see if we can get the -- Mr.
11 Bryant is the author of the July 24th, 1969 memorandum, is he
12 not?

13 A That is correct.

14 Q Mr. Bryant, what department did he work in?

15 A In 1969 he worked in the marketing department of the group
16 that sold PCBs.

17 Q So he was part of the sales force; is that correct?

18 A He was the technical support person helping the marketing
19 people.

20 Q He refers to the material that is not recycled as junk; is
21 that correct?

22 A The word junk appears in quotes, but Mr. Bryant had another
23 thought in mind.

24 Q When he was referring to junk?

25 A Yes. Many drums arrived labeled as containing PCBs but they

1 would contain kerosene, diesel fuel, paint thinner, all sorts of
2 material that the word junk refers to here.

3 Q It also refers to PCBs that could not be reclaimed; isn't
4 that right?

5 A I don't read that from this reference.

6 Q Directing your attention to the listing of the Westinghouse
7 capacitor plants on Plaintiffs' Exhibit 424 -- I'm sorry -- the
8 Westinghouse facilities, for which Westinghouse facilities were
9 you performing this service?

10 THE WITNESS: Do you want me to read them from there?

11 MR. KARAGANIS: Either from that or from your
12 recollection.

13 A It's the capacitor plant in Bloomington, Indiana, and the
14 transformer plant at Sharon, Pennsylvania, and a transformer
15 plant at South Boston, Virginia.

16 Q Now, directing your attention again to Exhibit 424, the July
17 memorandum, the July 1969 memorandum, this memorandum
18 essentially describes a recycle program whereby Monsanto sent a
19 product down to Bloomington Westinghouse and Westinghouse sent
20 scrap Aroclor back to Monsanto for further processing and
21 disposal that it wasn't capable of processing; isn't that
22 correct?

23 A That is correct.

24 Q And directing your attention to the first line of the July
25 24th, 1969 memorandum, just so we can date it for the jury, the

1 program began early in 1969, did it not?

2 A Yes, it did.

3 THE COURT: Well, we've seemed to have lost a little
4 momentum. Why don't we take a ten minute recess. Maybe you can
5 get that stuff in order.

6 (The Court recessed from 2:45 o'clock p.m. to 3:05
7 o'clock p.m.)

8 Q Mr. Papageorge, I show you what's been marked as Exhibit 511
9 for identification. It's dated January 14th, 1970. Can you
10 tell the jury what that is?

11 MR. FRUEHWALD: 511?

12 MR. KARAGANIS: Yes. It's dated January 14th, 1970.

13 A This is a copy of a Monsanto intra-company memorandum
14 composed by J. G. Bryant addressed to R. M. Kountz on the
15 subject, "Aroclor Waste Disposal."

16 Q Directing your attention to this exhibit, January 14th,
17 1970, what is the problem that Mr. Bryant is referring to -- I
18 believe it's Mr. Bryant, isn't it? -- referring to with respect
19 to Westinghouse waste?

20 A Well, I see a problem mentioned on page 2.

21 Q What is that problem?

22 A It refers to the fact that material from Westinghouse cannot
23 be used, and I'm quoting, "cannot be reused in Pydraul blend
24 stock."

25 Q Would you tell the jury what blend stock was?

1 A Pydraul blend stock refers to a Monsanto fire resistant
2 hydraulic fluid and one of the ingredients in that fluid is a
3 PCB.

4 Q All right. Isn't it a fact that the problem being talked
5 about there --

6 THE COURT: Pardon me. You're discussing with the
7 witness the contents of the memo but you haven't offered the
8 memo. May I suggest that we establish this procedure: The
9 number of the exhibit, the date of the exhibit, the
10 identification, then the offer, then you can talk about about
11 it.

12 MR. KARAGANIS: Yes. I apologize. I would like to
13 offer at this time what's been previously discussed Plaintiffs'
14 Exhibit 424 for identification.

15 THE COURT: It's 511, wasn't it? Are you backing up?
16 Because this one is supposed to be 511.

17 MR. KARAGANIS: I'm sorry, this one I would like to
18 offer, it has not been admitted, is 424. Okay.

19 THE COURT: And 511?

20 MR. KARAGANIS: And 511, Your Honor.

21 MR. FRUEHWALD: No objection.

22 THE COURT: They'll each be received.

23 (Plaintiffs' Exhibit Nos. 424 and 511 were received in
24 evidence.)

25 Q Now, Mr. Papageorge, with respect to the so-called blended

1 Pydraul, the blended Pydraul involved material that hadn't been
2 distilled; isn't that right? In other words, you could blend it
3 without distilling it, blend some of the product in without
4 distilling it?

5 A I find your question difficult to answer. When making the
6 Pydraul hydraulic fluids from fresh PCB as one ingredient, that
7 PCB is distilled.

8 Q Right. But when making it from waste PCBs --

9 A From waste PCB it can could go one of two routes. One is
10 using the PCB after a simple filtration to remove solid
11 particles and the like; or the other is a possible cleanup using
12 distillation.

13 Q Isn't what Mr. Bryant is talking about there, the fact that
14 the Westinghouse waste required distillation and you have a
15 shortage of distillation facilities?

16 A That is correct.

17 Q So they are piling up, isn't that what the memo says?

18 A Yes.

19 Q They're piling up back at Monsanto, aren't they?

20 A No. They are piling up at Findett Company in St. Charles,
21 Missouri.

22 Q Findett Company was a company that Monsanto paid to do the
23 filtration; isn't that right?

24 A That is correct.

25 Q And if I may, directing your attention to page 2 of this

1 document, in addition to the material that's piling up at
2 Findett, you also dumped 15,000 pounds of junk from Westinghouse
3 Bloomington, isn't that right, in the toxic landfill?

4 A That is correct.

5 Q Mr. Papageorge, the date on this memo is January 14th,
6 Plaintiffs' Exhibit 511, that's written by Mr. Bryant on January
7 14th, 1970, is it not?

8 A That is correct.

9 Q Directing your attention to the next exhibit which is
10 already in evidence as 530 which is a January 29th, 1970 letter
11 by the same Mr. J. G. Bryant to the head of the industrial waste
12 section of the Indiana State Department of Health, I would like
13 to direct your attention to the following language: "As we
14 discussed on the phone, Westinghouse Electric Company in
15 Bloomington is a large user of our capacitor Aroclor. We have
16 been actively working with Westinghouse developing a waste
17 recovery program aimed at pollution abatement. At present
18 Monsanto is taking back waste Aroclor from the capacitor
19 operation at Bloomington. Further, we know Westinghouse are
20 making quite an effort to collect all the waste PCBs from their
21 operation. This program has been underway since the fall of
22 1969. Thus far it appears very successful at controlling their
23 waste fluids."

24 Have you ever seen Plaintiffs' Exhibit 530 before?

25 A I have seen this document as it relates to this case.

1 Q All right. Now, would it not be correct that 530, the
2 program referred to in 530 that Mr. Bryant is talking to the
3 State of Indiana about, is the program that's reflected in your
4 Aroclor waste disposal program; namely, recycling it back to
5 Monsanto?

6 A That is correct.

7 Q Based on the recycle program we have described in the
8 January 14th Bryant memo to Mr. Kountz, and the January 29th,
9 1970 letter, isn't it true that Monsanto had an active pollution
10 control program going with Bloomington for the control of PCB
11 releases in the Bloomington plant?

12 A I find your description of that activity rather broad.
13 There was a program to enable the Westinghouse Bloomington plant
14 to send to Monsanto some liquid PCBs that could possibly be
15 recycled and reused thereby reducing the amount that had to be
16 disposed of. This has nothing to do with material involved with
17 water systems or material involved with solid absorbents or
18 drags or any of that.

19 Q Mr. Papageorge, in your deposition taken on June 25th, 1986
20 at page 159, did I ask you the following question and did you
21 give me the following answer:

22 "Q. Based on the recycle program we have just
23 described in the last exhibit in this letter, Monsanto
24 had an active pollution control program going with
25 Bloomington, did they not, for the control of PCB

1 releases in the Bloomington plant?"

2 "A. It appears so, yes."

3 Did I ask you that question and did you give me that answer?

4 A If it's in the document, you probably did; yes, sir.

5 Q Thank you. Now, Mr. Papageorge, again, getting the date
6 straight here, I direct your attention to Plaintiffs' Exhibit
7 488 for identification. Can you tell us what that is?

8 THE COURT: Did you give the date?

9 MR. KARAGANIS: I'm sorry. December 8th, 1969.

10 Q It is a memo by Mr. Kountz. Are you familiar with that?

11 A This is a copy of a Monsanto memo authored by R. M. Kountz
12 and addressed to N. T. Johnson, P. B. Benignus and J. R. Fallon.
13 The subject is "Aroclor Waste Disposal."

14 MR. KARAGANIS: All right. I move the admission of
15 Exhibit 488, Your Honor.

16 MR. FRUEHWALD: No objection.

17 THE COURT: It will be received.

18 (Plaintiffs' Exhibit No. 488 received in evidence.)

19 Q Who was Mr. Kountz?

20 A At that time Mr. Kountz was the manager in the engineering
21 department who was assigned engineering projects that related to
22 PCBs.

23 Q All right. Now, Aroclor that could not be made into Pydraul
24 there either through distillation or blending was considered
25 unreclaimable, was it not?

1 A Yes.

2 Q As we have just described at this period of time, Monsanto
3 would take that waste Aroclor that it got back from Westinghouse
4 and Monsanto and would dump in it into a local toxic landfill;
5 isn't that right?

6 A Yes.

7 Q I would like to read the following language from this
8 memorandum, Plaintiffs' Exhibit 488. "There is a strong feeling
9 in some parts of our business group that incineration facilities
10 are needed for disposal of the contaminant Aroclor. A serious
11 question and doubt do exist as to whether landfill is the proper
12 disposal method."

13 Do you recall receiving that information?

14 A Yes, sir.

15 Q Now, Mr. Papageorge, isn't it a fact that in 1969 Monsanto
16 was disposing of liquid PCBs in landfills?

17 A Yes.

18 Q And isn't it a fact that you decided in 1970 to stop
19 landfilling those liquid PCBs?

20 A That's not correct.

21 Q It's not correct? Mr. Papageorge --

22 MR. KARAGANIS: Your Honor, I would like to show the
23 witness Plaintiffs' Exhibit 743 for identification, a letter
24 dated June 5, 1970 to Mr. Garlington Wilburn, Manager,
25 Engineering, Westinghouse.

1 THE COURT: Is it in evidence?

2 MR. KARAGANIS: No. It's for identification.

3 Q Are you familiar with that document, Mr. Papageorge?

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1 Q Are you familiar with that document, Mr. Papageorge?

2 A Yes, I am.

3 MR. KARAGANIS: I move the admission of 743, Your
4 Honor.

5 THE COURT: Could we have a date, please.

6 MR. KARAGANIS: June 5th, 1970.

7 MR. FRUEHWALD: No objection, Your Honor.

8 THE COURT: It will be received.

9 (Plaintiffs' Exhibit 743 received in evidence.)

10 Q Directing your attention to the following language, on the
11 June 5th, 1970 letter to Mr. Wilburn and I quote, "They are
12 actively seeking answers to PCB disposal problems and at
13 present are concentrating on the design of units to effectively
14 incinerator liquid waste. We will shortly focus our attention
15 to the more challenging problem of disposing of solid material
16 of all types contaminated with PCBs." I will skip a line.
17 "Until proper units are installed, we have continued to use
18 authorized landfills or storage scrap material for eventual
19 incineration."

20 Do you recall sending that message to Mr. Wilburn?

21 A Yes, sir.

22 Q Mr. Papageorge, in your deposition on Page 192, did I ask
23 you the follow questions about the Wilburn letter and did you
24 give me the following answers:

25 Q You weren't landfilling at that time; is that

1 right?

2 A Starting at about this time in 1970, our program
3 was to receive the material stored in storage tanks or in
4 sound drums until the incinerator could be installed and
5 we can burn it.

6 Q So you stopped landfilling; isn't that right?

7 A To my knowledge, yes. In fact, it was on only
8 recently I was tuned into this landfilling bit. I had
9 missed that somehow.

10 Q So you stopped landfilling because you didn't think
11 it was a good practice; isn't that right?

12 A That is true.

13 Q You are talking about liquids here?

14 A Yes, liquids.

15 A That is correct.

16 Q So you stopped disposing of liquids into landfills in 1970
17 because you didn't think it was safe; isn't that right?

18 A That is correct. At what point in time?

19 Q Some point in 1970.

20 A Correct.

21 Q Now, with respect to the landfills that you continued to
22 use, you continued to store solid material in landfills, did
23 you not?

24 A That is correct.

25 Q And wouldn't it be correct to say that you only used

1 specialized industrial waste landfills, chemical waste
2 landfills?

3 A Will you help me with the definition of "you". Is this
4 Monsanto?

5 Q Well, if Monsanto disposed of PCB waste, where did it
6 dispose of it?

7 A Monsanto had its own landfill on Monsanto property.

8 Q And if Monsanto had to dispose of solid waste, any solid
9 waste that at Findett or had come back from the customer, where
10 did it dispose of those wastes?

11 A If Monsanto had possession of that material, it would go
12 into its own landfill. I do not know where the Findett Company
13 went with its material contaminated with PCBs.

14 Q Mr. Papageorge, directing your attention to the Wilburn
15 letter, if you could have incinerated solids at that time, you
16 would have wanted to incinerate solids as well; is that right?

17 A Certainly.

18 Q Pending the construction of a solid waste incinerator you
19 were either storing it or using authorized landfills; is that
20 right?

21 A No. We were not storing solid material contaminated with
22 PCBs.

23 Q What was your recommendation in 1970 with respect to solid
24 materials contaminated with PCBs?

25 A My recommendation was to find a permanent chemical landfill

1 properly managed that wasn't near any water, surface water or
2 groundwater.

3 Q Even as to a temporary solution of storage, the landfills
4 you were speaking about were especially designed chemical waste
5 landfills,; isn't that right?

6 A That was the intent, yes.

7 Q In the trade, the word sanitary landfills is not used for a
8 chemical waste landfill, is it?

9 A Not after I would say the middle 1960's.

10 Q The term sanitary landfill is typically used for a
11 municipal landfill; is that right?

12 A That is correct.

13 Q And when you were talking about a chemical waste landfill,
14 this would not be a local municipal landfill where household
15 waste was taken; is that correct?

16 A That is correct.

17 Q Now, at any time during 1970 when you had stopped, because
18 of safety reasons, dumping liquid PCBs in your operation, in
19 other words, the material you got back from GE and Westinghouse
20 that you couldn't process, you dumped--you had previously been
21 dumping in landfills. You stopped that and stored it; is that
22 right?

23 A That is correct.

24 Q You stopped it and stored it because you didn't think it
25 was safe to put in landfills; is that right?

1 A That is correct.

2 Q Mr. Papageorge, at any time during that year when you made
3 that decision back at Monsanto, did you ever tell the City of
4 Bloomington that it was not a good practice to put or have put
5 liquids in a landfill?

6 A I did not.

7 Q When you say you did not, to your knowledge, nobody from
8 Monsanto ever told them that; isn't that right?

9 A That is correct.

10 Q This is after you knew what a problem it was; isn't that
11 right?

12 A That's correct.

13 MR. FRUEHWALD: Your Honor, there is no evidence that
14 any such landfill was being used at that time in Bloomington.
15 The testimony is to the contrary. It was taken to Owen County
16 at that time. There is no reason to telling the City of
17 Bloomington at that time, and the evidence is clear this is
18 argument.

19 THE COURT: Well, it is argument. So I think you have
20 labored that point enough.

21 Q Mr. Papageorge, in 1970, when you learned that putting
22 liquids was not a good idea in landfills, liquid PCBs, did you
23 tell anybody in the Bloomington area--county, city,
24 anybody--that putting liquids in the landfill was not a good
25 idea?

1 A I did not.

2 Q Did anybody at Monsanto?

3 A Not to my knowledge.

4 Q Mr. Papageorge, isn't it a fact that Westinghouse, even as
5 late as 1972, was putting capacitors containing liquids in
6 landfills in the Bloomington area?

7 MR. FRUEHWALD: Your Honor, the evidence is to the
8 contrary. I don't think Mr. Papageorge can know that.

9 THE COURT: If he doesn't know, he can so state. I
10 will overrule your objection.

11 A I don't know.

12 MR. KARAGANIS: The next exhibit is dated April 1st,
13 1970.

14 Q Mr. Papageorge, I show you what has been marked as
15 Plaintiffs' Exhibit 388--I'm sorry, 588--for identification.
16 Can you tell me what that is?

17 A This is a Monsanto memorandum sent by D.A. Olson to me.
18 The subject is PCB-Electrical Customers.

19 MR. KARAGANIS: I would like to introduce exhibit 588
20 in evidence, Your Honor.

21 MR. FRUEHWALD: My notes indicate it's already in,
22 Your Honor; and it has been read.

23 MR. KARAGANIS: If it is, it is, Your Honor. My
24 oversight.

25 Q Mr. Papageorge, Mr. Olson refers to--and I read the

1 following. This is after a visit to GE and Westinghouse. "I
2 told them that we wanted to work with them in specifics to help
3 them evolve the least costly method of disposal. In this
4 respect, I told them about you, your present position, your
5 background, and your potential as their savior. I feel it
6 would be most beneficial if during one of the next one or two
7 months you could visit the three major locations of
8 Westinghouse and the three major locations of General Electric
9 to learn the facts of their individual situations and to begin
10 evolving any suggestions you can as to collection and disposal.
11 I am asking Randy Graham to contact you soon to set up possible
12 trips at your convenience."

13 Do you remember seeing that memorandum?

14 A Yes, I do.

15 Q Did you make such visits?

16 A Yes.

17 Q Directing your attention to what is in evidence as Exhibit
18 743, your letter to Mr. Wilburn, does that reflect a visit to
19 the plant?

20 A I don't believe so.

21 Q Directing your attention to Exhibit 779 dated July 6, 1970,
22 can you tell the Court what that is?

23 A This is a letter that was addressed to Mr. Garlington
24 Wilburn of South Boston, Virginia, Westinghouse Plant. And it
25 was signed by me.

1 MR. KARAGANIS: I move the admission of Exhibit 779,
2 Your Honor.

3 MR. FRUEHWALD: No objection.

4 THE COURT: It will be received.

5 (Plaintiffs' Exhibit 779 received in evidence.)

6 Q Mr. Papageorge, 779 does show the fact you visited South
7 Boston Plant sometime prior to July 6, 1970; isn't that right?

8 A Yes.

9 Q And I quote, "I found our discussion and plant tour last
10 week very interesting and informative. Your plant has
11 excellent housekeeping and with continued emphasis on
12 controlling loss of PCBs to the air and sewer, I am confident
13 you can succeed in achieving a 'bone dry plant' in which the
14 leakage spills, et cetera are a rarity."

15 Did you write that letter?

16 A Yes, sir.

17 Q Directing your attention to the Westinghouse Bloomington
18 Plant, did you have occasion to visit that plant?

19 A Yes.

20 Q When did you visit that plant?

21 A About the third week of July, 1970, second or third week.

22 Q I show you what has been marked as Plaintiffs' Exhibit 795
23 in evidence. Is that a trip report of your visit to the
24 Westinghouse Plant in Bloomington?

25 A Yes.

1 Q Was your goal at the visit to the Westinghouse Plant to
2 inspect that plant and to try to assist them in whatever way
3 you could in achieving a bone dry condition?

4 A Can you help me with your definition of "inspect"?

5 Q Examine, walk through, surmise, look, gaze upon.

6 A Yes.

7 Q And as you walked through the plant, did you come across
8 any evidence that material was going down the sewer?

9 A I saw what I thought were oil stains near their sewer entry
10 points which led me to believe the material very likely entered
11 that sewer at that point.

12 Q Isn't it a fact you saw there was clearly liquid dropping
13 from the conveyer system onto the floor?

14 A I don't see how that could have been. There were no--the
15 operation was shut down when I visited plant.

16 Q Mr. Papageorge, in your deposition previously given in this
17 case, on Page 221, did you give the following answers to the
18 following questions:

19 Q What do you recall seeing when you went through the
20 plant?

21 A Well, I saw the unique use, unique in terms of
22 comparing it to other similar plants, of sawdust on the
23 floor.

24 Q Unique use? Let's describe when you say unique use
25 of sawdust what was happening in the impregnation

1 facilities and the cleaning facilities from the
2 impregnation facilities, what was happening with regard
3 to release of PCBs in waters for example in the rooms
4 themselves, in the F30 room?

5 A I don't quite know how to answer that. There was a
6 loss of PCB fluid from the conveying system where the
7 basket in which the filled capacitors were conveyed to
8 the point in the process where they are sealed. It was
9 apparent to me that at one time their every intention was
10 that the drip pans underneath the conveyers was to
11 collect the material. And these drip pans in some places
12 were missing, and others they were shifted just enough so
13 that all of the oil wasn't trapped. And even at the very
14 end of this collection system, the oil would just deliver
15 the trapped liquid onto the floor."

16 Do you recall giving that testimony?

17 A Yes, I do.

18 Q Was that simply from the point that the production wasn't
19 taking place but you were able to deduce this from past
20 conditions?

21 A That's correct.

22 Q Isn't it a fact that you were also showed several washers?

23 A Yes.

24 Q Do you recall what those washers were?

25 A Yes.

1 Q What were they?

2 A They were a detergent scrubbing system. Like a car wash
3 system I guess is the closest I can come to it.

4 Q A car wash system, that was a one washer. What were the
5 other two?

6 A I don't remember two others.

7 Q When you go--let's see if we can go back a step. Wasn't it
8 a fact at a minimum you were planning on touring the plant and
9 making recommendations regarding cleanup?

10 A Yes.

11 Q So when you tour a plant to make recommendations regarding
12 cleanup, you look at the sources of the facilities that could
13 cause contamination, do you not?

14 A I do, yes.

15 Q Now, when you undertake your inspection, do you normally
16 make a report? Isn't it common practice for an engineer
17 undertaking an evaluation to take notes as to what that
18 engineer sees?

19 A I don't know what you mean by common practice. This was
20 not an inspection of the formal type with a clipboard and boxes
21 to check. This was a tour guide, no papers in hand. And we
22 were escorted to the plant at the discretion of our escort who
23 explained what took place in each of the rooms. And I would
24 respond with my reaction.

25 And then at the end of the tour, we met in the conference

1 room. And I spoke from memory as to my observations and gave
2 my recommendations.

3 Q Did you try to identify what the sources of PCB
4 contamination were in the operation of the plants, in other
5 words, what machinery was causing PCB contamination?

6 A Well, it was quite obvious to the people there. They knew
7 it was a pump or a conveyer drip pan or an impregnating oven or
8 unloading dock. They knew these things.

9 Q Did they tell you the pumps were leaking down the sewers?

10 A No.

11 Q Did you ask?

12 A I asked what that oil stain that I observed was leading to.
13 And they would point to the grating in the floor, the sewer
14 opening.

15 Q What did that tell you?

16 A It told me it entered a sewer system.

17 Q Did you ever ask where that sewer went?

18 A No, I didn't. I just told them it shouldn't go into any
19 public waters. That was my suggestion.

20 Q With respect to the washing system, did you ever look and
21 see whether or not there was a washing system for the capacitor
22 trays?

23 A I don't remember that detail.

24 Q Did you ever look and see whether there was a washer system
25 for the funnels that were used to fill the capacitor cans?

1 A No, this was all described as a PCB washing station.

2 Q Was there more than one station?

3 A There may well have been. I only saw, as best I remember,
4 just the one as an example of the kinds of washing they do.

5 Q The PCBs in the washing water, whether they be at the rinse
6 station or the wash stations, even on the capacitor washers,
7 those PCBs went right down into a sewer, did they not?

8 A They went into a sewer, yes.

9 Q Was there any treatment or capture procedure at all at that
10 time?

11 A I don't recall any treatment. I do not know about a
12 capture system. That didn't come up.

13 Q Isn't it a fact your recommendations to them was to conduct
14 their operation in such a way that their floor appeared to an
15 everyday observer to be bone dry?

16 A That was my strong recommendation, yes.

17 Q He let's talk about what you know about engineering and
18 what you know about keeping a plant bone dry. Do you know what
19 Westinghouse uses today to avoid discharging liquid that is
20 filled into the capacitors and then flows on the sides of the
21 capacitors to keep that from going down the sewer?

22 A I do not.

23 Q Have you ever been back to the plant--let's let me ask the
24 question. Have you ever been back to the Bloomington Plant
25 other than your one visit on July 22, 1970?

1 A I have not.

2 Q So in the entire course of the operation of the plant with
3 PCBs, from 1957 to 1970, you hadn't been there. After then the
4 July 22nd visit, from 1970 until 1977, you never visited; is
5 that correct?

6 MR. FRUEHWALD: He was there one time. I think that
7 has been established. That means other dates he was not there.

8 THE COURT: Yes, I think that's true. We are getting
9 into argument again.

10 Q Mr. Papageorge, you do recall talking about an evaporative
11 degreaser, do you not?

12 THE WITNESS: At what time? While I was there?

13 MR. KARAGANIS: Yes.

14 THE WITNESS: We talked about degreasing using
15 solvents. The expression evaporative degreaser was not common.
16 I don't remember that expression.

17 Q A degreaser using solvents?

18 A Yes.

19 Q Isn't that a process where you take a contaminated object
20 that has a chemical that you are worried about, you want to
21 clean that chemical off the object. You dip the object into
22 a--or put the object into a facility that has a solvent vapor
23 in it?

24 A Well, you could dip it or you can spray it. You can wipe
25 it with rags soaked in it. There are various ways.

1 Q What happens to the solvent?

2 THE WITNESS: At what point in time?

3 MR. KARAGANIS: After it's cleaned off the contaminant
4 you are concerned about.

5 A Many years ago, it was common practice to dump in
6 landfills. Recent years, the common practice is to attempt to
7 recover the solvent by distillation.

8 Q That is by after the solvent has taken the material off to
9 redistill the solvents and recover the material?

10 A You recover the solvent and then you have the residue which
11 contains the unwanted material that must be disposed of.

12 Q Now, from the standpoint of the--let's just take a look at
13 the Westinghouse plant. From the standpoint of the
14 Westinghouse Plant, it was possible, was it not, to make that
15 plant free from any contact with water; isn't that right?

16 A Possible, yes.

17 Q With respect to the washing lines, it was possible to keep
18 all the capacitors and all the trays and all the funnels free
19 from contact with water that would go down the sewer, was it
20 not?

21 A Yes.

22 Q And that was possible in 1970, was it not?

23 A Yes.

24 Q Now, Mr. Papageorge, did you ever tell the City of
25 Bloomington when you saw these sewers there, you saw the

1 sewers--

2 MR. FRUEHWALD: Your Honor--

3 THE COURT: I will sustain the objection. He has
4 already testified neither he nor anyone else from Monsanto ever
5 told Bloomington anything.

6 MR. KARAGANIS: I thought he heard about landfills,
7 Your Honor. I'm sorry.

8 THE COURT: I think anything would include anything.

9 Q Mr. Papageorge, I would like to direct your attention
10 to--Mr. Papageorge, later on when you got into contamination
11 problems with various materials such as fish meal--do you
12 recall that?

13 A I recall the fish meal incident, yes.

14 Q When you discovered the fish meal incident, did you inform
15 the impacted governments?

16 A Yes.

17 Q When you later had instances of contamination, would it be
18 your practice to inform the government that was impacted that
19 there was contamination present?

20 THE WITNESS: Can you give me examples?

21 Q Fish meal was one example. Wasn't there also an incident
22 with chicken meal?

23 A That's the same incident.

24 Q Were there any other incidents where there was
25 contamination of a food supply and you told the impacted

1 government there was contamination?

2 A I don't recall any other instance of contamination in which
3 the government knew it before Monsanto did. So there was no
4 other incident to my knowledge.

5 Q With respect to your plant visits when you saw
6 contamination--let me go back a step.

7 Isn't it a fact that Monsanto, after it began its recycle
8 program and its plant visitation program, went out and
9 inspected the environmental conditions at various customer
10 plants, undertook studies to see what the environmental
11 conditions were like?

12 A We went out and made observations of our customers' plants
13 primarily at their invitation in hopes we could help them.

14 Q I am talking about around the plants, in other words, to
15 determine whether or not the customers' activities had
16 contaminated the surrounding environment. Do you recall ever
17 doing that?

18 A I don't recall any such incident, no.

19 Q You certainly didn't do it around Bloomington, did you?

20 A That is true.

21 Q Mr. Papageorge, I would like to show you what is in
22 evidence as Plaintiffs' Exhibit 770 which is a letter to
23 Congressman Ryan. Did you have a hand in writing that?

24 A I saw a draft of a proposed letter to Congressman Ryan.
25 And it was shown to me by the author John Mason before he sent

1 this finished draft to the Congressman.

2 Q Let's see if we can parse the Monsanto program. We have
3 already read to the jury the sections that deal with Monsanto's
4 communication to the Congressman regarding their assumption of
5 responsibility. Let's talk about the individual items in the
6 program.

7 Item one was a decision not to sell chlorinated biphenyls
8 to plasticizer applications; is that correct?

9 A That is correct.

10 Q That was because--that was an application where disposal of
11 the end product cannot be controlled; isn't that right?

12 A That is correct.

13 Q And the second category of activity were applications where
14 "We are not satisfied that it is possible to control their
15 usage and eventual disposal to ensure there was no possibility
16 of escape to the environment;" isn't that right?

17 A You didn't mention this referred to hydraulic industrial
18 hydraulic fluids.

19 Q All right.

20 A That's correct then.

21 Q So on the industrial hydraulic fluids you were cutting out
22 plasticizers altogether, right, in that part of the program.
23 Let's go back to step one.

24 A Okay.

25 Q Plasticizers were cut out?

1 A Yes.

2 Q Industrial hydraulic fluids, what were you doing with
3 those?

4 A We were cutting them out as we developed alternative fire
5 resistant substitutes.

6 Q So in this case, you were cutting them out because "We are
7 not satisfied that it is possible to control their usage and
8 eventual disposal to ensure that there is no possibility of
9 escape to the environment and you were going to provide
10 substitutes;" is that right?

11 A That is correct.

12 Q With respect to the item three, chlorinated biphenyls used
13 in closed system applications--transformers, capacitors, heat
14 transfer fluids, et cetera--that's what we were talking about
15 with capacitors, were you not?

16 A That is correct.

17 Q Now, when you say a closed application, you are talking
18 about the can being closed; isn't that right?

19 THE WITNESS: By can, you mean--

20 MR. KARAGANIS: The container.

21 THE WITNESS: The capacitor itself?

22 MR. KARAGANIS: The can.

23 A That's right.

24 Q The closed can, the closed can emissions were if somebody
25 were to open a can out in a customer application; isn't that

1 right?

2 THE WITNESS: I don't understand.

3 Q You put a capacitor up on an electrical pole, do you not?

4 A That's right.

5 Q And it's closed up there, is it not?

6 A Correct.

7 Q Let's talk about back home at the customer's plant. That
8 wasn't a closed system at all, was it?

9 A That depended on how the owner of that piece of equipment
10 set up his maintenance programs to drain the units, flush them,
11 refill them, and how carefully he controlled that waste
12 material, what he did with it.

13 Q The fact is at Westinghouse Bloomington, you could walk in
14 there and tell immediately it was not a closed system; isn't
15 that correct?

16 A Closed system refers to the end use, not to the
17 manufacturer of the capacitor.

18 Q Did you ever tell Congressman Ryan or anybody else that the
19 plants of your customers were dumping materials down sewers and
20 putting liquids in landfills?

21 A The discussions were held with Congressman Ryan. And the
22 subject of better control of what was going down the sewers and
23 up the stacks and in landfills was raised. And he was told
24 that efforts would be made to control this better to minimize
25 entry into the environment. So the subject did come up.

1 Q By Monsanto?

2 A By Monsanto representatives.

3 Q To Congressman Ryan?

4 A Yes, sir.

5 Q There is no mention you can control plants with respect to
6 keeping them free from environmental contamination in this
7 letter, is there?

8 A Well, I would have to read the whole letter.

9 Q All right. Take your time. And what I am thinking of
10 specifically is there is no mention of the customer's plants
11 are leaking into the environment; isn't that right?

12 Mr. Papageorge, let me try and speed it along.

13 A Okay. I can't find it at the moment.

14 Q Isn't it a fact at the time you wrote Congressman Ryan on
15 June 30, 19 30, you knew that your customer's plants were
16 dumping things down the sewers and dumping things in landfills?

17 A That is correct.

18 Q Isn't a fact there is no mention of that in the letter to
19 Congressman Ryan?

20 MR. FRUEHWALD: Your Honor, the exhibit speaks for
21 itself.

22 Q Mr. Papageorge, I show you what has been marked as
23 Plaintiffs' Exhibit 753 in evidence, the sales contract between
24 Westinghouse and Monsanto. Are you familiar with that
25 document?

1 A I have seen something like this or similar during my
2 deposition.

3 Q As a matter of fact, that's a standard clause or very
4 similar to a standard clause put in as of 1970 in all of
5 Monsanto's contracts with its electrical customers; is that
6 right?

7 A That's what I understand.

8 Q Would you read that contract clause regarding termination
9 to the jury.

10 A "It's understood that the products sold hereunder contain
11 polychlorinated biphenyls which some studies have shown may be
12 an environmental contaminant. Buyer agrees to use its best
13 efforts to prevent such product from entering into the
14 environment through spills, leakage, use, disposal,
15 vaporization, or otherwise. In the event seller determines
16 that in order to prevent contamination of the environment it is
17 necessary to discontinue the sale to buyer of polychlorinated
18 biphenyls for the applications contemplated by buyer, seller
19 may terminate this agreement at any time by giving the buyer at
20 least 90 days prior written notice."

21 Q Mr. Papageorge, this contract gives Monsanto the authority
22 to terminate sales to Westinghouse in the event that Monsanto
23 determines that Westinghouse is contaminating the environment,
24 does it not?

25 MR. FRUEHWALD: Your Honor, the contract terms speaks

1 for itself.

2 THE COURT: Yes, it does. Sustain the objection.

3 Q Mr. Papageorge, with respect to Monsanto's program to try
4 and keep contaminants out of the environment, PCB contaminants
5 out of the environment, you do agree they had such a program,
6 did they not?

7 A Yes.

8 Q Now, what did Monsanto do about the bad actor? I would
9 like you to assume that someone was continuing to release, in
10 this case, a capacitor manufacturer or transformer
11 manufacturer, that had very sloppy plant practices and was
12 continuing to release into the environment.

13 MR. FRUEHWALD: Your Honor, I think this is a
14 hypothetical question which really has nothing to do with the
15 Bloomington situation and is, therefore, irrelevant.

16 MR. KARAGANIS: Judge, if I can tie up there was
17 sloppy practice--

18 THE COURT: Well, I think you can ask if they
19 terminated anybody.

20 Q Did you ever terminate anybody for sloppy practices?

21 A No.

22 Q Not once, not out of all your customers?

23 A That is correct.

24 Q Wasn't the contract a mechanism by Monsanto that if a
25 customer did not clean up its act and was using sloppy

1 practices for Monsanto to pull the product?

2 MR. FRUEHWALD: Your Honor--

3 THE COURT: Sustain the objection. The contract
4 speaks for itself.

5 Q Mr. Papageorge, let's go to the overall program that
6 Monsanto had with its customers. Program number one, element
7 number one, was to reduce the amount of waste being dumped in
8 local landfills or out of the plant by getting the waste back
9 to Monsanto for recycling; is that correct?

10 THE WITNESS: You are referring to liquid waste?

11 MR. KARAGANIS: Yes.

12 A That is correct.

13 Q And with respect to the effect of that program by Monsanto,
14 it was to reduce the amount of material that was going into the
15 environment; isn't that right?

16 A That was the intent, yes.

17 Q So as opposed to before the program was initiated and when
18 the program was initiated, customers like Westinghouse
19 Bloomington would have reduced the amount of material they were
20 sending to local landfills or to the sewers; is that correct,
21 liquid materials?

22 A Yes.

23 Q And that was as to liquid control. As to solids control,
24 there was a question of bringing solids to licensed chemical
25 landfills; isn't that correct?

1 A I don't know about a question. That was the available
2 acceptable practice.

3 Q And you contacted the various state authorities on behalf
4 of the Westinghouse plants to see about whether or not that was
5 an acceptable practice; is that right?

6 A That is correct.

7 Q You would agree that putting the landfill or putting
8 material in a landfill that was based on a sinkhole or
9 fractured rock would not be a good practice; is that right?

10 A That is my understanding.

11 Q That would have been your understanding at any time during
12 the operation of the Westinghouse plant; isn't that right? It
13 wasn't a good idea to put PCBs on top of a sinkhole in 1957,
14 was it?

15 A That is correct.

16 Q It wasn't a good idea in any period of operation of the
17 Westinghouse plant to put it on fractured rock; isn't that
18 correct?

19 A That is correct.

20 Q Did you ever check on Westinghouse--forget what you told
21 the city. Did you ever check on Westinghouse to see what their
22 practices were on the landfills at any time?

23 A Well, I talked to Westinghouse representatives discussing
24 the characteristics of the landfill that would be suitable for
25 industrial chemicals like PCBs. There were many discussions of

1 that type.

2 At no time was I informed of exactly where and what type of
3 landfills Westinghouse was using. That was their prerogative.
4 That was their decision.

5 Q Did you ever ask?

6 A No. That's not a normal question to ask a customer.

7 Q I am talking about when you come in in 1970. You know that
8 PCBs are a major environmental problem, don't you?

9 A In 1970, there was a potential environmental problem.

10 Q Would you agree that Monsanto was worried about them
11 getting out into the environment?

12 A That is correct.

13 Q Would you agree that Monsanto is telling Congressman Ryan
14 they have got a program which they will restrict uses to those
15 where it can be controlled?

16 MR. FRUEHWALD: Your Honor, again this is more windup.
17 I think the question can be stated.

18 Q Mr. Papageorge, given that information, did you ever check
19 on Westinghouse Bloomington and say, "Look. Where is this
20 material going and what kind of control conditions do you have
21 in place"?

22 A No, I am not a regulator.

23 Q So as far as you knew, they could be dumping it in a
24 street, in a hole, or anywhere?

25 A We were dealing with a world class company, Westinghouse.

1 They won't dump in the street.

2 Q Will they dump it down a sewer?

3 MR. FRUEHWALD: I will object.

4 THE COURT: I will sustain the the objection. And we
5 will take a ten-minute recess, members of the jury.

6 Counsel will remain in the courtroom.

7 (The was not present at 4:05 p.m.)

8 THE COURT: Now, Mr. Karaganis, I think you are a
9 pretty good lawyer. You write good paper and so on. So I take
10 it for granted that you must know how to present a case within
11 the rules.

12 And one rule is you don't make an argument in your
13 questions. You don't repeat the same question over and over
14 again. You don't fragment a thing so that you get to--after
15 someone says we never did it, you don't get to ask a dozen
16 times did you do this, that, and the other thing. And I am
17 getting tired of it.

18 MR. KARAGANIS: I apologize, Your Honor.

19 THE COURT: Now, there are two ways, at least two
20 ways, that a Court may enforce the rules in a courtroom. One
21 is to sanction the attorney. I have never done that very much.
22 The other one is to declare a mistrial.

23 Now, I don't want to try this case a second time. And I
24 doubt you do either.

25 MR. KARAGANIS: You are right, Your Honor.

1 THE COURT: But if you think I won't declare a
2 mistrial, you just keep this up a little bit longer; and you
3 will find out.

4 MR. KARAGANIS: I apologize.

5 THE COURT: And you may refer to local counsel and see
6 whether I am capable of doing that or not.

7 MR. KARAGANIS: I am sure you are, Your Honor.

8 THE COURT: Okay. Let's take a
9 seven-and-a-half-minute recess.

10 (The Court recessed from 4:07 p.m. to 4:15 p.m.)

11 MR. KARAGANIS: May I proceed, Your Honor?

12 THE COURT: Yes.

13 Q Mr. Papageorge, I show you what has been marked as
14 Plaintiffs' Exhibit 506 for identification dated January 12,
15 1970. Can you tell me what that is?

16 A This is a copy of a Monsanto in-house memorandum authored
17 by P.G. Benignus addressed to H. S. Bergen. The subject is
18 Technical Sales Report, Westinghouse Electric, Bloomington,
19 Indiana.

20 Q Directing your attention to the paragraph entitled The
21 Pollution Problem, would you read that first sentence.

22 A "Westinghouse are grateful to Monsanto for taking off their
23 hands all scrap Aroclor 1242."

24 Q Now, Mr. Papageorge, Monsanto was Westinghouse's only or
25 sole supplier of PCB, was it not?

1 A To the best of my knowledge, yes.

2 Q As a matter of fact, Westinghouse considered that Monsanto
3 and its products represented their lifeblood, did they not?

4 A I suppose so for that product at that plant, yes.

5 Q Directing your attention to the second paragraph on Page 2,
6 under the heading The PCB Problem, Mr. Benignus quotes or Mr.
7 Benignus says he told Mr. Kelly of Westinghouse about how they
8 would deal with his lifeblood, did they not?

9 THE WITNESS: Starting with the second sentence?

10 MR. KARAGANIS: Yes.

11 A I advised Keith Kelly that looking ahead we foresee
12 possibility of a price increase of Aroclor 1242--perhaps next
13 summer. His face steeled, and he said, "Oh no." I told them
14 that it's our responsibility as supplier of his lifeblood to
15 appraise him as far ahead as possible of significant economic
16 changes and that this was exactly my purpose in order to avoid
17 any short term surprises and instead give him ample opportunity
18 to plan ahead."

19 MR. KARAGANIS: May I offer 506 at this time.

20 THE COURT: It will be received.

21 (Plaintiffs' Exhibit 506 received in evidence.)

22 MR. KARAGANIS: 4-21-71 is the next exhibit.

23 Q Mr. Papageorge, I show you what has been marked as
24 Plaintiff's Exhibit 1093 for identification. Can you tell the
25 Court what that is?

1 MR. FRUEHWALD: 4-21-71?

2 MR. KARAGANIS: Yes, 4-21-71.

3 A This is a copy of an article that appeared in the trade
4 journal, the Chemical Week dated April 21, 1971. The article
5 is entitle "Pollution Cop's lot not 'appy."

6 Q Who is the pollution cop to which they refer?

7 A They are referring to me in this article.

8 Q And would you read the jury under the legend under that
9 article--

10 MR. FRUEHWALD: I think the legend under the
11 article--the article should be in for a limited purpose, if at
12 all. Whatever some newspaper said about Mr. Papageorge--

13 MR. KARAGANIS: Mr. Fruehwald is correct. I withdraw
14 the question.

15 Q Mr. Papageorge, did you tell Chemical Week magazine that
16 you made inspections to help check loss of PCB to the
17 environment?

18 A Not in those words, no, sir.

19 Q Did you tell them that you made inspections to try to
20 prevent PCB loss to the environment?

21 A I didn't use the word inspection.

22 Q Did you tell Chemical Week the following: We tell our
23 customers that if they ignore us, we may be forced to stop
24 selling them PCBs and the message usually gets through adds
25 Papageorge. To back up the message, Papageorge makes personal

1 inspections of customers unloading facilities to make sure
2 spilled-prevention programs are working.

3 MR. FRUEHWALD: Wait a minute. Is part of that a
4 quote and part not a quote?

5 MR. KARAGANIS: Part of it was quoted and then a
6 statement by the magazine.

7 MR. FRUEHWALD: Can you distinguish what of Mr.
8 Papageorge is quoted and what is not.

9 Q Did you tell the manager either of the following
10 statements: "We tell our customers that if they ignore us, we
11 may be forced to stop selling them PCBs. And the message
12 generally gets through," adds Papageorge. Did you tell them
13 that?

14 A That I told them, yes, sir.

15 Q When did you tell Westinghouse that if they ignored your
16 recommendations, you may be forced to stop selling to them,
17 selling them PCBs?

18 A I don't know that I used the word if they ignore my
19 recommendations. If they didn't prevent loss to the
20 environment, the whole industry would be treated just like the
21 plasticizer industry would be treated. We would have to cut
22 them off.

23 Q We are talking about individual customers, Mr. Papageorge?

24 A Yes.

25 Q Isn't it true that the contract allows Monsanto to

1 terminate an individual customer who is releasing into the
2 environment.

3 MR. FRUEHWALD: The contract again says what it says,
4 and it doesn't say that. It says what it says in any event--

5 THE COURT: Yes. How many times must we go over that?

6 MR. KARAGANIS: I'm sorry, Judge.

7 Q Mr. Papageorge, did you ever tell any individual customer
8 that if they ignore you, we "may be forced to stop selling you
9 PCBs"?

10 A I told customers individually and collectively many times
11 this message.

12 Q Did you ever tell Westinghouse this message, Westinghouse
13 Bloomington?

14 A I suspect I did, but I don't recall the exact situation
15 when I did it.

16 Q Do you recall to whom you made that statement for
17 Westinghouse Bloomington?

18 A I believe I told them when I visited their plant. There is
19 a group in the conference room. I don't recall who was in that
20 group.

21 Q So on July 22, 1970 you told the group at Westinghouse
22 Bloomington if you don't--if you ignore us, we may be forced to
23 stop selling you PCBs; is that correct?

24 A That is correct, words to that effect, yes.

25 Q Turning to the next statement, to back up the message,

1 Papageorge makes personal inspections of customers unloading
2 facilities to make sure spilled-prevention programs are
3 working.

4 Did you tell Chemical Week magazine that?

5 A I told the journalist who interviewed me that I made visits
6 to facilities. And one of the points that I try to cover was
7 the unloading of the material by the customer.

8 Q Did you tell the journalist that you looked at other
9 facilities at the plant to see whether there are spills?

10 A Yes.

11 Q Did you use the word inspections?

12 A No, sir. To me, an inspection is a different caliber of
13 observation.

14 Q What is the caliber of observation an inspection is what
15 would you do if you wanted to do a good inspection?

16 A Well, I would first of all assemble a team representing all
17 kinds of skills and talents. I would coach that team as to
18 what we are going to achieve when we make an inspection.

19 I would prepare a list of the things to look for and how to
20 score our observations. That would be the clipboard approach.
21 It would be very much like the white glove inspection in the
22 military or safety checks made in chemical plants or what we at
23 Monsanto call housekeeping inspections that are made annually,
24 very in-depth.

25 It would take more than an hour and a half walk through a

1 plants. It may we will take a week depending on the size of
2 the facility and the depth and scope of the inspection. That's
3 what I call an inspection.

4 Q Let's take each of those things at a time. You would
5 assemble a team of technical experts; is that right?

6 A Well, some technical depending on what we are inspecting
7 for.

8 Q Let's assume you were inspecting the Bloomington Plant.
9 What kind of team would you assemble?

10 A Well, this is all hypothetical.. Shall I describe that?

11 MR. KARAGANIS: Yes.

12 A I would consider a person that knows something about
13 loading and unloading tank cars and railroad spurs and how cars
14 are moved and bumped and connected and disconnected. I would
15 have a person who knew something about the capacitor industry,
16 how capacitors are made. I would also have a person that knows
17 something about waste handling internally and also over the
18 road.

19 I think that's the minimum. I think I could do a good
20 inspection with those three skills.

21 Q Is it the person with the experience in the capacitor
22 industry you would have inspect F30, the capacitor impregnation
23 area?

24 A Yes, I would like to think the person I selected would
25 understand that operation, yes.

1 Q When you said a checklist, what would you employ in such a
2 checklist to see they are not polluting the environment?

3 A Such things as what is the concentration of PCBs in this
4 work area or that work area or at the unloading dock and so on.
5 I would actually have an instrument that might gather a sample
6 for me and send it to a laboratory.

7 Q Would you have a checklist to see what equipment is
8 relieving PCBs into the environment?

9 A Yes, that would be an appropriate listing.

10 Q So you would go down and checklist to say this pump is
11 releasing PCBs and that pump is releasing PCBs or this washer
12 is releasing PCBs? Would you go through that kind of list?

13 A Yes, for a very thorough inspection, yes.

14 Q And you feel an inspection would be necessary in order to
15 determine whether or not there was adequate control of the
16 PCBs; isn't that right?

17 A Yes.

18 Q And you indicated that when you are looking at a Monsanto
19 plant to see whether the Monsanto plant is protecting the
20 environment or not releasing unnecessarily into the
21 environment, you do what you called a white glove inspection?

22 A I don't do it. There is a team that does it.

23 Q How many people--if you were the pollution cop, how many
24 other policemen worked for you?

25 A Well, I filled that role of coordinating information. I

1 had help from the marketing team as an extension of my eyes and
2 ears so to speak.

3 Q Mr. Papageorge, as far as your office goes and your job of
4 making sure that customers were doing whatever you were doing,
5 how many staff did you have? How many other inspectors did you
6 have?

7 A Nobody.

8 Q It was just you?

9 A Yes, sir.

10 Q And you had to take care of all the GE plants; is that
11 right?

12 A Well, I don't know what you mean by taking care of.

13 Q You were going to look and see what the GE plants were
14 doing with respect to pollution control?

15 A To those plants I was invited, yes.

16 Q You were invited to all the three GE plants that Monsanto
17 was selling to; isn't that right?

18 A Wait. I only went to two. Wait a minute. Three GE
19 plants. I don't know how many Monsanto--Monsanto was selling
20 to more than three GE sites.

21 Q We went through the Olson memorandum of April 1st, 1970.
22 He told you there were three GE facilities and three
23 Westinghouse facilities?

24 A I suggested going to three. There are more. I picked the
25 three largest.

1 Q So you had the job of looking at the three largest GE
2 facilities; is that right?

3 A Correct.

4 Q And you had the job of looking at the three largest
5 Westinghouse facilities?

6 A Correct.

7 Q What other facilities did you have the job of looking at?
8 What other users of PCBs did Monsanto send you to look at?

9 A I can't remember all of them. There was a P.R. Mallory in
10 Tennessee, Sprague Electric up in the New England area, Cornell
11 Dubilary, Arovox, Jard. These are all up in New England.

12 Maloney Electric in St. Louis, Federal Pacific. I forgot
13 where they are located.

14 Q Let's take them individually. Arovox, did you go and
15 inspect the Aravox facility?

16 A Yes, I did.

17 Q Did you find they were containing their pollutants, their
18 PCBs?

19

20

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25

1 MR. FRUEHWALD: Your Honor, I don't know what the
2 significance is of going through all the other plants. There
3 must be 15 or so that he's mentioned and having cases about
4 them. This is about the Bloomington situation, what was done
5 there. I don't see the reasoning for this or the relevancy.

6 MR. KARAGANIS: The relevance of this is that this man
7 is put out as an inspector of various facilities.

8 THE COURT: He just got through telling you he was not
9 inspecting and I fail to see the relevance of a plant in
10 Tennessee or wherever.

11 Q Mr. Papageorge, directing your attention again to the top
12 article, did you tell Chemical Week the following,
13 "Nevertheless" -- under the legend "Clamping Down" --
14 "Nevertheless, Monsanto insisted it is taking vigorous steps to
15 stop accidental distribution of PCBs into the environment so
16 vigorous that some customers have complained"?

17 A Yes.

18 Q Did you tell Chemical Week that you had the following
19 program: One, eliminating open system applications of PCBs such
20 as coatings and plasticizers?

21 A Yes.

22 Q Did you tell them that item two was controlling spillage or
23 other loss from closed system operations?

24 A Yes.

25 Q All right. When you say controlling spillage or other loss

1 from closed system operations, you were talking about the
2 capacitor industry, were you not?

3 A That's one of the industries, yes.

4 Q All right. Three was developing a less persistent type of
5 PCB?

6 A Yes.

7 Q And four was eliminating loss or contamination during
8 manufacture; is that right?

9 A Yes.

10 Q All right. So let's see if we can nail down the program.
11 Elimination of open system operations you said was coatings and
12 plasticizers, right?

13 A Correct.

14 Q Okay. Item two, controlling spillage or other loss from
15 closed system operations including the Westinghouse Bloomington
16 plant, did it not?

17 A Correct.

18 Q Three was a less persistent type of PCB and four was
19 eliminating loss from your own manufacturing plants?

20 A Correct.

21 Q Okay. Now, in 1970 when you cut off plasticizers, you left
22 other applications as customers, did you not? You cut off
23 plasticizers, you said you cut off hydraulic fluid?

24 A Well, in 1970 we were in the midst of a program for phasing
25 out of hydraulic fluids.

1 Q Had you cut off heat transfer fluid?

2 A Not in 1970.

3 Q Would you tell the jury what happened that led you if at
4 all -- I'm sorry -- strike.

5 In 1970 had you concluded that you could continue to sell to
6 the heat transfer market because that was a market where
7 releases to the environment could be controlled?

8 A That was one of the reasons. The other was that we did not
9 know of any alternative material that was fire resistant that
10 could be used in lieu of the PCBs.

11 Q Let's see if we can get something straight.

12 THE COURT: Why don't we ask a question without the
13 windup?

14 MR. KARAGANIS: I'm sorry.

15 Q Mr. Papageorge, even if a product is essential, let's assume
16 it was essential to the national defense, that doesn't make it
17 necessary to dump it down sewers, does it?

18 THE COURT: That's argument and if you do that one more
19 time --

20 MR. KARAGANIS: I'm sorry, Your Honor. I thought that
21 was a legitimate question.

22 Q Mr. Papageorge --

23 THE COURT: If you said "dump down sewers" once during
24 this trial, you have said it 50 times and I'm tired of listening
25 to it.

1 MR. KARAGANIS: Your Honor, I said -- strike.

2 Q Mr. Papageorge, is it necessary, assuming a product is
3 necessary for the national defense or for commerce, is it
4 necessary to place the waste from such products in landfills
5 based on fractures or sinkholes?

6 A I find that question very confusing. I don't know what
7 makes it necessary. This implies there is no alternative.
8 There are better ways.

9 Q To dispose?

10 A To dispose.

11 Q So that if we have a useful product that we want to keep it
12 out in the environment, keep it out in commerce, that it's
13 necessary to the society, there are better ways of disposal of
14 the waste from that product than by putting them into sinkholes
15 or fractures; is that right?

16 A I believe so, yes.

17 Q So the fact that it is a useful product doesn't mean that
18 the methods of waste must go in a certain way; isn't that right?
19 Methods of waste disposal?

20 A Let me try to reword my understanding. A very needed and
21 useful product can certainly be justified if the proper methods
22 of disposing of a product when it's finished its usefulness or
23 the raw materials that the byproducts are made as a result of
24 that manufacture, the important product, so as long as
25 everything else is associated with that product is done

1 responsibly, certainly that useful product must be supported and
2 continued.

3 Q And am I correct that the disposal of the waste in a
4 responsible fashion goes hand in hand in keeping the product in
5 the stream of commerce; isn't that correct?

6 A I would suggest that's true of all products.

7 Q Thank you. Mr. Papageorge, would it be safe to say that you
8 were part of a team at Monsanto whose job it was to see whether
9 or not customers to whom you were still selling PCBs were
10 releasing PCBs into the environment?

11 A Yes.

12 Q All right. And with respect to that job, so I have these
13 points firm, as part of that seeing whether or not customers to
14 whom you were still selling PCBs were releasing PCBs into the
15 environment, placing the PCBs -- I don't want to use the --
16 placing the PCBs down the sewer or allowing PCBs to leak down
17 the sewer was not an acceptable practice; isn't that right?

18 A That is correct.

19 Q And placing the PCB liquid or solid in municipal landfills
20 that were based on sinkholes or fractured rock strata was not an
21 acceptable practice; isn't that right?

22 A That is correct.

23 Q And that would not have been an acceptable practice at any
24 point during the time 1957 to 1977; isn't that correct?

25 THE WITNESS: Are you combining the water effluent with

1 the landfill disposal?

2 MR. KARAGANIS: Yes.

3 A I would suggest that in the '50s and '60s the use of
4 landfills that would not contain the material would not be
5 normally acceptable for industrial chemicals. The presence of
6 some chemicals in sewage effluence at that period of time was
7 rather common in the chemical industry, so I don't know that I
8 can call it unacceptable. Under the knowledge available at the
9 time it was acceptable.

10 Q All right. Did Monsanto ever tell customers not to pour
11 PCBs down sewers during the time -- during the '50s or '60s?

12 A I'm not aware of any such message to the customer.

13 Q Now with respect to heat transfer fluids, you indicated that
14 was one of the utilizations by which you had determined that
15 control of its disposal or release into the environment could be
16 maintained and that therefore in 1970 Monsanto decided to
17 continue selling for heat transfer applications?

18 A That is correct.

19 Q Would you tell the jury under what circumstances that
20 changed?

21 A There was an incident that occurred in 1971 in which PCBs
22 used to transfer heat to sterilize fish meal leaked into the
23 fish meal, contaminated the fish meal, the fish meal in turn
24 found its way into poultry feed, animal feed, and contaminated
25 poultry, eggs, and the food chain, in other words.

1 That experience taught us that no matter how well
2 intentioned we were, that it was extremely difficult to keep the
3 PCBs away from other materials, so we decided then to withdraw
4 from that application.

5 Q So this was a situation no matter how hard you tried, PCBs
6 still got out into the environment and to protect the
7 environment you decided to pull out of the application; is that
8 correct?

9 A In that application, yes.

10 Q And with respect to that, did Monsanto change its policy at
11 that time as a result of the leakage from heat transfer
12 application -- strike -- would it be correct that in 1971 upon
13 the incident that occurred -- where was that incident?

14 A The incident occurred in North Carolina.

15 Q Is that called the Holly Farms incident?

16 A Yes. That's the common term used, yes.

17 Q Now, that incident occurred in the summer of 1971, did it
18 not?

19 A Yes.

20 Q And based on that incident, it was in 1971 that you cut off
21 heat transfer fluids?

22 A Yes.

23 Q All right. Based on the incident in which despite your
24 concern PCBs were still being released into the environment, did
25 you change your policy with respect to your other customers?

1 THE COURT: Are you talking about heat transfer
2 customers or what kind of customers?

3 MR. KARAGANIS: Capacitor customers. Capacitor and
4 transformer customers, the other customers you were still
5 selling to.

6 A When you say did you, you are talking Monsanto obviously?

7 MR. KARAGANIS: Yes. You as a representative of
8 Monsanto. I am referring to Monsanto.

9 A I was not and to this day I'm not personally aware of any
10 change in policy. We would still work with our electrical
11 customers to keep the escape to a minimum, offer all the help we
12 could in disposing of the unusable material. I just don't
13 remember any changes regarding the electrical application.

14 Q Directing your attention to what's been marked as
15 Plaintiffs' Exhibit 1435 dated January 15th, 1972, are you
16 familiar with that contract document?

17 A I believe I first saw this document during my deposition.

18 Q So you're saying that you did not -- you were not aware of
19 it during the 1972 to '77 period? Strike that, Your Honor. Let
20 me move its admission, 1435.

21 MR. FRUEHWALD: No objection, Your Honor.

22 THE COURT: It will be received.

23 (Plaintiffs' Exhibit No. 1435 received in evidence.)

24 Q Are you saying that you were not aware of the January 15th,
25 1972 contractual agreement between Westinghouse and Monsanto,

1 Plaintiffs' Exhibit 1435?

2 A I was not aware of that specific document. I was aware of
3 the practice reflected in that document.

4 Q All right. Would you tell the jury what the practice that
5 was reflected in that document?

6 A Starting in January 1972, Monsanto insisted that those
7 customers still buying PCBs for electrical equipment would agree
8 that in the event any problems arose regarding the use, misuse
9 of those PCBs, that the customer would hold Monsanto harmless
10 and would take full responsibility for the problem that might
11 arise. Those aren't the legal words but that's the intent.

12 Q All right. Mr. Papageorge, with regard to that policy,
13 would Monsanto sell the PCB product which was necessary for fire
14 retardation as I understand it; is that correct?

15 A That's the principal benefit, yes.

16 Q Would Monsanto continue to sell the product to a customer
17 that did not give the contractual commitment that is
18 demonstrated by the exhibit?

19 A It would not.

20 Q Were there customers that Monsanto cut off from this
21 necessary product in the absence of the indemnity commitment?

22 A I understand there were, yes.

23

24

25

1 Q. Mr. Papageorge, was it Monsanto's intention to continue the
2 sale of PCBs to those customers that exhibited, and I quote,
3 "the right attitude and understanding of the issues," close
4 quote, related to the environment and PCBs and were capable of
5 conducting the necessary programs and whatever is required to
6 make certain the PCBs do not become an environmental
7 contaminant?

8 A. Yes.

9 Q. Was the intent of the contractual commitment of January
10 15th, 1972, to sell to those customers who, if there were any
11 problems, would have the resources to correct the problems?

12 A. Yes.

13 Q. And if the customers didn't have the resources to correct
14 the problems, Monsanto didn't want to continue to sell the
15 product, isn't that right?

16 A. That is correct.

17 Q. Despite its utility as an electrical fire retardant?

18 A. That's correct.

19 Q. What did the indemnity have to do with the appropriate
20 attitude of the customers with respect to safe handling of
21 PCBs?

22 A. Monsanto thought that by signing the indemnity it reflected
23 the attitude of the management of the company that was willing
24 to stay in the business that involved the use of PCBs.

25 Q. Let's talk about the attitude of the customers. How did

1 the indemnity agreement relate to the attitude of the customer
2 to prevent PCB pollution? What was its purpose in relationship
3 to the customer's attitude?

4 A. It would seem that if a customer didn't believe, for
5 example, that PCBs could harm the environment and had no
6 intention of controlling it going down the sewer, forcing him
7 to give it a second thought and signing an agreement of this
8 nature might change his attitude. That was one of the hoped
9 for benefits of such a program.

10 Q. Did you have evidence that your customers did not have the
11 right attitude, and in imposing an indemnity would help them
12 get the right attitude?

13 A. Not hard evidence, but grumbling.

14 Q. What kind of grumbling?

15 A. Well, some customers were accusing Monsanto of
16 overreacting, not being responsible, not really cooperating
17 with some of them. These are individuals speaking now. I'm
18 not saying they reflected their top management's thinking, but
19 these are the individuals we were working with.

20 Q. And your feeling was at Monsanto that if you had the
21 indemnity agreement, that would force the customer to have
22 second thoughts before that customer discharged unnecessarily
23 into the environment, is that correct?

24 A. That was one of the hoped for benefits, yes.

25 Q. Now, Mr. Papageorge, as long as the customer paid the cost

1 with regard to the cleanup, paid the cost to correct
2 environmental contamination, I believe your words were, the
3 problem, Monsanto would continue selling that customer PCBs,
4 isn't that right?

5 A. That was one of the features of this agreement, yes.

6 Q. So, with this new agreement, if Monsanto saw that the
7 customer was using improper landfills, using improper disposal,
8 as long as the customer paid for the problem Monsanto would
9 continue to sell them PCBs, isn't that right?

10 A. Not if the customer's actions would jeopardize the whole
11 industry.

12 Q. Let's just talk about the customer and the environment --

13 THE COURT: Well, I don't believe you let him finish
14 his answer.

15 MR. KARAGANIS: I'm sorry.

16 Go ahead, Mr. Papageorge.

17 A. The intent all along was to help the electrical
18 distribution industry and the apparatus that was made for that.
19 If any one customer abused the use and disposal of this
20 material it would affect all of them, and Monsanto was in a
21 position to be able to observe that as an overall impact.

22 Q. I'm talking -- I'm sorry, are you finished? I didn't want
23 to --

24 A. Finished for the moment, yes, sir.

25 Q. Mr. Papageorge, let's just deal with one customer. If

1 after the January 15th commitment there was a problem, the
2 customer would pay for the cleaning up of the problem?

3 MR. FRUEHWALD: I object to dealing with one customer.
4 This is a case dealing with Bloomington, and hypotheticals
5 about other customers is not helpful to the resolution.

6 MR. KARAGANIS: Judge, it is a company policy that he
7 said --

8 MR. FRUEHWALD: Application to Bloomington is what is
9 at issue here, not some other company.

10 THE COURT: First let's find out if he set the company
11 policy.

12 Q. Mr. Papageorge, did you set the company policy?

13 A. No.

14 Q. Did you have a hand in enforcing the company policy?

15 A. I had the responsibility for reporting to management any
16 observations that appeared to me to jeopardize or violate the
17 understanding.

18 Q. The indemnity?

19 A. Yes. I did not have any other role in enforcing it.

20 Q. Mr. Papageorge, if Monsanto, after the indemnity agreement,
21 saw a customer polluting the environment, would it cut the
22 customer off?

23 MR. FRUEHWALD: Your Honor, I think Mr. Papageorge has
24 testified he had no authority to make that decision, and it is
25 a hypothetical situation --

1 THE COURT: You can ask him what he would have
2 recommended. I don't know if he can tell you what the
3 president of the company would have done.

4 Q. As manager of environmental control -- that was your title,
5 wasn't it?

6 A. At what point in time?

7 Q. From 1970 to 1973.

8 A. By 1973 it was changed to Manager Environmental Protection.

9 Q. I'm sorry, Manager Environmental Control, Manager
10 Environmental Protection, if you saw a customer contaminating
11 the environment would you cut the customer off?

12 A. I would not.

13 Q. If you had the authority, would you? If the customer
14 refused to clean up his act, would you cut him off?

15 A. It depends on how hard I tried in reaching the top managers
16 of that company. I would have to give it a good, hard try and
17 time to perform. These things do not happen overnight.

18 Q. Mr. Papageorge, let's take you personally. You see a
19 customer in 1970 polluting the environment, not acting
20 responsively with respect to discharge --

21 MR. FRUEHWALD: Excuse me. Maybe I can help out. The
22 indemnity is in 1972. Are you talking about that program?

23 Q. Let's take it in 1972. You see a customer in 1972
24 polluting the environment, and you go to the customer's top
25 management and you say, "clean up. We must have you clean up.

1 We must have you protect the environment," and they refuse.
2 Would you cut that customer off?

3 A. I would go to the upper management within Monsanto and
4 report the reaction I got from my suggestions.

5 Q. What would your recommendation be?

6 A. My recommendation would be to seriously consider depriving
7 that customer of anymore PCBs.

8 Q. We know as of January 15, 1972, if the customer refused to
9 sign the indemnity agreement Monsanto cut them off anyway,
10 didn't they?

11 A. Yes.

12 Q. So, if the customer refused to take the financial
13 responsibility, Monsanto cut them off, whatever their needs
14 were?

15 MR. FRUEHWALD: Your Honor --

16 THE COURT: That has been asked and answered at least
17 twice. Sustain the objection.

18 I once again admonish you to quit asking the same
19 question over and over again. You are making an argument and
20 it is unfair.

21 Members of the jury, this is not the type of --

22 MR. KARAGANIS: I apologize, Your Honor.

23 Q. Mr. Papageorge, did there come a time when it became
24 apparent that Monsanto's pollution control program, nationwide
25 program of trying to contain discharges into the environment

1 had not been successful?

2 A. I don't know of any evidence that shows the program was not
3 successful.

4 Q. Did there come a time in 1975 when significance -- strike
5 the word significance.

6 Did there come a time in 1975 when contamination of
7 the Hudson River at the GE -- below what I think is called the
8 GE Hudson Falls plant received wide publicity?

9 A. That is true.

10 Q. And that GE contamination of the Hudson received publicity
11 in such magazines as Sports Illustrated?

12 A. That's true.

13 Q. And that was by PCBs, was it not?

14 A. That's correct.

15 Q. Did that event in 1975 lead to the succession of PCB sales?

16 A. No, because that contamination occurred in the '40's and
17 '50's.

18 Q. Talking now about the announcement or disclosure of the
19 event. Did that have anything to do with the succession of PCB
20 sales?

21 A. No, sir.

22 Q. Not at all?

23 A. That's correct.

24 Q. The disclosure of the discharges from GE -- public
25 disclosure of the discharges from GE, did that have anything to

1 do with the ultimate phaseout of PCBs?

2 A. I cannot speak for Congress and what thoughts they had in
3 passing the act.

4 Q. Mr. Papageorge, prior to the passage of the act had
5 Monsanto decided to phase out PCBs?

6 A. Yes.

7 Q. So, before the Federal Congress acted, Monsanto had
8 unilateral decided to phase out PCBs, isn't that right?

9 A. Yes.

10 Q. Now, if the pollution control program was working, why did
11 Monsanto choose to phase out PCBs?

12 A. I don't claim to know all the reasons. I can share with
13 you some of my understandings.

14 Q. Go ahead.

15 A. One was the continual criticism of the material and the
16 emotions associated with it, and the fact that it was no longer
17 a large product for Monsanto. The costs of research and
18 incineration and all the controls were just becoming
19 uneconomic. At the same time we were willing to continue
20 making it until our customers said they were ready with
21 substitute materials, and that was the message given out in
22 1975, '76.

23 Q. And when did you terminate sales?

24 A. September, 1977.

25 Q. Mr. Papageorge, directing your attention to the year 1969.

1 Did you have occasion to hear of -- I'm sorry, when you came to
2 Monsanto, Monsanto headquarters in 1970, did you have occasion
3 to review the documents with respect to a task force -- do you
4 recall seeing documents with respect to a task force?

5 A. There were some documents that were generated by a task
6 force, yes.

7 Q. Directing your attention to Plaintiff's Exhibit 4312, which
8 I believe is in evidence.

9 MR. FRUEHWALD: I didn't get the number.

10 Q. 4312. Have you ever seen that document before?

11 A. I had seen it either in preparation for depositions or in
12 preparation for trial.

13 Q. Now, do you recognize the handwriting?

14 A. No.

15 Q. Would you know Mr. Hodges' handwriting if you saw it?

16 A. I would not know his handwriting.

17 Q. Who is Mr. Hodges?

18 A. Mr. Hodges was a Monsanto employee who was, at that time, a
19 Manager of Environmental Protection.

20 Q. Is that your position?

21 A. No, it was more related to Monsanto plants, not to
22 products. Not to groups of products.

23 Q. Now, Mr. Papageorge, is it not correct that one of
24 Monsanto's actions in 1969 was to initiate a series of studies
25 with regard to the toxicology of PCBs?

1 A. That is correct.

2 Q. And wasn't one of the purposes of those toxicological
3 studies to prove that PCBs were toxicologically safe for man?

4 A. No, the purpose was to find out if PCBs caused any harm to
5 test animals.

6 Q. Mr. Papageorge, would you read line 2 of Mr. Hodges'
7 memorandum to the jury?

8 MR. FRUEHWALD: I think this has already been read to
9 the jury.

10 THE COURT: Yes, when it was introduced.

11 MR. FRUEHWALD: This is not Mr. Papageorge's document.

12 Q. Do you disagree with Mr. Hodges that one of the objectives
13 was to prove it was toxicologically safe to man?

14 A. Well, I personally would not look upon that as an
15 objective, since no one has any control over the results of a
16 test. The results would tell you whether it is safe or unsafe
17 and in what amounts.

18 Q. The results would tell you whether it was safe or unsafe
19 and in what amounts?

20 A. The results will tell the reader of that data whether a
21 material is safe or unsafe, but to have a target to prove it is
22 safe is unrealistic.

23 Q. What is unrealistic about it?

24 A. Well, one does not know the end result until the test is
25 complete.

1 Q. So --

2 A. So, the target is really to test the material, not to prove
3 it is safe.

4 Q. So, if one were to say the goal is to prove it is
5 toxicologically safe, there is an element of prejudgment in
6 that?

7 A. I see some prejudgment involved, yes.

8 Q. Now, Mr. Papageorge, is it true that animal studies --
9 based on your knowledge of the animal study programs by
10 Monsanto in this area, were animals studies the best
11 alternative for testing chemicals on human beings which we
12 could do in this country?

13 A. Best alternative to human testing, yes.

14 Q. Now, Mr. Papageorge, would you describe to the jury just
15 briefly in summary fashion what studies did Monsanto undertake
16 to prove -- strike that.

17 Would it be a fair statement that Monsanto undertook
18 animal studies to address whether or not PCBs were toxic to
19 man?

20 A. That was one of the objectives. Also are they toxic to any
21 creatures.

22 Q. But one of the objectives was whether or not they were
23 toxic to man?

24 A. That is correct.

25 Q. It is common practice, is it not, to use animal studies to

1 make that analysis, isn't that correct?

2 A. To help make it, along with other data.

3 Q. But they do use animal studies regularly, do they not?

4 A. Yes.

5 THE COURT: Well, I think we are overtime.

6 So, members of the jury, I once again admonish you not
7 to form or express any opinion about this case until it has
8 been submitted to you for your verdict. Do not discuss it,
9 even among yourselves or with others. Do not permit anyone to
10 discuss it with you or talk about it in your presence. Refrain
11 from news media accounts of this trial.

12 We will be adjourned until 9:15 in the morning.

13 MR. KARAGANIS: Could I have a moment after the jury
14 leaves?

15 THE COURT: Sure.

16 Goodnight.

17 (Jury out)

18 (Discussion outside the record)

19 (The court adjourned at 5:10 P.M.)

20 I CERTIFY THAT THE FOREGOING IS A CORRECT TRANSCRIPT FROM THE
21 RECORD OF THE PROCEEDINGS IN THE ABOVE MATTER.

22 
23 _____
24 THOMAS A. RICHARDSON
25 GLEN L. CUNNINGHAM
LARRY SMITH
OFFICIAL COURT REPORTERS

7-12-88

DATE

1 MR. KARAGANIS: Good morning, Your Honor.

2 THE COURT: Good morning.

3 MR. KARAGANIS: Good morning, Mr. Papageorge.

4 THE WITNESS: Good morning.

5 Q Mr. Papageorge, when you came to the St. Louis headquarters
6 of Monsanto, you were involved in preparing various
7 presentations to be made to senior executives, were you not,
8 with respect to the PCB problem?

9 A Yes, sir.

10 Q Did you make a presentation on April the 20th -- I'm sorry.
11 Mr. Papageorge, would it be correct that one of the principal
12 objectives of the PCB control program -- strike that -- would it
13 be correct that one of the principal objectives of your PCB
14 pollution activity was to prevent an adverse effect or impact on
15 return on investment for Monsanto?

16 A That is correct.

17 Q Mr. Papageorge, is it not also correct that it became common
18 for Monsanto to refer to the program as defense of Aroclor?
19 Have you heard that term used before?

20 A The term was used by one individual at Monsanto. It was not
21 common throughout Monsanto.

22 Q Who was that individual?

23 A Dr. William Richard.

24 Q Who was Dr. William Richard?

25 A At that time he was Director of Research for the functional

1 fluids business group at Monsanto.

2 Q So he was Director of Research for PCBs; isn't that correct?

3 A That is correct.

4 Q Directing your attention to what is in evidence as
5 Plaintiffs' Exhibit 384. It's dated April 14th, 1969. Mr.
6 Papageorge, is that memorandum by Mr. Richard or Dr. Richard?

7 A Yes.

8 Q Just so the jury knows, the author of the memorandum under
9 Monsanto protocol has put the author at the top; is that right?

10 A That is correct.

11 Q Then the addressee here is Mr. Benignus; is that correct?

12 A That is right.

13 Q He was Marketing Director?

14 A Marketing manager for dielectric fluids.

15 Q Would that be for the capacitor industry?

16 A Yes.

17 MR. FRUEHWALD: What's the date?

18 MR. KARAGANIS: April 14th, 1969.

19 MR. FRUEHWALD: Thank you.

20 Q Now, you indicated that it was Dr. Richard who used the term
21 to defend the Aroclor position; is that right?

22 A That is correct.

23 Q No one else at Monsanto?

24 A Not to my knowledge, no.

25 Q And pursuing Dr. Richard's memorandum of April 14th, 1969,

1 would it be correct that Monsanto did not manufacture
2 capacitors?

3 A That is correct.

4 Q Monsanto is not a capacitor manufacturer?

5 A That is correct.

6 Q All right. Would it be correct that in the first sentence
7 of his memorandum he's talking about "We", being Monsanto,
8 "should provide for disposal and incineration of off-grade
9 fluid"?

10 A That's what it says. That's correct.

11 Q The "we" here refers to Monsanto, does it not?

12 A That is correct.

13 Q "We should work with Westinghouse and blank on the disposal
14 of the off-grade capacitors as well"; is that correct?

15 A That's correct.

16 Q I take it the blank is General Electric?

17 A I believe so.

18 Q The next sentence, "I think we can foresee that control of
19 the total material balance for Aroclor will be important for
20 future operation."

21 What does he mean by material balance?

22 A That the amount produced for the capacitor industry and the
23 amount eventually used in the capacitors and the amount returned
24 for disposal or the amount that is vented up the stack is all
25 accounted for.

1 Q So that it would be important to control the material
2 balance, meaning the raw product, the use of the product in the
3 manufacture, any releases by the product during manufacture, and
4 disposal of waste product; is that correct?

5 A That is correct.

6 Q And his last sentence the "we" here is Monsanto, is it not?

7 A That is correct.

8 Q Now, Dr. Richard was head of -- not head of -- but a
9 principal member of an ad hoc task force that was commissioned
10 by Monsanto to look into how to handle the PCB problem, was he
11 not?

12 A Yes.

13 Q All right. Directing your attention to Plaintiffs' Exhibit
14 4575A, is that exhibit also a memorandum by --

15 MR. FRUEHWALD: What's the date again?

16 MR. KARAGANIS: September 9th, 1969.

17 Q Is that also a memorandum by Dr. Richard?

18 A Yes.

19 Q All right. And would you read the title for the jury?

20 A "Defense of Aroclor-F Fluids."

21 Q Functional fluids meant, among other things, Aroclor;
22 Aroclor was a functional fluid, was it not?

23 A Well, Aroclors were used in functional fluids.

24 Q But within Monsanto the functional fluids organization had
25 responsibility for Aroclors, did they not, for the sale of

1 Aroclors?

2 A For those Aroclors used in functional fluids.

3 Q All right. Now, with respect to -- this is dated 1969. And
4 would it be correct that this memorandum outlines a series of
5 things that Monsanto ought to do?

6 MR. FRUEHWALD: Your Honor, the witness should be shown
7 the entire exhibit including the cover sheet to be able to
8 answer a question like that.

9 MR. KARAGANIS: Absolutely.

10 Q Mr. Papageorge, if you will bear with my yellow marks, I'll
11 let you use my copy. Is that all right with you?

12 A That's all right.

13 MR. FRUEHWALD: As long as it gets the cover memo, it
14 says what might be done, what should be done, the cover memo.

15 MR. KARAGANIS: All right. I will give you my copy,
16 Mike.

17 Q I show you what's been marked as --

18 MR. FRUEHWALD: I would like to follow on.

19 Q -- as 4575. Have you seen that document before?

20 A Yes, I have.

21 Q Now is it correct that Dr. Richard is making recommendations
22 as to what should be done to address the defense of Aroclor?

23 A That is right.

24 Q And would it be correct that one of the things that Dr.
25 Richard is saying is that Monsanto "prove bioharmless, safe

1 level for man, mammals and fish via rats, chickens and fish"?

2 A Yes.

3 Q That refers to those animal studies we were talking about
4 yesterday, isn't that correct, that Monsanto sponsored animal
5 studies?

6 A It includes those studies, yes.

7 Q We're using again the rats, chickens and fish to serve as
8 indicators for toxicity to man, mammals and fish?

9 A That is correct.

10 Q Directing your attention to page 3 of that memorandum, Dr.
11 Richard then goes through the various functional fluids markets
12 and looks for sources of possible pollution by customer plant
13 operation, does it not?

14 A Yes, he does.

15 Q And he notes that capacitor fluids leakage from plant and
16 scrap materials; is that correct?

17 A Listed under possible pollution, yes.

18 Q All right. Now, directing your attention to page 5 of the
19 defense of Aroclor memorandum, would it be correct that among
20 the actions -- first of all, who is Kuhn? Who is Kuhn?

21 A Mr. Kuhn at that time was manager of manufacturing for
22 functional fluids.

23 Q All right. Now, the term "Switch to Therminol 55 or
24 Therminol 66 ahead of pollution problems in customers' plant,"
25 what's he referring to? Is that heat transfer fluid?

1 A Those are heat transfer fluids, non-PCB types.

2 Q So would it be fair to say that under Kuhn he's representing
3 we switch away from PCBs, Monsanto switch away from PCBs for
4 those markets before there's a problem?

5 A Yes.

6 Q Now, Kuhn again and Fallon, the memo says, "Findett already
7 set up to rework." Findett was the contractor for Monsanto, was
8 it not, that reworked the material coming back from customers?

9 A That is correct.

10 Q "Need to make them a manufacturing arm. We get sale of
11 recycle-rework fluid."

12 Isn't it a fact that one of the things, one of the
13 goals that Monsanto executives had was to make the cleanup
14 program a profitable business, a pay-as-you-go at a minimum
15 business?

16 A As a minimum it would not be -- it would pay for itself,
17 yes.

18 Q It wouldn't harm Monsanto, it would pay for itself?

19 A Yes.

20 Q Now, with respect to capacitor fluids, capacitor plants have
21 repurification and recycle systems but up to five percent of the
22 product can be lost" . . . "five percent of production could be
23 a million pounds a year. This is a big loss for the type of
24 pollution we are trying to guard against, "We" being Monsanto?

25 A That is correct.

1 Q "Monsanto must start to work with capacitor people to clean
2 up plant practices." Is that Monsanto's plants or the customer
3 plants?

4 A Customer plants.

5 Q Next item, "Monsanto must help plant cleanup of customer
6 plants." Again, that's customer plants; isn't that right?

7 A Yes.

8 Q And the reference at the bottom is to things like treatment
9 systems like decantation, coalescing, adsorption, disposal of
10 absorbent or recycle of absorbents?

11 A Yes.

12 Q Those are various treatments that might be employed with
13 respect to customer plants; is that right?

14 A Yes.

15 Q The studies that were referred to at the beginning, the
16 toxicity studies, Richard is recommending that Wheeler and
17 Keller and Indiana Bio-Test continue studies to establish FDA
18 type of limitation on toxicity on Aroclor 1242, 1254 and 1260;
19 is that right?

20 A Yes.

21 Q Those are the studies we referred to in yesterday's
22 testimony, the Bio-Test studies?

23 A Yes.

24 Q Mr. Papageorge, I show you what's been marked for
25 identification as Plaintiffs' Exhibit 4620. Tell me what that

1 is. It is a document which appears to be dated 2-71 by E. S.
2 Tucker, confidential, entitled "Aroclor Defense," 1970 PCB
3 support analysis. That's not in our book. We just got it a few
4 days ago.

5 MR. FRUEHWALD: May I take a look at it?

6 MR. KARAGANIS: Sure. Sure. I would move its
7 admission, Your Honor, 4620.

8 THE COURT: It will be received.

9 (Plaintiffs' Exhibit No. 4620 received in evidence.)

10 Q Mr. Papageorge, can you tell us who wrote Exhibit 4620?

11 A This was written by Dr. E. S. Tucker of Monsanto.

12 Q All right. That's somebody else in Monsanto, is it not,
13 other than Dr. Richard?

14 A That is correct.

15 Q Would you tell the jury what words Dr. Tucker used at the
16 top of the memorandum?

17 A "Aroclor Defense."

18 Q Thank you. Mr. Papageorge, so somebody other than Dr.
19 Richard used the term Aroclor defense?

20 A Apparently.

21 Q Mr. Papageorge, I show you what's been marked for
22 identification as Plaintiffs' Exhibit 4133 for identification.
23 It's dated November 23, 1970, a memorandum by Mr. Papageorge.
24 Do you recognize that document?

25 A I do.

1 MR. KARAGANIS: Your Honor, at this time I would move
2 the admission of Exhibit 4133.

3 MR. FRUEHWALD: No objection.

4 THE COURT: 4133 is received in evidence. We're
5 forgetting to give the dates of these things.

6 (Plaintiffs Exhibit No. 4133 received in evidence.)

7 MR. KARAGANIS: This is November 23, 1970, Your Honor,
8 by Mr. William B. Papageorge.

9 Q Mr. Papageorge, would you read the first sentence of that
10 exhibit?

11 A "I plan to assemble all expenses relating to our Aroclor
12 defense effort for 1970 and I need from you your estimate for
13 the medical department's costs which are attributable to the PCB
14 problem."

15 Q So you also used the term Aroclor defense, didn't you?

16 A I had forgotten that I did; yes, sir.

17 Q Thank you. Mr. Papageorge, Monsanto in 1969 knew that
18 customers were putting liquid waste down the sewers, were they
19 not?

20 A I don't know if Monsanto representatives literally saw and
21 knew or whether they assumed that PCBs would go into sewers.

22 Q Mr. Papageorge, I show you what's been marked for
23 identification as 4318. It is a document dated November 10th,
24 1969, Your Honor, entitled "Outline PCB Environmental Pollution
25 Abatement Plan. Are you familiar with that document?

1 A I have seen it before, yes.

2 MR. KARAGANIS: All right. Your Honor, at this time we
3 would move the admission of Plaintiffs' Exhibit 4318 into
4 evidence.

5 MR. FRUEHWALD: No objection, Your Honor.

6 THE COURT: It will be received.

7 (Plaintiffs Exhibit No. 4318 received in evidence.)

8 Q Directing your attention to page number 7 of Exhibit 4318 in
9 the category entitled VIII, "Sources of Contamination." Under
10 that subject, the subject was "A, Open Pollution."

11 I would like you to direct your attention to subparagraph 2
12 for electrical customers. Would you tell the jury what that
13 exhibit says with respect to electrical customers?

14 A "Electrical customers have in the past sewered their
15 wastes."

16 Q When you say electrical customers, you're referring to --
17 Monsanto is referring to its capacitor and transformer
18 customers?

19 MR. FRUEHWALD: Your Honor, this is not a document
20 prepared by Mr. Papageorge or whatever and the document says
21 what it says. Mr. Papageorge is not the author or recipient.
22 As a result, the questioning about what he thinks it means --

23 THE COURT: I will sustain the objection. Mr.
24 Papageorge is not -- you're just asking him to interpret words
25 contained in a document. The jury can interpret the document as

1 well as Mr. Papageorge.

2 Q Mr. Papageorge, you made a presentation to the Corporate
3 Management Committee on April the 20th, 1970, did you not, in
4 which you told your Corporate Management Committee that Monsanto
5 was controlling PCB pollution from its own plants and those of
6 its customers' plants?

7 A I made a presentation at that time. I don't know if those
8 are the exact words, but the thought is there, yes.

9 Q Wasn't one of the basic premises of the program that you
10 presented to the Corporate Management Committee was Monsanto's
11 ability to retain sales and in those areas where Monsanto could
12 exercise, I use the quoted terms "tight control over customers'
13 plants"?

14 A I don't recall that tight control quote.

15 Q Directing your attention to Plaintiffs' Exhibit 4324 in
16 evidence which is entitled "Presentation of PCB Management Plan"
17 to CMC on 4-20-70. Tell me what that document purports to be.

18 A This document is the text that I used when I made my
19 presentation in April 1970.

20 Q Mr. Papageorge, directing your attention to the last chart
21 that you used, "Aroclor business to be retained," under the
22 subject of, "Capacitors," would you read the first and second
23 sentence of that section on capacitors?

24 A "In sealed units. Can exercise tight control at customer
25 plants and repair facilities."

1 Q Now, Mr. Papageorge, you now recall using the words "can
2 exercise tight control"?

3 A Yes, but that's not Monsanto tight control. That was never
4 the intent.

5 Q I see. You didn't want to exercise control?

6 A You can't.

7 Q You can't.

8 A No matter what we want.

9 Q So what you said when you told the CMC that same day that
10 Monsanto was controlling pollution at its plants and its
11 customers' plants, you are misspeaking on that date; is that
12 correct?

13 A The intent was not to misspeak or mislead. Monsanto can
14 control its plants. Monsanto can advise its customers to
15 control their plants.

16 Q Directing your attention to Plaintiffs' Exhibit 4388 for
17 identification which is an outline for CMC presentation PCB
18 environmental problem, I believe it's an outline of a
19 presentation made to the CMC or prepared for the CMC on April
20 20th, 1970. Do you recognize that document?

21 A I believe I recognize it.

22 Q That is a Monsanto business document that was prepared as an
23 outline of the presentation to the CMC, is it not?

24 A Yes. This is the document that was given to the attendees
25 at the meeting as I was speaking from the previous document.

1 MR. KARAGANIS: All right. I would move at this time,
2 Your Honor, into evidence Plaintiffs' Exhibit 4388.

3 MR. FRUEHWALD: No objection, Your Honor.

4 THE COURT: It will be received.

5 (Plaintiffs Exhibit No. 4388 received in evidence.)

6 Q Mr. Papageorge, would you read the summary of Plaintiffs'
7 Exhibit 4388 to the jury slowly, please?

8 A "We are making progress in controlling contamination from
9 our plants and our customers' plants. We are now leaders in
10 analytical methodology. We are learning more about PCBs and
11 their effects on the environment. We are aggressively seeking
12 replacement products and removing some Aroclors from uses which
13 cannot be controlled."

14 Q Thank you. Mr. Papageorge, did you attend a meeting on
15 October the 30th, 1970 in which you and other Monsanto
16 executives explained Monsanto's program to Westinghouse?

17 A Yes.

18 Q Didn't Monsanto tell Westinghouse at the October 30th, 1970
19 meeting that Monsanto's program included initiating strict
20 control procedures at customers' plants?

21 A I don't recall the exact words. The topic was discussed,
22 yes.

23 Q It was discussed in those terms, was it not?

24 A I would have to see the reference in context.

25 Q Didn't Monsanto tell Westinghouse on 10-30, didn't Monsanto

1 tell Westinghouse at the 10-30 meeting that the Monsanto program
2 was based upon control of usage and disposal?

3 A Yes.

4 Q We talked about --

5 THE COURT: Can we eliminate the wind up, please?

6 MR. KARAGANIS: Yes, sir. Excuse me.

7 Q Mr. Papageorge, after your visit on July 22nd, 1970 to the
8 Westinghouse plant, did any other personnel go to the
9 Westinghouse plant to see what progress was being made on
10 pollution abatement?

11 A Yes.

12 Q Can you recall the circumstances of their visit?

13 A I would -- I need some help on the expression circumstances.
14 This was a visit to the plant by a Monsanto representative at my
15 request to observe the status of PCB control.

16 Q Directing your attention to Plaintiffs' Exhibit 919 in
17 evidence, have you ever seen that document before which is a
18 handwritten memorandum entitled "Inerteen Control Project"
19 November 4th, 1970 by Mr. John Pickett?

20 A I was shown this document recently by attorneys.

21 Q Counsel for Monsanto?

22 A Yes, sir.

23 Q All right. Would you read the jury the first sentence of
24 that memorandum?

25 MR. FRUEHWALD: Your Honor, this exhibit has already

1 been read into evidence.

2 THE COURT: Sustain the objection.

3 MR. KARAGANIS: I will withdraw the question.

4 Q Mr. Papageorge, I was asking you about a meeting on October
5 the 30th, 1970.

6 A Yes.

7 Q Directing your attention to what is in evidence as
8 Plaintiffs' Exhibit 915, which is a memorandum dated 11-4-1970.
9 Directing your attention to the paragraph that begins
10 "Controlled usage of Aroclors," does that paragraph refresh your
11 recollection as to Monsanto talking about initiating strict
12 control procedures?

13 A I see the reference to strict control procedures, but just
14 before that there's reference to customers and users.

15 Q Yes. And it says, "Plant visitations have been used to
16 alert customers and to initiate." Again, I don't want to argue
17 with you about the English language, but it was the plant
18 visitations which were the mechanism for initiating strict
19 control procedures?

20 MR. FRUEHWALD: Your Honor, this is a document written
21 by a Westinghouse employee that Mr. Papageorge has not seen.
22 What the author meant --

23 THE COURT: It's been read into evidence. Sustain the
24 objection.

25 Q Mr. Papageorge, I show you what's been marked for

1 identification as Plaintiffs' Exhibit 4424, a memorandum dated
2 July 27th, 1970 from you to Mr. Graham. Are you familiar with
3 that document?

4 A Yes, I am.

5 MR. KARAGANIS: At this time, Your Honor, I would move
6 the admission of Exhibit 4424.

7 THE COURT: It will be received.

8 (Plaintiffs Exhibit No. 4424 received in evidence.)

9 Q Mr. Papageorge, would you read the --

10 MR. KARAGANIS: It's a fairly brief memorandum, Your
11 Honor. It's significant. Can he read it?

12 THE COURT: He can read it, the whole thing, of course.

13 Q Can you read it to the jury, please?

14 A "Our recent visits with your major capacitor and transformer
15 customers have been very worthwhile for both the customers and
16 us. It is obvious that all customers are concerned and each has
17 expressed a desire to take appropriate action to comply with our
18 recommendations to close the loop. Some of the customers'
19 plants have a long way to go to achieve the standards we believe
20 will be acceptable. It would behoove us to call on these
21 customers frequently to assure that substantial progress is
22 being made and that interest is maintained. Time will not be
23 available for me to visit the remaining smaller customers in the
24 near future. I am certain that you know the 'PCB story' and can
25 do an effective job of sharing it with your customers. You

1 should arrange to visit the remaining customers as soon as
2 possible. I suspect many of the smaller customers will be more
3 difficult to convince that the problem is serious and urgent."
4 Signed by me.

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1 Q. Mr. Papageorge, was the Bloomington plant one of the plants
2 that had a long way to go?

3 A. No, the Bloomington plant was average.

4 Q. Mr. Papageorge, in your deposition previously given in this
5 case did I ask you the following question and did you give me
6 the following answer:

7 "Question: So, the Bloomington plant was one which
8 would fall within the category, 'some of our customers' plants
9 have a long way to go to achieve the standards we believe will
10 be acceptable close'."

11 "Answer: Yes."

12 Did I ask you that question and did you give me that
13 answer?

14 A. You probably did, yes, sir.

15 Q. Now, Mr. Papageorge, when the Monsanto program for
16 continued sale and use of PCBs was developed, is it not correct
17 that a discharge goal, or a treatment goal, of ten parts per
18 billion was established back in April and May of 1970?

19 A. That was a goal, yes.

20 Q. And isn't it a fact that that goal of ten parts per billion
21 can be achieved by use of carbon filters?

22 A. Carbon filters could help achieve that, yes.

23 Q. As a matter of fact, you previously indicated that it is
24 feasible to achieve ten parts per billion with carbon filters,
25 isn't that correct?

1 A. Technically feasible, yes.

2 Q. So, from a doing it standpoint, it can be done?

3 A. Yes.

4 Q. Now, at the time you began your plant visits, or after your
5 plant visits, did you have occasion to prepare a document
6 listing various pollution control procedures and practices
7 entitled "Polychlorinated Biphenyls Waste Control and
8 Disposal?"

9 A. Yes.

10 Q. I show you what has been marked as Plaintiffs' Exhibit
11 4175, dated August 31, 1970, by W. B. Papageorge. Is that the
12 document to which I have referred?

13 A. Yes.

14 Q. Now, Mr. Papageorge, so we can move fairly quickly through
15 this document, your first recommendation was to make every
16 effort to avoid mixing PCBs with water, is that correct?

17 A. That's correct.

18 Q. Your second effort was to make sure that all liquid
19 handling systems be designed to assure that leaks and spills
20 were a rarity, isn't that correct?

21 A. That is correct.

22 Q. That all areas in which spills and leaks could occur should
23 be paved, curbed, and properly drained, isn't that correct?

24 A. That is correct.

25 Q. And that if PCBs are present in waste water streams, those

1 streams must be treated before released to the environment,
2 isn't that correct?

3 A. That is correct.

4 Q. As to the treatment of those streams, it would be a
5 multi-step process that would first involve breaking the
6 detergent emulsions and then taking the PCB -- removing the
7 PCBs after phase separation and then dissolve PCBs to be
8 reduced by absorption on activated carbon, is that correct?

9 A. That is correct.

10 Q. And that, indeed, is the technology we talked about that
11 one would use to achieve ten ppb, isn't that right?

12 A. It is a technology that could be used. Monsanto did not
13 use it and still achieved ten ppb.

14 Q. It could be achieved by a variety of means, but the
15 technology you recommend in Plaintiffs' Exhibit 4175 could also
16 do it?

17 A. Correct.

18 MR. KARAGANIS: I move to admit 4175, if I haven't.

19 THE COURT: It will be received.

20 (Plaintiff's Exhibit 4174 received in evidence)

21 Q. Mr. Papageorge, that memorandum, Exhibit 4175 in evidence,
22 is what you considered to be sound practice with respect to
23 pollution control for PCBs, isn't that right?

24 A. Sound practice in 1970, the date of that memo, yes.

25 Q. Isn't it a fact, Mr. Papageorge, that everything in this

1 memo could have been done in the period '57 to '70?

2 MR. FRUEHWALD: I request that Mr. Papageorge be shown
3 the memo when he is asked the question.

4 MR. KARAGANIS: Sure.

5 A. There are some suggestions in this memo that are based on
6 information that was not available in earlier years.

7 Q. What suggestions are those?

8 A. For example, we did not know until it was tested that
9 activated carbon could do as good a removal job as it turned
10 out to. Another example, we did not know that liquid PCBs
11 could be destroyed by incineration under the right conditions.
12 Those are just two that come to my attention.

13 Q. Let's take carbon filters. They were not a new technology,
14 were they?

15 A. As a technology, no. But as it relates to PCBs, yes.

16 Q. Isn't it a fact that you could have put that technology on
17 without regard to whether it is ten ppb, or otherwise, at any
18 time during the period '57 to '70?

19 A. You could if the thought occurred to you.

20 MR. KARAGANIS: Directing the Court's attention to
21 paragraph C --

22 (Discussion held outside the record)

23 Q. Mr. Papageorge, you say that other people visited the
24 plant, is that right, to see whether or not there had been
25 improvement?

1 A. Other Monsanto people, yes.

2 Q. Would they inspect the plant? By the plant, I mean the
3 Bloomington plant.

4 A. Yes, they -- I know they made a plant tour and made
5 observations, yes.

6 Q. I don't want to quibble with words on you. Didn't they
7 inspect the plant?

8 A. Not an inspection -- my idea of a good inspection.

9 Q. What we described yesterday as a good inspection -- what
10 you described as a good inspection?

11 A. That type of inspection was never made.

12 Q. Are there other kinds of inspections that could have been
13 done?

14 A. Observations, discussions.

15 Q. Are there other kinds of inspections that could be done?

16 THE COURT: I think you are quibbling about the word
17 "inspections." He has given you his definition.

18 MR. KARAGANIS: I'll move on, Your Honor.

19 Q. When did you become satisfied, if ever, that the
20 Bloomington plant was engaged in satisfactory performance?

21 A. The latter part of 1970, as best I recall.

22 Q. And what, if anything, was the basis for you becoming
23 satisfied with Bloomington's performance?

24 A. There were two sources of information. The Monsanto
25 individual who visited the plant in November told me by

1 telephone that the plant had come a long way in controlling PCB
2 leakage and loss. That was encouraging. That was really
3 reenforced when I saw a report, as best I remember, shortly
4 after that from Monsanto's laboratory of the analysis of water
5 samples sent to our laboratory in which the PCB contents were
6 extremely low, very much like the ten part per billion that we
7 were recommending as a target.

8 Q. As of this time, as of 1970, at least, carbon filters could
9 be used to achieve ten ppb, isn't that right?

10 A. Yes.

11 Q. So, ten ppb was an achievable goal in 1970?

12 A. Yes.

13 Q. Now, did you say you recall the date when you got that
14 information?

15 A. It was after the November visit, as best I recall. It was
16 a report from Dr. Tucker.

17 Q. Directing your attention to what has been marked as
18 Plaintiffs' Exhibit 4621 for identification, which is a
19 memorandum dated May 7th, 1971, from E. S. Tucker to W. B.
20 Papageorge. Is that the memorandum to which you referred?

21 A. Yes.

22 MR. FRUEHWALD: Two copies of it.

23 MR. KARAGANIS: Two copies of the same document?

24 MR. FRUEHWALD: One page document.

25 MR. KARAGANIS: Your Honor, I would move --

1 THE COURT: It will be received.

2 (Plaintiff's Exhibit 4621 received in evidence)

3 Q. Mr. Papageorge, directing your attention to Plaintiffs'
4 Exhibit 4621. Is this the PCB analysis that led you to
5 conclude that Westinghouse was progressing on its pollution
6 cleanup?

7 A. Yes.

8 Q. We had said before that based on your pollution control
9 recommendations that ten parts per billion was feasible. Would
10 you explain to the jury what you see there with respect to
11 sample results which led you to conclude that Westinghouse was
12 performing satisfactorily?

13 A. There are eight samples listed, and the parts per billion
14 of PCBs found, the highest was 12 parts per billion. Next
15 highest is 2.5, and the others are .1, .8, .5, .6, .4, .3 parts
16 per billion.

17 Q. So, you were seeing results that were literally less than a
18 part per billion coming from Westinghouse, is that correct?

19 A. Yes.

20 Q. Was that encouraging to you?

21 A. Yes, very good.

22 Q. Now, Mr. Papageorge, based on that report did you conclude
23 that Westinghouse had essentially cleaned up?

24 A. Yes.

25 Q. Mr. Papageorge, just so we have the -- Mr. Papageorge, at

1 this time in 1970 we know of at least two technologies that
2 Westinghouse could have used to achieve these --

3 THE COURT: That is the wind up.

4 Q. Is it not correct that the two -- two of the technologies
5 that were available in 1970 to achieve these kinds of results
6 were, one, carbon filters on the end of the wash system?

7 A. Yes.

8 Q. And another technology which would have gotten zero
9 discharge to the water system would have been use of a what you
10 referred to yesterday as a solvent degreaser, is that correct?

11 A. The two are not related, sir.

12 Q. If instead of using the washer they used a solvent
13 degreaser there wouldn't be any discharge to the sewer?

14 A. Depends on how careful they are.

15 Q. If they are careful they don't use water?

16 A. Or they don't hose down the floor or let any amount dribble
17 into other waters, the water from the restrooms, and so on.

18 Q. Isn't it correct that as of 1970 one of the things that
19 Westinghouse did was seal the floor drains?

20 A. That is the report I got, yes.

21 Q. So, if they sealed the floor drains it can't drip into the
22 sewer anymore and in the floor drain because it is sealed,
23 isn't that right?

24 A. That is correct.

25 Q. So, if you put in an evaporative solvent device in lieu of

1 a washer, you couldn't have any PCBs going to the sewer from
2 that removal device, isn't that right?

3 A. If the floor drains are in that area, yes.

4 Q. But the solvent evaporator doesn't discharge waste water,
5 isn't that right?

6 A. That is correct.

7 Q. So, from the standpoint of pollution control one might call
8 that a zero discharge to waste water system, isn't that right?

9 A. It lends itself to zero discharge.

10 Q. Now, Mr. Papageorge, what, of the various pollution control
11 technologies available to get down under ten parts per billion,
12 what after 1970 did Westinghouse install on their washer
13 system, either in replacement or at the end of the pipe
14 treatment, in order to get down to the numbers you have just
15 testified to?

16 A. I was under the impression that they were studying solvent
17 degreasing, and I later heard that they were using a new
18 filling method directly introducing the PCBs inside the
19 capacitors without wetting the outside surfaces.

20 Q. Now, let's turn to the time period in which you made your
21 recommendations to clean up their wash water, or made your
22 suggestions. It was 1970, was it not, July 22nd?

23 A. In July I suggested don't mix PCBs and water, yes.

24 Q. And to clean up their waste water with a pollution control
25 system of some kind, isn't that right?

1 A. Whatever it took.

2 Q. And the goal was ten ppb, or less?

3 A. Yes.

4 Q. Isn't it a fact that Westinghouse continued to use the
5 washer throughout the period of 1970 to 1976 and never
6 installed a pollution control treatment system on that washer?

7 MR. FRUEHWALD: Your Honor, I don't know that this
8 question --

9 MR. KARAGANIS: If he knows.

10 THE COURT: If he knows he may answer the question.
11 If he knows of his own knowledge.

12 MR. FRUEHWALD: If he knows now or knew then?

13 THE COURT: Of course, if he knew then.

14 A. At that time I did not know exactly how Bloomington
15 Westinghouse was degreasing their capacitors.

16 Q. Mr. Papageorge, isn't it a fact that you now know that
17 Bloomington Westinghouse did not put on an evaporative
18 degreaser until 1976?

19 A. I don't know the date. I do know that eventually they did
20 install such a system.

21 Q. And you are just not aware of the specific date?

22 A. That is correct.

23 Q. And if you would accept -- accept, Mr. Papageorge, if you
24 would, that it was 1976, that the record shows it was 1976,
25 that is a six year wait, is it not?

1 A. Obviously.

2 Q. Now, Mr. Papageorge, isn't it also a fact that the washer
3 system was in use, the washer system to which you refer, while
4 the manifold filling process was in place?

5 MR. FRUEHWALD: Your Honor, these are facts which
6 Westinghouse can testify about.

7 THE COURT: Yes, I'll sustain the objection. He
8 doesn't know except by hearsay. That has been since the
9 lawsuit started.

10 MR. KARAGANIS: No, Your Honor, it was during the
11 period --

12 THE COURT: Well, in any event, I sustain the
13 objection.

14 Q. Mr. Papageorge, I show you what has been marked as
15 Plaintiffs' Exhibit 1973, which is a memorandum dated October
16 4, 1972, by Mr. W. M. Mees to Mr. William Papageorge. Do you
17 recognize that document?

18 A. I do.

19 Q. Mr. Papageorge, who is Mr. Mees?

20 A. Mr. Mees was a Monsanto analytical chemist working for Dr.
21 Scott Tucker.

22 Q. And the Exhibit 1973 is a report by Mr. Mees with respect
23 to a sample analysis from the wash water from the Westinghouse
24 Bloomington plant, isn't that right?

25 A. That is right.

1 MR. KARAGANIS: Your Honor, at this time I move the
2 admission of Exhibit 1973.

3 MR. FRUEHWALD: No objection, Your Honor.

4 THE COURT: It will be received.

5 (Plaintiff's Exhibit 1973 received in evidence)

6 Q. Mr. Papageorge, would you tell the jury what the test
7 results from the washer show?

8 A. You want me to read all three?

9 Q. Yes.

10 A. There is a 79 part per million, 16 part per million, and
11 214 parts per million.

12 Q. Mr. Papageorge, isn't it correct that a part per million is
13 1,000 times more than a part per billion?

14 A. That is correct.

15 Q. So that for each part per million that is being discharged,
16 it is -- excuse my arithmetic -- it is 100 times greater than
17 your ten part per billion limit?

18 A. This doesn't say these are discharges.

19 Q. It is coming from the washer, isn't it?

20 A. Yes. It doesn't say it is being discharged.

21 Q. It is coming from the washer, is it not?

22 A. Yes, sir.

23 THE COURT: These are two different things, Mr.
24 Karaganis.

25 Q. Would you agree that these are discharges from the washer?

1 Whether they are going to the sewer, or not, sir, they are
2 discharges from the washer?

3 I'll tie it up.

4 A. These are samples of water involved in the degreasing of
5 capacitors.

6 Q. When you say degreasing, so there is no confusion, these
7 are samples from washing? This is not a degreasing?

8 A. It is the same thing, sir.

9 Q. Same end goal?

10 A. Yes, sir.

11 Q. Okay. Directing your attention to the next exhibit,
12 Plaintiffs' Exhibit 2452 for identification, dated June 22nd,
13 1976, from Westinghouse Sharon to Mr. G. L. Hogetts of
14 Pittsburg. Do you recognize that document?

15 MR. FRUEHWALD: What is the date?

16 MR. KARAGANIS: The date of that is June 22nd, 1976.

17 MR. FRUEHWALD: '76?

18 A. I don't recall ever seeing this document.

19 Q. I would like to show you for identification Plaintiffs'
20 Exhibit 2435. Are you familiar with that document, which is
21 June 9th, 1976?

22 A. I don't recall having seen this document before.

23 Q. I would like to direct your attention to Plaintiffs'
24 Exhibit 2533, dated August 24th, 1976, a memorandum from a Mr.
25 Kurz to a Mr. Sawyer. Have you ever seen that exhibit before?

1 A. I have not.

2 Q. These are samples of water samples, are they not?

3 MR. FRUEHWALD: Your Honor, Mr. Papageorge can't
4 answer that.

5 THE COURT: I'll sustain the objection. He has
6 already said he can't identify them, so you can't talk about
7 them.

8 MR. FRUEHWALD: They are business records of
9 Westinghouse, so I have no objection on --

10 THE COURT: Well, do you have any objection on any
11 basis?

12 MR. FRUEHWALD: No.

13 THE COURT: They will be received in evidence and you
14 can read them.

15 (Plaintiffs' Exhibits 2452, 2435, and 2533 received
16 in evidence)

17 Q. Mr. Papageorge, I show you what has been marked as
18 Plaintiffs' Exhibit 2533 in evidence. Would you tell the jury
19 what the sample results show and where they are from?

20 MR. FRUEHWALD: Your Honor, if Mr. Papageorge doesn't
21 know anything about it --

22 THE COURT: As I have previously advised you,
23 gentlemen, before we started this trial, I want the lawyers to
24 read the exhibits.

25 MR. KARAGANIS: I'm sorry. "The following analysis of

1 recent -- the following are the analyses of recent water
2 samples from the Bloomington main sewer: ppm Aroclor 1016,
3 A.M. 830, P.M. Aroclor 1016 sample 7.75 ppm."

4 Q. Does that indicate to you that the washer --

5 THE COURT: What do you mean 830? Eight hundred
6 thirty?

7 MR. KARAGANIS: No, 8.3.

8 THE COURT: You read it that way.

9 We will be in recess for ten minutes.

10 (Jury out)

11 THE COURT: Mr. Karaganis, I'm reluctantly coming to
12 the conclusion that you are one of these individuals that would
13 rather steal a quarter than make a dollar on the square. Now
14 you quit fudging or this case goes to the absolute bottom of my
15 docket and we will try it again in 1992. Now, is that plain?
16 I don't want anymore of this cheating, fudging, or elbowing
17 or you are dead as far as this case is concerned.

18 MR. KARAGANIS: I'm sorry, Your Honor.

19
20 (The court recessed at 10:30 A.M.)
21
22
23
24
25

1 (Court in session at 10:45 a.m.)

2 MR. KARAGANIS: Your Honor, Plaintiffs' Exhibit 2533,
3 7-29-76 (AM sample) PPM Aroclor 1016 8.30; 7-29-76 (PM sample)
4 PPM Aroclor 1016 7.75.

5 These are the analyses of recent water samples from the
6 Bloomington main sewer date August 24, 1976.

7 Mr. Papageorge--2533 I believe is in evidence, Your Honor.

8 THE COURT: Yes, it is.

9 Q Would you tell the jury what in parts per billion the
10 values on Plaintiffs' Exhibit 2533 represent.

11 A You multiply each of these numbers by a thousand. So the
12 8.3 becomes 8,300.

13 Q 8,300 parts per billion?

14 A Yes. The 7.75 becomes 7,750 parts per billion.

15 MR. KARAGANIS: At this time, I would like to identify
16 and move into evidence three other exhibits which are water
17 samples of what purport to be sewer effluent.

18 Exhibit 2061 is May 2nd, 1975.

19 2217 is October 27th, 1975.

20 2003 is 11-10-74.

21 MR. FRUEHWALD: Your Honor, I have no objection to
22 them coming into evidence. I do object to interrupting Mr.
23 Papageorge's examination with documents that have no relation
24 to him as if they do.

25 I think those can be read into evidence at a later time,

1 but they have no relation to Mr. Papageorge. They are
2 Westinghouse documents. I have no objection to them being
3 authentic business records and admissible in that sense.

4 THE COURT: We will receive them in evidence.

5 (Plaintiffs' Exhibits 2061, 2217, 2003 received in
6 evidence.)

7 MR. KARAGANIS: I will move on, Your Honor. I will
8 read them in later.

9 Q Mr. Papageorge, it was one of your recommendations, was it
10 not, that liquids be drained from capacitors prior to their
11 disposal; is that correct?

12 A That was a recommendation, yes.

13 Q Are you aware of the fact that the Bloomington Westinghouse
14 Plant capacitors were still being put in landfills as late as
15 1972 undrained?

16 MR. FRUEHWALD: Your Honor, there is no evidence in
17 the record of that. It assumes a fact not in evidence.

18 THE COURT: I will sustain the objection. Does this
19 have to do with the Lemon Lane Landfill?

20 MR. KARAGANIS: I will move on, Your Honor.

21 Q Mr. Papageorge, in your work in pollution control for
22 Monsanto, one of the subjects that you had to deal with is
23 whether or not PCBs are toxic to man, was it not?

24 A Yes.

25 Q Isn't it a fact that Monsanto knew as early or certainly

1 before 1957 that PCBs were a toxic chemical, a hazardous
2 chemical?

3 THE WITNESS: Well, sir, toxic and hazardous are two
4 different words. Would you help me.

5 Q Well, let's start with toxic to man. Did Monsanto know
6 prior to 1957 that PCBs were toxic to man?

7 A Yes, sir.

8 Q Is it not correct that during the thirties, forties, and
9 fifties, Monsanto knew that exposure to PCBs could cause
10 serious liver injury?

11 A Prolonged exposure could cause liver damage, yes.

12 Q And as a matter of fact, experience at the Swann Company
13 which Monsanto bought had showed that workers in the middle
14 thirties or late thirties had developed yellow atrophy of the
15 liver; is that correct?

16 A That is my understanding.

17 Q And that's very hazardous, is it not?

18 A Yes.

19 Q You can die from that, can't you?

20 A Yes.

21 Q Mr. Papageorge, as to the chemical composition of various
22 PCB compounds, directing your attention to Plaintiffs' Exhibit
23 4178 for identification dated January 29, 1971, did you prepare
24 that exhibit?

25 A Yes, that is that is a copy of a letter I wrote to Mr.

1 Casey.

2 MR. KARAGANIS: Your Honor, at this time I would move
3 Exhibit 4178 into evidence.

4 MR. FRUEHWALD: 1-21-71?

5 MR. KARAGANIS: 1-29-71, Papageorge to Casey.

6 THE COURT: It will be received.

7 (Plaintiffs' Exhibit 4178 received in evidence.)

8 MR. KARAGANIS: I would like to read the following
9 statement to the jury, "A large percentage of our production
10 has had a chlorine content of less than 54 percent. However,
11 since our Aroclor products are mixtures of many isomers, the
12 higher chlorinated versions have been present in virtually
13 every mixture in varying amounts. These higher chlorinated
14 isomers are very resistant to degradation; therefore, we will
15 continue to build up in the environment unless controlled."

16 Do you remember writing that?

17 A Yes.

18 Q Now, you had or Monsanto had a product called 1242 which
19 was 42 percent chlorine; is that correct?

20 A Yes.

21 Q And it then developed in the mid seventies or 1972--is that
22 the right date--1016?

23 A It developed during 1970 and sold in mid 1971, 1016.

24 Q 1016 was 41 percent chlorine?

25 A 41 plus, almost 42.

1 Q So it had the same level of chlorine as 1242 or roughly the
2 same level but a different isomer mixture?

3 A That is correct.

4 Q Would it be correct, based on your recommendations for
5 pollution control, the ones you phased out in the summer of
6 1970, you would apply those same recommendations with respect
7 to 1016 as you would to 1242, would you not?

8 A Sure, yes.

9 Q Now, Mr. Papageorge, is it not correct that the most
10 important data which had led government agencies to permit the
11 continued but restricted use of polychlorinated biphenyls were
12 the extensive animal toxicity studies which Monsanto had
13 completed by Bio-Test?

14 A I don't think so.

15 Q Mr. Papageorge, Mr. Wheeler, who was he at Monsanto?

16 A He was manager of industrial health, a member of Monsanto's
17 medical department.

18 Q Was he a medical doctor?

19 A No.

20 Q But he was manager of what, occupational health?

21 A Well, no, he was environmental health which covered both
22 occupational and environmental.

23 Q Would it be fair to say Mr. Wheeler was involved in the
24 Monsanto/Bio-Test studies?

25 A Yes.

1 Q Directing your attention to Plaintiffs' Exhibit 4360 for
2 identification dated February 23, 1973, do you recognize that
3 document?

4 A I recall seeing this previously.

5 MR. KARAGANIS: Your Honor, I would move the admission
6 of Exhibit 4360.

7 MR. FRUEHWALD: May I see it?

8 MR. KARAGANIS: Yes.

9 MR. FRUEHWALD: No objection, Your Honor.

10 THE COURT: 4360 is received in evidence.

11 (Plaintiffs' Exhibit 4360 received in evidence.)

12 MR. KARAGANIS: I would like to read the following
13 paragraph.

14 MR. FRUEHWALD: Your Honor, again this is a document
15 which does not have any relation to Mr. Papageorge. It can be
16 read at some later time.

17 MR. KARAGANIS: I am about to get into the--Your
18 Honor, I would like to read it at this time as a prelude to my
19 examination of Mr. Papageorge on another subject.

20 THE COURT: Does this have to do with your last
21 question to him?

22 MR. KARAGANIS: Yes, it relates to the toxicity
23 studies.

24 THE COURT: Well, it has been received in evidence.
25 So I suppose you can read it.

1 MR. KARAGANIS: This is a letter from Kelly to
2 Speicher of Westinghouse. "You are probably aware that the
3 most important data which has led the government agencies to
4 permit the continued but restricted use of polychlorinated
5 biphenyls are the extensive animal toxicity studies which we
6 have completed in the last two years."

7 THE COURT: Well, what is the purpose of that? Is
8 that supposed to impeach Mr. Papageorge?

9 MR. KARAGANIS: No. I asked him as a prelude.

10 THE COURT: You asked him if in his opinion thus and
11 so and thus and so. He said no. Now you read something from
12 two other people. For what purpose?

13 MR. KARAGANIS: The purpose is to go into or set the
14 stage for the Bio-Test studies, Your Honor.

15 THE COURT: Well, it's not to be considered as any
16 anything to do with Mr. Papageorge, members of the jury, what
17 he just read.

18 Q Mr. Papageorge, limiting to your knowledge of the Bio-Test
19 studies, isn't it true that in the studies of rats, beagles,
20 and dogs that Bio-Test did show the exposed animals developed
21 enlarged livers while the unexposed did not?

22 A That is true for the high feeding levels for the higher
23 chlorinated types, yes.

24 Q In the studies with regard to chickens, isn't it true there
25 was a reproductive problem observed at exposure to Aroclor

1 1242?

2 A Yes.

3 Q Isn't it true that later studies by others confirmed these
4 findings, confirmed that PCBs were toxic?

5 A I am not aware of any studies that were exactly like those
6 studies in order to confirm the results.

7 Q Mr. Papageorge, the studies that Bio-Test performed, would
8 it not be correct that Bio-Test was providing Monsanto this
9 information during the period '69 to '72 and beyond?

10 A Yes.

11 Q You were getting regular interim reports, were you not?

12 A Yes.

13 Q And the information you have just testified to that
14 enlargement of the livers of the exposed animals, that
15 information was coming in to you during the period '69 to '71,
16 was it not?

17 A Yes.

18 Q Mr. Papageorge, do you know who Otis Fancher was?

19 A Yes.

20 Q Who was he?

21 A He was an employee of the Industrial Bio-Test Laboratories.

22 Q It was Dr. Fancher, was it not?

23 A Correct.

24 Q And Dr. Fancher was at various times in his career the
25 director of the laboratory; is that right?

1 A Yes.

2 Q And who was Mr. Paul Wright?

3 A Paul Wright is or was formerly an employee of Monsanto and
4 an employee of Industrial Bio-Test Laboratories.

5 Q Mr. Wright first worked for Monsanto; is that correct,
6 before he went to Bio-Test?

7 A That is correct.

8 Q And he went to Bio-Test and then came back to Monsanto?

9 A That is correct.

10 Q And Bio-Test was performing independent laboratory
11 experiments; is that right? They were an independent lab?

12 A That is correct.

13 Q Mr. Papageorge, directing your attention to what has been
14 marked for identification as Plaintiffs' Exhibit 4622, a report
15 to the Monsanto Company on your Chronic Oral Toxicity Study
16 with Aroclor 1254 in Albino Rats, are you familiar with that
17 document?

18 MR. FRUEHWALD: Date, please?

19 MR. KARAGANIS: The date, I'm sorry, is November 12,
20 1971.

21 A Yes, I have seen this document before.

22 Q Was that a study that was being done to investigate the
23 hazards of cancer in animals and humans, to investigate whether
24 or not PCBs represented a cancer hazard?

25 A No, it was a study to determine the effect of Aroclor 1254

1 on white albino rats.

2 Q That's it?

3 A That's the purpose of the study.

4 Q Did it have anything to do with making an assessment as to
5 whether or not PCBs represented a threat to human health?

6 A Those who make those risk assessments use this data as one
7 piece of information in arriving at their conclusions, yes.

8 Q Thank you. And the report was signed by Paul Wright; is
9 that correct?

10 A Under the section report approved by, I see a signature
11 that looks like Dr. Wright's, yes.

12 Q Were there other cancer studies? I'm sorry, this was a
13 study to see whether or not PCBs induced tumors in rats, was it
14 not? It was a feeding study?

15 A That was not the design of the test, no.

16 Q What toxicological or endpoint were they looking to?

17 A Anything observable: tissues, blood, behavior, the full
18 gamut of the protocols that were common at that time.

19 Q And this is called IBT Study 9278?

20 A Yes, sir.

21 Q Did Monsanto commission Bio-Test to do any other studies on
22 cancer, if you know?

23 A I don't recall any study placed by Monsanto involving PCBs
24 that was specifically designed to detect cancer.

25 Q Do you recall whether there were any studies whether they

1 were specifically designed or not, that related to the subject
2 of cancer?

3 A The reports referred to observations and whether they are
4 cancerous or precancerous or not, yes.

5 Q Which reports were those, if you remember?

6 A As I recall, they were reports dealing with rat feeding
7 studies similar to the one in that last exhibit.

8 Q In 1971, to your knowledge, did Monsanto know that other
9 investigators had indicated a finding of cancer in animals, if
10 you know?

11 MR. FRUEHWALD: Your Honor, I object to that. I think
12 that's a fact not in evidence.

13 MR. KARAGANIS: I am asking if he knows.

14 THE COURT: Sustain the objection. You are assuming
15 that was true; your question does.

16 Q Mr. Papageorge, just so we are clear, after Dr. Wright
17 signed the report--this is report Exhibit 4622--the report to
18 Monsanto Company to your Chronic Oral Toxicity Study with
19 Aroclor 1254 in Albino Rats, Dr. Wright went back to work for
20 Monsanto, did he not?

21 A Sometime after that, yes.

22 Q Now, let's see if we can put the information in
23 perspective. I'm sorry. Mr. Papageorge, regardless of whether
24 Monsanto had discovered cancer or could have discovered cancer
25 in a study, there was sufficient information known about PCBs

1 and their toxicity, their potential toxicity in humans, to
2 justify not dumping them in a landfill; is that right?

3 A It depends on the type of landfill and the proximity to
4 humans and the probability of exposure of humans to that
5 situation.

6 Q If it were a leaky landfill, there was enough known about
7 the toxicity of PCBs prior to the Bio-Test studies to say don't
8 put them there because they could harm humans; is that right?

9 A If that leak occurred in waters that were potable waters or
10 waters used by people, yes.

11 Q Mr. Papageorge, are you familiar with the amount of sludge
12 that is contaminated in the Winston-Thomas lagoon, the amount
13 of contaminated sludge?

14 A I am not.

15 Q Mr. Papageorge, would it be fair to say during the course
16 of the pollution program, the PCB pollution program by
17 Monsanto, that Monsanto continued to make a profit with PCBs?

18 THE WITNESS: When you say would it be fair--

19 Q Is it accurate?

20 A Yes.

21 Q Is it correct that one of the things that Monsanto did to
22 assure its revenue in this area was to raise the price to the
23 remaining customers to take care of a market plus share?

24 A That is true.

25 MR. KARAGANIS: No further questions. I'm sorry, Your

1 Honor. I believe the exhibit in Chemical Week, Exhibit 1093,
2 is not in evidence. May I move it?

3 MR. FRUEHWALD: We object to that exhibit except to
4 the extent it quotes Mr. Papageorge as being hearsay and for
5 some--if it's offered for a limited purpose, I guess we might
6 consider that.

7 THE COURT: I will sustain the objection. He was
8 asked about the quoted part.

9 MR. KARAGANIS: If I may, Your Honor, the IBT report
10 which is 4622, I move its admission.

11 THE COURT: It will be received. While we are at it,
12 I am sustaining the objection to the item which I inspected in
13 camera.

14 CROSS-EXAMINATION

15 QUESTIONS BY MR. FRUEHWALD

16 Q Mr. Papageorge, would you tell us your educational
17 background.

18 A Yes, sir. I have a Bachelor of Science in chemical
19 engineering in 1943, a Master of Science in chemical
20 engineering in 1947, both from the Washington University
21 located in St. Louis, Missouri.

22 In addition, I earned as best I recall about 12 or 15
23 credits toward a doctorate degree at Oklahoma State University.

24 Q During your direct, your jobs up through 1976 were listed.
25 Can you take us forward from February of 1976 as to what jobs

1 you have held with Monsanto prior to retirement.

2 A In 1976, up to about November of that year--let me think;
3 it was November of 1977 as best I recall--I was appointed
4 Director of Environmental Operations for one of Monsanto
5 Company's operating units.

6 I held that title for different units of Monsanto until the
7 end of 1985 at which time I was made Manager Occupational
8 Health for the Monsanto Chemical Company which was a unit of
9 Monsanto Company.

10 Q And that took you up to your retirement date?

11 A Retirement which was the last day of 1986.

12 Q And to refresh us all, when was the first time you started
13 working for Monsanto?

14 A November 1951.

15 Q When was the first time during your employment for Monsanto
16 that you came into contact with or worked with PCBs?

17 A My first significant involvement occurred in about 1958.

18 Q What was that involvement?

19 A At the Monsanto plant when I was the superintendent of the
20 maintenance department. And in that department was a team of
21 electricians whose duties at times would expose them to
22 equipment containing PCBs.

23 And it was my responsibility to make certain that their
24 supervisor, their foremen, and they, themselves, understood the
25 best ways to handle PCBs: to wear gloves, not to breathe the

1 fumes, get it on their clothing, and so forth.

2 Q Were those instructions made known to you as a
3 superintendent or a supervisor of these employees?

4 A Yes.

5 Q What was the next occasion that you had responsibilities
6 for or were involved with PCBs?

7 A The next occasion occurred at the same plant when I was a
8 general superintendent of that miscellaneous group that I
9 described yesterday. In that group, we had two activities that
10 related to PCBs. One of them was the utilities department.
11 That's the department that generates steam, electricity, clean
12 water, and so on.

13 In that electrical distribution system were transformers
14 and capacitors and other electrical gear that had PCBs. So the
15 operators of that equipment had to know--and it was my
16 responsibility that they follow--the instruction regarding the
17 proper exposure or avoidance of exposure to the PCBs.

18 The other unit was the unit which received PCBs from the
19 producing plants and blended it with other chemicals to make
20 the industrial fire-resistant hydraulic fluids. These were
21 operators blending and packaging and shipping the industrial
22 hydraulic fluids.

23 Q What instructions were given to those employees about
24 handling PCBs?

25 A Again similar: avoid breathing the fumes, don't get it on

1 your clothing, wash your hands, change clothing, and so on.

2 Q What was the next occasion which you had some
3 responsibilities in connection with PCBs?

4 A The next significant one was, of course, as plant manager
5 of the Anniston, Alabama plant where PCBs were manufactured.

6 Q During what period were you plant manager there?

7 A 1965 up to 1970.

8 Q How big was the Anniston plant you were manager of?

9 A Oh, in terms of people, when I first arrived, there were
10 about 200 employees. When I left it had reached 350 employees,
11 an area of about 50 acres of ground, a typical kind of chemical
12 facility on that land.

13 Q How many products were made at the Anniston plant while you
14 were plant manager?

15 A As best I remember, about 25 or so.

16 Q Did you become familiar with the PCB product line of
17 Monsanto at that time?

18 A Yes.

19 Q Which products or PCBs were made at the Anniston plant?

20 A These products that Monsanto called Aroclors were 1221,
21 1232, 1242, 1248, 1254, 1260, occasionally a 1268.

22 Then we made the nonPCB Aroclors which were the 5000
23 series--there are about four or five of them--Aroclor five
24 thousand something, 5041, and the like.

25 We made a material which we called HB 40 which was a

1 plasticizer to put in plastics to make them flexible. We made
2 chlorine.

3 We made an insecticide, Parathion, and Niran which is a
4 cousin to it. We made phosphorous pentesulfide, hydrochloric
5 acid, biphenyl of course. We made mixtures of electrical
6 fluids using PCBs which we labeled with customer trademarks
7 like Inerteen and Pyranol.

8 Q Inerteen was a trademark for what company?

9 A Westinghouse Company.

10 Q And Pyranol?

11 A The General Electric trademark. We also made the heat
12 transfer fluids under the trade name Therminol with different
13 numbers to designate the different types.

14 Q What were the various applications that the PCB products
15 were sold for at the time you were plant manager?

16 A I will try to remember all of them. All of them to some
17 degree or another were added to plastics to give them
18 flexibility instead of being brittle like the old-time
19 phonograph records.

20 They were added to rubbers to make them more resistant to
21 other chemicals. You had rubber hoses of a special design.

22 They were added to adhesives, both types, the type that was
23 the so-called hot melt which takes heat to melt and then they
24 solidify when cooled or the typical tacky room temperature type
25 adhesives.

1 They were used in calking materials for sealing around
2 windows in the skyscraper buildings, that type of calking.
3 They were used, as I mentioned earlier, in hydraulic fluids
4 that were fire-resistant so they could be used in factories
5 where they handle hot molten metal to cast automobile engines
6 and the like.

7 They were used as heat transfer fluids for use in those
8 areas where it was dangerous to have an open flame. So you
9 located the open flame in a safe area, heat the PCB fluid,
10 transfer that hot fluid to the area where you need the heat to
11 perform a duty like cooking varnish or some other operation,
12 and return the cool fluid back to be reheated and cycled
13 through.

14 Of course, we have heard about the use in electrical
15 equipment as a fire-resistant fluid that conducts electricity
16 and yet carries away the heat generated in the unit as it's
17 being used.

18 Another popular application was as a solvent in the
19 carbonless duplicating paper. This is the paper where the
20 ballpoint pen breaks the little capsules on the back of the
21 page and transfers the ink to the second page. That was a
22 popular use.

23 High quality paints, a lot of the traffic paints, the
24 yellow stripe and the white stripe we used to see on highways
25 contained PCBs. They were long lasting. You don't see that

1 these days.

2 I can't recall any more.

3 Q Which of these applications you have described were the
4 most profitable for Monsanto?

5 A On a--if you look at it on a pound base, those specialty
6 uses in paints, lacquers, paper coatings, plasticizers were
7 more profitable on a pound-per-pound basis. But the volume in
8 the electrical heat transfer, the functional fluids, because of
9 their greater volume, the net result was that more of the
10 profit came from that business than it did from the paint
11 coating and miscellaneous business.

12 Q How did the profitability of the PCB line of products
13 compare to the other products you were manufacturing at the
14 Anniston plant?

15 A I would call it down the middle, sort of average.

16 Q How were PCBs made at the Anniston plant? What was the
17 production procedure?

18 A The two principal starting materials were benzene which
19 comes from crude oil, petroleum, and chlorine which we made at
20 the plant from salt.

21 The benzene is exposed to high temperatures. And, as a
22 result, biphenyl is formed which at room temperature is like
23 white candle wax. So it must be heated to be kept in a liquid
24 form.

25 Chlorine is then funnelled through this biphenyl. And with

1 time, the chlorine attaches itself to the biphenyl and kicks
2 off or removes a hydrogen which combines with other chlorine.
3 I hope I am not getting too complicated.

4 And the result is hydrogen chloride is formed which is the
5 gas that eventually is absorbed in water and then makes what is
6 commonly called muriatic acid that's used in many uses.

7 The chlorine attaches itself randomly. But we found that
8 for a given period of time under the conditions, we knew that
9 after so many hours of bubbling chlorine, we would get a
10 certain PCB mixture, the one we were looking for for that
11 particular operation.

12 So we knew that after so many minutes of bubbling, you
13 could reach the point where you want to make Aroclor 1242. If
14 you want to make Aroclor 1260, you bubble chlorine longer. It
15 takes a little longer.

16 The batch, after the chlorination is finished, is distilled
17 to give the clean product. And the tars then are sold
18 separately.

19 Q Was there any patent that Monsanto had to prevent others
20 from entering this market to sell PCBs?

21 A The only patent I recall was a patent referring to a
22 special device for efficiently introducing the chlorine into
23 this molten bath of biphenyl. That's the only patent that
24 Monsanto had.

25 Q If Monsanto had stopped making PCBs at any time, would

1 other companies be able to initiate the production?

2 A Very easily. It's very basic chemistry. Anybody with the
3 necessary pots and pans can do it.

4 Q What kind of capital investment would be required to enter
5 the PCB market if Monsanto had stopped

6 THE WITNESS: At that time?

7 MR. FRUEHWALD: Yes.

8 A Very modest. I am going to say for \$50,000, you could put
9 together a unit to make PCBs.

10 Q Could a company like GE or Westinghouse have made their own
11 PCBs if Monsanto had stopped supplying them?

12 A Very easily, yes.

13 Q In connection with the PCBs used for dielectric uses, who
14 had the patents on that usage?

15 A General Electric Company.

16 Q Did you make the PCBs for dielectric uses to
17 specifications?

18 A Yes.

19 Q Who supplied the specifications?

20 A The customer.

21 Q What kind of elements were in the specifications supplied
22 to you, for example, by Westinghouse?

23 A I don't recall them all. But there was specifications
24 reflecting what is called the dielectric constant. This is a
25 measurement that tells you how good an insulator is that

1 liquid. Does it conduct electricity or doesn't it? Of
2 course, we don't want it to conduct electricity.

3 So that's a very key measurement. It's color is
4 designated. It must be a certain color. If it's too dark a
5 hue of yellow or amber, that would imply there are impurities
6 in that material that are undesirable.

7 The specific gravity which is really the weight of the
8 material is another indicator of how good it might be or might
9 not be depending on whether it met the specification.

10 There were many others. I don't recall them although.

11 Q In the experience you have had with PCBs that you have
12 described in the maintenance and in your miscellaneous
13 supervising group and in your time as plant manager at
14 Anniston, did you have any experience with any of the employees
15 having any adverse health effects from their exposure to PCBs?

16 A I recall only one incident in which an experienced longtime
17 employee, a chief operator, had forgotten and lost respect for
18 the material I would say where he handled PCBs without wearing
19 gloves for several shifts. And he showed me his hands.

20 And I remember they were very red and chafed and sort of
21 bleeding in spots. And he admitted that he did something
22 stupid. He should have worn his gloves. I do not recall any
23 other incident watching workers through those years.

24 Q There has been admitted in evidence an exhibit--rather than
25 plowing through to find it on the stack, let me show you what

1 is a part of Plaintiffs' Exhibit 238. It is a memo from
2 Mr. Benignus to Mr. Miller and others at the Anniston plant
3 dated September 21, 1967. Were you a recipient of that memo?

4 A Yes.

5 Q This memo deals with an impending visit by Westinghouse
6 Bloomington employees to the Anniston Plant?

7 A Yes.

8 Q And why did you receive a copy of that memo?

9 A As plant manager, I was the host. I had to make certain
10 the proper arrangements were made and that the program was put
11 together properly.

12 Q There is a reference in Mr. Benignus' memo--and it's in
13 quotes--to "sloppiness". Do you see that reference?

14 A I do.

15 Q Did you understand as a recipient of that memo what kind of
16 sloppiness was being referred to?

17 MR. KARAGANIS: Objection, Your Honor. That's double
18 hearsay. The business record is to Benignus. Benignus is the
19 one who heard the communication from the Westinghouse
20 employees, not this witness.

21 MR. FRUEHWALD: Mr. Papageorge is a recipient of the
22 communication. He has to act upon it. I am asking what he did
23 basically in response to it.

24 THE COURT: I will overrule the objection.

25 A The sloppiness referred to here had to do with the

1 employees properly handling the material and wearing the
2 appropriate protective equipment such as gloves and changing
3 their clothes and shoes that were contaminated with the
4 material.

5 Q Did the sloppiness referred to there have anything to do
6 with disposal of wastes of PCBs?

7 A Not to my understanding, no.

8 Q What was Monsanto doing in response to this report of
9 sloppiness at the Westinghouse Bloomington Plant?

10 A Well, we shared with the representatives of the plant the
11 kinds of things we did at our plant, the kinds of gloves we
12 used and where we purchased them and the kinds of shoes and the
13 rubber booties we provided and something about our clothing
14 program and the laundry service we had.

15 We shared all we knew regarding the appropriate way to
16 handle these materials.

17 Q Thank you. Can you describe, please, for the jury at what
18 various plants Monsanto produced PCB products and during what
19 periods.

20 A At Anniston, Alabama, PCBs were initially produced by a
21 company called the Swann Chemical Company which was bought by
22 Monsanto in the early 1930's. So that was the first PCB plant.

23 Later, as best I recall, roughly about World War II time or
24 maybe shortly thereafter, a second producing unit was
25 constructed in Illinois just east of the Mississippi River from

1 St. Louis in a small village called Sauget, S-A-U-G-E-T,
2 Sauget, Illinois.

3 A third plant constructed after World War II also was built
4 in the United Kingdom in Wales at Newport. Those were the
5 three Monsanto units.

6 Q Some of the documents referred to a Krummich
7 K-R-U-M-M-R-I-C-H, I believe?

8 A That is correct.

9 Q Which of those plants is Krummich?

10 A The Krummich plant is located in Sauget, Illinois.

11 Q You have described in 1970 beginning the position of
12 Manager of Environmental Control. Can you tell the jury how
13 you came to have that job?

14 A I was in Anniston, Alabama as plant manager. And in the
15 earlier part of 1969, my supervisor, in one of his frequent
16 visits, informed me that there was a PCB issue, environmental
17 issue. He didn't know all the details. But he would keep me
18 informed.

19 Then in November in another visit of that same year, 1969,
20 he said that this PCB environmental issue I had talked to you
21 about seems to be getting bigger and bigger. We need some
22 help. Would you like to be considered for a job in that area?

23 I took the position personally if I can help, I will give
24 it a try. So in December of 1969, I went to St. Louis and was
25 interviewed by the two business group leaders, Mr. Bergen and

1 Mr. Springate.

2 As a result of that interview, shortly thereafter I was
3 offered the assignment; and I accepted.

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1 Q After you accepted the job in St. Louis, Mr. Papageorge, how
2 did you go about becoming familiar with the situation in order
3 to fulfill your job?

4 A I had one-on-one discussions with individuals in Monsanto
5 who had been closer to the environmental issue, people such as
6 the directors of research, the marketing managers, the medical
7 department, the medical director and his team. Anybody that I
8 could corner I would sit down and spend as many days as it took
9 to share, so I could pick their brain, so to speak. And as I
10 had those discussions, I would also pick up documents,
11 literature, newspaper articles, anything that related -- and
12 even material that wasn't directly related such as material on
13 DDT which was sort of interwoven in the early days of PCBs. As
14 a result of that, I felt that I had a good understanding of the
15 general issue.

16 Q Okay. Let me show you what's been marked as Exhibit 5032
17 which is a letter dated February 18th, 1970. This version has
18 no addressee. It's "Dear sir" and it has an attachment to it.
19 Can you tell us, is that an exhibit you've seen before?

20 A Yes, I have.

21 Q Did you participate in its creation?

22 A Yes, sir.

23 MR. FRUEHWALD: At this time, Your Honor, let me move
24 the admission of Exhibit 5032.

25 MR. KARAGANIS: Let me see it, Mike. What is the date?

1 February 18, '70? No objection.

2 THE COURT: It will be received.

3 (Defendant's Exhibit 5032 received in evidence.)

4 Q What was your involvement, Mr. Papageorge, in Exhibit 5032?

5 A This was the first activity I got involved with when I
6 reported to the new assignment, and this was to coordinate the
7 efforts of composing a letter to our customers to share with
8 them what we knew in early 1970 about the PCB issue.

9 Q Okay. And what was that -- what was done with that letter
10 after it was composed?

11 A This copy is the form letter that was mailed to the
12 customers on record at the time who had bought or were buying
13 dielectric fluids containing PCBs.

14 THE COURT: Are you going to read it?

15 MR. KARAGANIS: Not at this time. The jury can read it
16 later, Your Honor.

17 THE COURT: We're going to have an awful lot of
18 reading. You don't have to read it fully.

19 MR. FRUEHWALD: Let me see if I can find the most
20 relevant parts of it.

21 Q It's dated February 18th, 1970 on Monsanto letterhead. It's
22 Signed by Don A. Olson, Director of Sales, Functional Fluids
23 Group.

24 "Dear Sir: Recently several newspaper and magazine articles
25 have been published indicating that Polychlorinated Biphenyls,

1 (PCBs) have been discovered at some points in some marine,
2 aquatic and wildlife environments. The quantities detected are
3 said to be in the parts per million and parts per billion
4 categories. It is claimed that the PCBs found strongly resemble
5 chlorinated biphenyls containing 54 percent and 60 percent
6 chlorine by weight. Products which are sold by Monsanto under
7 the trade names of Aroclor 1254 and 1260 do contain chlorinated
8 biphenyls. In addition to Aroclor 1254 and 1260, Monsanto sells
9 certain functional fluids containing Aroclor 1254." And they
10 are listed.

11 "As your supplier of Aroclor 1254 and 1260 in formulated
12 products containing 1254, we wish to alert you to the potential
13 problem of environmental contamination as referred to in the
14 magazine and newspaper articles.

15 "We feel that all possible care" -- this is skipping down --
16 "We feel that all possible care should be taken in the
17 application, processing and effluent disposal of these products
18 to prevent them becoming environmental contaminants. Of
19 interest to you may be an article in Chemical Week October 29,
20 1969, regarding water pollution standards set by each state in
21 the Union. It is attached. This article reflects good
22 manufacturing practice in the future may require that no product
23 used by any company should find their way into waterways."

24 Mr. Papageorge, you testified about a presentation to the
25 CMC in April of 1970. When did you come -- how did you come to

1 make that presentation?

2 A I was asked by the general manager of the division which had
3 responsibility for PCBs to present a program regarding the
4 future sale and limitations of PCBs to the principal corporate
5 committee at the high levels of the company.

6 Q Let me ask you to refer to, if I can find it, Exhibit 604.

7 MR. KARAGANIS: Have you got a date, Mike?

8 MR. FRUEHWALD: That's the April 7, 1970 paper that Mr.
9 Papageorge wrote.

10 MR. WHITE: Here.

11 THE COURT: Do you have some of the original exhibits?

12 MR. WHITE: These are the ones we've just been
13 referring to in the course of the presentation.

14 THE COURT: Okay.

15 Q Mr. Papageorge, I refer you to Exhibit 604. Various parts
16 of it have been read in evidence previously. I'm going to refer
17 you to parts that haven't been read.

18 What is this paper? Is it a paper you wrote?

19 A Yes, sir.

20 Q Okay. Was this document the one that was handed out to the
21 members of the CMC as part of your presentation?

22 A Not exactly.

23 Q This was circulated to the people who are indicated thereon?

24 A That is right.

25 Q Let me refer you to the section called "Action Plan"

1 starting on page 3 and the various objectives thereunder. This
2 is in April of 1970. Objective number one is to "Reduce and
3 effectively control the PCB content of all effluent from
4 Monsanto plants."

5 And under "Status," "A tentative target of 10 ppb of PCB in
6 plant liquid effluent has been established."

7 How was that ten ppb tentative target established?

8 A It was perceived to be achievable within reason, feasibly --
9 feasible both economically and technically. And it also
10 represented a level that most laboratories that did PCB analysis
11 could detect with accuracy.

12 Q Why was not the target zero?

13 A Because in the real world we just could not perceive that
14 zero would ever been achieved, especially in the older plants.

15 Q You have a target date indicated here of achieving 10 parts
16 per billion by September of 1971. That would be approximately
17 14 or 16 months after April of 1970. Why was the target so far
18 in advance of the time of this presentation?

19 A The time was required for, first of all, conducting the
20 necessary audits of the conditions that existed, to design the
21 proper equipment and approaches that would help control the
22 purchase of these materials and any equipment and the
23 installation and the demonstration. And although this appears
24 to be a long time, actually this was a pretty tight schedule to
25 force people to act with high priority.

1 Q Objective number 2 is, "Informing customers of the PCB
2 problem." I believe we've previously had that read in.

3 Objective number 3 deals with developing products to replace
4 Aroclors, and I take it that is related to the plasticizer and
5 other uses besides dielectric; is that correct?

6 A That is correct. In addition to dielectric.

7 Q Objective number 4 is, "Develop reliable analytical
8 procedures for determining PCB content of liquids, gases and
9 solids." Why did reliable analytical procedures need to be
10 developed at that time?

11 A Well, the use of the sophisticated instruments and the
12 development of a -- the method to get the right sample and
13 concentrate the PCBs in that sample and to analyze the results
14 was evolving. There were many, many laboratories that did not
15 have this expertise. Monsanto was fortunate enough to be at the
16 forefront and we were anxious to not only develop procedures but
17 to share the procedures we developed with other laboratories and
18 demonstrate whether the procedures that Monsanto had developed
19 were indeed the best available. If not, we were willing to
20 listen to comments and criticism from other laboratories and
21 fine tune the methodology.

22 And the methods also differed to a considerable degree when
23 analyzing clear water, water with silt in it, soil samples,
24 animal tissue, each of these methodologies required special
25 procedures. They had to be developed.

1 Q Objective number 5 was to, "Develop methods for effective
2 disposal of wastes containing PCB without contaminating the
3 environment." What if anything was done after this April '70
4 memo to fulfill that objective?

5 A Well, we developed a PCB mixture that could be used in
6 capacitors and remove from that new mixture were those PCBs that
7 we thought would persist in the environment. And the purpose
8 there is that in spite of the tight control that we hoped could
9 be achieved, in the event there was still an accidental release
10 of this material, nature could cope with it and eventually the
11 bacteria or the biota would destroy it. It would not be
12 persistent.

13 The other program involved determining the best ways to
14 incinerate and completely destroy PCBs once and for all in a
15 safe manner.

16 Q Was not the technology to incinerate PCBs already present in
17 1970?

18 A We sure didn't know about it, no, because PCBs had an image
19 of -- a reputation of being fire resistant, and normally you
20 don't associate fire resistant liquids in burners and burning
21 freely and easily.

22 Q The next objective on your list was number 6 to, "Develop
23 methods for reclaiming and reusing off-grade fluids containing
24 PCB." What if anything was done to further that objective?

25 A There were many great efforts made to try to reclaim PCBs

1 that were considered to be scrap or waste. We did not --
2 frankly, we did not really achieve a method that could take a
3 scrap PCB and refine it good enough to be used back in
4 electrical equipment so the program really was not successful.

5 Q Number 7, the objective is, "Determine the effects of PCBs
6 on birds, aquatic life, animals and humans." I believe you
7 testified about the industrial Bio-Test studies as being a part
8 of that effort?

9 A Yes, sir.

10 Q Number 8, the objective is to, "Establish and maintain
11 favorable relationships with customers, the press, governmental
12 agencies, and other worldwide producers, the public and the
13 universities." What was done to fulfill that objective?

14 A We communicated with our customers as much as we could. Any
15 new information that was available to Monsanto was immediately
16 shared with the customer. The same approach was made with the
17 government agencies. At the same time with both customers and
18 governmental agencies, we tried to make a two-way street where
19 they would share information they had and we would compare the
20 information we had.

21 I guess the key word there was an honest -- just
22 determined effort to be kind of open about this. It's a serious
23 matter that anyone involved ought to communicate freely.

24 Q Did this effort to deal with various groups in society
25 include groups associated with protection of the environment?

1 A Oh, certainly. Yes.

2 Q Let me show you what's previously been identified as Exhibit
3 5230. It's a letter from Roderick A. Cameron, Executive
4 Director of the Environmental Defense Fund addressed to Pierre
5 Wilkins, Press Relations, Public Relations Department at
6 Monsanto dated August 24, 1970.

7 Mr. Papageorge, did you see that letter at or about the time
8 it was sent and received by Monsanto?

9 A Yes.

10 MR. FRUEHWALD: Your Honor, at this time let me offer
11 Exhibit 5230.

12 THE COURT: It will be received. You may read it.

13 (Defendant's Exhibit No. 5230 received in evidence.)

14 Q Again, this is from the Executive Director of the
15 Environmental Defense Fund dated August 24, 1970, addressed to
16 Mr. Pierre Wilkins, Manager Press Relations at Monsanto.

17 The first paragraph -- I will read the whole thing.

18 "Dear Mr. Wilson: I am in receipt of your letter dated August
19 13th to Mr. Robert Marston of Robert Marston Associates, Inc.
20 Your letter expresses concern about a newspaper article written
21 by Joe Wing which asserts that Monsanto makes DDT at Anaheim,
22 California. We are sorry for whatever distress this factual
23 error has caused you. Apparently your name got confused with
24 that of the Montrose Corporation which does operate a very large
25 manufacturing plant at Torrance, California. I do not know what

1 the source of that confusion is.

2 "At EDF we have been most impressed by Monsanto's
3 willingness to be responsible where the environment is
4 concerned. We have closely watched the development of
5 information concerning the environmental impact of Monsanto's
6 product, polychlorinated biphenyls (PCB). What impressed us
7 most was Monsanto's attitude and finally its action to lessen
8 the environmental degradation caused by its product. We
9 continue to watch your PCB cleanup program to be sure that your
10 action is as good as your word but, in the meantime, we are
11 impressed by your sensitivity and responsibility. Indeed, in
12 many informal conversations, we have signalled out your company
13 as being one capable of acting in its own long-term interest and
14 that of society rather than its short-term economic interest.
15 We have great respect for you. Sincerely, Roderick Cameron."

16 Did Monsanto have contacts with other environmental groups
17 in connection with its plans in 1970?

18 A Yes.

19 Q What other groups did you deal with?

20 A Oh, I made presentations before the Michigan -- I don't know
21 the official title -- Associated Garden Clubs of Michigan, the
22 Isaac Walton League, the Natural Resource Defense Council, the
23 Wildlife Federation people. The Audubon Society. I forgot
24 them.

25 Q What was the reaction of those groups to the presentations

1 you made?

2 A Very favorable.

3 Q At the end of the exhibit -- is Exhibit 604 still in front
4 of you?

5 A Yes, sir.

6 Q The last page of the exhibit talks about the costs for the
7 program and indicates a total of \$675,000 budgeted for 1970; is
8 that correct?

9 A That is correct.

10 Q Did it turn out that was the amount of expenditures that
11 Monsanto made in 1970 to fulfill these objectives?

12 A The actual expenditures were somewhat more than that.

13 Q Why was that?

14 A Two things happened. We did more than the activities
15 listed. And in addition to that, of course, we were faced with
16 some inflation. Our estimates were too low.

17 Q Do you know how much Monsanto spent in 1970 to fulfill these
18 objectives?

19 A I think it approached a million dollars.

20 Q In addition to the written materials that were distributed
21 to the Corporate Management Council, I understand you made an
22 oral presentation?

23 A Yes, sir.

24 Q And, in fact, wasn't that very similar to what Mr. Karaganis
25 did in your place here to the jury last Friday?

1 A Yes.

2 Q Rereading your script?

3 A Yes, sir.

4 Q I refer you to what's been marked or entered in evidence as
5 Plaintiffs' Exhibit 4324 which has been read in evidence and
6 therefore I will not read again. I want to refer to certain
7 pages and certain questions.

8 MR. KARAGANIS: What was the date, Mike?

9 MR. FRUEHWALD: That's your exhibit. That's the
10 presentation on April 20, 1970 that you just referred to.

11 Q Page 3 of the oral presentation refers to a meeting with Dr.
12 Risebrough and Olcutt in Berkeley, California. First of all,
13 who were Drs. Risebrough and Olcutt and why were you going to
14 see them?

15 A Dr. Robert Risebrough was an analytical chemist at Berkeley
16 University and very interested in environmental impact of
17 chemicals. Professor Olcutt was his superior at the university.
18 Dr. Risebrough had made some studies of the pelicans in the
19 islands off of southern California to determine why the birds
20 were not reproducing properly, why the eggs in the nest had
21 either soft shells or no shells, and the reproduction rate was
22 very, very low and disturbing.

23 He made analyses and in his analyses he saw not only
24 DDT but he saw PCBs. And his conclusion was at that time that
25 PCBs were the cause of the brown pelican's inability to

1 reproduce. We wanted to talk to Dr. Risebrough personally and
2 see what else he was finding. And that's why we made the trip
3 to Berkeley.

4 Q On that page is also a mention of a meeting in Duluth,
5 Minnesota in early 1970, March. What was that meeting? How did
6 you come to attend it?

7 A The Director of the water laboratory located in Duluth, Dr.
8 Mount, had heard of PCBs in waterways because of his activities
9 regarding the Great Lakes. Lake Michigan in particular. He
10 wanted to become more familiar with PCBs.

11 He called Monsanto and asked for an audience, somebody to
12 come by and talk with him, and had hoped to make it a small
13 conference in his office with a couple people from his staff and
14 some Monsanto people. Very shortly, however, he found that
15 there was much interest in other laboratories, both within the
16 government and universities. So, he ended up with about 50
17 participants. It was rather informal where individuals would --
18 those who had anything to contribute were given an opportunity
19 to get up and speak.

20 Monsanto was represented by three of us. I was one of the
21 attendees. Mr. Jack Garrett representing industrial hygiene was
22 present, and Dr. Robert Keller who represented the analytical
23 chemistry effort was also present. Each of us shared with the
24 audience our understanding of PCBs.

25 Q On page 6 of the presentation is described a meeting with

1 General Electric in late January. Did you attend that meeting?

2 A Yes.

3 Q Who attended that meeting besides yourself?

4 A Oh, there were representatives from research, marketing, the
5 medical department. From Monsanto, that is.

6 Q What occurred at that meeting with General Electric in
7 January of 1970?

8 A We shared with General Electric the status of the PCB issue
9 as we knew it at that point. They also shared with us the kinds
10 of things they saw from their part of the business. And I
11 recall that meeting because this is the meeting where they were
12 very adamant, very, very strongly said that we need PCBs in
13 electrical systems in this country, this country is too
14 dependent on PCBs, we cannot have PCBs arbitrarily banned.

15 Q Did they tell you what they thought would happen if PCBs
16 were denied?

17 A They forecasted blackouts and brownouts and total disruption
18 of the power distribution system in this country.

19 Q As a result of your -- if the recommendations you had made
20 in your presentation to the CMC had been adopted, what would
21 have been the effect on the volume of PCBs manufactured and sold
22 by Monsanto?

23 A It would have reduced it by half.

24 Q Did the CMC adopt the recommendations that you had made in
25 your presentation?

1 A They adopted the program but were anxious to speed up the
2 timing so they asked the management of the groups that were
3 responsible to go back and come up with a faster timetable and
4 report back to them.

5 Q Did you make the report back to the CMC that was requested
6 in the April meeting?

7 A No. I couldn't.

8 Q Who made that presentation?

9 A Mr. John Mason from Monsanto.

10 Q Who was Mr. Mason in the heirarchy? How did he fit in?

11 A Mr. Mason was the assistant general manager under whom the
12 PCB functional fluids group reported.

13 Q Why didn't you make the presentation?

14 A I was in Europe discussing PCBs with the European customers
15 and authorities.

16 Q Were there European producers of PCBs during this period of
17 time?

18 A Yes.

19 Q Who were they?

20 A Oh, there's Bayer, this is not the official German name, we
21 called them the Bayer Company in Germany. There were two
22 companies in France, Kuhlman and Prodelac. There's a company in
23 Spain, Flick Company, Kafaro Company in Italy. I have never met
24 them but I understand that there were PCB manufacturers east of
25 the Iron Curtain, Czechoslovakia, Russia.

1 Q Were imports from these European producers possible into
2 America during the period of time we're talking about here, the
3 early '70s and late '60s?

4 A Yes.

5 Q Are you aware that imports did occur?

6 A I have seen no documents to support that.

7 Q Before Mr. Mason made his presentation to the CMC in May of
8 1970, did you have any input into that presentation?

9 A Well, Mr. Mason in a telephone conversation to Europe where
10 we shared with him our observations and information that we had
11 gathered informed us of the key points that he was going to
12 cover at this presentation. So I was aware of the direction he
13 was going to suggest.

14 THE COURT: I think we'll break for lunch at this
15 point. Members of the jury, I want to once again remind you not
16 to form or express any opinion about the case until it's been
17 submitted to you for your verdict. Don't discuss it among
18 yourselves or with others or permit anyone to discuss it with
19 you or talk about it in your hearing or presence. Don't read,
20 listen to or watch news presentations. We'll be recessed until
21 1:15.

22 (The Court recessed from 12:00 o'clock p.m. to 1:15
23 o'clock p.m.)

24

25

1 (Trial resumed, 1:15 P.M.)

2 (Jury present)

3 MR. FRUEHWALD: If it please the Court.

4 THE COURT: You may proceed.

5 CROSS EXAMINATION (Resumed)

6 QUESTIONS BY MR. FRUEHWALD:

7 Q. Mr. Papageorge, before lunch we were talking about a
8 presentation made by Mr. Mason to the Monsanto CMC in May of
9 1970. I put before you what has been marked as Exhibit 686.
10 Can you take a look at that and confirm for me that you have
11 seen it before. This was the slides, or the overheads, that
12 Mr. Mason supposedly used during his presentation to the CMC.

13 A. That is what it is. I have seen it before.

14 Q. I refer you to the second page of the exhibit, which is the
15 first page of the overheads. I don't believe that section was
16 read to the jury earlier. It is already in evidence. Let me
17 do it at this time preparatory to a question.

18 The overhead reads: "Cost of rapid phase out of all
19 chlorinated biphenyls, except dielectrics, 1970 loss in sales
20 5.4 --" and that M is a million?

21 A. M with a bar over it is a million.

22 Q. "5.4 million loss in gross profits. 2.6 million in
23 additional COGS --" I think that is cost of goods sold --
24 "would increase, giving a total loss of gross profit of 2.75
25 million. 1971 loss in sales, 12 million. Total loss in gross

1 profit, 6.1 million, plus possible writeoff of some 2.6
2 million, Krummrich Aroclor facilities."

3 Mr. Papageorge, did this loss of profit which Mr.
4 Mason has projected here occur in connection with the steps
5 taken to phase out PCBs, except for dielectrics?

6 A. Close to these numbers, yes.

7 Q. There is a reference to writing off the Krummrich Aroclor
8 facilities. Was that done?

9 A. No, the decision was changed to write off the Anniston,
10 Alabama facilities instead of the Krummrich facilities.

11 Q. Let me refer you to, I guess, the fifth page of the
12 exhibit, the diagram called the closed loop.

13 A. I see it.

14 Q. Have you seen that diagram before?

15 A. Yes, I have.

16 Q. Do you understand it?

17 A. Yes, sir.

18 Q. Can you explain to the jury what each of the boxes in the
19 closed loop diagram is and what it means in terms of the closed
20 loop?

21 A. The box here on the left is designated as PCBs production.
22 That represents the Monsanto plants that manufacture the PCBs,
23 and control within that box is Monsanto's responsibility.

24 The material is then shipped to the center box, which
25 is designated as PCBs usage. This box represents the

1 customers, and proper handling and control of PCBs within that
2 box is perceived to be the responsibility of the customer.
3 They are in the best position to control it.

4 There is some opportunity to go to the upper box,
5 which is referred to as regeneration and recycle. Some of that
6 is done within the customer's plants, some of that was
7 attempted at Monsanto, and, as I mentioned earlier, it wasn't
8 as successful as we had hoped, but at that time it looked like
9 it was quite possible.

10 Further to the right there is a box designated as
11 incinerate. That represents the capability to incinerate,
12 which included a unit that Monsanto was preparing to design and
13 install and operate, as well as any contract incinerating
14 services that might exist elsewhere in the country.

15 There is an arrow showing to the box to the lower
16 right, absorption from air and water. This reflects the
17 attempt to control the emission from both the -- from the
18 customers' units, in terms of collecting PCBs that were
19 collectible in such a way that they could be sent to an
20 incinerator for destruction.

21 And finally at the very bottom of the page is a box
22 referred to as biodegradation. Now, that is put in there to
23 reflect a thought that goes something like this: No matter how
24 responsible everyone is in this total loop, as we started to
25 call it, wherever human beings are involved there is going to

1 be a slip up, there is going to be some of the PCBs that just
2 will not be captured, they will enter the environment. If that
3 happens the idea was to have it in such small quantities and of
4 the type that they could degrade with reasonable time. This is
5 why Monsanto, for example, designed the PCB we call Aroclor
6 1016. If it does get away from the capacitor usage, somehow,
7 somewhere, nature can cope with it. That is the intent of that
8 bottom box that represents that part of the loop.

9 Q. Did the closed loop, as used by yourself and in Monsanto,
10 mean that Monsanto controlled its customers' plants?

11 A. Never.

12 Q. Why not?

13 A. It is not feasible; it is impractical. We are just --
14 first of all, we are not there all the time. Secondly, we
15 don't have enough information regarding what else is going on
16 in a customer's plant to be able to understand it properly to
17 be able to take the proper actions. And in every instance we
18 must be invited into a plant. We don't have the authority to
19 just walk in like a regulator might. So, it is just not
20 practical for any company to assume another company's
21 responsibilities. This is not only the customer, it is also
22 the railroads and the trucking firms that ship the material.
23 If they have an accident it is their responsibility. And it
24 goes on into the final use in the utility company or the
25 factory, and so on.

1 Q. In using the terminology "closed loop," was it intended by
2 you and other Monsanto officials who used that term to control
3 a customer, and later, user plants?

4 MR. KARAGANIS: Objection, Your Honor. The witness
5 can testify as to what he knows.

6 THE COURT: The question was, was it it his intention,
7 I thought.

8 Read the question.

9 (The reporter read the pending question)

10 THE COURT: He can speak as to his own intent.

11 A. It was never the intent to control the customer's
12 activities.

13 Q. Did the closed loop mean zero escape to the environment?

14 A. Never. That is impractical also, unfeasible.

15 Q. Thank you. That's all for that exhibit.

16 You have mentioned the introduction of a new PCB
17 chemical that had some changes to it. Let me show you what has
18 been marked as Exhibit 5047, and it is a letter from Mr. P. G.
19 Benignus, Market Manager, Dielectric Fluids, to Don McClain at
20 Westinghouse in Bloomington, dated May 26, 1970. Let me go
21 ahead and move the admission of 5047.

22 MR. KARAGANIS: No objection.

23 THE COURT: It will be received.

24 (Defendant's Exhibit 5047 received in evidence)

25 MR. FRUEHWALD: I'll go ahead and read it.

1 To Donald McClain. "Dear Don: Attached are
2 preliminary properties of Aroclor 1242B as compared against our
3 regular Aroclor 1242 Electrical Grade. The markedly superior
4 biodegradability of Aroclor 1242B is also indicated."

5 "We expect to have prepared 500 gallons of Aroclor
6 1242B by the middle of June, at which time we look forward to
7 sending a standard 55 gallon drum to your attention for
8 capacitor impregnation and life testing."

9 "We realize it may take about six months time before
10 your life test studies have been completed, especially as your
11 summer vacation shut down period will be involved."

12 "When we have the pilot plant material in hand we
13 will, of course, make complete analysis and send you those
14 data, as well. If we can be of further assistance about this
15 we would be glad to help in every way we can."

16 And attached is a chart showing various biodegradation
17 information. This particular exhibit also has some notes
18 apparently by the Westinghouse employee regarding that.

19 The cover letter of Exhibit 5047, does that refresh
20 your recollection as to the time in which the new chemical was
21 introduced to the dielectric customers?

22 A. Yes, it does.

23 Q. Why was not the new -- excuse me. Is the 1242B referred to
24 here what eventually became 1016?

25 A. Yes.

1 Q. Can you explain for the jury how that numbering occurred
2 and why?

3 A. We tried to stay with the Aroclor designation because that
4 is what all our customers were accustomed to. The new material
5 still had almost 42 percent chlorine in it. We thought at
6 first we would use the expression Aroclor 1242B, B being
7 biodegradable, but that became rather confusing when it came to
8 records, and the like, because that B many times would not be
9 included and we were afraid that it might cause much confusion.
10 In the meantime when we were testing this new PCB we were using
11 a designation in the laboratory, MCS 1016. That came from a
12 log in which the researchers would take the next number
13 available and assign it to a new study. A new product, MCS,
14 stood for Monsanto Company sample. Monsanto Company sample
15 1016, and that is the terminology, the word we used to
16 communicate to customers when we put labels on samples,
17 referred to it in the discussions or in writing. It became so
18 entrenched that we decided we might as well just continue using
19 the 1016 and just call it Aroclor instead of MCS.

20 Q. Why was not Aroclor 1016 sold in volume in 1970 if it was
21 beginning to be produced at that time?

22 A. We needed a large piece of equipment to be installed, and
23 that installation was taking place in 1970. It was not
24 completed.

25 Q. Were the customers ready to accept 1016 as a replacement in

1 1970?

2 A. After they had tested the 500 gallons we gave each of them;
3 that is, ten drums each that they were testing, after about six
4 months of testing all of them were ready to accept it.

5 Q. And in what year did 1016 become the principal or only
6 impregnant sold to the capacitor makers like Westinghouse
7 Bloomington?

8 A. 1971.

9 Q. You mentioned earlier a product call Aroclor 1221, which,
10 as you pointed out, I think, has pretty good degradation
11 ability. Why was that not sold to the electric industry?

12 A. It had 21 percent chlorine in it; therefore, it was not
13 fire resistant. And one of the benefits of PCBs in capacitors
14 was the fact that they were fire resistant. Therefore, 1221
15 was not acceptable.

16 Q. You mentioned previously the building of an incinerator.
17 When was the incinerator built by Monsanto to destroy PCBs?

18 A. As I remember, the construction was completed in 1971.

19 Q. Where was that facility built?

20 A. It was at the Sauget, Illinois plant.

21 Q. And approximately how much did it cost to build that
22 incinerator?

23 A. Somewhere around a quarter of a million dollars.

24 Q. Are you familiar with the term ANSI C-107 committee?

25 A. Yes, I am.

1 Q. Can you describe for the jury what that was?

2 A. This was a committee formed under the auspices, the
3 umbrella, of the American National Standard Institute, which is
4 a group that helps industry establish standards on many, many
5 items of commerce. This particular group was formed to put
6 together some guidelines on how to handle and properly dispose
7 of PCB type dielectric fluids. The members consisted of
8 representatives of the industry that made the equipment, the
9 transformer industry and the capacitor industry. It included
10 representatives from government agencies that were interested,
11 it included representatives from Monsanto, included
12 representatives from companies that serviced transformers that
13 go around and check transformers and top them off and change
14 the oil. That type of company was represented. Also the
15 utilities industry was represented, and the electronics
16 industry was represented. I'm sure I didn't get everybody, but
17 that -- it was a mixed group of people, all of them interested
18 in PCBs.

19 Q. Who from Monsanto participated in the C-107 committee?

20 A. Mr. Benignus and I were the Monsanto participants.

21 Q. Was there a participant from the Westinghouse Bloomington
22 plant?

23 A. Yes.

24 Q. Who was that?

25 A. Don McClain.

1 Q. What was Mr. McClain's role within the committee?

2 A. Mr. McClain served on the capacitor subcommittee, and he
3 was the principal editor or the composer of the guidelines for
4 that group, served as secretary for that group. He was sort of
5 an assistant chairman. So, he played a very active role.

6 Q. What was the result of the work of the ANSI C-107
7 committee?

8 A. The result was a document which contained the guidelines on
9 the safe handling of PCB dielectric fluids, initially issued
10 under the National Electrical Manufacturer's Association label
11 as a draft in January, '73. Then it came out as an American
12 National Standard -- this is the group I just referred to -- as
13 a final document in January of 1974.

14 Q. Let me show you what has been marked as Exhibit 5130, which
15 bears the cover page "American National Standard, Guidelines
16 for Handling and Disposal of Capacitor and Transformer Grade
17 Askarels Containing Polychlorinated Biphenyls." Can you
18 identify that, Mr. Papageorge?

19 A. Yes, I can. This is the document I just mentioned.

20 MR. FRUEHWALD: At this time I move the admission of
21 5130.

22 MR. KARAGANIS: No objection.

23 THE COURT: It is received.

24 (Defendant's Exhibit 5130 received in evidence)

25 Q. Mr. Papageorge, can you refer to that document in the

1 section entitled "Forward," and can you tell me has -- at the
2 bottom it has a list of organizations represented, does it not?

3 A. Yes, it does.

4 Q. Can you tell me what governmental organizations
5 participated in the ANSI proceedings?

6 A. Environmental Protection Agency, the General Services
7 Administration, the National Bureau of Standards, the U.S.
8 Department of Agriculture. This is the Rural Electrification
9 Administration. And the U.S. Department of the Army.

10 Q. Besides the government participation that is evidenced in
11 the ANSI proceedings, were you aware of an interdepartmental
12 task force by the Federal Government?

13 A. Yes.

14 Q. Can you describe for the jury what that was?

15 A. This was an informal group of representatives of
16 governmental regulatory agencies called together by an official
17 from the executive offices of the President to address
18 chemicals of interest in any given period. A group was formed
19 to address the PCB environmental issue, and included
20 representatives from the Department of Agriculture, the EPA,
21 the Department of Interior with their Fish and Wildlife
22 Services, the Commerce Department, with its Commercial
23 Fisheries Laboratories represented, the National Institute of
24 Environmental Health. I believe that is most of them.

25 Q. Did Monsanto have any input into the work of this task

1 force?

2 A. Yes, we did.

3 Q. Can you describe that, please?

4 A. In the early days of its organization Monsanto was asked by
5 the chairman of this group, Dr. Ed Berger, to send someone to
6 Washington to attend one of the early meetings to help the
7 group understand what PCBs were, how they were manufactured,
8 where they were manufactured, what types there were, what we
9 knew about their health effects, what uses they were put to.
10 And this occurred, as I remember, in early '71, something like
11 that.

12 Q. Was there a further contribution by Monsanto to the task
13 force's work?

14 A. Yes. Our second discussion with this group occurred in
15 early 1972 where Monsanto asked for an audience because we were
16 ready then to share with them some thinking, some thoughts that
17 Monsanto people had involving degradation and presence of the
18 environment, and to share with them Monsanto's current program,
19 where we stood regarding sales or no sales.

20 Q. Let me show you what has been marked as Exhibit 5101. Can
21 you identify what that is, please, dated May 15, 1972, entitled
22 "Presentation to the Interdepartmental Task Force on PCBs,
23 Washington, D. C., May 15th, 1972?"

24 A. Well, this looks like two documents. The first part
25 appears to be a copy of the report put out by the inter-agency

1 task force. The back part is the material Monsanto presented
2 to them earlier.

3 Q. Let me check to see if the exhibit is properly assembled.

4 MR. KARAGANIS: Talking about Monsanto's presentation?

5 MR. FRUEHWALD: I think this is what this is.

6 THE WITNESS: Oh, I misread that.

7 Q. Would you comment again, Mr. Papageorge?

8 A. My apologies. This is Monsanto's presentation to the task
9 force, dated May 15th.

10 Q. Were you one of the participants in that presentation?

11 A. Yes, sir.

12 Q. Who else made a presentation?

13 A. Dr. Munch, who was a Monsanto research employee, Dr.
14 Cumings Paton, and Dr. Scott Tucker.

15 MR. FRUEHWALD: I think at this time I'll offer
16 Exhibit 5101, if I haven't already.

17 MR. KARAGANIS: Object to that. If he was a
18 participant he can testify live as to what he said.

19 THE COURT: Overrule the objection as to 5101.

20 (Defendants' Exhibit 5101 received in evidence)

21 Q. What was the result of the task force's work?

22 A. They finally put out a report.

23 Q. Did you receive a copy of the report at Monsanto?

24 A. Yes.

25 Q. Did you read it?

1 A. Yes.

2 Q. Did it have anything to do with the way you operated your
3 business thereafter?

4 A. No. It supported Monsanto's program.

5 Q. Let's me show you what has been marked as Exhibit 5102.
6 Can you identify what that is, please? It has got the title
7 "Polychlorinated Biphenyls in the Environment,
8 Interdepartmental Task Force on PCBs, May, 1972."

9 A. Yes, this is the report put out by the Interdepartmental
10 Task Force.

11 MR. FRUEHWALD: At this time I'll over Exhibit 5102.

12 MR. KARAGANIS: No objection.

13 THE COURT: It will be received.

14 (Defendant's Exhibit 5102 received in evidence)

15 MR. FRUEHWALD: At this time I would like to read
16 various portions from the findings and conclusions of the task
17 force.

18 THE COURT: You may.

19 MR. FRUEHWALD: First of all, from the preface, which
20 describes the task force.

21 "The task force included operating units of five
22 executive branch departments; Department of Agriculture,
23 Department of Commerce, Assistant Secretary for Science and
24 Technology and National Oceanic and Atmospheric Administration,
25 The Environmental Protection Agency, the Department of Health

1 Education and Welfare, Food and Drug Administration, and
2 National Institute of Environmental Health Sciences of the
3 National Institutes of Health, and the Department of Interior,
4 the Bureau of Sport Fisheries and Wildlife."

5 "The report which follows represents the results of
6 the task force's review and reflects the position of the
7 operating agencies of the Federal Government which have major
8 responsibilities concerning such chemicals as PCBs in food and
9 the environment."

10 Turning over to the section entitled "Findings,
11 Conclusions, and Recommendations."

12 It starts off, "Polychlorinated Biphenyls, PCBs, have
13 been used in the United States and elsewhere for the past 40
14 years for many industrial and consumer applications. During
15 the past three years evidence has accumulated to indicate that
16 PCBs are widely dispersed throughout the environment and they
17 can have adverse ecological and toxicological effects."

18 "The principal uses for PCB fluids are in the
19 electrical industry. PCBs have superior cooling, insulating,
20 and dielectric properties, and, hence, are widely used in
21 various electrical devices. Transformers and capacitors filled
22 with PCBs can be used inside locations where failures of
23 oil-insulated equipment would present a potential danger to
24 life and property. Because PCBs are relatively non-flammable,
25 apparatus containing them is essentially free from fire and

1 explosion hazards associated with oil-insulated and oil-cooled
2 electrical devices. Stability at high temperatures is another
3 major factor in the attractiveness of these compounds. The
4 principal advantage of PCBs over substitutes is the relative
5 freedom from flammability in some applications that previously
6 have been plagued by serious fires."

7 There are a number of conclusions reached by the
8 committee. I'll read, in most cases, just the underlined
9 portion.

10 "1. PCBs should be restricted to essential or
11 non-replaceable uses which involve minimal direct human
12 exposure, since they can have adverse effects on human health."

13 "2. PCBs have been used so widely over such a long
14 period that they are ubiquitous."

15 "3. PCBs were first identified as potential food
16 contaminants in 1966. Three principal sources or routes of
17 contamination of food have been identified."

18 "4. The sole domestic producer of PCBs, government
19 agencies, and key user industries are taking appropriate steps
20 to cut off further introduction of PCBs into the food supply
21 and to reduce the current levels of PCBs as food and
22 environmental contaminants."

23 "5. Housekeeping is particularly important in the
24 manufacture, use, and disposal of PCBs."

25 I'll read that entire paragraph.

1 "Under a program of limitation on the sale of PCBs the
2 electrical industry will continue to be the principal user of
3 PCBs. It, as well as industries now holding inventories of
4 PCBs, have a special responsibility for monitoring and
5 controlling their wastes. In this connection the Environmental
6 Protection Agency will restrict industrial liquid discharges of
7 PCBs from PCB users. To keep levels in fish as low as
8 possible, and in any case below FDA's interim action level of
9 five parts per million, concentrations in rivers or lakes from
10 all sources should not exceed 0.1 parts per billion."

11 "6. The use of PCBs would not be banned entirely.
12 Their continued use for transformers and capacitors in the near
13 future is considered necessary because of the significantly
14 increased risk of fire and explosion and disruption of
15 electrical services which would result from a ban on PCB use.
16 Also, continued use of PCBs in transformers and capacitors
17 presents a minimal risk of environmental contamination. The
18 Monsanto Company, the sole domestic producer, has reported
19 voluntarily eliminating from its distribution of PCBs to all
20 except manufacturers of electrical transformers and capacitors."

21 Number 7. I'll read this entire paragraph.

22 "Most capacitors presumably have been disposed of in
23 landfills. PCB containing material buried in soil is not
24 expected to migrate, but should remain in place. In the past,
25 many fluids containing PCBs have been disposed of in sewers.

1 More appropriate means of disposal, such as high temperature
2 (at least 970 C) incineration must be used in instead."

3 "8. PCBs are manufactured in countries other than the
4 United States."

5 "9. More scientific information about PCBs is needed,
6 and several government agencies are seeking it through
7 research."

8 Q. Mr. Papageorge, during the time that Monsanto continued to
9 sell PCBs, did the position of the U.S. Government change as to
10 the necessity for continued sale to the capacitor and
11 transformer industry?

12 A. No.

13 Q. Did you, on later occasions after 1972, receive
14 communications or hear statements made by government officials
15 to the effect that PCB sales to capacitor manufacturers should
16 be continued in the national interest?

17 A. I did, yes.

18 Q. Can you tell me the occasions on which that occurred?

19 A. Well, the one I recall mostly was statements by the
20 administrator of the EPA, Mr. Russell Trane, at a hearing
21 before Congress.

22
23
24
25

1 Q Why did you happen to hear that congressional testimony?

2 A I was part of a program and was in the audience when Mr.
3 Train spoke.

4 Q Did you also testify that day after Mr. Train?

5 A I did, yes.

6 MR. FRUEHWALD: I would like to have Mr. Papageorge
7 identify something from a transcript, Your Honor, I don't know
8 if you want to have it marked as an exhibit or you don't.
9 Whatever the Court's pleasure.

10 MR. KARAGANIS: I think the testimonial transcript,
11 unless it's a sworn deposition, is not admissible.

12 THE COURT: I am not sure I understand quite what you
13 are doing.

14 MR. FRUEHWALD: Your Honor, this is a sworn statement
15 by Mr. Train of the EPA to Congress in a hearing Mr. Papageorge
16 participated in stating the Government's position in 1976 on
17 the sale of PCBs to the capacitor industry. At a minimum, Mr.
18 Papageorge heard it; and it affected the way Monsanto continued
19 to operate.

20 I think it's also an admissible statement of a federal
21 official in a federal record as to the position of the
22 government.

23 THE COURT: Let me see it.

24 MR. FRUEHWALD: We purport to read certain sections
25 which are marked here, Your Honor.

1 MR. KARAGANIS: It's apparently congressional
2 testimony. I have never seen congressional testimony
3 introduced in a trial proceeding before. It comes in as pure
4 hearsay.

5 THE COURT: Well, it's obviously hearsay. I think I
6 will sustain the objection.

7 MR. FRUEHWALD: Your Honor, may I offer it for the
8 limited purpose of reflecting on the state of mind of Mr.
9 Papageorge in continuing to sell PCBs after that period of
10 time?

11 MR. KARAGANIS: Mr. Papageorge can testify as to his
12 state of mind.

13 MR. FRUEHWALD: The jury is going to be judging the
14 state of the mind. I think the--

15 THE COURT: You can ask him what his state of mind was
16 and how he got that way.

17 Q Mr. Papageorge, after these hearings in 1976, did your
18 state of mind as to the continued sale of PCBs to the
19 electrical customers change from what it had previously been?

20 A It did not.

21 Q Did anything Mr. Train said during these hearings support
22 or deny your thoughts about the PCBs in the continuing sale to
23 the electrical industry?

24 MR. KARAGANIS: Objection to that, Your Honor.

25 THE COURT: I will overrule the objection.

1 A They strongly supported my understanding of the need for
2 PCBs in dielectric fluids.

3 MR. FRUEHWALD: Your Honor, is the objection sustained
4 to the limited offer of the portions I indicated to be read?

5 MR. KARAGANIS: Your Honor, I would continue my
6 objection if he is intending to read in portions.

7 THE COURT: I have sustained the objection. He has
8 stated what he heard influenced his opinion.

9 Q Mr. Papageorge, what was it that Mr. Train said that
10 affected your decisions with continuing to sell PCBs to the
11 electrical industry?

12 THE COURT: I will admit that for the limited purpose
13 of showing what influenced the witness' thinking and not for
14 the truth of the statement.

15 MR. KARAGANIS: May I just record my objection, Your
16 Honor.

17 THE COURT: Certainly.

18 A Mr. Train's comments reinforced my understanding--

19 THE COURT: The question was what was the comment?

20 Q The best evidence of what that is what the transcript says.
21 But what is your recollection?

22 THE COURT: Not necessarily. The best evidence of
23 what he thought is what he thought.

24 MR. FRUEHWALD: Yes, sir.

25 A Mr. Train understood the need for continued use of PCBs in

1 dielectric equipment.

2 MR. KARAGANIS: May I object?

3 THE COURT: That's not responsive to the question. I
4 will sustain the objection.

5 Q I believe the question is, Mr. Papageorge, what did Mr.
6 Train say that you considered important in your decisions about
7 PCBs the best you can recall what he said.

8 MR. KARAGANIS: Again objection, Your Honor.

9 THE COURT: Overrule the objection.

10 THE WITNESS: I thought I was responding.

11 MR. FRUEHWALD: Limit to it what he said.

12 A I don't remember the man's exact words. I don't know how
13 to answer your question, sir. Can you help me.

14 MR. FRUEHWALD: I am afraid I can't. The transcript
15 would help you, but the Judge has ruled it in inadmissible.

16 THE COURT: You can use it to refresh his memory, I
17 suppose.

18 Q Mr. Papageorge, would you take a look at the transcript and
19 see if it refreshes you as to what Mr. Train said that day on
20 January 1976 about sale of PCBs to capacitors that affected
21 your decisions as to continued sale. Has your recollection
22 been refreshed?

23 A I recall it, yes.

24 Q What did Mr. Train say on that day in your presence?

25 A He said he did not believe any short period of time leading

1 to a ban of PCBs was appropriate because the alternative
2 materials wouldn't be available, something to that effect.

3 Q Did you have other occasions to deal with Mr. Train during
4 that period of early 1976, late 1975?

5 A Yes. I did.

6 Q What was that occasion?

7 A Mr. Train had called a meeting in early--well, there were
8 two situations involving Mr. Train and his department. One was
9 a national symposium on PCBs in Chicago in late 1975.

10 Q Would you describe what that was.

11 A This was an attempt to gather together all of the
12 individuals who had new information regarding PCBs, the
13 analysis thereof, the health effects thereof, their presence in
14 the environment. And that was accomplished in a one-day
15 symposium.

16 The next recollection I have where Mr. Train took an active
17 part was to call--he called a meeting in Washington of Monsanto
18 representatives and representatives of the PCB dielectric
19 equipment industry at which he encouraged the industry to
20 continue their efforts to find alternatives and try to hasten
21 the program.

22 Q Going back to the symposium in the late part of 1975, did
23 Monsanto participate in that symposium?

24 A Yes.

25 Q Who were the participants, and what was the participation?

1 A As I remember, we had an individual speak on the
2 biodegradation studies on PCBs. I served on a
3 question-and-answer panel at the end of the session.

4 Q Who attended the second meeting you are talking about where
5 Mr. Train asked Monsanto and other industry representatives to
6 meet?

7 A A vice-president of Monsanto and I were the attendees.

8 Q Did Monsanto or the vice-president issue a statement that
9 day?

10 A Yes, he did.

11 Q Let me show you what has been marked as Exhibit 5142. Can
12 you identify what that is, please.

13 A This is a copy of a Monsanto memorandum prepared by Mr.
14 David Wood who was a marketing representative and addressed to
15 two Monsanto individuals who were field marketing salespeople.

16 Q The date on that is January 19th, 1972?

17 A 1976.

18 Q Excuse me, 1976. What is attached to this?

19 A Attached to it is a draft of the vice-president, Mr. Jack
20 Fitzgerald's comments that were made at Mr. Train's meeting in
21 Washington.

22 MR. FRUEHWALD: At this time, I would offer Exhibit
23 5142, Your Honor.

24 MR. KARAGANIS: I would object. I have no objection
25 to the cover memorandum. But what it closes with is a speech.

1 The speech is not a business record.

2 THE COURT: May I see it, please. Well, this is a
3 communication from Monsanto to its customers, I presume
4 including Westinghouse. Since they emphasize all capacitor and
5 transformer manufacturers, I will overrule the objection and
6 receive it in evidence.

7 (Defendant's Exhibit 5142 received in evidence.)

8 MR. FRUEHWALD: I will read it at this time. The
9 cover memo is from Mr. Wood to Mr. Petrilli and Mr. Alley of
10 the marketing department January 19th, 1976.

11 "I attach copies of the comments that J. Fitzgerald made at
12 the EPA meeting in Washington on January 14th. Will you please
13 ensure that copies are sent to all our capacitor and
14 transformer manufacturer customers in order that they can see
15 firsthand exactly what was said and not become confused by
16 mis-reports of Monsanto's position."

17 I will read the remarks of Mr. Fitzgerald at the meeting,
18 "Good afternoon, my name is Jack Fitzgerald. I am a
19 vice-president of Monsanto Company, a member of its Corporate
20 Administrative Committee and Managing Director of Monsanto
21 Industrial Chemicals Co., an operating unit of Monsanto
22 Company.

23 "Since I am responsible for the operating unit which
24 manufactures polychlorinated biphenyls dielectric fluids, John
25 Hanley, our President, has asked me to represent him today and

1 reaffirm to you Monsanto's commitment to continue working with
2 the EPA and the electrical industry in finding solutions to the
3 PCB issue.

4 "Let me state at the outset that Monsanto agrees
5 wholeheartedly with EPA's desire to work toward the goal of
6 eventually eliminating all uses of PCBs.

7 "Monsanto has already taken several steps designed to
8 restrict the entry of PCBs into the environment.

9 "First, Monsanto began restricting the use of PCBs solely
10 to closed electrical systems, for which not only viable
11 alternates existed, back in 1970. It should be noted this
12 voluntary program was fully implemented prior to the completion
13 of the study done on PCBs by a Federal Interagency Task Force
14 in 1972.

15 "Secondly, Monsanto has been working for a number of years
16 on non-PCB replacement products. These materials, designed to
17 replace PCBs fluids, in capacitors and transformers, are
18 currently being evaluated by the major electrical manufacturers
19 in the United States.

20 "While the PCB issue is a tough one to handle, the
21 difficulty does not nor will not in the future stem from any
22 lack of cooperation on the part of Monsanto. The problems that
23 we face, collectively are rather rooted in the unique
24 characteristics of PCBs and the irreplaceable role they have
25 served in our electrical-industrial environment for the past 45

1 years. The challenge: Replacing them in an orderly manner
2 without creating another hazard of equal or potentially greater
3 consequence, while at the same time avoiding serious power and
4 transportation disruption.

5 Let me emphasize that we have no desire to remain in the
6 PCB manufacturing business any longer than is necessary. By
7 this I mean as soon as we are satisfied that the electrical
8 power supply industry's needs for usable, acceptable alternate
9 dielectric fluids have been met by whomever, Monsanto will
10 voluntarily shut down its PCB manufacturing unit. In the
11 interim, we will continue to work with industry and government
12 to ensure that the restrictive measures and controls we
13 implemented in the early 1970's remain in force and are
14 diligently pursued."

15 Q Mr. Papageorge, this statement of Mr. Fitzgerald in January
16 of 1976, was that a change of Monsanto's policy?

17 A Not really.

18 Q How long had Monsanto had this policy that's reflected by
19 Mr. Fitzgerald?

20 A Oh, I would suggest that as early as early 1970 when the
21 withdrawal program was considered, withdrawal from dielectrics
22 was discussed. And the intent to eventually withdraw was
23 expressed as soon as the alternative material was found. That
24 was the intent from the very beginning.

25 Q And did there come a time when Monsanto did terminate the

1 production of PCBs?

2 A Yes.

3 Q Let me show you what has been marked as Exhibit 5154 which
4 is a letter from R.G. Potter to Keith Kelly, R.G. Potter of
5 Monsanto to Keith Kelly of the Westinghouse Bloomington Plant
6 dated October 4, 1976.

7 MR. FRUEHWALD: Let me move the admission of this
8 Exhibit 5154, Your Honor.

9 MR. KARAGANIS: No objection.

10 THE COURT: It will be received.

11 (Defendant's Exhibit 5154 received in evidence.)

12 MR. FRUEHWALD: I will go ahead and read it to the
13 jury. "To Keith Kelly: We are writing to advise you Monsanto
14 will cease manufacture at Sauget, Illinois all polychlorinated
15 biphenyls (PCBs) products used as dielectrics, effective August
16 31, 1977. We will cease sales and delivery of these products,
17 effective October 31, 1977.

18 "This decision is consistent with our commitment to exit
19 this business while responsibly taking into account your need
20 to establish replacement products.

21 "Our marketing department will be contacting your company
22 shortly to discuss our decision in detail and to answer your
23 questions. We will work with you to accommodate your specific
24 plans and needs within our phase-out program."

25 Q Mr. Papageorge, why did Monsanto give a notice like this to

1 its customers in 1976? What had happened at that time?

2 A We were informed by the large users of PCB dielectric
3 fluids they thought they had materials, although weren't quite
4 as good, that were acceptable. They were ready to start using
5 the new materials.

6 Q Why was a year given or the notice given approximately
7 several months or almost a year in advance?

8 A Well, in any changeover in a manufacturing process, there
9 are many things that must be done. And this year gave the
10 customers time to convert their factories to new materials, new
11 methods of handling, a total new approach in design and
12 whatever it took.

13 Q Mr. Papageorge, did you have any involvement in the
14 labeling of Monsanto's Aroclor products as sold to various
15 customers?

16 A Yes.

17 Q When did that responsibility start?

18 A In 1970.

19 Q I show you what has been marked as Exhibit 5043 which is a
20 memo from W.B. Papageorge to Mr. Sido, S-I-D-O, dated April
21 28th, 1970. I will move its admission at this time, Your
22 Honor.

23 MR. KARAGANIS: No objection, Your Honor.

24 THE COURT: It will be received.

25 (Defendant's Exhibit 5043 received in evidence.)

1 MR. FRUEHWALD: I will go ahead and read it. This is
2 again from Mr. Papageorge to Mr. Sido dated April 28, 1970.

3 "With amounting interest in polychlorinated biphenyls (PCB)
4 and their possible harmful effects on the environment, we are
5 very interested in adding the following statement on products
6 containing PCBs."

7 I will read you the typed portion and I will ask Mr.
8 Papageorge about the handwriting. It's block quote, "This
9 product contains polychlorinated biphenyls which some studies
10 have shown may be an environmental contaminant. Care should be
11 taken to prevent any loss into the environment through spills,
12 leakage, disposal, vaporization or otherwise." That's the end
13 of that quote.

14 "This additional wording is intended for packages
15 containing Aroclors 1232, 1242, 1248, 1254, 1260, 1262, 1268,
16 and 4465 and Hontar, H-O-N-T-A-R, 1.

17 "We also plan to use this statement on Pyranol and Inerteen
18 labels, but we will discuss with General Electric and
19 Westinghouse since the trademarks belong to them.

20 "We are very anxious to make this change quickly. May I
21 have your comments?"

22 Q Mr. Papageorge, this typed portion of this memo I take it
23 is what you wrote?

24 A Yes, sir.

25 Q There is some handwritten changes in the text of the

1 warning. Can you explain what those are about?

2 A Those are comments offered by one of the four recipients.
3 I don't recall just who. But one of the four suggested use of
4 these words, and they were acceptable to me. And that was
5 relayed to Mr. Sido.

6 Q And then the label that eventually appeared had your text
7 plus the additional words?

8 A That is correct.

9 Q Mr. Papageorge, are you familiar with the history of the
10 various labels used by Monsanto on its Aroclor products from
11 the time you were plant manager on through until the time PCBs
12 were stopped?

13 A Yes, sir.

14 Q I am going to show you what has been marked as Exhibits
15 5207 through 5214 which appear to be various labels.

16 MR. FRUEHWALD: Right now I will move their admission
17 into evidence, Your Honor.

18 MR. KARAGANIS: No objection, Your Honor.

19 THE COURT: All right. What numbers?

20 MR. FRUEHWALD: 5207 through 5214, Your Honor. There
21 are however many exhibits that make up those numbers.

22 MR. KARAGANIS: They are all labeled?

23 MR. FRUEHWALD: Yes.

24 THE COURT: Each of the exhibits will be received in
25 evidence.

1 (Defendant's Exhibits 5207-5214 received in evidence.)

2 Q Mr. Papageorge, are these exhibits that I have just put in
3 front of you the various labels that were used by Monsanto over
4 the years?

5 A These are examples, yes. They appear to be examples of the
6 different labels through the years.

7 MR. KARAGANIS: Could we get dates on the labels.

8 Q That was my next question. Could you take us through the
9 history of these labels as to which labels were used in various
10 periods and what changes occurred?

11 A I will try.

12 Q Maybe I can help you.

13 A The first two I am looking at are very short paragraphs.
14 They have the same wording. And the words are as follows:
15 "Caution! Contains chlorinated hydrocarbons. Avoid prolonged
16 breathing of vapors or mists. Avoid contact with eyes or
17 prolonged contact with skin. If skin contact occurs, remove by
18 washing with soap and water. Following eye contact flush with
19 water. If clothing becomes soaked with fluid, launder before
20 wearing again."

21 Q During what period were those labels used?

22 A Those labels were in use in the thirties, the forties, and
23 into the fifties, middle fifties. They were placed either on
24 drums or the smaller label would be put on the five-gallon
25 pails, the smaller containers. But the message is identical.

1 Q What was the next label then used?

2 A The next label now includes--

3 Q The first two labels you were referring to were exhibits
4 5208 and 5207, were they not?

5 A Yes.

6 Q The next label you are referring to is Exhibit 5209?

7 A Yes. The label now contains the identical message in
8 bigger print. The trademarks for the product that's in the
9 container as well as the references to Monsanto and its
10 location and the gross net and tare weight of the package.
11 This label was in use through the latter part of 1955 through
12 1960 up to early 1970.

13 Q And the next label in the stack is Exhibit 5210. Is that
14 the next label chronologically?

15 A Yes. This label now has all of the features of the
16 preceding one. Except at this time, it includes a message
17 regarding contamination of the environment. This was added in
18 early 1970, about April or May.

19 Q And is this the text that's been added to the label--is
20 that the same text that was the subject matter of that memo we
21 just talked about?

22 A Yes.

23 THE COURT: For the record, how does it read?

24 A "This product contains polychlorinated biphenyls, which
25 some studies have shown may be an environmental contaminant.

1 Extreme care should be taken to prevent any entry into the
2 environment through spills, leakage, use, disposal,
3 vaporization or otherwise."

4 Q All right, sir. The next one?

5 A This label was used until about 1971 as I remember.

6 Q All right, sir. What is the next label?

7 A The next label is an example of--is Exhibit 5211. It's an
8 example of a product packaged for the customer under the
9 customer's trademark. In this case, it's Inerteen, a
10 Westinghouse product.

11 The messages on the label include the first one we read
12 regarding exposure to the employees. It also includes the
13 environmental paragraph that I just read. In addition, it
14 includes information regarding the return of scrap material
15 back to Monsanto for incineration. This disposal information
16 was added about 1971.

17 Q When was the next label used?

18 A Exhibits 5212 and 5213 really represent the information on
19 a package of the material. This was used starting in 1973. It
20 contains the information that we talked about before. In
21 addition to that, it has a little bit more information on a
22 seven-language label that was printed on a yellow drum, in the
23 periphery around the drum, all the way around the drum.

24 Q The exhibit, itself is basically a xerox copy, attempted
25 color xerox copy. Was that the color of the actual label, or

1 was it different than is presented?

2 A It was a brighter yellow on the drum with black lettering
3 to highlight the drum. So these colors are not true.

4 Q This in fact is on two pages, but it was in reality one
5 continuous document as it existed on the barrels?

6 A Around the surface of the barrel, yes.

7 Q And this is in several languages. The English portion is
8 on the first page of Exhibit 5213. Was there additional
9 language added at that time to the prior labels?

10 A There was additional language, yes. And some modification,
11 slight modification of the original language.

12 Q Let me refer you to the last exhibit, Exhibit 5214. Could
13 you tell me what that is, please?

14 A This is again information that applies to PCBs. It is the
15 type of label that was affixed to bulk shipments such as a tank
16 car or tank truck movement.

17 Q Can you tell me, please, what of the information on here
18 was added from the prior labels that you have read?

19 A The prior labels had virtually all of this information:
20 the disposal statement, the environmental statement, and the
21 worker protection statement.

22 Q Okay. Thank you. And was this series of labels at the end
23 here--Exhibits 5212, 5213 and 5214--used up until the
24 termination of sales?

25 A Yes.

1 Q Now, the memo we talked about earlier where you had some
2 suggested language referred to consulting about Inerteen
3 something with Westinghouse about the usage of this terminology
4 on Inerteen labels. Was that in fact done?

5 A Yes.

6 Q Why was that done?

7 A Well, Inerteen is a Westinghouse trademark. And it's a
8 Westinghouse product made to their specifications. So it's
9 only proper that they approve what goes on the label.

10 Q Did they eventually approve that language on their labels?

11 A Yes.

12 Q Did the statements that you had in your memo about
13 environmental contamination, did they go in other documents to
14 the customers besides the labels?

15 A Yes.

16 Q Let me show you what has been marked as Exhibit 5114 which
17 is a--well, you can describe what this is. It's a notice to
18 the carrier as it appears to be. It's a particular one, an
19 example dated September 4th, 1972. Can you identify what that
20 is, Mr. Papageorge?

21 A This looks like a bill of lading.

22 MR. FRUEHWALD: I move the admission of Exhibit 5114.

23 MR. KARAGANIS: No objection, Your Honor.

24 THE COURT: It will be received.

25 (Defendant's Exhibit 5114 received in evidence.)

1 Q And was there certain language put on bills of lading
2 regarding the environmental contaminant possibilities of PCBs?

3 A Yes.

4 Q Does that language appear? Why don't you read that
5 language to the jury?

6 A "This product contains polychlorinated biphenyls (PCBs)
7 which some studies have shown may be persistent, an
8 environmental contaminant and possibly injurious to certain
9 forms of bird, aquatic and animal life. Prevent any entry into
10 the environment through spills, leakage, disposal,
11 vaporization, reuse of containers, or otherwise. Spills
12 leakages and waste product must be collected. During shipment
13 avoid spills and leakage into inland waterways and the sea.
14 Keep away from food, animal feedstuffs and pharmaceuticals."

15 Q Why was this terminology added to this type of a document?

16 A It's just a continuation of our effort to communicate
17 widely.

18 Q Likewise, let me show you what has been marked as Exhibit
19 5125. Can you identify what that is, please.

20 A This is a copy of an invoice, a Monsanto invoice, to
21 Westinghouse Electric in Bloomington, Indiana.

22 Q The particular one is dated January 5th, 1973. Let me move
23 the admission of Exhibit 5125.

24 MR. KARAGANIS: No objection, Your Honor.

25 THE COURT: It will be received.

1 Q Rather than reading it again, does not the same text you
2 just read also appear on the invoice that was sent to
3 Bloomington?

4 A Very close, yes, sir.

5 Q Why was this material put on the invoice that was sent to
6 Bloomington?

7 A Again to make sure that the message was read by the right
8 people.

9 Q Let me direct your attention, Mr. Papageorge, to the
10 Bloomington Plant. There has been prior testimony about a
11 visit you made there on July 22, 1970.

12 I believe you were in the presence or accompanied by Mr.
13 Randy Graham at that time?

14 A Yes.

15 Q Who was Mr. Graham?

16 A At that time, Mr. Graham was Monsanto's field sales
17 representative for dielectric fluids.

18 Q Mr. Graham still with Monsanto?

19 A No.

20 Q When did he depart?

21 A I believe he left in 1972.

22 Q Another name that's appeared in the documents is Jim
23 Bryant. Who was Mr. Bryant?

24 A Mr. Bryant in the late sixties, early '70 and '71 was the
25 technical representative in the marketing department located in

1 St. Louis who supported Mr. Graham's field activities with
2 technical backup.

3 Q Is Mr. Bryant still with Monsanto?

4 A No.

5 Q When did he depart?

6 A I am not too sure. 1973 or 1974.

7 Q Did you make any notes of your visit to the plant on July
8 22, 1970?

9 A No.

10 Q Did you make any memos when you got back or record of that
11 visit?

12 A No.

13 Q I show you what has been marked as Exhibit 5055.

14 MR. KARAGANIS: State the date, please.

15 MR. FRUEHWALD: Just a minute.

16 Q Which is a memo from Robert D.--I think it's Don McClain at
17 Westinghouse to others at the Westinghouse plant. It appears
18 to be an internal Westinghouse document dated July 23, 1970.

19 MR. FRUEHWALD: Let me at this time, Your Honor, go
20 ahead and move the admission of Exhibit 5055.

21 MR. KARAGANIS: No objection, Your Honor.

22 THE COURT: It will be received.

23 (Defendant's Exhibit 5055 received in evidence.)

24 Q Mr. Papageorge, this is an internal memorandum in the
25 Westinghouse organization. Did you see this document anywhere

1 back in the seventies?

2 A No.

3 Q Have you seen it recently?

4 A Yes.

5 Q Have I asked you to take a look at the description on the
6 second page of the exhibit under the heading No. 5 and to
7 review that?

8 A You have.

9 Q This purports to be Mr. McClain's description of the
10 meeting with you and Mr. Graham on July 22, 1970. From your
11 recollection, do you believe it is an accurate description of
12 things that were said at that meeting?

13 A It's a pretty good understanding of what transpired.

14 MR. FRUEHWALD: At this time, Your Honor, let me read
15 that section of it to the jury. Again this is a memo from
16 Robert D. who we have been referring do as Don McClain to
17 several others at the Westinghouse Plant dated July 23, section
18 No. 5.

19 "Messrs. Randy Graham (Sales) and W. Papageorge (formerly
20 Anniston Plant Manager and now in charge of efforts to control
21 environmental contamination by PCBs) of Monsanto met with
22 Messrs. Tison, Shoaff and McClain on 7-22-70. Monsanto's
23 assessment of national and international interests in this
24 problem was reviewed and their corporate response was stated:

25 "a) An urge to totally abandon further manufacture of PCBs

1 was put down in favor of continued manufacture and supply of
2 the lower molecular weight (1242, 1232 Aroclor) to industries
3 where exposure may be controlled. (It was acknowledged that
4 withdrawal of higher molecular weight 1248, 1254, 1260 Aroclors
5 is forcing some materials formulators out of business; and it
6 was further stated that Monsanto refused to sell even 1242 to
7 customers they regard as irresponsible or careless in their
8 control and handling of the material).

9 "b) Aroclor 1242 with fractions of 1248, 1254, etc.
10 completely removed, will be offered shortly for evaluation as a
11 suitable material for capacitor impregnation. This material
12 will be designated 'MCS-1016'. It is felt that the absence of
13 1242 in any reported environmental problem, to date, will allow
14 continued use of this material under controlled conditions.
15 Costs are expected to be higher than for present Aroclor 1242.

16 "c) Monsanto has wording with John Zink Co. (Division of
17 Singer) of Tulsa, Okla. to develop an incinerator for Aroclor
18 fluid. This is being installed at Sauget, Illinois and they
19 expect to be able to receive fluid in drums or cars for
20 incineration at a cost of about three cents a pound plus
21 packaging and shipping charges.

22 "d) Kiln methods for incineration of saturated solids is
23 under study, but Monsanto is dubious as to the economic
24 feasibility of shipping such materials to them for disposal.
25 At present, they recommend consideration of disposal in

1 suitable landfills.

2 "e) Return of 'clean' scrap Inerteen for credit (on the
3 basis of reprocess and resale) is expected to be discontinued.
4 Phasing out the resale market (hydraulic fluids) by December
5 31, 1970 was cited as the reason.

6 "f) Monsanto has proceeded on an extensive program to
7 control escape of any Aroclors to the environment from their
8 Anniston and Sauget operations. It was stated that they have
9 reduced losses from 300 pounds a day to less than 10 pounds a
10 day with the goal of 0.1 pounds per day. (It must be assumed
11 that they will expect a similar effort on the part of their
12 customer-users).

13 "g) Monsanto expects the greatest governmental pressures to
14 develop in Canada first. U.S. federal pressure is expected to
15 increase, and they anticipate investigation by a congressional
16 committee this year. They do not discount the possibility that
17 they may be forced to cease manufacture because of governmental
18 action. Intensity of emotional factors may be more critical
19 than consideration of real danger, in this respect."

20 I will read the last paragraph, which is Mr. McClain's,
21 separate from the report: "6. In consideration of the above
22 situation and the action being taken, strong efforts to
23 establish procedures and control of Inerteen during manufacture
24 must be continued."

25 Q As I understand it, Mr. Papageorge, you did not go back to

1 the plant; but Mr. Graham went back to the plant at your
2 instruction later in the year?

3 A Yes.

4 Q Did you receive a report from Mr. Graham as to what he
5 observed at the plant on that return visit?

6 A Yes.

7 Q Can you tell the jury what his report was.

8 MR. KARAGANIS: Objection, Your Honor. It is a
9 memorandum of something that reflects it as a business record.
10 What Mr. Graham told him--

11 MR. FRUEHWALD: That was asked on direct examination
12 and just wasn't completely filled out, Judge. He has already
13 asked it on direct.

14 THE COURT: Well, is this exhibit in evidence or not?

15 MR. FRUEHWALD: I thought this one was.

16 MR. KARAGANIS: I believe we agreed to it.

17 MR. FRUEHWALD: 5055.

18 THE COURT: Yes, that's in evidence.

19 MR. FRUEHWALD: There is no exhibit. That's why the
20 conversation was a phone conversation and as a result only oral
21 testimony can give the results of Mr. Graham's report. That
22 was what was asked about.

23 MR. KARAGANIS: That is classic hearsay.

24 THE COURT: Did you ask about it or not?

25 MR. KARAGANIS: I didn't ask about any conversation

1 with Mr. Graham. I asked whether or not he received any
2 reports, Your Honor, to my recollection. I don't recall asking
3 about any telephone conversation.

4 MR. FRUEHWALD: Mr. Papageorge said he had received a
5 report from Mr. Graham and it was to this effect. I am asking
6 him now to fill out what else Mr. Graham said.

7 THE COURT: Overrule the objection.

8 Q Mr. Papageorge, can you tell me please what Mr. Graham
9 reported to you about his return visit to the Westinghouse
10 plant.

11 A He reported to me over the telephone that he had just been
12 to the plant and was very encouraged by what he saw; that the
13 conditions had improved dramatically; that sewers were sealed;
14 that some curbing had been installed. Sawdust was used only
15 for spills rather than as a way, a daily way, of operating.
16 Those are not his exact words. But that's what I recall from
17 that conversation.

18 All in all the report, as I understood it, was the plant
19 was trying its best and achieving good results.

20 Q Did Mr. Graham report anything about the washers in the
21 plant?

22 A He told me an extensive study was being made regarding
23 different ways of handling wash waters or changing the washing
24 operation.

25 Q And who was doing that study?

1 A Westinghouse, the plant.

2 Q Mr. Papageorge, there was previously referred to or
3 introduced in evidence a document entitled Polychlorinated
4 Biphenyl Waste Control and Disposal attached to a memo you
5 circulated around within Monsanto. Do you recall that?

6 A Yes.

7 Q Let me show you what has been marked as 5075. It is a
8 letter from Mr. Papageorge to Keith Kelly, Manager of
9 Purchasing, at the Westinghouse/Bloomington Plant dated
10 November 23, 1970, with the attachment being what is called a
11 rough draft of the Polychlorinated Biphenyl Waste Control and
12 Disposal paper.

13 MR. FRUEHWALD: I move its admission at this time,
14 Your Honor.

15 MR. KARAGANIS: No objection, Your Honor.

16 THE COURT: It will be received.

17 (Defendant's Exhibit 5075 received in evidence.)

18 MR. FRUEHWALD: This was not previously read when this
19 portion was offered earlier. I don't think I will--I will just
20 read the cover letter.

21 :Dear Keith, Attached is a copy of a very rough draft of
22 suggestions for the effective containment of Askarels which I
23 promised to send to you.

24 "We are actively seeking more detailed information and plan
25 to improve the draft before we issue it. In the meantime, it

1 may be of some help to you.

2 "If you have any suggestions of your own on how we can
3 improve it, I would appreciate hearing from you."

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1 MR. KARAGANIS: Your Honor, I would like the entire
2 instruction be read, the suggestion that Mr. Papageorge include
3 it.

4 MR. FRUEHWALD: I am very pleased to read it again,
5 Judge.

6 THE COURT: Go ahead.

7 MR. FRUEHWALD: I was just going to save some time.
8 It's called a "Rough Draft, Polychlorinated Biphenyl Waste
9 Control and Disposal."

10 "With increasing evidence that some polychlorinated
11 biphenyls are being found in the environment and indications
12 that some species of birds and marine animals are being
13 affected, extreme care must be taken to prevent any entry into
14 the environment of these materials through spills, leakage,
15 use, disposal, vaporization or otherwise. Suggestions are
16 offered below for effective containment of PCBs.

17 "Liquids. Number 1. Every effort must be made to prevent
18 the mixing of PCB with water, thereby measurably reducing the
19 opportunity for PCBs to enter a water system; e.g., sewer,
20 creek, river or lake.

21 "Number 2. All liquid handling systems must be designed
22 and maintained to assure that leaks and spills are a rarity.
23 If they do occur, corrective measures should be taken
24 immediately and the PCBs be properly contained.

25 "Number 3. All areas in which spills and leaks could occur

1 should be paved, curbed and properly drained. In some
2 instances such as under pumps or sampling points, drip pans or
3 catch basins may be appropriate. These, however, must be
4 drained properly into waste collection systems.

5 "Number 4. Drainage systems should contain interceptor
6 basins to trap the heavy PCB for subsequent recovery.

7 "Number 5. If PCBs are present in waste water streams,
8 these streams must be treated before release to the
9 environment. Detergent emulsions must be broken, free PCB must
10 be removed after phase separation and dissolved PCB can be
11 reduced by absorption on activated carbon.

12 "Number 6. Waste liquid PCBs can be destroyed by
13 incineration at temperatures above 800 degrees centigrade" or
14 Celsius. "Temperatures below this level will result in
15 vaporization to the atmosphere, or in the possible formation of
16 severely toxic oxygen-containing materials. The stack gases
17 from incineration must be scrubbed to remove the resulting HCl
18 gas and then neutralized before disposal to plant effluent. If
19 incineration facilities are not available, waste liquid
20 containing PCB may be shipped to Monsanto for disposal. Cost
21 has been tentatively set at three cents per pound of material
22 to be disposed and does not include container and freight
23 costs. Material returned to Monsanto should be addressed to:
24 Attention, Supervisor Department 246, W. G. Krummrich Plant,
25 Monsanto Company, Sauget, Illinois."

1 The next heading is vapors.

2 "Number 1. Vapor generation should be reduced by limiting
3 the heating of PCB to the lowest temperature required for the
4 process.

5 "Number 2. The vapor handling facility should be designed
6 and maintained to assure no vapors escape to the atmosphere.
7 The use of liquid vent seals, condensers and entrainment
8 separators are recommended. Interconnection of vent lines to
9 contain vapors within the system helps."

10 The next heading is solids.

11 "Number 1. Solids contaminated with PCB must be segregated
12 from other plant solid waste.

13 "Number 2. Disposal may be made in a properly operated
14 landfill which is not located near any water system.

15 "Number 3. Ordinary burning of these materials must be
16 avoided. Steel or copper waste may be reclaimed in high
17 temperature furnaces.

18 "Number 4. Steel drums which contained PCB should not be
19 reused for any other material."

20 End of exhibit.

21 THE COURT: Let's take ten.

22 (The Court recessed at 2:35 p.m.)

23 MR. FRUEHWALD: May it please the Court.

24 THE COURT: You may proceed.

25 Q Mr. Papageorge, I show you what was previously marked in

1 your direct examination as Exhibit 4621. When you were --
2 would you redescribe what that was for the jury for reference
3 purposes?

4 A That was a letter from Dr. E. S. Tucker in Monsanto
5 addressed to me in which he reports the analytical resolution
6 of some water samples received from Westinghouse.

7 Q Let me show you what's been marked as Exhibit 5087 which is
8 a letter from a Mr. Kleinvehn of Westinghouse Aquatechnics to
9 Mr. Scott Tucker dated April 16, 1971.

10 MR. FRUEHWALD: Let me offer that in evidence, Your
11 Honor, Exhibit 5087.

12 MR. KARAGANIS: No objection, Your Honor.

13 THE COURT: It will be received.

14 (Defendant's Exhibit No. 5087 received in evidence.)

15 Q Mr. Papageorge, was Exhibit 5087 the letter which
16 transmitted the samples, the results of which were given in the
17 memo you've just referred to?

18 A Yes, sir.

19 Q I'll read this to the jury at this time, Your Honor. It's
20 a letter on Westinghouse stationary from Lynn Kleinvehn of
21 Aquatechnics, Consulting Engineers, Westinghouse Electric
22 Corporation, to Mr. E. S. Tucker, Monsanto Chemical Company,
23 St. Louis. Subject, "Westinghouse Electric Corporation
24 Distribution Apparatus Division, Bloomington, Indiana,
25 Industrial Waste Treatment Facilities, PCB Samples. Our file

1 numbered DAB01.

2 "Dear Mr. Tucker: As per direction of Mr. W. B.
3 Papageorge, we are shipping eight water samples for your
4 analysis to determine the PCB concentrations. These samples
5 were taken at the Bloomington plant prior to discharge to the
6 sanitary sewer system. If you have any questions, please
7 contact the undersigned."

8 Mr. Papageorge, had you heard of Aquatechnics prior to
9 this contact?

10 A Yes, sir.

11 Q What had you heard about them?

12 A I had heard that Aquatechnics was involved in a major
13 environmental study of Chesapeake Bay in '69, 1970, in that
14 period of time.

15 Q Did you have any opinion as to their capabilities in the
16 area of analyzing of plants such as the Bloomington plant?

17 A Oh, I think they are world class. It's a capable company.

18 MR. FRUEHWALD: I have nothing further, Your Honor,
19 except I would like to dictate an offer to prove with regard to
20 the Congressional testimony, but if the Court pleases, I will
21 do that sometime during the recess.

22 THE COURT: Yes, that would save time.

23 MR. FRUEHWALD: That's all.

24 REDIRECT-EXAMINATION

25 QUESTIONS BY MR. KARAGANIS:

1 Q Mr. Papageorge, other than the Aquatechnics' samples that
2 you looked at, the one set of samples with the one letter, did
3 you ever see any other samples from discharges to the
4 Bloomington sewers in the period 1971 to 1976?

5 A Yes.

6 Q So you did look at other samples?

7 A I recall another set of samples, yes.

8 Q One other set. What date was that?

9 A I believe about 1975 some samples were taken. It's kind of
10 fuzzy in my recollection.

11 Q Do you have those samples with you, sample results or does
12 your counsel?

13 MR. FRUEHWALD: I don't know.

14 A I don't even remember if a report was sent to me but I knew
15 the activity was taking place.

16 Q You knew sampling was taking place?

17 A Sampling was taking place, yes.

18 Q Mr. Papageorge, did you know that Aquatechnics had never
19 built a facility -- never did build a facility at Westinghouse?

20 A No, I did not.

21 Q Mr. Papageorge, you were asked to describe on I believe it
22 was the May 10th presentation to the CMC where Mr. Fruehwald
23 took you through the closed loop?

24 A Oh, yes. Yes.

25 Q Okay. You spoke earlier with regard to the contract, sales

1 contract between Monsanto and Westinghouse.

2 A Yesterday, yes.

3 Q Was that part of the closed loop program?

4 A Well, that contract was a device communicating the intent
5 of the closed loop. I never thought of it as part of the
6 closed loop, but it might be considered so by some people.

7 Q In your earlier deposition did I ask you this question and
8 did you give me this answer:

9 "Q Now as part of the closing the loop program, the
10 contract term that is set forth there, is that part of closing
11 the loop, making sure that there was a minimization of the
12 release of PCBs into the environment?

13 "A Yes."

14 Do you recall making that statement?

15 A Yes.

16 Q Mr. Papageorge, directing your attention to your list of
17 recommendations, the list that was just read to the jury, you
18 know what I'm talking about, it's Defendant's Exhibit 5075,
19 Polychlorinated Biphenyl Waste Control and Disposal.

20 A Yes, I remember that.

21 Q Mr. Papageorge, I ask you for the moment to consider
22 whether -- to assume that the incinerator was not available. I
23 would like to go through very briefly your other
24 recommendations.

25 "Number 1. Every effort must be made to prevent the

1 mixing of PCB with water, thereby reducing the opportunity for
2 PCBs to enter a water system." That's pretty much a common
3 sense recommendation, isn't it?

4 A I don't know how common sense it is. One has to know the
5 characteristics of the chemicals involved and how they behave
6 in the environment.

7 Q In order to make the decision to restrict its use that way?

8 A Correct.

9 Q Okay. And wouldn't it be true that if you knew the
10 characteristics of the chemical that your recommendation number
11 one there under liquids would have been a practice that would
12 have made sense and was available from 1957 to '70?

13 A If the persistence in the environment were known then, yes.

14 Q I am talking about the feasibility of the recommendation.

15 A The feasibility? Yes.

16 Q With respect to "All liquid handling systems must be
17 designed and maintained to assure that leaks and spills are a
18 rarity. If they do occur, corrective measures should be taken
19 immediately and PCBs be properly contained," isn't that also
20 something that could have been implemented from '57 to '70?
21 Feasible?

22 A It's feasible, yes.

23 Q Your recommendation with respect to paving and curbing and
24 properly draining, that's again something that could have been
25 done between 1957 and 1970; isn't that correct?

1 A Yes.

2 Q Your recommendation that drainage systems should contain
3 interceptor basins to trap the heavy PCB for subsequent
4 recovery," again, a drainage trap is something that could have
5 been developed between '57 and '70; isn't that correct?

6 A That's correct.

7 Q At any point in that time?

8 A Yes.

9 Q Now with respect to the recommendations that you made, I
10 take it your earlier testimony is that you don't feel that the
11 carbon treatment, carbon treatment was feasible, but you didn't
12 know whether you could reach 10 ppb; is that correct?

13 THE COURT: Is there anything about this on redirect?

14 MR. KARAGANIS: Yes, Your Honor.

15 THE COURT: Carbon, did Mr. --

16 MR. KARAGANIS: This is the exhibit he brought out on
17 redirect, Your Honor. He showed it to the jury.

18 THE COURT: I don't think there was any testimony on
19 redirect -- not redirect, but whatever it is.

20 MR. KARAGANIS: On cross.

21 THE COURT: On cross-examination.

22 MR. KARAGANIS: I will move on, Your Honor.

23 THE COURT: I wish you would.

24 Q Mr. Papageorge, with respect to the recommendations on the
25 incinerator, wouldn't it be correct that the incinerator that

1 you say you constructed could have been built in an earlier
2 time?

3 A That's difficult to answer. In order to build an
4 incinerator, information that was lacking was required. It's a
5 step wise process.

6 Q You had to test; is that right?

7 A That is true.

8 Q The fact that you had not gone out and tested was what made
9 it technically unfeasible; isn't that correct?

10 A That's true.

11 Q Isn't it also correct that you could have gone out and
12 conducted those tests earlier?

13 A That's true of any new development on any piece of
14 equipment.

15 Q Is it not also correct there was no technical burden or
16 impossibility or hurdle that prevented you from either
17 conducting the test or demonstrating the feasibility of the
18 incinerators at an earlier date?

19 A Well, without this test, the technical hurdle did exist.
20 We could not have gone to any machine shop and asked them to
21 build us an incinerator. You have to have data.

22 Q There was no technical hurdle to having performed the test
23 which would have demonstrated the project?

24 A To perform the test, you're right.

25 Q And had you performed the test, they proved out to be

1 feasible, did they not?

2 A Very likely.

3 Q Now, Mr. Papageorge, with respect to your earlier testimony
4 with respect to General Electric and the desire -- the concern
5 about blackouts or brownouts --

6 A I remember it.

7 Q There was nothing about the concerns about blackouts or
8 brownouts which would have prevented the implementation of your
9 recommendations for safe waste control; isn't that correct?

10 A That is correct.

11 MR. KARAGANIS: No further questions, Your Honor.

12 MR. FRUEHWALD: I have nothing further.

13 THE COURT: That's all. Thank you.

14 THE WITNESS: Thank you.

15 (Witness excused.)

16 MR. KARAGANIS: Your Honor, I anticipate at this time
17 reading some deposition testimony from some witnesses not
18 available.

19 THE COURT: You may.

20 Members of the jury, you heard the other day some
21 interrogatories read and the answers thereto. There's still
22 another way of getting evidence before you which is to take the
23 deposition of a witness. Now in a civil case such as this one,
24 the attendance of a witness may not be compelled if he lives
25 more than a hundred miles away from the courtroom.