IN THE MISSOURI COURT OF APPEALS
STATE OF MISSOURI

JUDITH BECHTOLD, et al.,	)	
	)	
Appellants,	)	
	)	
v.	)	
	)	Appeal No. 67517
MONSANTO COMPANY,	)	
	)	
Respondent.	)	

IN THE CIRCUIT COURT OF THE CITY OF ST. LOUIS, MISSOURI
22ND JUDICIAL CIRCUIT
Honorable Jimmie M. Edwards, Judge

JUDITH BECHTOLD, et al.,	)	
	)	
Plaintiffs.	)	
	)	
v.	)	
	)	Cause No. 922-0911
MONSANTO COMPANY,	)	
	)	
Defendant.	)	

VOLUME FIVE

TRANSCRIPT OF RECORD ON APPEAL

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Plaintiff calls Mr. William Papageorge.

THE COURT: Mr. Murray, you may proceed.

MR. CARNEY: Your Honor --

WILLIAM B. PAPAGEORGE, P.E.

having been duly sworn by the Deputy Clerk, testified as follows:

DIRECT EXAMINATION

BY MR. MURRAY:

Q Good morning, Mr. Papageorge.

A Good morning, Mr. Murray.

Q Would you tell the jury your name and where you live?

A My name is William B. Papageorge. I live at 321 Pebble Valley Drive in West County, St. Louis.

Q Mr. Papageorge, what is your education, sir?

A Well, after high school, I received a bachelor of science degree in chemical engineering. Then, I received a master of science degree in chemical engineering, both of those from Washington University. While working in Oklahoma, I was able to attend classes at Oklahoma A&M, which today is called Oklahoma State, working toward a doctor of science degree. I did not get to complete that program.

Q Was there any kind of a subspecialty in your master's work?

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A Not that I'm aware of, sir. We didn't use that terminology.

Q Do you know what I'm talking about? Was there an area that you concentrated on? That's a pretty broad subject.

A Oh, I see. My thesis work was in electrochemistry, the making of chemicals using electricity.

Q Okay. Distinguishing that from the chemicals that are used in the electrical industry?

A Well, certainly, yes.

Q And tell the jury briefly, Mr. Papageorge, your employment history?

A This is following my master's degree, sir?

Q Yes, sir.

A I worked for Phillips Petroleum Company in Bartlesville, Oklahoma, from 1947 to 1951. I then joined Monsanto here in St. Louis in 1951 and worked with Monsanto until I retired at the end of 1986.

Q In your early days with Monsanto, and it's hard for you to define that -- well, why don't we do it this way. Why don't you just tell the jury some of the jobs you had while you were with Monsanto over the years?

A Well, the first dozen or so years, I worked in what we called the manufacturing activity. That's where we made chemicals. I worked at the John F. Queeny plant down

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here on Second Street, and I had jobs there that ranged, starting out with engineering work where we did the necessary calculations to decide what kind of equipment was needed, how big it should be, and where it should be, to make certain chemicals. I then was supervising a department that made chemicals. I was then assigned to the department that constructed and repaired the equipment in that department. I was able to reach the promotion to be the superintendent.

Following that, I was assigned back to the engineering department as a supervisor, superintendent, where I had engineers and technicians working for me, working on engineering problems. I was then assigned a job that was called general superintendent of a department that was concerned with distribution of the chemicals within the plant from department to department, the receiving of raw materials, the shipping out of the finished product, the pickup of the trash, the generation of electricity and steam, and treated water, all of the services that the manufacturing people needed to get their job done other than the maintenance part, the repair part.

Following that assignment, I was transferred across the river to the Monsanto plant in Sauget, Illinois, called the W.G. Krummrich plant, and there I was one of five general superintendents of manufacturing, and I was responsible for

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the given group of chemicals that were manufactured by the departments assigned to me.

In 1965, I was transferred to Anniston, Alabama, as the plant manager of the Monsanto plant located there, and I served at that plant until the end of 1969. Beginning in 1970, I came back to St. Louis and was assigned a new job, which was called the manager of environmental control, and that job was concentrated on PCBs and how they were being found in the environment, and to try to establish why were they there. If so, what harm, if any, was occurring and how we can improve the situation. I had that assignment until about the end of February '76. At that time, I was assigned a different set of products that didn't include the PCBs.

I was then appointed a director of environmental operations, one of about, as I remember, about four of us in the company, each of us assigned parts of Monsanto, and we were responsible for keeping up the data on environmental matters of all kinds in the products that Monsanto made, and how where they handled, and where were they used, and how were they shipped, and what effect if any they might have on the environment and on people. I had that title with different kinds of chemicals and plants assigned to me until 1985.

In 1985, I was given the job of manager of occupational health for all the plants at Monsanto Chemical Company, the

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chemical part of Monsanto Company, and at the end of 1986, I retired.

Q So you were with Monsanto for what? Forty-five years?

A A little over thirty-five.

Q Thirty-five, I'm sorry. I want to go back, Mr. Papageorge, to your tenure as the plant manager at Anniston. That, I believe you testified, was from '65 to '69?

A Yes, sir.

Q What was -- let me ask it simply: Were PCBs manufactured at that plant?

A Yes.

Q In the manufacture of the PCBs, that was done in a closed system; correct?

A Well, that is correct, but I hope that I have the same understanding of the word "closed" that you do. These are not open vats with fumes spewing at all; on the other hand, it's not as closed as, say, a plant that's making chemical warfare chemicals. There are different degrees of closed systems.

Q The intent of the manufacturing system was that the PCBs, as they went through the process of being manufactured and into the final product, didn't escape into the air; right?

A Oh, certainly.

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Q Okay.

A But there were -- my reason for trying to define "closed system," for example, in the big tank in which the chemical is made, there is a steel cover over an opening, that cover is pushed aside during the process, and the operator adds chemicals to the reaction. And while that's open, I can't really say it's a closed system anymore. It's temporarily opened and it's closed.

Now, throughout the system, there are vents that go on out to the air. Technically, those are not really closed except that the gases or vapors that go through them are cleaned up by other equipment such that when it is finally released into the atmosphere, it doesn't contain the bad chemicals. So, it's open in that respect, also.

Q There is such a thing, Mr. Papageorge, in the industry as a closed system and an open system; isn't there?

A Which industry, sir?

Q In the chemical industry, the one we're talking about?

A In the chemical industry, those terms are used.

Q Well, that's all --

A But some systems are more closed than others. That's the distinction I'm trying to make.

Q That's all I was asking, Mr. Papageorge. The one at Anniston was a closed system?

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A It's a closed system by definition, yes.
Q That's all I wanted to know.
A Not in operation.
Q Now, the people who were working in this system with the PCBs, your employees --
A Yes, sir.
Q -- certain precautions were taken to make sure that those individuals were not exposed to the PCBs; is that correct?
A Certainly.
Q One of those was special clothing; right?
A By "special clothing," do you mean rubber suits and so on?
Q Yes, sir.
A Those were available, yes.
Q And in fact, employees were instructed, "If you have a chance of getting PCBs on you, wear these suits"?
A Yes, sir.
Q Okay. They had special footwear?
A Yes.
Q Booties or things to go over their shoes to make sure that if there was something on the floor, they wouldn't walk in it?
A Yes. The booties we had replaced the shoes; they didn't go over the shoe.

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Q Okay.

A It's a rubber shoe, really. We call it "bootie."

Q And, again, the employees were instructed that if there was something on the floor that you had to walk in, you'd better put the boots on?

A Correct.

Q You had special gloves for them to wear?

A Yes.

Q If for any reason their hands might have to come in contact with the PCBs, they were instructed to wear the gloves?

A Correct.

Q You even had a special skull cap? If there was any possibility of anything dripping on them, they were to wear that skull cap; right?

A The -- the head wear that were worn by these particular employees was the same throughout the plant. It was really a knit cap for comfort or warmth, and then there was a hardhat, a plastic hardhat that was worn.

Q You don't remember any skull caps being available, rubberized skull caps that they were to wear?

A Well, I certainly don't remember a rubberized skull cap in the time I was there at all.

Q Let me refer you to your deposition, Mr. Papageorge, page 207, volume two, 1987.

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"Q If the employee were going to be in a job where PCB oils might" --

THE COURT: Excuse me, counsel. Wait a minute.

MR. CARNEY: Do you have a copy, Judge?

THE COURT: I don't have a copy. Let's see if we can get the witness a copy.

MR. MURRAY: Sure. I'll give him mine.

Q (By Mr. Murray) Have you had a chance to review that?

THE COURT: Excuse me. If you have an extra copy of the deposition, why don't you just set one up here so he has it, so he doesn't have to -- Mr. Murray won't have to give him his.

Mr. Murray, why don't you proceed and we'll see if we can find another copy. You can share with Mr. Carney if you'd like.

Q (By Mr. Murray) Let me read you the question that I'm referring to, Mr. Papageorge.

"Q If the employee were going to be in a job where PCB oils might contact them on the head, were they required to wear a type of head cover that would keep the oils from coming into contact with the skin?

"A Yes. There were rubber-coated skull caps that could be used and should be used."

Do you remember that testimony?

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A Yes, sir. I relate that to the rubber suit that we talked about earlier.

Q All right.

A That included a head cover as well as the body coverage, yes.

Q So that was part of the suit that they were to wear?

A Yes, sir.

Q If there were jobs that required the workers to -- well, let's use the example of the guy who opens the cover. Vapors would come out at that point; correct?

A Correct.

Q He was required to wear a respirator when that occurred; correct?

A He was to use his judgment based on his training and experience as to whether, for that particular moment or operation, the fumes were strong that he'd be best to wear a respirator. If it was a very short interval and the fumes were not the amount that he couldn't stand, he may choose to do it quickly and not bother with the respirator. It was a judgment call on his part.

Q So if he were just going to dump something and he does that and he closes it, he didn't have to wear a respirator for that?

A That's a good example, yes.

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Q But if there was any possibility of him having to breathe the vapors, then he was supposed to wear a respirator?

A Well, yes, if the time involved was of some substance, yes.

Q In addition to all of that special equipment, Monsanto also made available to all of its employees in the plant clothing that they were to wear during their work assignments; correct?

A That's correct.

Q And they would come into the plant in the morning, put on that clothing, do their job, and take it off at night before they went home?

MR. CARNEY: Objection to the form, Your Honor.

THE COURT: It will be overruled.

THE WITNESS: That is correct.

Q (By Mr. Murray) And Monsanto laundered those things?

A Yes, sir.

Q And, in fact, the employee was to -- was instructed that if he got some PCB oil on that clothing that he was to go change?

A When an opportunity during the operation presented itself, he should go clean up, yes.

Q All right. These were rules which you believed

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were important in your plant; correct?

A Certainly.

Q And you would even go around making spot checks periodically to make sure these rules were being enforced; correct?

A Yes, sir.

Q In fact, you were only aware of one time that you can remember where somebody actually was exposed to the oils?

A I do remember the incident, yes, sir.

Q And that was an incident where an individual was doing something with a railroad tank car and had to put his hands in the oil?

A Somehow, he got PCBs on his hands, yes, sir.

Q And you spoke to that individual?

A I did, after I found out he had a red hand problem.

Q He was kind of sheepish about it?

A Yes, sir, he was.

Q He knew that he was breaking the rules; right?

A Yes, he did. He was a oldtimer.

Q And in your entire -- was it four years or five years there as the plant manager?

A About five.

Q In your entire five years, that's the only

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incident you were aware of where one of your employees was actually exposed to the oil?

MR. CARNEY: Objection, Your Honor.

THE COURT: All right. The objection will be sustained. Ask a proper question.

Q (By Mr. Murray) Were you aware of any other instance in your five years at the -- as manager of the plant where one of your employees came into contact with PCB oil?

MR. CARNEY: I'm going to object. I don't know what he means by "came in contact," or "actually got injured." I think the question is vague.

THE COURT: Counsel, that will be overruled.

Mr. Papageorge, do you understand the question?

THE WITNESS: I believe I do, Your Honor.

THE COURT: All right, sir, you may answer the question.

THE WITNESS: I am aware of several instances where employees got oil on their hands or their pants legs or their legs, other parts of their body. The incident you described earlier was the only incident that I was aware where an effect on the skin resulted from the oil on that skin.

MR. MURRAY: Page 210, counsel.

Q (By Mr. Murray) Let me, again, refer you back to

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the deposition, page 210, the top question. Have you had a chance to review that?

THE COURT: Excuse me for just one minute. I must have the wrong deposition.

MR. CARNEY: This is a deposition -- maybe we'd better approach to explain.

MR. MURRAY: May we approach the bench?

THE COURT: We don't need a record.

[Discussion off the record at the bench outside the hearing of the jury.]

Q (By Mr. Murray) Mr. Papageorge, I'm going to read you the question and answer that was given at that time.

"Q Can you recall any instances where your workers were actually exposed to PCBs? And, by that, I mean, where they had them, for example, come into contact with their unprotected skin, no barrier creams, no rubberized clothing to keep it out?

"A In the five years I spent there, I recall vividly only one incident."

Is that the answer you gave at that time?

A I did give, but the answer was erroneous in that I recalled the incident where injury was reported. There were other instances where oil did get on workers but no injury resulted because they washed up soon or took off the contaminated clothing and so on.

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Q So even if something did happen, they were instructed to go wash it off as soon as possible?

A As soon as practical, yes, sir.

Q And, in fact, only in emergency situations would they have to stay there until the emergency was over before they would go wash it off?

A True.

Q You also had some time spent at the Krummrich plant; correct?

A I'm sorry?

Q You also spent some time at the Krummrich plant?

A Yes, I did.

Q Not as plant manager but in other capacities?

A Yes.

Q And you're aware of the conditions under which the PCB workers worked in that plant as well?

A To a degree, yes. To the degree that all other workers in the plant were provided clothing and so on.

Q Well, the fact is, the PCB workers in the Krummrich plant had the exact same protections that the workers in the Anniston plant had; correct?

A Yes, sir.

Q And the same intent was there at the Krummrich plant, that was to avoid exposure to every degree possible?

A That is correct.

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Q And, in fact, the employees at the Krummrich plant even had twenty minutes at the end of the day where they could take a shower, paid time?

A It did.

Q And at the Anniston plant, if somebody had something on them, they also had that opportunity to go take a shower on company time?

A Yes, sir.

Q Now, is it true, Mr. Papageorge, that Monsanto was the sole manufacturer in the United States of PCBs from the mid-'30s all the way up until they stopped in 1977?

A I don't know how true it is because I heard reports which I was never able to confirm that other producers had, on occasion, made PCBs, attempted to market them, and did not succeed. So, there were, as I understood it, periods of time when others made PCBs in this country.

Q You heard about that?

A Yes, sir.

Q You never saw it?

A Oh, no, I wouldn't be able to see it.

Q And you never -- you never confirmed it?

A I was never able to confirm it, yes.

Q So, to your knowledge, Monsanto was the sole manufacturer of PCBs in the United States from the mid-'30s all the way up to '77?

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A I find that hard to answer because I know that one of the major chemical companies in this country attempted to go, and did go, to the large users of PCBs and attempted to get some of that market. How much PCBs they made in order to sample the customer and get the business, I have no way of knowing. So, I just cannot imagine anybody trying to get into a market without having some product on hand that he could demonstrate to the customer, it's quality and cost and so on.

Q You know, I really hate to argue semantics with you, Doctor -- Mr. Papageorge. The fact is, you didn't know if that person made PCBs or not; did you?

A I personally don't know, no. But, in the real world, that's the way it works, sir.

Q All right. In the real world, they may have made a sample --

MR. CARNEY: Your Honor --

Q (By Mr. Murray) In the real world, they may have gone to a customer, "If we make PCBs, would you buy them from us"?

THE COURT: All right, is there an objection?

MR. CARNEY: Your Honor, we're not going to contend that anybody else's PCBs went to the Bloomington plant, so there is no issue involved on that score.

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THE COURT: It has been stipulated that the only PCBs that went to the Bloomington plant were Monsanto PCBs. Let's move forward.

MR. MURRAY: All right.

Q (By Mr. Murray) After you left the Anniston plant, you went into a new job, I believe you testified, as manager of environmental control?

A I did.

Q That was a job that no one else had had previous to you; right?

A That is correct.

Q Why was it created?

A In the late '60s, there were a growing number of reports that analytical chemists throughout the world, with their very sophisticated equipment, were spotting PCBs in samples from the environment. With that piece of information and the vast development of more and more information, it became very difficult to keep tuned into everything that was going on. And I was asked to take on this job and try to let the left hand know what the right is doing, that kind of thing, to work with these analytical chemists, whether they be in government laboratories or university laboratories or industry laboratories, or even the private labs, and to work with government regulators that concerned themselves with chemicals, to work with the

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customers, to work with anybody that had any interest in PCBs in the environment, and, also, just within Monsanto where at least two or three groups were involved with PCBs. This is really where I thought I was helping the left hand know what the right was doing internally.

Q And something like that was needed at that point; right?

A Certainly.

Q Now, in addition to creating that position, Monsanto also did other things in order to handle the problems that were arising during that period of time; correct? With regard to PCBs?

A Yes, sir.

Q And what were some of the other things they did?

A I'll try to remember as many as I can. Of course, there was the program to communicate as much as we knew to our customers on record. There was a program to continue to fine-tune the analytical methods that were available using the latest equipment that was on the market being custom-made for laboratories. There was working started on testing what effect do PCBs have on living creatures; this is called the toxicity study program. There was a program also started to determine do PCBs degrade out there in the environment, or do they just sit there like pebbles on the beach, what happens to them in the environment. There were

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many programs to find substitute materials for PCBs to be used by our customers. That's all that comes to mind at the moment.

Q Okay. I'm going to concentrate, if you don't mind, Mr. Papageorge, on the programs to determine the toxicity of PCBs; okay?

A Okay.

Q Monsanto didn't have the facilities at that time to do its own testing; is that correct?

A That's correct.

Q So those tests were formed out to another company?

A Yes.

Q What was the company?

A There was a private laboratory at the time called Industrial Bio-Test Laboratories located just outside Chicago.

Q Why did Monsanto choose that laboratory?

A Well, it was the best laboratory available for that kind of work at that time.

Q Had Monsanto, prior to this, ever tested any PCBs in that laboratory?

A No.

Q Was Monsanto aware that in 1967, that laboratory was purchased by Nalco Chemical Company?

A Oh, yes.

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Q Now, what studies were commissioned with IBT at that time?

A Again, sir, I don't propose to say I remember all of them, but I'll try to recall as many as I can.

There were studies conducted --

MR. CARNEY: Your Honor, I would object if we're going beyond the three studies.

THE COURT: I'm not sure whether we are going beyond the three studies.

MR. CARNEY: I'm not sure either. I'm just --

MR. MURRAY: Can we approach the bench, Your Honor?

THE COURT: Yes, you may.

[The following proceedings took place at the bench outside the hearing of the jury:]

MR. MURRAY: Are we not going to be allowed to get into the other studies at all?

THE COURT: Where are you going with this, Mr. Murray?

MR. MURRAY: Your Honor, there was a whole battery of tests that were run at IBT and the whole battery was used in disseminating information to the public.

THE COURT: Keep your voice down. I need to know where you're going with a little bit more specificity in terms of this witness.

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MR. MURRAY: I want to get out what tests were commissioned, what the purpose of those tests were and if, in fact, the results were used and/or disseminated to the public.

MR. CARNEY: Your Honor, as I understand your ruling with regard to Smith was we would limit this IBT stuff to the three rat studies that he testified about. And, you know, I think at this point to open that door when we did not cross-examine Smith as to what the other studies were would be unfair to have him to be able to cross-examine our witness when we were unable to cross-examine their witness.

MR. MURRAY: Smith only worked in the rat place.

THE COURT: Let me just ask a question. Mr. Murray, can you tell me, do you know the studies that you're interested in talking about?

MR. MURRAY: Your Honor, only to the extent that -- I don't have to go into all of them in detail, I guess. What I can do is to indicate -- I want the jury to understand that this was not just this one study, that there was a battery of tests that were commissioned with IBT and that whole battery was used to disseminate information. So, I don't have to go into the details of each study, but the fact that there was a lot more than one done is important.

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MR. CARNEY: My concern isn't that, but I don't want to open the door because I think you made your ruling on this chicken study and the memo that they wanted to get in on that, and you said that was not admissible. And I don't want to open the door to that by -- if he wants to ask a question about were there a battery of tests done and, of those tests, three of them were on rats, that's the extent of that, and I'm not opening any door. I would be comfortable with that. But, otherwise, I would object to anything other than the three rat studies.

THE COURT: Mr. Murray, what I will permit you to do is to go in and ask this witness with regard to studies. I do not want any specific inquiries made of any studies beyond the rat studies with regard to the Aroclor I believe it's 42 and 60. I believe you kept 54 out.

MR. CARNEY: They referred to 54. That was the study that was forged.

THE COURT: That was forged, okay.

MR. CARNEY: As long as they don't mention the forged study, I don't mind the 54. There were all three done and that came out.

THE COURT: There is something with the 54 study, and I'll have to go back to my notes, that came out on

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the 54 studies.

MR. MURRAY: Just the signature was forged.

THE COURT: Fine. Okay, you have the 42 study and the 54 study and the 60 study with the rats. With regard to the other studies, the battery of other studies, I will permit you -- if he knows the name of those studies, then that's fine. If he doesn't know the name of those studies, he will not be able to go beyond that.

MR. MURRAY: Okay, fine. I just want to get the idea out.

MS. RUTTER: And just for the record, this is all subject to Monsanto's objections that have previously been made about the relevancy.

THE COURT: I understand.

[Proceedings were then resumed within the hearing of the jury as follows:]

THE COURT: All right, sir, you may proceed.

Q (By Mr. Murray) Tell the jury what tests were commissioned by Monsanto to IBT at that time, the ones that you remember? You may not remember them all.

A There were three of Monsanto's PCB mixtures that were tested, the types that were referred to by Monsanto as Aroclor 1242, Aroclor 1254, and Aroclor 1260. These materials were tested in what is known as a subchronic test,

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which is a ninety-day test with test animals, rats in this case. And the levels of chemical that's put in the food that these rats were eating was deliberately raised high enough so that effects would be noticed. And one of the primary reasons for such a test is to --

MR. MURRAY: Your Honor, that goes beyond the question.

Q (By Mr. Murray) I just want to know generally what studies were commissioned, Mr. Papageorge.

A Oh, I misunderstood the intent, all right.

There were the subchronic tests, I started to describe, with these three chemicals.

Q Okay.

A The test animals used were rats, dogs and chickens. There were also the lifetime feeding study tests, which are two years for the rat. They were also done on dogs and chickens. I think that covers it pretty well.

Q Okay. The two-year studies that you mentioned, I think you called them lifetime feeding studies?

A Yes, sir.

Q That was the first time that Monsanto ever commissioned a study like that with regard to PCBs; correct?

MR. CARNEY: Objection to the form.

THE COURT: It will be overruled.

THE WITNESS: That is correct.

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Q (By Mr. Murray) This was in 1968?
A No, it would have to be 1969 or so.
Q All right. Roughly some thirty-four years after they began manufacturing them?
A That's true. No different than any other industrial chemical, sir.
Q Now, during the course of these studies, Monsanto had its toxicologist visit the IBT labs; correct?
A Yes, sir.
Q And the purpose -- what was the purpose of that?
A To monitor the activities to see if there are any problems coming up, to get status reports on the results being observed every so many months.
Q So they would actually look at the data that was coming out of the studies while it was coming out?
A Yes, sir.
Q Part of what they were doing, also, was to insure that IBT was sticking to the protocol?
A Well, that's part --
MR. CARNEY: Objection. It will call for speculation.
THE COURT: It will be overruled.
THE WITNESS: That's part of their objective, yes, sir.
Q (By Mr. Murray) The protocol of any toxicological

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test is an important part of the test; correct?

A Certainly.

Q If the protocol isn't followed, then the results may be invalid?

A That's possible, yes.

Q The protocol is something that's developed ahead of time before the actual testing is done; right?

A Yes.

Q And it tells the people that are going to be actually running the test how to do it?

A That's the purpose of the protocol, yes, sir.

Q What amounts to feed, the length of time to feed, and what to do if an animal dies, all those things are included in the protocol; correct?

A That is correct.

Q The tests that were run at IBT were used by Monsanto to give information to the public regarding the toxicity of PCBs; correct?

A I don't know quite how you mean the word "used." The information that Monsanto gained from these tests helped Monsanto understand what effects might be possible with these materials under these conditions, and that information was shared with anybody who was interested in that kind of data.

Q Let's talk about your job during this period of

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time, Mr. Papageorge. Part of your job was to go to government agencies, both at their request and at your request, to --

MR. CARNEY: Ah -- I'm sorry, I thought you were finished.

Q (By Mr. Murray) -- to talk about PCBs?

MR. CARNEY: Your Honor, could we approach?

THE COURT: Yes, you may.

[The following proceedings took place at the bench outside the hearing of the jury:]

MS. RUTTER: Judge, there's a doctrine called the Noerr-Pennington Doctrine. Monsanto has a constitutional right to petition the government and talk to the government and there are cases holding you cannot premise a cause of action -- there are cases holding that you cannot premise a cause of action on Monsanto having talked to the government about PCB regulation. That's where he is going. I have a memo prepared on this.

MR. MURRAY: This is amazing, Your Honor. Here I am in the middle of a cross-examination of a witness. It's not like they didn't know this was coming. And they first bring this up in the middle of cross-examination. How do I respond to it?

I would just say this one thing, that is, I don't

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care what the constitutional right is to talk to the government. They don't have a constitutional right to defraud the government.

MR. CARNEY: Well, we agree on that.

THE COURT: Where are you going, Mr. Murray? I'm not sure I understand exactly where you're going with your examination of this witness.

MR. MURRAY: I have to get out the fact that they used these test results extensively both to delay government action, to prevent government action, and to just convince the general public that there was nothing wrong with the PCBs.

MR. CARNEY: Judge, what they're trying to do, and this is the poison I think that's already gotten into the case with this IBT stuff, they have not connected up Monsanto's knowledge to the IBT. We heard Phil Smith's testimony, and now they're going to try to take that testimony and say that we defrauded the government by submitting a phoney test to the government and other people. And Monsanto didn't do that; there's not a scintilla of evidence that they did, but the inference is there. When you follow Phil Smith's testimony that we conveyed these tests to people that are interested, I think this is highly prejudicial. It all occurred long after Dr. Bechtold ceased his employ and,

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furthermore, I think that Noerr-Pennington Doctrine says we have this right to do this and that this would impinge on that right as set out in that memo.

MR. MURRAY: If I could just respond, Your Honor. I just established with this witness that Monsanto toxicologists visited the IBT labs during the study, that they looked at the raw data. And the testimony of Phil Smith and the other documents clearly indicate that the raw data, if you looked at the raw data, you would know that something was screwy here.

MR. CARNEY: Judge --

THE COURT: Let me just ask a question. Let me just ask a very simple question. Are you attempting to get this witness to testify that the data used by Monsanto that came from IBT was meant to defraud the government?

MR. MURRAY: I was not going to ask if it was meant to defraud the government. I think that's certainly a fair implication from what was being done, from all the evidence that's been produced so far. But what I do want to -- and if I can't argue it in fraud, whether that claim is here or thrown out, ultimately it's still relative to negligence and to the way they've treated PCBs from the beginning all the way to the end.

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MS. RUTTER: The Noerr-Pennington Doctrine prohibits you from premising any cause of action, fraud, negligence, or whatever.

THE COURT: Are you familiar with the Noerr-Pennington?

MR. MURRAY: No, I am not, Your Honor. But the matter of fact is it was disseminated to the public as well.

THE COURT: All right.

MR. MURRAY: This is not a new issue, Your Honor. This has been in every trial.

MR. CARNEY: And in every trial, we've mentioned the Noerr-Pennington Doctrine.

THE COURT: All right. I am not familiar with the Noerr-Pennington Doctrine and I'm going to need to take a look at the Noerr-Pennington Doctrine. I suspect that this witness is going to be on the stand -- how long do you expect?

MR. MURRAY: I personally don't have a whole lot more with him, but everything I do have with him left is going to relate to what they knew and what they disseminated to the government and to the public.

THE COURT: All right. I think the public is a little easier to deal with. If you move to the public area, maybe we can reach a break and that will give you

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the opportunity to get some information on this Noerr-Pennington Doctrine as it relates to the government.

And that's the issue, as it relates to the government, that you are telling me; is that correct?

MS. RUTTER: Yes.

THE COURT: Can you adjust your questions so that --

MR. MURRAY: I can, Your Honor, but I'll have to come back when you've made a ruling on this and ask him with regard to the government.

THE COURT: If I permit you to do it. And even if you get through your direct at this time, then leave will be granted to permit you to get into it on your redirect. But I just want an opportunity to take a look at this Noerr-Pennington Doctrine. I wish you would have told me this morning that this was coming up. I would have had an opportunity to have at least read thoroughly your memorandum. I would have had an opportunity --

MR. MURRAY: And I would have had an opportunity to do it.

MS. RUTTER: I'm sorry, I had forgotten in dealing with the documents.

THE COURT: Why don't you take the document. Assuming that we at least get to the cross, you'll have

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an opportunity to read it during cross-examination by Mr. Carney. And, by the break, I'll have a chance to read it. So, if you'll just move away from the government area and deal with the public or whatever else you're going to deal with, I'd certainly appreciate it. It will give me an opportunity to read the document.

[Proceedings were then resumed within the hearing of the jury as follows:]

Q (By Mr. Murray) Mr. Papageorge, the studies that we've been discussing were used by Monsanto to disseminate information to the public regarding PCBs; correct?

A It was -- I have a problem with "the public." I don't know that the man on the street was aware of this information, but that part of the public that was interested in this kind of work did get that information.

Q Customers?

A Customers.

Q Whoever asked you was shown these studies with regard to the toxicity of PCBs?

A There were also cases where they didn't ask for it but we volunteered it.

Q They were used extensively, were they not?

A I don't know how you use the word "extensively." As far and wide as we could.

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Q Okay, that's good. As far and wide as you could?
A Yeah.
Q Let's go back to your specific job. Part of your job was to get this information out to the public; correct?
A Yes, sir.
Q You would call organizations and request an opportunity to speak with them; wouldn't you?
A Yes, sir. I personally would do that.
Q And at least fifty percent of the time that you would devote to speaking to groups and organizations, it was done at your request as opposed to theirs; correct?
A Oh, I never made a measure of that. I don't know.
Q Is that estimate far off?
A Well, it can't be too far off.
Q Okay. In fact, you began disseminating information from these studies before they were even complete; didn't you?
A True.
Q Now, in addition to your two-year rat testing that was going on during this period of time, there was a Dr. Renate Kimbrough who was also doing rat testing; correct?
A Can you help me with a period of time?
Q Early '70s.
A Early '70s, yes, she did.
Q Okay. And Monsanto learned that Dr. Kimbrough had

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found that when rats were fed one hundred parts per million of Aroclor 1254 over a two-year period, that they developed liver cancer; is that correct?

A No, sir. The Aroclor, as I recall, was 1260 that she used.

Q I apologize. Whatever number it was, it developed liver cancer; right?

A Her studies showed that there were -- I don't believe that she used the word "liver cancer." As I recall, her pathologist defined his observation as precancerous lesions or some such word. I'm not a toxicologist, so I can't quote the exact terminology. But there were precancerous indications.

Q Whatever he called them, Monsanto wanted to verify those results; is that correct?

A That is correct.

Q And Monsanto hired some IBT pathologists to go with him to look at the slides from Dr. Kimbrough's study?

A Yes.

Q That was Doctors Gordon and Richter?

A Yes, sir.

Q Those two individuals were actually consultants of IBT; is that correct? They weren't direct employees?

A Well, as I understood it, Dr. Richter was a consulting pathologist. Dr. Gordon was an employee of

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Industrial Bio-Test Laboratories.

Q Monsanto wanted an independent person to go and verify the results that Dr. Kimbrough said she found?

A That's true.

Q Dr. Kimbrough invited the IBT pathologist, as well as Dr. Levinskas, correct, to go view her slides?

A Yes, sir.

Q And they actually did that?

A Yes, sir.

Q Is it not true, Mr. Papageorge, that Doctors Gordon and Richter viewed the slides and agreed that the evidence showed that there was carcinoma in those livers?

A They agreed with Dr. Kimbrough's pathologist using the then new guidelines regarding how their observations were defined. They agreed with her pathologist.

Q They all defined them as cancer; didn't they?

A The word "cancer" was there but it was more an adjective than a noun. So, it was a cancer something. I am beyond my expertise here.

Q Let me show you a document, Mr. Papageorge, that I've marked as Plaintiffs' Exhibit 16.

THE COURT: Counsel, would you be kind enough to make sure that defense attorney has had an opportunity to look at the document before you give it to the witness?

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[Item shown to defense counsel.]

THE COURT: All right, counsel, you may proceed.

THE WITNESS: I have read the document.

Q (By Mr. Murray) You've seen that document before; haven't you?

A I don't recall seeing this at all.

Q You've never seen this document?

A No, sir.

Q It's addressed to Dr. Levinskas at Monsanto; right?

A Right, it is.

Q Dr. Levinskas made the trip with Doctors Gordon and Richter?

A Yes, he did.

Q And this is a trip report from Doctors Gordon and Richter talking about what they found when they got there?

A Yes.

Q Let me read -- this is page two of the document, a trip report from Dr. Richter dated February the 3rd, 1975, addressed to Dr. Donovan Gordon at IBT; correct?

A [Nodded.]

Q It says, "I wish to summarize my observations of the lesions seen in Dr. Kimbrough's study of Aroclor 1260 and the comparison of diagnoses with Dr. Kimbrough and Dr. Squire." Dr. Squire was the pathologist who originally

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reviewed Dr. Kimbrough's study; correct?

A That's correct.

Q "The criteria that I used for diagnosis of the lesions are similar to what they used. My evaluation tends to be a little more conservative than theirs. For example, they would call some of my hepatomas carcinoma but with some question."

What is carcinoma?

A I really don't know, sir. It has something to do with a cancerous condition or precancerous.

Q Mr. Papageorge, all of your work with PCBs and you don't know what the word "carcinoma" means?

A No, sir. I'm not a medical person. I'm not a toxicologist. All I know is it's not a good result.

Q Let me ask you this: When you were first put into that position, you sat down with all of Monsanto's toxicologists; didn't you? Particularly Elmer Wheeler?

A Yes, sir.

Q And he went through everything about PCBs; didn't he?

A Well, most of it. I don't know if he covered everything.

Q And after the -- Dr. Kimbrough's study came out and IBT's study came out, there was a lot of talk about cancer; wasn't there?

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A There were many discussions regarding is it or is it not cancer-causing material, and that was the thrust of many of these studies to determine exactly what do PCBs have to do with cancers.

Q And during all of this time, Mr. Papageorge, and throughout all of those discussions, nobody ever told you what a carcinoma was?

A Sir, I was privileged to look in a microscope at stain slides and samples and I was pointed out, "There's a carcinoma." That was their way of telling me. To me, it looked like a dark red spot on a pink background.

Q I certainly can understand that. But then nobody ever told you that carcinoma was cancer?

A They told me it was a -- I understood it was a precursor to a real cancer situation. That's my understanding.

Q Let me continue reading with Dr. Richter's report.

"Therefore, if we both read the same slides, there might be a little variation in numbers of lesions in the different categories, but no major difference. Dr. Squire and Dr. Kimbrough are using a new and revised terminology for the categories and list them as follows:"

And then he says what his terminology would be and what theirs is?

A I see that.

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Q It says, "My terminology (classical use); Dr. Squire's (revised terminology)." Is that the new thing that you were talking about?

A Yes, sir.

Q Under "My terminology," he says "focal hypertrophy," and Dr. Squire calls it "cellular alteration"; correct? Am I reading that correctly?

A You're reading it, sir, yes, sir.

Q "Nodular hyperplasia hepatoma," "nodular neoplasia or neoplastic nodule," those are the differences in that terminology; correct?

A Yes, sir.

Q Then it comes down to "My terminology, carcinoma," Dr. Squire's terminology, "carcinoma." They were exactly the same; weren't they?

A Yes, they are.

Q There wasn't any new and revised terminology with regard to the cancer; was there?

A Not from Dr. Richter's report here.

Q And then Dr. Richter goes on:

"However, the lesions in Dr. Kimbrough's study were more severe than those in the Bio-Test study. The lesions that she and Dr. Squire are calling carcinoma are also carcinomas by my criteria."

Is that what he says there?

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A He does.

Q "I would conclude from an examination of their material that Dr. Kimbrough's study demonstrated carcinogenicity."

Do you know what that term means?

A Yes, sir.

Q What is that?

A It causes cancer.

Q Okay. So this wasn't some precancerous thing that happened?

A No. Carcinogenicity is a different term than carcinoma. Carcinoma must be a physical condition that the expert can better define than I can.

Q Okay. And is it your understanding, Mr. Papageorge, that Dr. Gordon, who also went on that trip and looked at the slides, agreed with Dr. Richter?

A That's my understanding.

Q Now, after Monsanto had these two independent pathologists go and look at these slides to determine whether they were cancer or not and got the answer that they were, what did you do?

A Because the two studies, one conducted by Dr. Kimbrough and one conducted by IBT, had used the same kind of test material, that Aroclor 1260 from the same lot number, and the pathologist saw two different effects, it

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was decided to seek a third opinion. And that opinion was asked of the Eppley Institute, and Dr. Pour, representing the Eppley Institute, also made a study.

Q So, in other words, after the two independent pathologists that Monsanto hired to go look at those slides decided that they were cancer, Monsanto hired somebody else?

A You called them two independent -- they're independent of Monsanto, you mean?

Q Yeah.

A But they were involved with the IBT study, so they were not totally divorced from the Monsanto-sponsored study.

Q Sure. They had even more of a reason why they wanted Dr. Kimbrough's stuff to be non-cancerous; didn't they? If Dr. Kimbrough's study and their study showed the same thing, then it would confirm the results; wouldn't it?

A Well, certainly, if it showed the same thing, it would be confirmatory, yes.

Q So if they showed different results, it's going to raise questions about theirs; isn't it?

A It's going to raise questions on both tests, yes.

Q Right. So they had even more of a reason to hope that Dr. Kimbrough really didn't find cancer?

A Well, sir --

MR. CARNEY: Objection, Your Honor.

THE WITNESS: You're asking me to speculate.

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THE COURT: Excuse me. There's an objection. Whenever there's an objection, you just need to stop.

Objection will be sustained.

Q (By Mr. Murray) In any event, you hired somebody else to go look at it?

A To look at both studies.

Q And this was Dr. Pour from the Eppley Institute?

A Yes, sir.

Q Dr. Pour looked at Dr. Kimbrough's slides and looked at IBT's slides?

A Yes, sir.

Q And didn't find cancer in either one of them?

A That is correct.

Q You used Dr. Pour's opinion in talking to the public and in talking to groups about Dr. Kimbrough's study; didn't you?

A Along with Dr. Kimbrough's and the IBT studies.

Q Every time Dr. Kimbrough's studies were mentioned, you would bring in the fact that Dr. Pour looked at her slides and decided there wasn't any cancer?

A When you say "every time her study was mentioned," I don't understand it.

Q When you were talking to a group and somebody said, "Hey, what about Dr. Kimbrough's study," you told them about Dr. Pour; didn't you?

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A I don't ever recall that happening, sir. We -- Monsanto asked for an audience and we shared these three reports with members of the federal government agencies, and that's the only time I personally was involved with a discussion in which the studies were compared with each other. I don't recall any other audience that you are describing.

MR. CARNEY: Your Honor, just based on the bench conference, I just want to preserve the same objection.

THE COURT: Counsel, you may have a continuing objection.

Q (By Mr. Murray) Mr. Papageorge, are you telling me and this jury that the only time in your presence that Dr. Kimbrough's study was ever mentioned was one time?

A No, sir. There were, gosh, there were about a half a dozen groups that we met with to discuss this topic.

Q And every time you met with those groups, you would use Dr. Pour's opinion to show that Dr. Kimbrough might have been mistaken about what she found?

A We showed Dr. Pour's analysis, as well as the IBT analysis and Dr. Kimbrough's analysis, and let the audience decide what to believe.

Q When you say "IBT analysis," you're talking about the IBT studies?

A No, no, no, no. This is the study by Richter and

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Gordon representing IBT, who were represented at these meetings by their boss, Dr. Calandra. So, Dr. Calandra, when he spoke of Dr. Richter's work and Dr. Gordon's work, was speaking about a special assignment made to IBT to study slides from the two studies and give an opinion. That was separate from the actual test work that was done on the animals.

Q You are telling me that when Dr. Calandra went to a group at your request, that he told that group that Drs. Gordon and Richter looked at Kimbrough's slides and said that they showed cancer?

A Yes.

MR. MURRAY: I apologize, Your Honor. I didn't have this place marked.

THE COURT: Ladies and gentlemen, why don't you stand and stretch your legs at this time.

And, Mr. Papageorge, you may stand and stretch your legs if you'd like. Sir, would you like some water?

THE WITNESS: I have some, thank you.

THE COURT: All right, Mr. Murray, let's move forward.

Q (By Mr. Murray) Let me show you, again, going back to your deposition, Mr. Papageorge, I'd like for you to look at it and review pages 361 and 362.

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THE COURT: From lines number, counsel?

Q (By Mr. Murray) Is this the 1987 depo?

THE COURT: What line, please.

MR. MURRAY: Both pages, Your Honor.

MR. CARNEY: I'm sorry, what pages?

MR. MURRAY: Pages 361 and 362.

Q (By Mr. Murray) Have you had a chance to look at those?

A I have.

Q In that part of your testimony, you were discussing the fact that Dr. Calandra would go to the government agencies and talk about the differences between Kimbrough and IBT?

A It did.

Q Beginning on line twenty-one, counsel, on page 361, the question was asked:

"Q Were you present at the meetings where Dr. Calandra presented the Industrial Bio-Test view on the Renate Kimbrough study?"

MR. CARNEY: What line?

MR. MURRAY: Beginning on line twenty-one, page 361.

Q (By Mr. Murray) "Q Were you present at the meetings where Dr. Calandra presented the Industrial Bio-Test view on the Renate Kimbrough study?

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"A Yes.

"Q But you don't recall whether Dr. Calandra indicated it was his own work as a pathologist that he was reporting on or the work of others?

"A I recall it's the work of several. I don't know if Dr. Calandra is one of the pathologists involved.

"Q I see. Did he report that all of those several pathologists were in agreement that the slides did not show anything that we as laymen would call cancer?

"A That is correct."

Do you remember giving that testimony?

A I do, sir. It's, again, a matter of my understanding of the word "cancer" and "carcinoma."

Q What you're saying is that at meetings that you attended with Dr. Calandra, Dr. Calandra would go and tell the meeting that there wasn't any finding of cancer?

A I don't recall the word "cancer" being part of his summation.

Q Let me show you a document that is marked as Plaintiffs' Exhibit Number 164. It's a multi-page document and I'll ask you to look at each page.

MR. CARNEY: Your Honor, could we approach on this?

THE COURT: Yes, you may.

[The following proceedings took place at the bench

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outside the hearing of the jury:]

MR. CARNEY: Your Honor, this document I object to on two principal grounds. Number one, it does have information in here that concerns the Noerr-Pennington Doctrine about presenting things to the government, and I assume he's not going to cover that at this point. But the second thing is that this document, I think, refers to, that the Eppley Institute didn't want to have their name associated with Dr. Pour. Let me just read it.

The last paragraph says: "Dr. Pour had agreed that we could present his findings to scientists in the regulatory agencies, and he is willing to defend is judgment in scientific circles. His reports have been made available to the regulatory agencies. The Department of Medicine and Environmental Health feels that this is the proper and best use that can be made of his studies. Since we do not want to compromise his position, and we do not want to jeopardize our future relationship with him or the Eppley Institute, the proposed news release should be destroyed."

And then the paragraph before that talks about the Eppley Institute do not want to be embroiled in a public controversy. They don't want the institute's name to be bandied about in the press. I think this

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kind of thing is highly prejudicial, why the Eppley Institute didn't want to be embroiled in a public controversy. It would be speculative and, certainly, what Mr. Murray would like to do is to present the implication that the Eppley Institute didn't want to be embroiled in a public controversy because they didn't stand behind their own employee. And I think that's an improper inference that he will obviously draw upon in his closing argument, and it's highly prejudicial.

And I think for that reason, since it's pure and total unadulterated speculation as to why they didn't want to be involved in a public controversy, and there's a thousand different reasons why, I think it would be prejudicial and have no probative value in terms of this case. And we're taking about five years after Dr. Bechtold's -- more than five years after Dr. Bechtold's last exposure. This could not relate in any way to any of the issues in this case.

THE COURT: Mr. Murray?

MR. MURRAY: Your Honor, I'm going to do more than imply. I'm going to try to get him to admit, just as we all know, that any person who publishes an article, the institute in which they publish it -- with which they're associated loves to have that happen. Universities, institutes, the more they get out in the

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press, the more reputation they have. And the only possible reason that they didn't want to get involved in this is because they knew that Dr. Pour's judgment couldn't be substantiated, couldn't withstand scientific scrutiny.

THE COURT: First, with regard to the Noerr-Pennington Doctrine, the witness offered without a specific question that he had shared reports with the federal government. And that came -- I don't know whether you heard him say that, but he did indicate.

MR. CARNEY: That's when I objected. I did.

THE COURT: He said that without a specific question, so he offered that up without objection.

MR. CARNEY: No, Your Honor, I think, Your Honor, it was in response to a question in an answer.

THE COURT: It was response in an answer without the question being specific as it relates to the federal government. I am going to permit the document. I'm going to permit the document as is. If he wishes to explain it away, then that's fine.

MR. CARNEY: This document?

THE COURT: Yes.

[Proceedings were then resumed within the hearing of the jury as follows:]

THE COURT: All right, Mr. Murray.

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Q (By Mr. Murray) Have you had a chance to review that document yet, Mr. Papageorge?

A I have.

Q This document relates to a press release that Monsanto drafted in response to Dr. Pour's opinion; correct?

A Yes.

Q The intent -- I guess, you know, you didn't write this; did you?

A I did not.

Q It was written by Mr. Bishop, who was in the public relations department?

A Yes, sir.

Q You didn't ask him to write it?

A No, sir.

Q Do you know who did?

A No.

Q The press release --

MR. CARNEY: Could we get on the record the pages of the document so the jury will know.

Q (By Mr. Murray) November 17, 1975; correct?

A Correct.

Q The press release is actually dated November 19th, and I guess because this is a draft, it was intended that it would go out on that date?

A That's the purpose of the advance date.

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Q It's actually three pages; right? The press release?

A I didn't count them.

Q Let me read to the jury this press release.

MR. CARNEY: Your Honor, I'm going to object to the press release. It's clearly a draft and there's no foundation it was ever issued in that form.

THE COURT: It will be overruled.

Q (By Mr. Murray) "Chicago, November 19th.

"Monsanto Company today announced that a newly issued scientific report, commissioned by the St. Louis-based company, takes issue with the presence of the malignant liver tumors in the tissues of experimental rats fed polychlorinated biphenyl dielectric fluid. The conclusion that has been previously reached and widely reported by Dr. Renate Kimbrough of the Center for Disease Control of the U.S. Public" --

THE COURT: Excuse me, counsel, where are you reading from?

MR. MURRAY: Your Honor, it's difficult for me to read because -- actually, I'm reading on page 057196 of the document.

THE COURT: Date stamped 057196?

MR. MURRAY: Right. Let me, rather than try and read from this one, Your Honor --

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THE COURT: Go ahead and read it.

MR. MURRAY: I have one that doesn't have all the writing on it. Let me read that one.

Q (By Mr. Murray) Let me just ask you, Doctor, this is Defendants'(sic) Exhibit Number 165? Same memo on the front of it; correct?

A Yes.

Q This has a memo just as a cover sheet to the news release; correct?

A It is.

Q All right. And it indicates that this is the second draft of the news release?

A Yes.

Q Okay. The draft that you have in your hand has some markouts and words inserted and that kind of thing; right?

A I see that, yes, sir.

Q Let me read from this one. Again, this is Plaintiffs' Exhibit Number 165.

"Monsanto Company today announced that a newly completed scientific report, commissioned by the St. Louis-based company, does not confirm the presence of malignant liver tumors in experimental rats fed a commercial polychlorinated biphenyl mixture, a conclusion that had been previously reached and widely reported by Dr. Renate

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Kimbrough of the Center for Disease Control of the U.S. Public Health Service in Atlanta.

"The Monsanto-sponsored report, a re-evaluation of Dr. Kimbrough's work, is titled, 'Histopathological Re-evaluation of Tissues from Sherman Rats Fed Aroclor 1260,' and is authored by Dr. Peter Pour, a pathologist with the renowned Eppley Institute for Research in Cancer of the University of Nebraska Medical Center at Omaha. Aroclor is a Monsanto trademark for a class of chlorinated hydrocarbon industrial chemicals it manufactures.

"In her study, Dr. Kimbrough reported that when Sherman strain female rats were fed 100 parts per million of PCB (Aroclor 1260) for about 21 months, 170 of the 184 experimental animals developed neoplastic lesions (precursors of malignant tumors). She further identified 26 of these lesions as hepatocellular carcinomas (malignant liver tumors)."

Now, do we know what carcinomas mean?

A I'm getting educated.

Q Okay.

"During his re-evaluation, Dr. Pour saw the same alterations but identified them as being hyperplastic or non-tumorous lesions, further pointing out that it was his strong impression that many of the detectable alterations were a degenerative and reparative rather than a neoplastic

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process. Dr. Pour's re-evaluation is consistent with conclusions drawn from Monsanto's own PCB feeding studies, which have never produced a carcinogenic response in experimental animals."

Those were the IBT studies they're talking about there?

A Yes, sir.

Q "In his discussion, Dr. Pour reported that he observed twenty cases of abnormal lesions, which presented such structural criteria as to be considered possible precursors to tumors, although a most significant criteria for malignancy, namely invasiveness, was missing, and the sign of ongoing toxic, degenerative and regenerative processes in the rest of the tissue was evident. 'At present, the statement that these lesions may have metastasized (infiltrated adjacent tissue) if the treatment had been continued is as much as unreliable as the possibility that they might have been regressed if the animal would have been kept longer or for life,' he stated.

"'In summary,' the Eppley Institute pathologist reported, 'It is difficult at present to conclude whether or not some of the examined lesions represent a malignant lesion, because of the lack of invasion and metastases. In the case of such organs as the liver, with its marked tendency toward regeneration, it is, in my opinion, difficult and sometimes impossible to distinguish between

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regeneration, hyperplasia and neoplasia, particularly when the tissue is continuously exposed to a toxic substance.'"

"Quoting further from Dr. Pour's report, he wrote, 'In this context, Dr. Kimbrough's study seems of particular interest, in that polychlorinated compounds may be retained in the body, even in higher concentrations for several months after feeding has been stopped. This finding may explain the continuing degenerative and regenerative processes in the livers of most experimental rats, even two months after Aroclor was removed from the diet.

"'One should also bear in mind that some animal strains may react more specifically to a compound because of common endogenous diseases, as in the case of the Sherman rats used in this experiment, which tend toward spontaneous liver lesions.

"'In my opinion,' he concluded, 'many of the lesions induced were of a degenerative nature and, without further studies, the induced liver lesions could not be definitely designated as neoplasia.'

"Notice to Editors: Copies of Dr. Pour's report are available on request, in writing, from Public Relations Department, Monsanto Industrial Chemicals Co.," and then it gives the address. Correct?

A Correct.

Q Did I read all of that correctly?

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A I believe you did.

Q The reason why I read all of this is because I wanted to ask you whether or not there is any mention in this press release regarding Dr. Kimbrough's study of that fact that Drs. Gordon and Richter reviewed her slides and agreed with her and with Dr. Squire's that there was cancer shown in those slides?

A There is no mention of that.

Q This draft never went out; is that correct?

A That is correct.

Q Why not?

A Well, the Eppley Institute, as represented by its director and Dr. Pour, did not want to get embroiled in a scientific matter being discussed in the public press. They wanted to keep this within the scientific community and were very willing to participate in that kind of discussion, but they were just very upset that such an item of seriousness would be sent out to the public newspapers and the public press.

Q Let me ask you something, Mr. Papageorge: During your years as the environmental director for Monsanto, you became familiar, did you not, with the toxicological literature and the studies that were being done at that time?

A Of the PCBs?

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Q Yes, sir.

A I became familiar with a bit of it. I don't have any way of knowing whether I knew all there was to know.

Q Well, let me ask you --

A I was still a layman talking to the professionals and trying to learn.

Q Let me ask you this: You received a master's in chemical engineering; right?

A Yes, sir.

Q In the field of chemical engineering, when something has been well established and isn't controverted, there's no reason the public -- to write a paper on it?

A That's generally true, yes, sir.

Q And even if you did write the paper, it isn't likely to be published; is it?

A Yes, that's true.

Q It's only on controverted points where scientific papers are published; right?

A Not necessarily controversial, sir. New information is more likely to be published.

Q Well, this was certainly new information; wasn't it?

A I have a hard time in my own mind understanding a new piece of information found by an investigator, or an opinion expressed by someone on other people's work. I

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don't know how that all fits in to this publication of opinions.

Q Well, let me ask you this: Dr. Kimbrough's study was published in a peer review journal; was it not?

A Yes, it was.

Q And Monsanto came into this information from Dr. Pour, which would have controverted her statements in that article and would have sustained Monsanto's position regarding the carcinogenicity of PCBs; correct?

A Yes. The reason I hesitate, sir, is I don't recall when Dr. Kimbrough's report was published in the scientific literature. The date escapes me.

Q Whenever it was published, Mr. Papageorge, you still had Dr. Pour's report there; didn't you?

A Yes, sir.

Q All right. Now, it would have been important to Monsanto to have something else in the scientific literature which says Dr. Kimbrough is wrong?

A I -- if the data indicated that, then that's the proper conclusion. Yes, that would have been helpful.

Q Absolutely. And, according to Monsanto, Dr. Pour's report did that?

A Well, Dr. Pour's report did not involve a new independent study. It involved an opinion expressed by an individual of observations made of slides from another

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study.

Q It happens all the time in the scientific literature, Mr. Papageorge -- let me finish -- it happens all the time in scientific literature where something is published and it's controverted, somebody else will come right back behind them and publish an article saying that he's wrong?

A But that contra argument is based on new studies starting from scratch, coming up with a different answer.

Q You know that's not true; don't you?

A I wouldn't say it if I didn't think it was true, sir.

Q There's no such thing as reviews in the scientific literature where people come in and review the work done by others?

A Not in the peer -- you're talking about peer review of articles?

Q Yes, sir, I am.

A I personally don't recall a highly respected scientific journal which just published a review by an individual or several individuals. I just don't remember that. There are what I'm going to call scientific magazines that do this kind of thing.

Q Well, let me ask you this, Mr. Papageorge: When somebody publishes a study that has a wrong conclusion in it

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and they publish that in a well respected peer reviewed journal, how does one rebut it?

MR. CARNEY: Objection, Your Honor.

THE COURT: The objection will be sustained. Counsel, I think the point is made. Let's move on.

Q (By Mr. Murray) Let me just cut through all of this. Mr. Papageorge, was Dr. Pour's report ever published?

A No.

Q Are you aware, Mr. Papageorge, of any document that Monsanto put out for public consumption which talked about the fact that Drs. Gordon and Richter believed that Dr. Kimbrough's slides showed cancer?

A Yes, I am.

Q What is it?

A As best I recall, when we visited the governmental representatives in November of '75, we left with them copies of the Richter/Gordon summary as put together by their boss, Dr. Calandra, and we also left with them a summary of Dr. Pour, a copy of Dr. Pour's report, and we handed them out to the audience before we started our discussion.

Q Were those the same meetings where Dr. Calandra went to and testified that, in IBT's opinion, none of these things showed cancer?

A Well, I don't recall Dr. Calandra saying that because I vividly recall that there was agreement that Dr.

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Kimbrough's slides did show an effect that was not noticed in the IBT slides. So, there was a difference. This is why Dr. Pour was called in, to try to resolve the difference between the two studies.

Q I don't need to read you your deposition again; do I?

A I saw the deposition and I frankly am puzzled. I don't recall it the way the deposition reads.

Q I believe I'm finished, Doctor -- I mean, Mr. Papageorge. Let me just go through my notes thus far. I'm sorry, I'm not finished. Let me show you a document I've marked as Plaintiffs' Exhibit 375.

MS. RUTTER: What's that document, please?

MR. MURRAY: Three seventy-five.

MR. CARNEY: Just hold up one second while we get it.

MR. MURRAY: I'm sorry. No, I'll just get it.

Q (By Mr. Murray) It's a letter address to you from a Mr. Dan Albert. Could you not --

MR. CARNEY: Could you hold up just until I have a chance to look at it?

Your Honor, I would make an objection to this on the ground that it's five years after, almost five years after Dr. Bechtold last worked at --

MR. MURRAY: May we approach the bench, Your

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Honor?

THE COURT: Yes, you may.

MR. CARNEY: -- Westinghouse.

[The following proceedings took place at the bench outside the hearing of the jury:]

MR. MURRAY: Your Honor, Mr. Carney has made that objection constantly throughout this trial at the bench, and the only reason to make such an objection in front of the jury as he did is to try to get argument to them, and I object to it. And I would ask for an instruction to Mr. Carney that, if he wants to continue to make the objection which has already been made continuing --

THE COURT: Keep your voice down.

MR. MURRAY: -- that's already been made continuing, that he make those objections at the bench.

MR. CARNEY: Judge, the reason that I made that objection was that I'm trying to avoid going to the bench. You asked us to try to avoid going to the bench. I wanted to make my objection so we could avoid this conference.

MR. MURRAY: The objection is continuing.

MR. CARNEY: That's the only reason I did that. And the other thing is, what we're taking about here is warnings to Westinghouse. This is five years after the

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fact. It could have no relevance to any issue in this lawsuit, and they've already injected a ton of evidence over our objection on this environmental issue and on IBT that I don't think has any probative value in this case and it's highly prejudicial. And now we're going further in talking about actual communication after, and we've been careful to limit the warnings to Westinghouse to the period of time that Dr. Bechtold was in the case.

MR. MURRAY: Let me just say what I'm preparing to do with this document, Your Honor. There were answers written to those questions and those answers were very detailed. The cover letter that went with the answers says, "Please emphasize to your employees that there have been forty years of experience with no human health effects." In addition to that cover letter, Mr. Papageorge requested that an employee from his Atlanta plant hand deliver these answers to Westinghouse and emphasize that to them.

THE COURT: I'm looking for the forty years.

MR. MURRAY: That's not on this. That's what I'm saying. This is preliminary. These are the questions. I'm going to introduce the answers and the cover letter and then question him about his instructions.

THE COURT: Let me see your answer and your cover

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letter. Plaintiffs' 309, counsel?

MR. CARNEY: Three-o-nine.

THE COURT: All right. This is what we're going to do. I am not going to let the letters in. I will let you get into whether he's ever indicated there has been forty years of usage of PCB without any human problems. You may inquire with regard to that matter, and you may only use the letter -- you may only use this letter, 309, if he, in fact, denies that he ever said it.

MR. CARNEY: Keep in mind, Judge, what Bill Papageorge is talking about is forty years of Monsanto experience where there's no human harm. We're not talking about customers.

THE COURT: You can clarify it. If it is not clarified, you can clarify that on cross-examination.

MR. MURRAY: That's what he's going to say, Judge, and that's why it's important to get the letter in. You see, he's going to come back --

THE COURT: Counsel, what I've said is, you use that letter only.

[Proceedings were then resumed within the hearing of the jury as follows:]

Q (By Mr. Murray) Mr. Papageorge --

THE COURT: All right, sir, you may proceed.

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Q (By Mr. Murray) In answering questions from the customers and the public, have you ever told anyone that there has been forty years of experience in which no human harm has resulted?

A Certainly, I mentioned the almost forty years of use, but I believe I tried to include in that comment that, when properly handled, there was no harm.

Q Let me ask you more specifically --

A Yes.

Q Have you ever said in correspondence, "I strongly recommend that the prospective gain from over forty years of experience in which no human harm has resulted be emphasized"?

A I probably did.

MR. MURRAY: That's all I have, Your Honor.

THE COURT: Ladies and gentlemen, this is a good breaking point. We are going to take our morning break. We are going to be in recess until 11:15.

Ladies and gentlemen, justice requires that you not make up your mind about the case until all the evidence has been seen and heard. You are not to discuss this evidence among yourselves, nor are you to permit anyone to discuss the case in your presence.

Mr. Papageorge, you have to return at 11:15. We will be in recess.

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[At this time, a recess was taken.]

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[Subsequent to the recess, the following proceedings were conducted in the courtroom within the presence of the jury:]

MR. MURRAY: Your Honor, I just have a few more questions.

THE COURT: All right, that's fine. I will permit it.

DIRECT EXAMINATION (Continued)

BY MR. MURRAY:

Q (By Mr. Murray) Mr. Papageorge, right before we broke, you indicated that Monsanto would provide those reports from Drs. Gordon and Richter, and I asked you if you ever had anything in writing. You said, "Yeah, we would take those reports from Gordon and Richter and give them to people at meetings"?

A I didn't mean to mislead you, sir. We gave copies of the summary of Drs. Gordon and Richter prepared by Dr. Calandra, their supervisor, to the groups that we met with by appointment in Washington in early November 1975.

Q A summary prepared by Dr. Calandra?

A Yes, sir.

Q You actually never saw the reports; did you?

A The reports you showed me earlier?

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Q Right.

A I never saw that copy. I saw Dr. Calandra's.

Q Without having seen the actual trip report, you don't even know if Dr. Calandra's summary was accurate; do you?

A I have no way to determine accuracy on any of those reports, no.

MR. MURRAY: Thank you. That's all I have.

THE COURT: All right, Mr. Carney, cross-examination.

By the way, Mr. Murray, that was four questions.

MR. MURRAY: A lawyer is entitled to that, Your Honor.

THE COURT: All right.

CROSS-EXAMINATION

BY MR. CARNEY:

Q Some of your background was covered. I don't want to repeat it. I don't remember if you gave your age.

A I'm approaching seventy-two.

Q Could you briefly tell me just a little bit about your family background, where you grew up?

A Well, I'm a native St. Louisan, grew up in the near South Side, what I'm going to describe as the Soulard Market, Lafayette Park neighborhood, went to the Seigal Elementary School on Allen Avenue, McKinley High School on

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Russell. Then I attended Washington University and still stayed in town.

Q Okay. And you've lived most of your life in St. Louis except for you were in the service down in Anniston?

A That is correct.

Q And you mentioned your jobs after graduation where you got your degree. Did you have other jobs before that?

A Not in the same profession. I had odd jobs. I worked my way through school, grocery store kind of things. I worked my way through college working for the then -- they had, I think they had a National Youth Administration where I was paid a little bit to help out a professor doing something. I had to earn my money to pay for my bills.

Q And you were in the military service?

A Yes, I was.

Q Which branch?

A The Army.

Q And how did you go in and how did you come out in terms of rank or whatever you call it?

A Well, I went in as a private but was allowed to finish my university work as a private.

THE COURT: Mr. Papageorge, let me just ask if you would keep your voice up just a little bit so the attorneys are not straining to hear.

Q (By Mr. Carney) You might put the microphone just

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a little closer, okay?

A I entered as a private and I was allowed to complete the last year or so of my college work, and then I went into the active service, served in the infantry, went to the Pacific Theater and the Philippines up to Japan, and was discharged in 1946 as a captain. And then I entered Washington U. and earned my master's degree.

Q And you mentioned your degree in chemical engineering; is that right?

A Correct.

Q What is a -- what kind of, just briefly, what do you have to do to get a degree in chemical engineering?

A We have to have, of course, the knowledge of mathematics and chemistry and physics, and you combine all of these bits and pieces of information to help you understand materials and how they react with each other and what causes them to react with each other. And, using that knowledge, you are asked to design the pots and pans, if you will, to make a certain end product, and you're expected to do this in the most efficient way so it doesn't cost an arm and a leg, and you're expected to do this safely so you don't result in explosions or harm to the workers or the neighborhood.

Does that help any?

Q Yes. And did you take toxicology courses while

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you were in school?

A I did not.

Q Did you take any epidemiology courses?

A No, I did not.

Q Did you take medical courses?

A No.

Q So you don't have medical training; do you?

A That is correct.

Q Other than picking things up on the job?

A That is right.

Q And are you a registered professional engineer in the State of Missouri?

A I am.

Q Just briefly, what kind of work did you do at Phillips Petroleum? I think you mentioned you worked there.

A Yes, I worked there for four years, and half of that time, I worked in the research department studying ways to help the drilling of the oil wells, and also studying ways to take wells that are producing less and less oil and introducing water in one well and pushing the oil up the other well. It's called secondary recovery, and it's the chemical kinds of problems that are associated with mixing the different waters and the equipment needed to do this. And, finally, the last two years, I was doing engineering work in their refining department, doing the necessary

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calculations, and all to decide what kind of piece of equipment I needed to make a certain kind of gasoline refraction.

Q I'm not going to go into all the different job duties, but let me ask you this: Before you went to the Anniston plant, you described a number of those jobs that you had, the Queeny plant across the river, the Krummrich plant in Sauget, did you have any experience with PCBs? Just briefly describe it prior to going to the Anniston plant.

A Yes. My experience with PCBs prior to that was as a supervisor of teams of workers who either installed the equipment with PCBs in it, or repaired it. And I also had experience with PCBs as a user of that kind of equipment that had PCBs in it. And I also was responsible for the supervision of a department where blends were made of different chemicals, and sometimes the blends would include, as one of the ingredients, PCBs.

Q You mentioned that you were the plant manager, then, down in Anniston, Alabama, from 1965 to 1969. What are the duties of a plant manager of a plant like that?

A Well, the duties, of course, are many. I think the real defining -- what's the word I'm looking for? -- the responsibility of the plant manager kind of describes the duties. I was responsible, really, with the final analysis

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for anything that took place within the plant fence, and also within the neighborhood, and also with the local and state and federal agencies, anything that was related to the plant. I was finally responsible for the buck stopped with me.

Q Okay. You mentioned the neighborhood. Did Monsanto have a good neighbor policy?

A Oh, yes. Yes.

Q Can you describe that?

A Well, it covers many things, really. One is, of course, you don't operate a plant so you make an awful lot of noises. You don't operate it so you sent up a lot of fumes and dust in the neighborhood. You provide a good working place for the workers because they are members of the community, along with their families. You participate in the activities of the community. You sponsor such things as the Junior Chamber of Commerce, car races, the tours and some of the YMCAs used to conduct the hiking trips, also donate money to the various funds, the United Fund, the -- I forget all of them now. There were many in that community. So, when I say "donate money," you also donate people to help out wherever needed, personnel from the plant.

Q Was the good neighbor policy that you've described in Anniston, Alabama, was that also a policy in St. Louis with the plants here?

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A Yes, sir.

Q And did Monsanto, as a part of that policy, contribute to various groups in the local area?

A Oh, certainly. I remember -- well, the Botanical Garden; the Zoo; the Museum; of course United Way is a big one; the new Science Center is on the list now; the boy's clubs; the Matthew-Dickey Boys Club, yeah, that was very popular at the Queeny plant.

Q Did Monsanto have a plan not only of that, but matching employee contributions to those groups?

A They had it and still do.

Q Let's get back to Anniston for a minute. Did the Anniston plant manufacture things other than PCBs?

A Yes.

Q Okay. Would you describe briefly those?

A I'll try to remember all of them. We made, of course, the biphenyl starting with benzene. We also made the chlorine, starting with salt, table salt.

Q These are the ingredients to PCB?

A PCB.

Q Let me ask you, when you mention chlorine, are we talking about the kind of chlorine you put in swimming pools?

A Yes, exactly.

Q And that's one of the two major ingredients in the

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PCB?

A Yes.

Q Am I right on that?

A That is correct.

Q Go ahead, and aside from the raw materials for the PCBs, were there other products that were made there that were unrelated to PCB manufacture?

A Yes, there were. I'm going to use some chemical terms that may not mean much. Phosphorous pentasulfide was a chemical we made there. Some of it was sold as that product; some of it was used in another big operation where we made an insecticide that took care of the common boll weevil. It's called Parathion.

Q Did you make some acids at that plant?

A Yes, because of the -- the acid was a byproduct of the PCB process. We made muriatic acid hydrogen chloride. It's the kind of acid to clean off brickwork and so on.

Q I think that's enough to give the jury an idea.

A I can't remember any more.

Q What kind of information was available to the employees at Anniston about safe handling procedures?

A Of course, the product label is the obvious one.

Q And were the labels that were given or shown the workers down there the same labels that were put on drums that would go to Westinghouse?

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A Exactly, the same wording.

Q The same wording? There wasn't a different label for a Monsanto worker and a different label for a G.E. worker and a different label for Westinghouse in terms of the wording?

A No, sir. There were portions of their operating instructions that covered the safe handling for the materials in their department. They also had -- of course, when a new employee came into the department, he would have to go through a training period and, during that training period, he would have many sessions on the safety of chemicals, safety and housekeeping and industrial hygiene. And, in addition to that, there were, each month, safety meetings held to discuss different subjects relating to chemical exposure and the use of chemicals.

Q And these meetings would cover not just PCBs but the other chemicals that were used in the plant?

A Oh, yes.

Q Why didn't you just leave Monsanto with these warning labels about prolonged breathing of fumes and prolonged skin contact and leave it at that, not have any safety meetings?

A Well, we're striving, really, for the best we can do in the area of safety, and it's always good to review the proper way to comply with these instructions about avoiding

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prolonged exposures and the like. And the best way to do that is to actually show the kinds of respirators, for example, that are appropriate for the different chemicals, how to put them on, how to test them, how to keep them clean so, when you need it, it's ready for use. We have found that it does help to review. It kind of reinforces their previous training.

Q Okay. And then you described the next job that you had as manager of environmental control, I think, already. When you were given the job that I think you've described generally -- can you hear me okay?

A I can hear you.

MR. CARNEY: I'll try to talk up. If a juror doesn't or can't hear anything, just raise your hand and I'll try to speak louder.

Q (By Mr. Carney) Were you given -- when you were given that title or that job, were you given any guidance how Monsanto wanted you to deal with this PCB issue, this environmental issue?

A Yes. Yes, the guidance was one of find out all you can from anywhere you can get it and share it with anybody that is involved and interested and hold nothing back, just share everything.

Q And was this the word that you got from top management at Monsanto?

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A Yes, sir.

Q And I'm going to go into some of the things that you did in a minute, because I want to cover some of those things. Let me cover one point. Did -- there was a statement about using PCBs safely for forty years. Was it your opinion and is it true today, after testifying in some lawsuits and having your deposition read, the deposition -- by the way, that deposition that was read, that was a 1987 deposition?

A It was.

Q In another case?

A Yes, sir.

Q And you've had your deposition taken. Do you have any information to lead you today to believe that if PCBs are handled safely, if PCBs are handled according to the instructions of Monsanto that they are to be of no harm to humans?

MR. MURRAY: I object to the question, Your Honor. It calls for an expert opinion.

THE COURT: Overruled.

MR. MURRAY: This witness doesn't even have any toxicological training.

THE COURT: It will be overruled, counsel.

Q (By Mr. Carney) Do you want me to repeat?

A I would appreciate your repeating it.

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Q Okay. As you sit here today, is it your opinion that PCBs can be handled safely in the workplace if they're handled according to Monsanto's warnings?

A Definitely, yes.

Q And is it true that, back when you were working at Monsanto and had this job as manager of environmental controls, that at that point, Monsanto had been able to handle PCBs safely in the workplace for forty years?

A It is.

Q Was there any instance, Mr. Papageorge, other than the one you described where the employee got it on his hands and he got the reddening of the skin, do you recall any other instance where PCBs were used by Monsanto employees where there was some kind of an injury or ill effect?

A I don't recall any.

Q Were there -- was there a plant doctor, a Monsanto plant doctor at Anniston?

A Yes.

Q At that point in time, was there an industrial hygienist as well?

A Yes.

Q What was the job of these folks at the Anniston plant in terms of conveying to the workers safety?

A Well, they would participate in the information meetings that were held regarding safety. There would be

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spokesmen. Many times, we'd put on demonstrations if necessary. Of course, they would also be in a position of one-on-one kind of contact as they'd walk through the plant, or the worker would show up in the dispensary. The doctor would be in a position to talk with them and there was a lot of that that went on. So, they did serve as a good source of information.

Q Okay. How many years did Monsanto make PCBs?

A They made it from when they purchased the company that made it in 1935 until the middle of 1977.

Q And I think this may be repetitive. Monsanto purchased that plant from a company called Swann?

A Yes.

Q And that's the same plant that you became plant manager of many years later?

A Yes.

Q When you first started at Monsanto -- well, strike that.

Yeah, when you first started at Monsanto, were you aware that if you got too many PCBs on your skin, you could have a skin problem?

A When I first started? No, sir.

Q After you were there for a few years, did you learn that information?

A Yes, I did.

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Q And did you become aware that if you had contact, too much skin contact or too much breathing of heated fumes of PCBs, that it's possible that you might get something called chloracne?

A Yes. Eventually, I learned that, yes.

Q Do you recall that anyone at Monsanto, any Monsanto employee, ever actually got this skin condition -- and the jury's heard about it, so you don't need to explain it -- but a skin condition called chloracne?

A From PCBs?

Q Yes.

A Never.

Q Okay. That guy that got it on his hands where his hand got all red, that wasn't chloracne; was it?

A No.

Q And he did go to a doctor to have it checked out?

A Yes.

Q Did he miss any work because of that injury?

A No, he didn't.

Q And did the redness go away after that one incident?

A Yes, it did.

Q And did you know when you first started working around PCBs that if you breathe the fumes, you could get ill from that, either a liver problem or chloracne?

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A I was informed of that, yes.

Q During the time that you were involved with PCBs, and I'm going to take the period from when you first started your involvement with PCBs, would that have been at the Krummrich plant? Or did you have some involvement earlier than that?

A Well, my first assignment with Monsanto Queeny plant -- I shouldn't say my first assignment -- my first location at the Queeny plant, I did get involved with PCBs with the repair teams, construction teams, and then, eventually, the operating equipment.

Q Okay. From that time, which would have been what year, approximately?

A Nineteen fifty-seven, approximately.

Q From that time, in the mid- to late-'50s, until you left your assignment where you were in charge as manager of environmental control in '77, in that, say, twenty-year period, what health effects were you aware of that PCBs could cause in humans? And I'm going to divide it into two categories: one are what we call the acute, short-term, immediate-type problems; and what might be a longer-type problem like chloracne. Could you discuss both of those?

A Okay. My understanding, let's talk first of skin exposure. If it's excessive, the first sign is reddening of the skin, very much like chapped hands. If it continues,

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that reddening then becomes worse and you get cracks in the skin with bleeding. I understand, too, that if exposure continues, eventually this chloracne condition will exhibit itself in parts of the body not necessarily covered by the PCB. For example, the exposure is on the hands, but the chloracne shows up on the temple or the cheeks and at different places.

Q And is that because the PCBs can be absorbed through the skin, get into the system, and then it would show up with pimples or acne around the face?

A That's exactly right, yes.

Now, the breathing, many people, initially, if the fumes are quite dense, they will get an irritation that's just not comfortable and they'll back off, back away from it instinctively. If the -- then, some people also get the watery eyes. If the breathing of fumes continues and the situation has not corrected, the next symptom that I personally called the early warning symptom is the employee develops what looks like a severe chest cold, very painful, a lot of coughing. That is certainly a sign of over-exposure. It's my understanding that, if that isn't corrected, the body has accumulated, now, enough PCBs to the point where it could affect an important part of the body like the liver, and if it continues, the ultimate is death. It's just -- but that's really exposing.

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Q And is that true of a lot of industrial chemicals? If you get over-exposed to an extreme amount, that it could cause death?

A Oh, yes.

Q Can you give me some other examples?

A Well, the obvious ones are such things as ammonia and hydrogen cyanide. But then there's some, too, that are a little more subtle like carbon tetrachloride. It's the stuff that removes spots off your clothing. And the dry-cleaning fluid, perchloroethylene is another example. If the worker breathes too much of that, it can be fatal. Those are just some quick examples that come to mind.

Q You mentioned that if it's possible you got too much contact with PCBs to a great extent, I guess if you swallow and drink a couple of ounces, I guess that could cause some very serious problems?

A Yes. Yes, it would.

Q And that's also true of a lot of industrial chemicals?

A Definitely.

Q And, certainly, they're not designed to be ingested?

A No.

Q But as long as we're talking about death, are you aware that when you were at Monsanto, right up until your

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retirement -- you retired in '86?

A Yes, sir.

Q Were you aware of anybody that had died as a consequence of exposure to PCBs, either by looking at literature, getting reports of it, did you ever hear of that while you were employed in Monsanto?

A I never heard that.

Q Did you hear of an incident where -- and I think this involved the Drinker studies, the Harvard professor -- where there were some deaths associated in that article?

A Yes. I read that article.

Q And what is your understanding of what chemical caused those deaths? Because I think there were six, if I'm not mistaken.

A The chemical that caused those deaths was chlorinated naphthalene.

Q Is that the same as a PCB?

A No, they're not the same, but they belong to that broad class of chemicals, chlorinated hydrocarbons.

Q There are a lot of chemicals in this family called chlorinated hydrocarbons?

A Yes.

Q Are there other industrial chemicals or things that would come to mind that cause problems with the liver other than what we've described already with PCBs?

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MR. MURRAY: Your Honor, may we approach the bench?

THE COURT: Objection will be sustained. The objection is sustained. Let's move forward.

Q (By Mr. Carney) Do PCBs give off a vapor at room temperature?

A At room temperature, they give off a very slight vapor to the point where you have to get up very close to the liquid to smell it.

Q I've heard the word "low vapor pressure" to describe PCBs. First of all, is that correct, that they have very low vapor pressure?

A Yes, that is correct.

Q And what does that mean?

A That means that at, say, room temperatures, the amount of vapor that comes off the liquid surface is very, very small.

Q As compared to?

A Well, as compared to -- let me think of something that doesn't have a high vapor pressure. Nothing comes to mind. Let me put it a little different way. If it were of a high vapor pressure, it would be like alcohol.

Q It gives off a lot of vapor?

A It would give off a lot of vapor and would dry up quickly on you, whereas the PCB sits there and very little

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escapes in the vapor. That is known as a low vapor pressure.

Q Would there be a concern if there is a little plate or a jar of PCBs that is open on this table, would that be a cause for concern if it was at room temperature?

A No, not in my opinion, no, sir.

Q On the other hand, when PCBs are heated, that's a different story; isn't it?

A As they're heated, you now approach the high vapor pressure condition.

Q And it's like anything, like water, when you heat it, it gives off --

A Steam.

Q -- steam, a lot more vapor than at room temperature?

A Correct.

Q Now, I've covered some of the things you said and did with your employees in the Anniston plant with regard to safe handling, and I think you mentioned some of those things in your testimony in answer to Mr. Murray. What kind of things, what kind of information did you give to the customers, the PCB customers, regarding how to handle safely PCBs?

MR. MURRAY: I would just object to the form of the question. Is he talking about personally or

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Monsanto in general?

Q (By Mr. Carney) I'm talking about, to your knowledge, what Monsanto did. I think you were involved in some of it but just, if you could, summarize what kinds of information on safe handling in terms of categories. I don't want you to go into a lot of detail at this point.

A There were product bulletins, which contained a lot of information about the PCBs, and part of that bulletin was generally called the safety and handling section or the toxicity section. It had a title that referred to health considerations. Those were quite important and they were revised through the years, brought up to date, and new copies would be automatically sent to the customers.

Q This was the policy of Monsanto, to automatically send this kind of brochure to every PCB customer at that time?

A Yes, definitely.

Q What other kinds of information was sent?

A Of course, there's the product label that goes on the container. Then, there's the person-to-person contact. The best example is the one where Monsanto's medical department would talk to representatives of the customers' medical department or the industrial hygienists would talk to each other and compare notes. Then there was the mail correspondence. There were many inquiries that would arrive

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by some letter addressed either directly to the medical department or Monsanto in general and would find its way to the medical department, and they would respond and answer the questions that were raised.

Q When was Monsanto first started as a company?

A I believe the year was 1901.

Q What was the first product?

A The first product was saccharin.

Q And if you could, just give me a very brief summary of some of the products that Monsanto makes?

A Of course, they make fibers that go into Wear Dated carpeting. I think many of us have heard of that one. There's also the fibers that go into the acrylon used in clothing. There's NutraSweet is made by a Monsanto unit. This is the artificial sweetener. They make chemicals that go into automobile tires to make them flexible so they don't dry out and crack and last longer. They make the plastic liner that's between the glass panes in your windshield on the car. That liner is called, if I remember, Safeflex, and that same plastic is also used in these skyscraper windows that are sun-shaded now so the sun will not penetrate all the way into the room. There are sun shields. They make a lot of plastics used in automobiles: the dashboard, the bumpers, the trim. They make the ingredients that go into many of the lacquers and paints, a lot of the adhesives.

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Q And they make, I think another thing, like Lasso and Roundup? Are those products?

A The agriculture chemicals that take care of weeds, pesticides, yes.

Q Approximately how many Monsanto employees are there in the St. Louis Metropolitan area?

A As I remember, about 6,000.

Q Monsanto, in addition to having plants in this area, has other plants in the United States; doesn't it?

A Yes, they do.

Q And it competes, in fact, internationally, and it has some plants abroad?

A Yes, they do.

Q What do PCBs look like?

A Well, PCBs are --

Q There are lots of different kinds. Let's talk about the 1242 that we know went to Bloomington.

A All right, 1242 looks like a light oil and, when new, unused, it's crystal clear, has no color.

Q And the consistency of it?

A The consistency is a little bit like I'm going to say baby oil.

Q What about when you get to the higher chlorinated PCBs? Does the consistency change at all?

A The consistency, the more chlorine, the higher

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number of PCBs, become thicker and thicker in terms of pourability. And I always described, it's like molasses in January when you get up to the Aroclor 1260 and the 62 version.

Q What do they smell like? I know I've heard people describe the smell and everybody describes it a little differently.

A The smell, as you know, varies from person to person. I can only share with you my impression. When I smell PCBs, I'm reminded of a disinfectant kind of odor.

Q And the trade name of Monsanto's PCBs was what? I think that's probably getting repetitious by now.

A It's Aroclor, followed by a four-digit number starting with 12.

Q And I think the jury's already heard too much on the 42 percent, et cetera, so I'm not going to cover that with you.

A All right.

Q Were there other PCB -- basically, Monsanto, with the possible exception that somebody may have made a little bit of PCB to market it, Monsanto manufactured the PCBs that were used in the United States?

A Essentially, 99-plus percent.

Q Point nine-nine, whatever?

A Right.

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Q Were there other manufacturers of PCBs?
A Throughout the world?
Q Yes.
A Yes, there were.
Q Where were -- what other countries were PCBs manufactured in?
A Germany, France, Italy, Spain, Czechoslovakia, Russia, Japan.
Q Did Monsanto sell its PCB products to the government, to the United States government?
A Yes, they did.
Q And in terms of customers, we've heard about Westinghouse and General Electric as PCB customers. Were they the two biggest PCB customers?
A They were.
Q And just in terms of numbers, how many other PCB customers were there? I'm not talking about at the tail end, because I know they restricted the sales, but before that, how many were there roughly, if you have an estimate?
A Roughly -- this is rough -- a couple of thousand.
Q Some of them were very small users; weren't they?
A Yes.
Q They would just take a few, maybe, of the fifty-five gallon drums?
A Yes. You remind me, that type of a customer would

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go to a distributor and pick up his two drums.

Q Okay.

A So, there were customers of Monsanto's PCBs that we had no record of.

Q Okay. But with the big customers like Westinghouse and General Electric, 99.99 or whatever percent of the PCBs shipped to like Bloomington were in railroad tank cars?

A Oh, yes, yes.

Q Eight thousand -- how many gallon tank cars?

A Most of them were ten thousand. There were a few eight-thousand gallon cars in service.

Q Let's go back to get some historical information for a minute. When Monsanto bought the plant from the Swann Chemical Company in the mid-'30s, who did Monsanto make the PCBs for then? Was it primarily G.E. and Westinghouse?

A Yes, General Electric and Westinghouse.

Q And did Monsanto continue to sell PCBs to those two -- let me just forget G.E. now, we're talking Westinghouse -- did Monsanto continue to sell the PCBs to Westinghouse from the 1935 period right through to 1977?

A Yes.

Q Let me get into some documents now, and I'm going to get -- I'm going to hand you a notebook.

MR. CARNEY: And some of these documents, to speed

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this along, Your Honor --

Q (By Mr. Carney) -- some of these documents I did show you both yesterday or this morning?

A That's true.

Q So that, hopefully, you won't have to read through them, I can ask you some questions and we can get through this testimony a little faster.

A I hope I have the answers, yes, sir.

Q The first one is Monsanto 398. Mr. Murray's assistants are gone, so we'll just share these. And if you want me to stop at any point and look at them, let me know.

THE COURT: What volume are you reading from, counsel?

MR. CARNEY: It's Monsanto 398. We might have an extra copy here. It's volume one, Your Honor, is what we're starting with.

Q (By Mr. Carney) I'm going to ask you to look at two exhibits together, Monsanto's Exhibit 398 and 399, and ask you if you can just generally describe to the jury what those are?

A These are copies of patents issued to Westinghouse Electric, one of them in 1945, the other in 1952, that refer to the use of liquids as oils in electrical equipment to which other chemicals are added to improve the performance of those liquids.

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Q And are these dielectric fluids that go into capacitors or transformers?

A Yes.

Q And the 1952 patent, Exhibit 398 -- is that 398, if I'm right?

A That's 399.

Q Okay, 399, does that cover an additive that was used by Westinghouse to remove impurities during the use of PCBs?

A Yes, sir.

Q And the other exhibit, 389(sic), does that discuss adding chemicals to enhance PCBs?

A Yes.

Q What is the -- let's next go to the Exhibit three -- the next one in your notebook, I think, is 366 and 367, and we'll try to cover them together to speed things along. Can you identify those documents?

A These documents are copies of Westinghouse --

Q Are those Inerteen Westinghouse brochures?

A Well, they do -- one refers to Inerteen in itself. The other refers to networking of transformers.

Q And we've already established that Inerteen is Westinghouse's trade name for their PCBs?

A That's true.

MR. CARNEY: And, Your Honor, I understand we

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don't have to offer these exhibits in at this point in time; we can do that later.

Q (By Mr. Carney) Did -- what I'd like to do is show you, if you would look at Exhibit 366, and I'd like you to look at page three of that document, and I want you to read the first paragraph of this Westinghouse brochure. And I've got it here for the jury to follow along.

A "In this golden jubilee year, Westinghouse takes pleasure in presenting Inerteen. Much time and effort has been expended in developing this truly non-inflammable liquid, which may be used as a substitute for transformer oil. Research work to bring about this outstanding development dates back to the year 1921 when the United States Patent 1,622,609" --

Q Is that 809?

A That's eight hundred, yes, sir.

Q That's the patent number, is it?

A Yes.

Q Okay.

A -- "was assigned to Westinghouse Electric and Manufacturing Company."

Q And read the first sentence -- the next sentence.

A "Inerteen was first used commercially in transformers early in 1933."

Q And, then, if you'd drop down to the bottom of the

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page, would you read that last paragraph?

A "Inerteen has been approved by the National Board of Fire Underwriters, thus making possible its use for many applications where oil insulated transformers carry restrictions."

Q Thank you. And can you determine -- do you know what the date of this brochure, this Westinghouse brochure was?

A Well, I'm looking at the logo. I've determined that the brochure is dated 1936.

Q Now, if you'd look at Exhibit 367, page seven.

A I have it.

Q And I'd like -- if you would look at the paragraph under -- I'm having trouble reading -- "Inerteen network transformers," do you see that paragraph?

A I see it.

Q And I want you to read that paragraph out of that Westinghouse brochure and I'll tell you when to stop. When you get to the word "therefore," I would stop. I think that's all I've got on this board, or I'll just -- why don't you read and when you get down to the end of this thing, I'll tell you when to stop.

A Very good.

"Westinghouse research and insulation engineers have produced a new non-inflammable insulating and cooling medium

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for use in transformers and switches known as Inerteen. In addition to these characteristics, Inerteen has dielectric and thermal characteristics equal to or better than transformer oil. It is non-inflammable in the sense that it cannot be made to burn and non-explosive, since the gas given off is non-combustible when mixed with air in any proportion. Therefore, there is no possibility of an explosion in a fault due to a mixture in this gas with air. Likewise, a gas" --

Q Okay, just for the jury's benefit, we didn't put -- you're reading some parts that I don't have in here, but go ahead, why don't you read that, or why don't you just go to, just to save some time, you see the sentence, "More or less"? Why don't you read that sentence?

A I am looking for it.

Q Let's see, I think it's at the bottom of that column there, the last sentence there where it says, "More or less."

A Oh, I see it.

Q "Irritation"?

A I see it.

Q Okay.

A "More or less irritation to the skin may be expected in handling these liquids and, for this reason, care is necessary when working around transformers and

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switches in which they are used."

Q Okay. And do you know when this -- do you know when this brochure was written?

A I thought I saw a reference date.

Q It's got something down here but I can't read it. Are you able to tell by the -- I'm not sure that --

A No, I cannot tell from what I see here.

Q Okay. Oh, I think what it says, it says, "Printed in U.S.A. 1-36." I don't know if you can read that or not. Can you read that?

A Not on this copy.

Q The xerox copies get kind of bad after they get xeroxed many, many times.

MR. MURRAY: Your Honor, I'm not going to stipulate that that's what that says.

MR. CARNEY: I won't blame him for not stipulating. I can't read it on this copy. Maybe we can find a better xerox. If we do, we'll get it.

Q (By Mr. Carney) Were -- what type of equipment that used PCBs was made at the Bloomington plant of Westinghouse?

A Electrical capacitors.

Q And did the same kind of PCB go into the capacitor as it did to the transformer for Westinghouse?

A Well, some of the Westinghouse transformers used

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the same kind, but most of them did not.

Q Where were the locations of the Westinghouse transformer plants that used PCBs?

A Sharon, Pennsylvania, and South Boston, Virginia.

Q And where were the plants that you made capacitors for Westinghouse?

A Westinghouse? The only one that I'm familiar with is Bloomington.

Q Were there other facilities at Westinghouse that were repair facilities that had contact with PCBs?

A Yes, they had some of those. I personally have never seen them.

Q Okay. And the PCB that went into most of the transformers was a higher chlorinated PCB?

A Yes.

Q Which chlorination?

A 1254.

Q And did Westinghouse, when it made its capacitors, did it add anything to the PCB fluid that Monsanto shipped before it went into the impregnating oven and into the Westinghouse capacitor?

A Yes, they did.

MR. MURRAY: I object, Your Honor. I don't think he's laid a foundation to testify to that.

THE COURT: It will be overruled.

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Q (By Mr. Carney) And were you given the opportunity to know what that ingredient was?

A No, that's a carefully guarded Westinghouse secret. I don't know what it was.

Q And did General Electric have some ingredients that they added to their PCB that Monsanto sold to make their -- what was their's called again? I've forgotten.

A Pyranol.

Q Pyranol.

A They also had ingredients that they never divulged to me.

Q And you -- Monsanto dealt with both companies?

A Oh, yes.

Q In the sale of this product?

A Certainly.

Q Did Westinghouse and General Electric, were they competitors in the market in the sales of capacitors?

A Very much so, yes. Yes.

Q Did they share, to your knowledge, this kind of information with each other?

MR. MURRAY: Judge, he can't testify --

THE COURT: Objection will be sustained.

MR. CARNEY: I'll withdraw the question, Your Honor.

Q (By Mr. Carney) Do you know who Westinghouse sold

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the capacitors to when they put the PCBs -- or their Inerteen in? What kind of customer?

A Well, various kinds. Of course, they sold them to utilities. They sold them to appliance manufacturers, also to industrial machinery that was run by electrical motors and all. That's all that comes to mind in broad categories.

Q Where was Westinghouse's headquarters?

A Pittsburgh.

Q Give the jury, just briefly, some idea of how big Westinghouse was?

A Well, in my opinion, they were about three times Monsanto's size, worldwide.

Q And Monsanto had approximately fifty thousand employees, something like that?

A At that time, yes.

Q Are they smaller now?

A Yes.

Q If you would look at Exhibits 358 and 362, can you identify those documents?

A These are copies of Westinghouse Electric Corporation product specification for Inerteen for capacitors. One is dated 1961 -- that's Exhibit 358 -- and Exhibit 362 is dated 1971.

Q And is -- the one that's dated 1961, is that a specification for the Monsanto PCB that was shipped to

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Bloomington?

A It is.

Q And I'll get to the 362, Exhibit 362, that was the 1971 specification. That was a different type of Inerteen, I mean, of PCB than the 1242?

A It was.

Q That was a 1016?

A Correct.

Q And I'm going to get into that just a little bit later. Now, Monsanto made its PCBs in accordance with these Westinghouse specifications?

A Monsanto made the Inerteens according to --

Q When you were making a PCB for Westinghouse Bloomington, did you refer to it as Aroclor or Inerteen?

A It was Inerteen when it was --

Q Made to their spec?

A -- made for this specification.

Q And who added that secret ingredient? Did Monsanto do it at its plant?

A No, no.

Q Okay, who added that?

A It must have been at the receiving Westinghouse plant.

Q Did Monsanto have to follow the Westinghouse specification when it made PCBs or Inerteen for the

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Bloomington plant at Westinghouse?

A It did, definitely.

Q Okay. And were there different specifications when Monsanto made PCBs for the Sharon, Pennsylvania, and the South Boston, Virginia, transformer plants?

A Yes, for different Inerteens.

Q And Westinghouse would have a different specification to give to you to follow in the manufacture of those products?

A That is correct.

Q If Monsanto made the Inerteen PCB for Westinghouse Bloomington and it didn't follow these Westinghouse specifications, what would happen?

A Well, the shipment would be returned.

Q And I take it that didn't happen very often?

A Not very often, but it did happen.

Q Where they'd send it back and say, "You haven't met our specifications. You're going to have to" --

A -- "send us another one," which it does.

Q And they would check that out and, if it passed, they'd accept it?

A Correct.

Q What -- why were PCBs -- the jury has heard this, that PCBs are a good dielectric. Why were they a good dielectric?

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A Well, there were two characteristics or properties of these liquids that made them such good dielectric fluids. One is the fact that they were good electrical insulators. That means that electricity cannot arc through the liquid like it can through other materials. So, the electricity stays where it should in the metal parts. It doesn't jump from one metal part to another through the liquid.

Q I'm going to ask a dumb question, and I ought to know this since I've been involved in this case. Would water, would that be an insulation?

A No. Water is a good conductor. You wouldn't put your hand in water, a swimming pool with water, and a live wire at the other end. You'll feel that electricity.

Q I hope I wouldn't. What about the other? You said there were two characteristics?

A Yeah, the other characteristic was the one where it is not the type of liquid that will burn. So, if there is a fire created by arcing or sparking or other sources, this liquid will not burn. It will just keep snuffing out the flame, which is very valuable for safety purposes.

Q The PCB would not -- it does not support combustion?

A That is correct.

Q And why was that important, that safety consideration?

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A Well, these transformers and capacitors were generally used in highly populated areas. People were involved, buildings were involved, valuable things are associated with them, and a fire could be disastrous. So, the fact that they do not support a flame certainly helps prevent fires that get out of control.

Q Before PCBs were widely used, was mineral oil used?

A Yes, yes.

Q Before PCBs were widely used, were there fires involving mineral oil capacitors and transformers where there were loss of life?

A Yes.

Q Let me talk about building codes just briefly. Were there building codes after PCBs became a product used in this type of equipment that required use of PCBs over any other type of insulating fluid?

A Yes, there were.

Q Do you know which codes those were?

A Well, there is, as I remember, the National Code that was established, and then the various communities would refer to it when they passed their own laws and ordinances and so on.

Q We talked about fire resistency. Were PCBs good if they were to prevent explosions as well as fires?

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A Yes, because the -- if they do break up and form some kind of gas, the gases formed are not explosive when mixed with air and a source of heat. The gases formed, it's got -- it just will not explode.

MR. CARNEY: Your Honor, I'm going to change categories. I don't know if this is appropriate or not.

THE COURT: Why don't we just keep on going. We'll go till 12:30.

Q (By Mr. Carney) Did Westinghouse have an industrial hygiene department?

A Yes.

Q Did it also have a medical department?

A Yes.

Q And did they have those departments during the entire time that you were involved with PCBs?

A They did.

Q Let me talk about the ways in which Monsanto gave Westinghouse information. You mentioned several ways, and I'll start out with the correspondence. Are you familiar with the fact that there was exchange of correspondence between Monsanto's medical department and the industrial hygiene department of Westinghouse?

A I have seen some of the correspondence, yes.

Q Was there, in addition to the correspondence

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exchanged, was there exchange between personnel like sales people and the customers?

A Yes. The sales people would communicate up to the level of their knowledge, and if the question became highly technical, they would call Monsanto's medical department and have the medical department make the contact and answer the more complicated questions.

Q We talked just briefly about labels on the drums, and I understand the jury's heard that there really weren't any drums that were sent. It was largely the tank cars. But do you know whether labels were put on every fifty-five gallon drum or not that Monsanto sent out with PCBs?

A Every drum? Yes, there were.

Q How do you know that?

A Well, there was a control system built into the whole procedure, sort of checkpoints. Whenever that drum moved through the plant, when it's first filled, of course, the person who fills the drum is given a certain number of labels. That is controlled by count.

MR. MURRAY: Excuse me, Your Honor, I don't want to interrupt this witness. This case isn't about whether there's a missing label on a drum. We will stipulate that every drum went out with a label on it.

THE COURT: Will you accept the stipulation?

MR. CARNEY: I do, Your Honor.

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THE COURT: This may be a good time to break for lunch.

Mr. Papageorge, why don't you step down. You're going to have to return after lunch.

THE WITNESS: Thank you.

THE COURT: Ladies and gentlemen, we have arrived at the lunch period. As you will recall, your lunch period is from 12:30 to 2 o'clock, and you need to return back to the jury room before 2:00 p.m.

Ladies and gentlemen, justice requires that you not make up your mind about the case until all of the evidence has been seen and heard. You're not to discuss this case among yourselves, nor are you to permit anyone to discuss this case in your presence.

Ladies and gentlemen, have a good lunch and we'll see you at 2:00 p.m.

[At this time, a luncheon recess was taken.]

oOo

[Subsequent to the recess, the following proceedings were conducted in the courtroom within the presence of the jury:]

THE COURT: Good afternoon.

Mr. Papageorge, I remind you, sir, that you're still under oath to tell the truth.

Mr. Carney, you may proceed.

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MR. CARNEY: Thank you, Your Honor.

CROSS-EXAMINATION (Continued)

BY MR. CARNEY:

Q Let me bring you back to the last year that you were the plant manager of Anniston. That would be 1969?

A Yes.

Q Could you describe the conditions in the plant with regard to PCBs that last year that you were plant manager? Just tell the jury about what the conditions were?

A You're talking about housekeeping and orderliness?

Q Yes, uh-huh.

A Well, the department was quite clean if you compare it to other chemical kinds of operations. It wasn't as clean as a dairy plant, for example, but for a chemical industry, I felt it had come a long way. We had stopped the presence of oil on the concrete floor because we had introduced a program like, if you see the drip, don't wait three days before you correct it. And if these valves don't shut off, replace it with a new valve. When the operator takes a sample of a material, instead of being sloppy about it, you put little catch basins or tubs underneath to catch the drip.

Q So, they caught --

A So, as a result --

Q So the PCBs would be caught in a little pan rather

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than dripping on the floor?

A Correct. And by avoiding dripping on the floor, you'd avoided having to walk in it. By avoiding walking in it, you didn't spread PCBs all up and down the stairwells and the walkways, into the control rooms and so on. So, these kinds -- these are examples of the kinds of things that we did and it certainly improved the whole department.

Q Did you, during the time that you were plant manager, institute procedures to improve the housekeeping so that PCBs would not be on the floor where people would get PCBs on their clothes or whatever?

A I did. And these examples that I mentioned about quick maintenance, better valves, catch pots, and so on, were part of that program.

Q Let me ask you, when you got to the plant in 1965, I guess Monsanto had been operating that plant for thirty years by the time you got there; isn't that correct?

A That's correct.

Q What were the conditions like when you got there in terms of housekeeping?

A Well, the conditions that I mentioned that I tried to correct on were there. The area underneath the sample valve was oily and a pool of oil would be there too long before someone would clean it up. The employees would find themselves walking in PCBs and carrying them up the

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stairwells, making them slippery, and I was afraid of somebody slipping and hurting themselves. So, at the bottom, they would also put little sand boxes.

Q At the bottom of the stairwell?

A At the bottom of the stairwell, so that anybody walking on that oil would step on some sand, get a little grit on some shoe soles, so he wouldn't slip on the stairwell.

To the point, also, although the employee would wear a glove, say, to do some dirty work, get some oil on it or PCBs on his gloves, he'd forget himself and then grab the handrail as he went up the steps, so the handrail would be oily. So, someone who wasn't wearing gloves, like I'm going out, say, to walk through the plant, I would forget that and I would grab an oily handrail.

I don't know if those are -- those are certainly not all the examples but that's the kind of atmosphere we had there. And then, on occasion, too, when the pot that I mentioned earlier was opened up to add some more chemicals, to take a sample or what have you, the fumes would come out and would deposit on the piping and the walls and create a oily condition that was there at that time.

Q And that was something else that you corrected at the time that you were plant manager?

A Yes, and we succeeded in doing that, too, yes.

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Q What was your purpose, what was your reason for putting in these improvements in housekeeping that you've described?

A I don't know that there's any one reason. It's a mixture, really. First of all, I'm kind of the type that likes to be a nitpicker when it comes to cleanliness. I have learned through the years that a clean workplace really helps the worker in ways that aren't hard -- they're easy to see but hard to predict, and that morale is better. I've noticed if a place is dirty, the worker starts getting a little sloppy.

When this happens, the log sheets where they put data from the operation become messy. You can't read them after a while. More mistakes are apt to happen. Accidents do happen in a dirty place. Even the workers, when they have a chance to get a clean set of clothes in a dirty department, they put on the same dirty set they had the shift before. If they don't have clean ones provided, sometimes they will -- well, they do have clean ones, but they, for some reason, put on the dirty ones and go back out. It sort of keeps going downhill. So, I found that it helps to insist on high standards and it kind of starts going uphill on you. The worker catches on and he likes it.

Well, maybe I'm talking more than I had intended to, but I remember that in '69, that you mentioned it, that we

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cleaned up the plant, underwent the annual housekeeping inspection that Monsanto had.

Q Monsanto had a procedure or policy where there were annual plant inspections of all the plants?

A Yeah. They'd send inspectors from all the plants to look us over and give us a score. For years, the plant was considered average.

Q This is the PCB Anniston, Alabama, plant?

A Yes, and in '69, we got the outstanding rating, which is two steps above. It's the best rating. So, that helped the plant, really. In fact, the workers came to me and said, "Let's have open house. I want to show my wife where I work," which is good thanks as far as I was concerned.

Q Had they ever asked for an open house before, at least when you were there?

A No, no. They were ashamed of the place.

Q Let me ask you this: Since the plant had been operating for thirty years before you got there and did some -- suggested and made some improvements on housekeeping --

A Uh-huh.

Q -- do you know how often the workers at that Anniston plant got PCBs on their skin between 1935 and 1965 before you got there?

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A No, I don't. There is no system for keeping scores. All we know is that the opportunity for getting things on your hands like the handrail and the sampling system and all, it happened.

Q And I take it, even when you do your best to clean up housekeeping, that accidents happen in the plant and that there are spills and leaks in any plant that you've seen?

A Oh, certainly, yes.

Q Did that happen in Anniston as well?

A Yes, it does.

Q And your goal was to try to keep those to a minimum?

A Yes.

Q And if there was a leaky PCB valve, do not wait three days, but fix it very quickly?

A Correct.

Q And did you institute those housekeeping procedures pretty much in the first couple of years that you were there, or did you wait for four years to do that?

A Oh, no, I started almost from the very beginning, the first few months. Once I got familiar with the system and all, we started the program and it took a while to get people into thinking this way and get the necessary help. If you're going to replace valves, you need more pipefitters, for example, so we had to hire some people to

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get the team together.

Q You described, I think, in answer to Mr. Murray's question, that there were -- Monsanto furnished clothes, work clothes for the workers?

A Yes.

Q Do you know when that was instituted?

A This happened about 1945, '46 period.

Q How do you know that since you didn't come until 1965?

A Well, it's part of the record. This is the issuing of work clothes, the shirt, trousers, underwear, socks and shoes, and was a matter discussed over the union management bargaining table. It's the union contract. And the Anniston plant instituted that benefit for the worker, copying what was already done at the Krummrich plant across the river here in Sauget.

Q So that was something that was part of a union contract that took effect in 1945?

A About that, yes.

Q And prior to that, the first ten years, Monsanto didn't have a policy of issuing clothes then at Anniston to the workers?

A No, the workers would wear their street clothes and bring along another set for the workplace and take them home to launder and so on.

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Q And you talked about the rubber suits that the workers wore. Were these like a spacesuit of some kind, or can you describe that?

A Well, a spacesuit is much more airtight than these. These are more likely -- to me, they remind me of a black rubber suit similar to the yellow rubber we see, what firefighters wear. It's waterproof pants with a jacket with the clip-kind of a sealant rather than buttons. And there was a ---

Q Was there a -- I'm sorry.

A And it had a head cover.

Q Did it have a head cover to it?

A Yes. It was like a close-fitting hood, a little bit like the rubber skull cap we talked about this morning.

Q That was part of the suit? It was connected to the suit?

A Yes.

Q And did the workers wear these rubber suits all the time?

A Oh, no, no, no. You only wear those where you're going to be exposed to the liquid, a spray, a major break in the pipeline. You've got to get over to the other side to reach a valve and shut it off, or if you have to go into a tank car that's full of material and has to be scrubbed clean. There are situations when you can't avoid getting

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liquid on you.

Q And would that rubber suit be used for people that worked with the acid that you talked about as well as the PCB?

A Yes, uh-huh.

Q And do you know when those rubber suits were first provided? Do you have any idea about that?

A No, they were there long before I had arrived. It's like respirators. It's part of the business. I don't know when they introduced them.

Q Okay. What about the respirators? Did people go around the plant wearing a respirator?

A No.

Q How did they -- did some of them not even carry a respirator with them?

A Some of them did not. They kept them in a carrying case in the little locker they had where they put their gloves, safety glasses and goggles and other equipment. Some of them did strap them on their belts and carry them with them, depending on the person and the type of job that he had and the frequency or the need for a mask.

Q And PCBs weren't the only industrial chemical that was being used at that plant?

A That's true.

Q And these protective garments were for workers'

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use whenever they were around a harmful chemical, whatever it was, PCBs, muriatic acid or anything?

A Much of this protective equipment could be used for many different chemicals. You had to be careful you don't use the wrong protective equipment in some situations where, say, the garment you're wearing dissolves and it doesn't protect you. So you have to use some judgment as to what to wear in this kind of environment.

Q And is that where the training comes in to train the worker?

A Yes.

Q Now, you've had -- did you have contact with Westinghouse people, employees of Westinghouse, while you worked at Monsanto?

A At what point in time?

Q Let's say in the '60s and early '70s?

A Yes, in the '60s, I had some contact, yes, with Westinghouse.

Q And who were some of the people that you had personal contact with that worked at Westinghouse?

A I don't propose to remember all of them. I do recall a Mr. Pickett and Mr. McNally from the Bloomington plant -- I think it's Mr. McNally -- from the Bloomington, Indiana, plant.

Q Do you recall the other names of people that

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worked at -- whether they worked at the Bloomington plant or just they worked at Westinghouse?

A Oh, yes. I don't think I remember all of them. There's a few. Dr. T.K. Sloat comes to mind, a Dr. Dakin, and a Mr. Don, I think it's Don, McClain. I'm not positive of the first name.

Q I think his correct name is Robert McClain and he goes by Don McClain.

A All right.

Q And the jury has heard from him already.

A Okay. Those are some of the key people that I met then and worked very closely with after 1970.

Q And when you had these discussions and contacts with these Westinghouse people, did you have them about PCBs and their use in capacitors and transformers?

A Yes.

Q And were these people knowledgeable about PCBs?

A Oh, very much so. In fact, they taught me a few things.

Q And was this part of the sharing of information that went on between the two companies, sharing what they knew about PCBs?

A Exactly, yes.

Q Dr. Sloat you mentioned, did he ever contribute any information to you about PCBs? The guy that worked for

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Westinghouse named Dr. Sloat?

A Yes. He contributed a lot of information. I can't recall the specifics. He was a very knowledgeable person. In fact, I looked upon him as one of the pioneers in the use of PCBs in transformers. He -- I do recall how he felt the use of PCBs --

MR. MURRAY: I object to anything that Mr. Sloat or whoever this is --

THE COURT: Objection sustained.

Q (By Mr. Carney) Where did Dr. Dakin and Dr. Mandelcorn work?

A It's been decades. I associate those individuals with the Pittsburgh location.

Q The headquarters of Westinghouse?

A The headquarters, yes, sir.

MR. CARNEY: Your Honor, on some of these discussions with Westinghouse people, I think it's an exception to the hearsay rule where we're talking about notice.

THE COURT: All right, counsel, you need to approach.

[The following proceedings took place at the bench outside the hearing of the jury:]

THE COURT: All right, Mr. Carney.

MR. CARNEY: Your Honor, what I'm getting this

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information in for is not for the truth of the matter asserted but for notice purposes and the knowledge involved Westinghouse. So I think that would be an exception to the hearsay rule and it should go in on that basis.

THE COURT: Not necessarily what Dr. Sloat or what Dr. Dakin or what Dr. Mandelcorn said, but the fact that he was in contact with them is.

MR. MURRAY: Your Honor, I haven't said anything about that, but the particulars of the conversation, the whole thing, I don't think are admissible.

THE COURT: I just think that -- I mean, if he's had any conversations with them, he said that he thought Dr. Sloat was a pioneer and all of that came in without objection. Counsel only objected when he started to express statements made by Dr. Sloat, which I think is a proper objection.

MR. CARNEY: I would like to, just for the record, we would make an offer of proof that the witness would testify as to what Dr. Mandelcorn and Dr. Dakin and Dr. Sloat --

THE COURT: Is it Dakin?

MR. CARNEY: Dakin, D-A-K-I-N. That these Westinghouse people informed Monsanto about various aspects of PCBs and shared with Monsanto information

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that actually taught Monsanto some things and actually things that Monsanto put in some of its own bulletins and brochures that came from Westinghouse. So, I would make that offer.

THE COURT: Well, counsel, I am particularly concerned about specific statements, and I think counsel has given you a great deal of latitude in terms of letting him get into the area that he had been in contact with Westinghouse and that the Westinghouse people did teach him some things.

What is objectionable are the conversations, the specific conversations as to what was said by the Westinghouse people to him or to members or representatives of Monsanto. So that the court's ruling is clear --

MR. CARNEY: Can I ask a general question without specific conversations? "Can you tell me what you learned from these people from Westinghouse," without --

MR. MURRAY: That's the specifics that I'm trying to object to, Your Honor. I can't cross-examine that man on those specifics. He's already gotten out -- in fact, everything he just said that we wanted to get out from the witness is gotten out in general terms. The specifics aren't necessary. They're prejudicial to me

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because I can't cross.

THE COURT: The court believes that any of those statements would be unduly prejudicial. They are not probative and they would be just rank hearsay.

[Proceedings were then resumed within the hearing of the jury as follows:]

THE COURT: You may proceed, counsel.

Q (By Mr. Carney) Were Dr. Dakin and Dr. Mandelcorn technical type people at Westinghouse?

A Yes.

Q Can you describe that in any better detail than I have?

A Well, they were very knowledgeable about the scientific basis for the use of various materials.

MR. MURRAY: Your Honor, he's asking what their position was. He's starting to talk about their knowledge. He doesn't know what their knowledge is.

THE COURT: That will be overruled.

Doctor, you may proceed.

Q (By Mr. Carney) Go ahead.

A There were technical people who served in Westinghouse as a source of technical knowledge that helped Westinghouse in designing their products and improving their processes and improving their products.

Q Okay. I believe you indicated that Monsanto

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learned sometime in the late 1960s about PCBs in the environment. Can you tell me, how did Monsanto find that out?

A The researchers in Stockholm knew of the Monsanto representative in Sweden who represented Monsanto in the sales of PCBs in Sweden. Contact was made with this individual. This person then contacted the Monsanto people located in London to inform them of this finding of this laboratory and to, as I recall, to offer to send a draft of the translation of the scientific article or presentation that was prepared in Sweden describing the presence of these materials that looked like PCBs in environmental samples.

Q Do you recall what the environmental samples were where PCBs were found?

A I don't recall all of them, but I remember some fish samples, some eagle feathers, some infant hair.

Q Pine needles?

A Pine needles.

Q Let me ask you this: Do you recall the name of this -- well, I think you said the -- was this article not in English?

A As I understand it, the article that I saw was in English, but it was presented to me as a translation from the Swedish language.

Q Okay. And who were these scientists who found

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this in pine needles and feathers and things?

A It was Dr. Widmark and Dr. Jensen.

Q Were they looking for PCBs in the environment, these two doctors?

A No, sir. They were studying DDT and its effect on birds, particularly, and fish.

Q Was this finding by these scientists of concern to Monsanto?

A Certainly. It was the concern in that it was a total surprise, just didn't seem to fit Monsanto's understanding of the type of material that was being reported, its presence in these very unusual places not associated with industry, and they were reporting a type of PCB that really wasn't the most popular type, the type we sold the most of. So, there were many pieces of the puzzle that didn't quite make sense based on the knowledge available at the time.

Q And why -- tell me what happened, I guess is the best way to go, but what did Monsanto do when they found this out?

A Well, there were several things that were done. First, the Monsanto representative out of London made it a point to go to Stockholm and meet with Dr. Widmark and Dr. Jensen. While there, they got copies of the analytical methodology used by these investigators, what instruments

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they used, how did they treat the sample, how did they interpret the results, and sent that information to St. Louis here to the research laboratory here.

The analytical laboratory here took that method and studied it and learned how to do it, ordered the necessary new equipment --

Q Okay, let me stop you with this new equipment. Were these researchers or scientists in Sweden, did they have some state-of-the-art equipment and procedures that were relatively new?

A Yes, yes. Especially the spectrophotometer, which is the second instrument used. There is a series of instruments. First -- the second one was a much more highly sophisticated model. As I remember, theirs was ordered out of Germany, and Monsanto had to order one out of one of the U.S. companies to be equal to it, to the German model.

Q At this point in time, were there a lot of these pieces of equipment that you could buy?

A No, no, no. They had to be ordered and they were virtually custom made.

Q Give the jury some idea, when these Swedish scientists found this in the environment, did they -- can you give me the quantity that they found? Was it --

A Well, they reported finding parts per million in some of their samples, parts per million, parts of sample is

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the way they reported it.

Q In the '30s and '40s and '50s, was it -- was the technology there so that you could find something in a part per million?

A Of PCBs?

Q Or anything? Could you find something that tiny, something like a PCB and a part per million?

A Something like a PCB, no, you're lucky if you can find it in percent.

Q Okay. Give the jury -- can you, in practical terms, describe what a part per million is?

A I've found personally that it helps me to visualize, let's say, a Busch Stadium here, I think it's fifty thousand people in it.

Q A little more, but that's approximately right.

A I'm going to use the round numbers. It's easier for my mathematics. You take twenty Busch Stadiums and you've got a million seats, if you can visualize that. Now, picture yourself in one of those million seats, that's one part per million.

Q And that's what we were talking about in terms of these Swedish scientists, what they found in the bird feathers and pine needles, in that tiny amount?

A Yes, sir.

Q I think I interrupted you. You were explaining

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what Monsanto did when they found this out, and I believe you've covered the point about getting the type of equipment that could find this, ordering the equipment and getting it, sending a representative over to Stockholm to talk to the scientists. Did you work with these Swedish scientists by giving them any assistance, providing them with any PCB of ours to help them in their study?

A Oh, yes. We cooperated with them fully. We gave them whatever samples they needed. Yes, it was totally open.

Q Did these European manufacturers of PCBs that you mentioned, did they join in Monsanto in this investigation about the concern of PCBs in the environment?

MR. MURRAY: Objection, Your Honor, irrelevant.

THE COURT: It will be sustained.

MR. CARNEY: Your Honor, I think -- can we approach?

THE COURT: Yes, you may.

[The following proceedings took place at the bench outside the hearing of the jury:]

THE COURT: Yes, sir.

MR. CARNEY: Your Honor, they've still got a punitive damage claim, unless they're giving it up, and as long as that's in here, I think I'm entitled to bring out what Monsanto did in comparison to what some

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other companies did. They're going to say Monsanto was an irresponsible company that exposed the people. They already had Dr. Silbergeld say everybody's got PCBs in their body and it's Monsanto's fault. Every PCB in the jury's body is Monsanto's fault and I think I'm entitled to rebut that. They've gotten into this stuff and I'm just trying to defend on that issue.

MR. MURRAY: I understand that, but you cannot defend by bringing in irrelevant evidence, the fact that --

THE COURT: Wait a minute. The objection is sustained, counsel. I've given you a lot of latitude to deal with the environmental issues over in England, so we've got to move forward. You've got to deal with it in a different way.

MR. CARNEY: Okay.

[Proceedings were then resumed within the hearing of the jury as follows:]

THE COURT: Let's proceed, counsel.

Q (By Mr. Carney) Let me ask you this: Did any other company participate in this investigation?

MR. MURRAY: Objection, Your Honor.

THE COURT: It will be sustained.

Q (By Mr. Carney) Did Monsanto alert its customers about this problem once they started their investigation?

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A Monsanto alerted its customers after they achieved enough experience to confirm the findings and then, as I remember, in 1969, they informed key customers like Westinghouse of the information they had as of that point in time.

Q Did Monsanto also alert the other PCB manufacturers of this issue?

A Yes.

Q Monsanto then, when it obtained this new technology, this equipment to find things in the parts per million, what did it do at that point?

A They did several things, really. It started some studies that were called biodegradation studies to determine if any of the PCBs changed their form out there in the environment because the form of the PCB that was reported, as I said earlier, was not the most popular one. It was referred to as either the 1254 or 1260, and the more popular one was the 1242, and we wondered if the 1242 was changing its form out there. There were some toxicity studies started because the question then came up, if it's out there, is it hurting anything. And this was a question that was somewhat difficult to solve or to start on because the testing of industrial chemicals was, to that degree, was new and foreign to everyone, industry, government.

Q Let me stop you then. So, I think in 1969,

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Monsanto commissioned IBT to do some tests?

A Yes.

Q Was that in response to this environmental concern?

A Yes.

Q And we've heard testimony in this trial about, you know, these two-month -- I mean, two-year studies, and we've heard that Monsanto did some studies that were seven-month long studies earlier. Was it common in the '50s and '60s to do two-year animal feeding studies or lifetime feeding studies on industrial chemicals?

A No.

Q What kind of -- it was on the food product-type, thing that people would eat, there were these kind of two-year tests prior to this time; is that correct?

A Yes. Any chemical that could eventually end up in food, either directly added or through use in farming and so on, were tested.

Q So, what kinds of things were tested in these long-term tests? Can you give me some examples? And I'm talking about prior to 1970.

A Well, of course, the drug industry, that's well known, the food additive industry where you add an ingredient in the food to give it some property you like, or the weed killer, insecticide kind of chemicals that are put

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on food crops where the chemical may end up in the food.

Q Let me -- did Monsanto actually confirm at some point then what Dr. Widmark found in Sweden was, in fact, PCB?

A Yes.

Q Was there some confusion as to whether it was PCB right away?

A Initially, there was this confusion, what is it really, and Dr. Widmark's initial announcement of these discoveries really carried with it a request that other laboratories attempt to confirm his findings.

Q Did these researchers in Sweden indicate that when they made this finding that it -- that the PCBs were harmful to animals?

A No. As I -- Professor Widmark stated that they were in no position to evaluate what effect these PCBs were having on anything.

Q Did Monsanto then learn at a later point that, in fact, PCBs were in the environment in the United States?

A Yes.

Q Did Monsanto -- I know you said you sent a person from England over to check with Dr. Widmark. Did Monsanto make any further investigations with this professor in Sweden?

A Certainly.

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Q Can you tell me about that?

A Well, I recall some correspondence with Dr. Widmark. I also know that Monsanto representatives from St. Louis visited with Dr. Widmark in early 1969 and I, along with two other Monsanto individuals, visited with him in April or May of 1970.

Q And can you tell me what the reason -- purpose was for those trips?

A To exchange whatever new information each group had found in their laboratories regarding the analysis of PCBs and the identity of the sample materials, where did you find them, and how much, and just compare notes, really.

Q At that time when you had your meeting with Dr. Widmark in Sweden, did he, at that point, conclude anything about whether PCBs in the environment were causing any problem to any living organisms?

MR. MURRAY: Objection, Your Honor.

THE COURT: It will be overruled.

THE WITNESS: No, Dr. Widmark admitted that he had no basis for arriving at any conclusions at that time.

Q (By Mr. Carney) When you were in Europe in April -- was it April and May of '70?

A Yes.

Q Did you meet with anyone else other than Dr. Widmark?

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A Certainly, yes. We met with the government representatives and the other producers of PCBs and some disposal companies.

Q What was your purpose in those meetings?

A Again, to kind of learn what we could from anybody that was in any way involved with PCBs.

Q Did you have -- I think you said you went to London?

A Yes.

Q Did you have discussions with government scientists there?

A Yes, we had discussions with several of the London-based ministries, the agriculture, the fisheries, what we call the government chemists, which is their national laboratory. They were conducting environmental sample studies, also.

Q Were you able to learn anything from those meetings?

A Nothing astoundingly new except that they were becoming pretty sophisticated with their new instruments, also, that they were finding PCBs in some of the North Sea fish. I remember that, and they were finding some in some of the wild birds in the United Kingdom.

Q Let me ask you now, sir, to turn to Exhibit 35. Do you have that in front of you?

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A I have it.

Q Can you identify that document?

A This is a letter dated March 3rd, 1969, on Monsanto letterhead authored by Mr. Elmer Wheeler of Monsanto's medical department.

Q And this letter --

A And addressed --

Q Okay, who is it addressed to?

A It's addressed to Mr. Robert Innis at the Westinghouse Electric Corporation in Bloomington.

Q And the letter's March 3rd, 1969?

A Yes, sir.

Q And I don't want to really have -- it's a three-page letter. If you could just, rather than try to read it, just describe generally what was in that letter.

A Well, it covers the findings of PCBs off the southern coast of California in pelicans by a Dr. Riseborough from the University of California. It covers the work done at the Stockholm University we discussed earlier.

Q By this time, March 3, 1969, I think it was a few months earlier that the PCBs were found in the United States for the first time?

A Yes, yes. It goes on to describe, briefly, the kinds of uses PCBs were put to.

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Q Was the principal purpose of this letter in March of 1969 to Westinghouse to alert it about this environmental problem that had been discovered?

A Yes.

Q And was this letter, a similar letter, did it go out to all of the PCB customers of Monsanto?

A The customers on record, yes, sir.

Q Did the letter also outline Monsanto's research efforts and its investigation of this issue?

A Yes.

Q And I think the letter concludes that, "We will keep you advised of our research and are available to answer questions as they may arise"?

A It does.

Q That was the last sentence of the letter?

A Yes.

Q Once Monsanto was reasonably sure that the Swedish scientists' reports were accurate, did they develop a plan of action in relation to this problem with PCBs?

A Yes, they did.

Q And let me ask you to turn to page -- to Monsanto Exhibit 37.

A I have it.

Q Can you identify that document?

A This document is a copy of portions of minutes of

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a meeting of the Monsanto corporate development committee. The meeting was held on November 17, 1969.

Q And this is the minutes of a -- is this corporate development committee some lowly little committee at Monsanto?

A No, this is probably the top committee at Monsanto. It's composed of the chairman of the board plus the president of Monsanto and the key vice presidents.

Q And these are the actual minutes portion of those minutes that related to PCBs that were discussed on November 17, 1969?

A Yes.

Q And what are those -- do those minutes contain the Monsanto plan that you just mentioned?

A Yes, I think we mentioned earlier a twelve-point program. The twelve points are listed in these minutes.

Q And let me -- I'm going to ask you to go through at least some of these twelve points. First of all, point one, you're very familiar with point one; aren't you?

A Yes. That created the job that I eventually ended up with.

Q Okay. And that was a point project manager responsible for overall management of the Aroclor pollution problem, and he would be assisted by a task force from members of each business group, plus medical, law,

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engineering and manufacturing?

A Yes, sir.

Q And why don't you just go through these points, starting with number two?

A Number two. We were to notify all of our Aroclor customers of the PCB problem.

Q And that was part of the letter that we just referred to that was part of that program?

A Well, the letter was -- the letter we just saw was earlier than this. There was another letter that followed this to supplement.

Q Okay. And point two, PCB effluents, what does that mean?

A That's the waste that leaves Monsanto's plants in which PCBs are made, and by "effluents," it's primarily waste water.

Q Okay. And then the next point is to educate the customers to do the same thing on their waste that Monsanto was going to do?

A That is true.

Q And skipping down to six -- I don't want to take the time to cover each one -- but introduce to market replacement products for Aroclor?

A Yes, sir.

Q What is that? To try to find something that would

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sales, administration, research and engineering. That's the day-to-day costs to do the research work, change the engineering and so on. And then the reference to the $700,000 capital means the money needed to buy new equipment, like an incinerator.

Q You said this was in 1969 dollars?

A Yes.

Q I'm not all that good at it, but it would be more than double that today with inflation?

A Oh, much more, I would say. Golly, almost ten times.

Q In today's dollars?

A Yes.

Q And, then, I think it talks about discontinuing the 1254 and 1260. What was the reason for that?

A Well, to this point in time, you may recall that all of the laboratories that were very good at PCB analysis were reporting that their material looked like 1254 and 1260 and, based on that information, we decided that if that's what's really out there, let's try to eliminate making 1254 and 1260 so we don't continue to get it out there in the environment.

Q And what about 1242? At the end of the memo, what does it say about that?

A Well, it really indicates we didn't really know

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whether 1242 was part of the problem or not. There was no information to help us. And the idea there was, let's look for something to help us.

Q Okay. Did -- and you were appointed to head up this twelve-point program?

A Yes, sir.

Q Is that --

A The word "head up" --

Q I don't want to -- tell me how you would describe it rather than me trying to describe it. What was your role going to be?

A My role was really one of making sure that all lines of communication were open. I was to be the eyes and ears of the bosses to make sure that things were being pursued quickly and properly, and if I were finding any resistance, I was either to resolve it on my own, in other words, carry a big stick and never have to use it, or, if necessary, take the person who wasn't cooperating into the boss and get some resolution. So, I was kind of the guy that prodded the program along.

Q Was this, by the way, this twelve-point program that's in the minutes of the corporate development committee of Monsanto, was it adopted by the company?

A Yes, sir.

Q So that was company policy then?

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stretch your legs right where you are.

[Pause.]

THE COURT: You may proceed, Mr. Carney.

Q (By Mr. Carney) One of these things on the program that I actually skipped over in the twelve-point plan was number ten, determine feasibility and cost of eliminating five/six --

A Chlorine.

Q -- chlorine in Aroclors 1242 and 1248. So, you were going to eliminate the higher chlorinated ones and, as to the 1242 and 1248, am I right in understanding you, that you were going to try and eliminate those higher chlorines in the lower -- the higher chlorinated PCB molecules in the mixtures of 1242 and 1248 to help the biodegradability?

A Yes.

Q Okay. And that test, that program went forward?

A It went forward for the 1242 material.

Q And, eventually, does Monsanto come up with a PCB that made it more biodegradable, eliminating some of the higher chlorines in the 1242 mixture?

A They did.

Q And what was that called?

A It was eventually called Aroclor 1016.

Q And we've -- I think that's been mentioned before. Did Monsanto then send some 1016 to its customers like

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Westinghouse to see if that would work in a capacitor?

A Oh, yes, definitely.

Q And I think Don McClain testified about that a little bit. I'm fuzzy on exactly how much detail. But, could you tell the jury, was that eventually found acceptable by customers like Westinghouse?

A It was, and it totally replaced the older Aroclor 1242 in capacitors.

Q And when did that take place, approximately?

A Oh, about 1971.

Q Okay, what did it take to come up with, and did you get involved at all with developing this new, I'm going to call it the 1016, the new and better 1242, at least in terms of environmentally?

A Well, I, of course, got involved because I was very interested in the program succeeding personally. I helped get the necessary manpower and money, whatever, to push the program along. It did succeed. We got a material that had the same amount of chlorine, 41-42 percent, but it did not have these higher chlorinated types that you were finding in the environment and the hope was, the intent all along was, it was never intended to be dumped in the environment but, if it should get away from us, what did get away, the bacteria would eventually get it. It would not be found in environmental samples.

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Q By the way, I know they talked about in the twelve-point plan continuing the toxicologic test program. Was that testing that was done that we heard about at IBT, was the purpose of it to, because of concern of PCBs for human health?

A Well, there was that concern, as well as harm to any other creatures, mammals, birds, and so on.

Q Did Monsanto, as it continued this program and this testing, in trying to come up with substitutes and follow all of the twelve points, did it communicate with its customers as it went along?

A Certainly.

Q Did it communicate with other people other than customers?

A Oh, yes. Anybody interested in PCBs in the environment that was available to us either through meetings, letters, telephone conversations. We would keep them posted.

Q Did Monsanto also have communications with governmental agencies on this?

A Oh, yes. I forgot to mention the governments, the universities.

Q At some point, did Monsanto decide that it was going to stop the sales of PCBs for any particular uses?

A Yes, it did.

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Q And what type of uses did Monsanto stop making PCBs altogether for?

A Well, again, in about 1970, decision was made to terminate, to stop all sales of PCBs, no matter what kind, to those uses that appeared to us to be open, open to the environment, immediate entry into the environment, and that included such things as the paints used to paint the yellow and white stripe down the highway.

Q Why were PCBs used in that?

A It gave durability, those white and yellow lines lasted longer than you see nowadays. But eventually they erode and get into the environment.

Q Let me show you -- why don't we look at this point on Monsanto Exhibit 40.

A I have it.

Q Can you identify -- tell us the date of that document.

A It's dated April 7th, 1970.

Q And who is the author?

A I am the author, or was the author.

Q And what was the purpose of Exhibit M40?

MR. CARNEY: I notice Mr. Race always had an assistant there.

MR. MURRAY: I understand that. I'm just me.

[Item shown to plaintiffs' counsel.]

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Q (By Mr. Carney) What was the --

MR. MURRAY: May we -- I'm sorry, wait a second. Thank you.

Q (By Mr. Carney) What was the purpose of this document that you authored in April 1970?

A This document was prepared to help us arrive at a presentation to be made to this corporate management committee that we spoke of earlier and to bring them up to date on our PCB environmental issue and proposes some actions to help with that particular issue. And this is an attempt to put all those thoughts together.

Q And attached to your memo is a -- it's called a "Management Plan: Polychlorinated Biphenyl Environmental Problem." Is that the title?

A Yes.

Q And this looks like a nine-page document with about I don't know how many -- well, you start out discussing the problem and then the basic strategy, and then you have a five-part -- well, it's got a bunch of subparts, so numerous parts to the action plan that you were going to present to the top committee of Monsanto?

A Yes, sir.

Q And one of the action plans was to stop the sales of PCBs of any kind, whether it's the high chlorinated or the low chlorinated where it's in an open use?

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A That was one of the plans that eventually evolved. I don't know if it's described exactly that way in this particular document.

Q Did -- in this plan, you came up with a cost. I guess when you present any plan in a large company, they want to know how much it's going to cost as part of the consideration?

A Yes, sir.

Q And did you come up with a cost estimate for the plan?

A I did at the time.

Q And how much was that?

A For the year 1970, I estimate these activities that were discussed in this document would cost about $675,000.

Q And did the -- did you present this plan to the -- this top committee of Monsanto, the corporate development committee?

A I developed a plan slightly modified from this document to the corporate committee on April 20th, as indicated in this exhibit.

Q And I notice the objective of the plan was to try to prevent PCBs from adversely affecting the environment; isn't that true?

A Yes.

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Q Did you provide in the plan that you presented to the top committee of Monsanto some deadlines as to when you were going to do things like cut off PCB sales to all customers other than customers that would put PCBs in an enclosed system?

A Yes, we did, gave the committee our proposed action and idea as to when it would be completed.

Q And do you recall approximately when that was? Was it sometime in that period shortly after April of 1970?

A Well, the initial plan took it over into the following year, as I remember, the '71 period, to get all the steps completed.

Q And did you then present the -- did you have a meeting in June of '70 with the corporate development committee to present this finalized plan that Exhibit M40 was at least the beginning of that plan?

A Well, there was, of course, a meeting in April to discuss the initial proposal, which the committee accepted and the kinds of things we were proposing, but they were not satisfied with the timetable. They wanted it done faster.

Q So you presented a plan in April of 1970 to the corporate development committee of Monsanto with the highest levels of offers there and gave a timetable, and they weren't completely satisfied with your timetable?

A Correct.

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Q Were they satisfied with your plan except for the timetable?

A They were.

Q What did they say about the timetable?

A They said, "It's not fast enough. You go back, study it some more, and report back to us by June 1st with a shorter timetable."

Q And did I show you some minutes of that meeting to refresh your recollection this morning as to that fact?

A Yes.

Q When did Monsanto stop sales of PCBs for open uses?

A The majority of PCBs sold for those uses were terminated on August 30, 1970. There was still some sales to the carbonless copy paper because the technology was much more difficult to change, and it took, as best I remember, till about the first quarter of 1971 before that was accomplished.

Q Did all of the twelve steps of that plan that was initiated by the corporate development committee, were those all accomplished?

A No, not all of them.

Q Okay. Tell me which ones, say, by this point in time -- well, I guess we're talking about May of -- we're talking about the spring of 1970. Some of them were still

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in progress; weren't they?

A Yes, they were. Most of them were in progress. The one that I note here that was not accomplished, really, was the total replacement of Aroclor 1254. There was no good acceptable substitute for Aroclor 1254 for transformers. So, the item numbered six of the twelve-point program was not achieved for 1254. Aroclor 1260 was eliminated.

Q Did the United States government or anybody else require Monsanto to stop selling PCBs for open uses?

A No.

Q Did --

MR. MURRAY: Can we approach the bench, Your Honor?

[The following proceedings took place at the bench outside the hearing of the jury:]

THE COURT: Yes, Mr. Murray.

MR. MURRAY: Your Honor, I just want to object to all this as being cumulative and beyond the scope of the judge's prior ruling about environmental matters. We've been on this thing for about an hour and a half. I've allowed him to get out the whole twelve-point plan, the fact the plan was implemented, even the cost of it, the whole thing. But I think anything beyond this is just too much.

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THE COURT: All right, Mr. Race -- I'm sorry, Mr. Murray.

Mr. Carney, where are you going?

MR. CARNEY: Well, Your Honor, I've got some other points to cover, but this matter has been gone into by Dr. Silbergeld and by Mr. Murray and Mr. Race in their questioning, and I wanted to bring it out. There are some other things that I'm going to cover on this, but I think I've got to cover some of these things that they've brought up to give both sides of the story so that my hand isn't tied behind my back on this issue.

MR. MURRAY: I wasn't allowed to ask Dr. Kelly his plan for getting PCBs out of the rivers or anything else.

MR. CARNEY: He wasn't the guy that was in charge of that.

MR. MURRAY: Well, I understand that, but --

THE COURT: Mr. Carney, I'm going to give you some latitude. I'll let you continue this line of questioning. I mean, it appears we've been in this environmental matter for about an hour at least. We just need to move this.

MR. CARNEY: I'm going to skip some things and just cover the highlights.

[Proceedings were then resumed within the hearing

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of the jury as follows:]

THE COURT: Counsel, you may proceed.

Q (By Mr. Carney) When Monsanto stopped making PCBs for open uses, did the other PCB manufacturers do the same?

A No.

Q By the end of 1971, was Monsanto selling PCBs to anyone except the electrical industry?

A By the end of '71? No, the electrical industry was the only customer.

Q About how many customers did Monsanto then have left? You mentioned there was a thousand customers at one point over the period of some time. How many were left by 1972, the beginning of '72?

A I don't recall the exact count, but it seems to me a couple of dozen, just a list on one piece of paper.

Q Doctor -- Mr. Papageorge --

A You've promoted me.

Q I'm been talking to too many doctors lately. Mr. Papageorge, are you familiar with the Environmental Defense Fund?

A Certainly.

Q Just briefly, what kind of group is that?

A It's an organization composed of people very interested in effects of the negative nature on the environment, a very active group. Really a respected group,

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too, for the environment and the protection thereof, yeah.

Q Take a look at Exhibit M61.

MR. MURRAY: Can we approach the bench, Your Honor?

THE COURT: Yes, you may.

[The following proceedings took place at the bench outside the hearing of the jury:]

THE COURT: Yes, sir, Mr. Murray?

MR. MURRAY: This is the same letter from the Environmental Defense Fund that was excluded the other day. It's no more relevant now than it was then.

MR. CARNEY: Judge, this witness got a copy of this letter and it is, I think, essential since they've gotten into this environmental issue. We did not get into it. They brought it into the case over our objection.

THE COURT: Let me take a look at the letter. Just stay right there.

MR. CARNEY: Okay, I've got a copy of it. And could I, before you read it, Judge, mention some of the things that Silbergeld testified about? She testified, and this was nonresponsive answers, about the systemic effects of PCBs that they found in many, many different parts of the environment, particularly in marine mammals such as seals and dolphins and whales. She

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went on to testify about this environmental contamination. She said -- and went into the food chain.

"Q Is the existence of PCBs as a contaminant in the environment one of the reasons why it was banned pursuant to TSCA?

"A Yes."

And she goes on to talk about how everybody has PCBs in their body because of Monsanto. This is a punitive damages case.

MR. MURRAY: Whose questioning was that?

MR. CARNEY: This was Mr. Race's question. He brought it out. He injected it into the case.

MR. MURRAY: And in response to those few lines, Judge, we've had an hour and a half worth of testimony.

MR. CARNEY: No.

THE COURT: I've read the letter, Mr. Carney. What is it about the letter that you're interested in?

MR. CARNEY: They're going to say in closing argument, Your Honor, I already know what it's going to be -- I've heard it before -- where we've introduced this in every PCB trial that I've been associated with --

THE COURT: That's not the question. The question is --

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MR. CARNEY: They're going to say in closing argument --

THE COURT: Mr. Carney, the question is: Where are you going with this letter with this witness?

MR. CARNEY: I'm just going to ask him if he received that and I'm going to ask him to read it.

MR. MURRAY: You have to look at the second page, Judge.

MR. CARNEY: The second page, when they get up in closing argument and say how irresponsible we are and we ought to be punished because we let this chemical get in everybody's body, and all the ways that Silbergeld talked about with the fish and into the food chain.

THE COURT: All right. Well, let me read the letter. I guess you want to get this in because this is nice, self-serving language?

MR. CARNEY: And, Your Honor, over our objection, page 106, Dr. Silbergeld talked about this Yusho incident in Japan where the people ate the PCBs and they got birth defects from it in women who were pregnant. And, you know, they are going to show, to say, you know, here we've got everybody on this jury and they're thinking birth defects. They're talking about all this toxic stuff, and they're going to

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inflame that jury, that we're just a totally irresponsible company. And I think I have a right to defend our honor, and that's what -- I know what they're going to say in their closing argument. If you don't allow them to argue it, that will be a different thing.

MR. MURRAY: I won't argue environmental stuff in a toxic case, and I can promise you that.

MR. CARNEY: But Race is going to do the argument. I've already heard him give this speech. I've heard every speech, every closing argument and seen them all, and they all talk about this.

MR. MURRAY: We have to talk about it, Judge, a little bit because that's what prompted them to finally start doing the testing. But you don't have to get into it to the degree that we've been getting into it. I don't care if he wants to get into it, fight over it. We'll get into it and I'll start cross-examining him on the environment and we'll see how far we go with that.

THE COURT: Counsel, I am not going to let the letter in. This whole environmental issue and all of those things that you guys have gotten into just to make points, and all of these unsolicited responses that we've gotten from all of these experts that I'm sure have injected a lot of these things in the case

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because they knew that they needed to get into this case, that they probably would not have gotten in otherwise, you guys are not going to be able to argue it. This just isn't going to happen.

I mean, when you argue to this jury with regard to punitive damages, you're going to be locked into what the evidence is, what the credible and probative evidence is. We're, like, spending a lot of time with this environmental area and I've given you an opportunity to hopefully prosecute as well as to defend your points. But, in the final analysis, in terms of whether you get to the jury on a punitive issue claim, I mean, I'm going to make that decision.

MR. MURRAY: It's got nothing to do with the environment. I agree with that, Judge.

THE COURT: It will not be made. It will not be made based on what has happened in Europe. It will not be made based on what has happened with fish, birds, chickens and other animals.

MR. MURRAY: I agree with that.

MR. CARNEY: Judge, the problem is, it's in and I didn't put it in, and I think it was put in -- there's no question, it's in every PCB case that I've seen. They've gotten it in. And now that they've gotten it in, I'm not going to argue it if they're not going to

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argue it. But you let them get in birth defects, or they got it in through nonresponsive answers where nobody could protest. But all I'm saying is, the plaintiffs put it in. If he's not going to argue it, I won't argue it. But, I think, to leave the jury with the impression that birth defects and problems with whales and all of these environmental problems that they've spent a lot of time -- it's not five minutes; there's been hours of testimony on both sides on this issue -- and now I've got something I can present that, at least in part, will rebut this so that the jury isn't totally poisoned. And I believe that they are poisoned with this stuff; you can't get it out of their mind. The only way I can solve the problem is at least to have reference to it. I won't argue it if they don't argue it.

MR. MURRAY: If it comes in, it's going to be argued.

THE COURT: This is the same issue -- is this the same issue you just had this witness testify about PCBs being found in the environment out in San Francisco or out in California?

MR. CARNEY: That's the environmental issue.

THE COURT: This is the environmental issue?

MR. CARNEY: Yes.

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THE COURT: As I understand this, this letter is suggesting that Monsanto was not the party responsible for some of the environmental problems?

MR. CARNEY: No. What this letter says --

THE COURT: Is this letter suggesting Monsanto has not done a good job with PCBs?

MR. CARNEY: That they were behaving responsibly and responding to the problem that they have in front of the jury. That's the only purpose for it.

THE COURT: Why don't you just ask the witness whether this Environmental Defense Fund group or committee believed that Monsanto was acting responsibly as it relates to the environment, period.

MR. MURRAY: If he gets into asking about that, Judge, I'd rather to have the letter come in. I'm going to have to cross-examine him on it and I'd be happy to do it.

THE COURT: The letter isn't coming in.

[Proceedings were then resumed within the hearing of the jury as follows:]

THE COURT: You may proceed, counsel.

Q (By Mr. Carney) Is this Environmental Defense Fund that we just mentioned the same Environmental Defense Fund that Dr. Ellen Silbergeld has been a member of for fifteen years?

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A Yes.

Q Did the Environmental Defense Fund, in 1970, tell Monsanto anything about their conduct in responding to this environmental problem that we've been talking about?

A Yes, they did.

Q And what did they say?

A They were favorably impressed with what they were hearing about Monsanto's action toward PCBs, were carefully watching our program to see if the kinds of things that we indicated we would do would be achieved, and that they were impressed that Monsanto seemed to be interested in the environment as distinguished from purely economic gain.

Q They were complimentary then about Monsanto's response to the problem?

A Oh, yes, yes.

Q Why did Monsanto quit selling PCBs to the electrical industry -- well, let me strike that and ask a more specific question, because I don't want to get into an area that the court has said that we shouldn't get into.

I don't know how to ask it any other way, but I think I cautioned you about one area not to get into; you remember that?

A I think I do.

Q If you could answer this question, but I don't want you to open up an area that we have agreed that we

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won't open up.

Why did Monsanto quit selling PCBs altogether, in other words, quit selling them to electrical companies like Westinghouse and General Electric?

A We relied on our Westinghouse, General Electric, and other electrical apparatus customers because of their knowledge of the electrical distribution business and all, and they repeatedly informed people like me at meetings and so on that the discontinuance of the availability of these PCBs would result in chaos in the electrical industry, resulting in brownouts and blackouts.

MR. MURRAY: I object, Your Honor. May we approach?

MR. CARNEY: Your Honor, that was gone into by Mr. McClain.

THE COURT: The objection is overruled.

Q (By Mr. Carney) Let me ask you to look at Exhibit M81.

A I have it.

Q This was a memo from Mr. Raab and the subject is a Westinghouse report on the need for continued use of polychlorinated biphenyls as electrical insulating liquids; is that correct?

A That is correct.

MR. MURRAY: Can we approach the bench, Your

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Honor?

THE COURT: Ladies and gentlemen, I think we're going to take a recess. We're going to be in recess till about ten minutes after 4:00.

Ladies and gentlemen, justice requires that you not make up your mind about the case until all of the evidence has been seen and heard. You're not to discuss this case among yourselves, nor are you to permit anyone to discuss this case in your presence.

Ladies and gentlemen, we'll be in recess until 4:10.

[At this time, the jury panel left the courtroom.]

THE COURT: Mr. Murray, what is your concern about this exhibit?

MR. MURRAY: It's been withdrawn, Your Honor.

MR. CARNEY: I told Mr. Murray I was going to withdraw it. With your ruling, I told him I'd better stay away from it.

[At this time, a recess was taken.]

oOo

[Subsequent to the recess, the following proceedings were conducted in the courtroom within the presence of the jury:]

THE COURT: You may proceed, Mr. Carney.

MR. CARNEY: I cut way back on my cross, Your

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Honor, so we're going to finish the witness for sure today.

CROSS-EXAMINATION (Continued)

BY MR. CARNEY:

Q Why did Monsanto chose 1977 as the year to stop making PCBs altogether?

A Monsanto was informed by the electrical equipment customers that they had finally developed alternative materials that were not quite as good but were acceptable for use in their equipment.

Q Did it not only take a chemical but a redesign of the capacitors and transformers to do this?

A Yes. Yes, it did.

Q And were the capacitors after they redesigned -- after General Electric and Westinghouse redesigned their capacitors to accept this other material, where the capacitors themselves safe as far as fires?

A Well, the new liquid that was a substitute for the PCB was flammable. It would burn. So it's my understanding, they have redesigned the capacitor system in a way, they put a fuse in it so that the electricity doesn't build up to the point where it becomes a fire problem. So, I don't know the technical details, but there was a combination of equipment design, as well as a liquid replacement.

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Q So it wasn't just simply finding a replacement for the fluid?

A That is correct.

Q When did Monsanto -- we know that Monsanto stopped in '77. When did Monsanto indicate that it wanted to stop making all PCBs, even in the enclosed systems like capacitors and transformers?

A Early in '76, as I recall. It was quite early, right after the Christmas holidays. In '76, the vice president of Monsanto announced at a meeting in Washington where the director of EPA had called the high executives of the electrical equipment companies and Monsanto, the Monsanto vice president announced that Monsanto was ready to terminate that business as soon as its customers indicated that it had a replacement material.

Q And then it took from that point until sometime in 1977 before the electrical companies did find the replacement you just described?

A Yes, that's what happened.

Q Can you tell me a little bit about the discussions internally at Monsanto, and I believe that occurred in late '75, September, about the decision to stop making PCBs just as soon as a substitute was found?

A Of course, I don't recall the details. I do recall that then the vice president was a newly assigned

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vice president.

Q Do you know his name?

A Jack Fitzgerald, came onboard, gave me an opportunity to sit down and review with him where we stood on the PCB environmental issue and the programs we had undertaken. That's when I took the opportunity to suggest to him that it seemed to me, from what little I knew, that our customers might well be ready and that here's an opportunity for him to make his announcement.

Q When did Monsanto then -- well, then, did Mr. Fitzgerald make that decision, or did he have to bring -- who made the decision then at Monsanto to get out of the PCB business? I know you got out later when the substitute was found, but who made the decision; do you recall?

A I understand Mr. Fitzgerald made it.

Q Did you recommend that decision?

A Yes, sir.

Q We heard about governmental ban on PCBs from a witness in this case. Did Monsanto, in terms of its decision to stop, when was that in comparison to when this ban came into effect?

A I'm trying to recall the dates. The ban of the manufacture and use of the PCBs occurred, as I recalled, in '79 and the legislation, the law passed by Congress to authorize that ban was passed in, as I remember, about the

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middle of '76. This was the Toxic Substances Control Act.

Q It's called TSCA?

A TSCA. In that law, there are words that refer to PCBs, specifically, and authorizes the EPA to pass the necessary regulations to stop its use.

Q And, so, Monsanto then stopped making PCBs about two years before PCBs were banned.

Let's talk a little bit about IBT. What was -- and I'm getting a little bit fuzzy here about what's been said and what hasn't been, to be honest, and if I'm repeating myself, stop me. Did you testify about what the reputation was of IBT?

A I believe I mentioned that they were probably the best in the country.

Q Okay, good. Were you ever shown -- you mentioned you went up to IBT. By the way, when you went to IBT, did you go in unannounced or did they know you were coming?

A They knew we were coming.

Q How do you know that?

A Well, many indications. First of all, they met us at the airport and took us to their laboratory.

Q And is that in Chicago?

A It's Northbrook, Illinois, which is just outside of Chicago, yes. They had their conference room ready and their presentations ready with the slides and the charts, so

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they were prepared for our arrival.

Q Were you ever actually shown any data yourself by IBT while you were there?

A Not the raw data, no, sir.

Q Okay. Do you know what kind of data anybody at Monsanto saw on trips to Monsanto(sic)?

A No, I don't.

Q You don't know whether they saw blood data, urine data, or weight data, or what?

A No, I don't.

Q And Monsanto didn't have any inhouse facility to do this kind of testing?

A It did not.

Q Did most chemical companies at this point in time when you went to IBT in 1969 have their own testing laboratories, animal testing laboratories?

A No, sir.

Q Did a few of the companies have it; do you recall?

A I'm only aware of one; that's duPont. They had their own toxicity laboratory.

Q There was some mention by a witness about Dow having one. Do you recall that or not?

A I really --

Q Don't get me wrong. I think I heard that. I don't want to mislead you.

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A It may well have, unless Dow had a subsidiary by some other name. I don't recall personally.

Q Okay. And duPont, is that a company that -- it's a chemical company?

A It's the biggest chemical company in this country.

Q Is it bigger than Monsanto?

A Oh, yes.

Q By a lot?

A Three or four times.

Q And I take it later on in the '70s, after Dr. Kelly retired, was there -- did Monsanto eventually get its own toxicological department with a laboratory for testing?

A Yes, eventually there was a laboratory set up.

Q And did Monsanto have food products and lots of other products where they could make use of it?

A Oh, certainly.

Q Was that true in the '60s? Did Monsanto have a need for a full-time laboratory?

A No, in the '60s, there wasn't that type of need to the point where you could hire the necessary staff and have the facilities in tip-top shape, so to speak. It would have been idle most of the time.

Q From what you saw when you were invited and picked up at the airport and taken to the IBT lab, did you see a laboratory that looked like it had dead animals all over the

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place and wild animals chewing off legs or anything of that sort?

A I've heard of all those allegations, but I saw nothing that even approached that.

Q And you don't have any idea whether they took special precautions to spruce up the place knowing that you were going to visit or not?

A No, it was so clean, it would have taken a mammoth effort to clean it up the way they described the bad situation.

Q Okay. Do you personally know Dr. Wright?

A Yes.

Q Or did you know him?

A I knew him.

Q Where is he now?

A He's deceased.

Q When Dr. Wright came back to Monsanto after he'd been employed for IBT about a year and a half, I think -- is that your recollection, he was employed up there for about a year and a half? Or do you recall that?

A I really -- I don't know the details.

Q At any rate, there's some testimony he was there for a year and a half. When he went to work for Monsanto after he had worked for IBT, did he ever tell you that there were any problems with the test IBT did for Monsanto on its

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Aroclors?

A No, sir.

Q Or any other tests?

A No tests. No remarks of that kind.

Q Did he ever say anything like, "We did get short of manpower. We didn't weigh the animals like we were supposed to in the protocol, and so we just inserted where we didn't have months. We were supposed to weigh every month; we didn't do it and we just inserted weights, approximating what we thought they'd be," or something like that?

A No, never.

Q Did he ever describe that there were horrible conditions that existed there in the rat department?

A No.

Q Where rats were dying and it was a mess?

A No.

Q When you were using these IBT tests, did you have any idea, any clue, that there was any problem with any of those IBT tests?

A No.

Q If you had known that, would you have used them?

A I would not use bad data, no, sir.

Q As far as you know, did Monsanto, anyone at Monsanto, know that there was any problems with those IBT

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tests during the time that you were going to meetings and IBT tests were being discussed with Kimbrough tests?

A There was nothing to indicate any need to worry about any of that testing.

Q In fact, Monsanto was somewhat surprised to see a difference between the Kimbrough results and the IBT results?

A Yes.

Q Let me look at -- I'm going to hand you a notebook or, no, I'm going to ask --

I'm going to hand you a different notebook. I'm going to try to go through these pretty quickly. Did I --

THE COURT: What volume are you on?

MR. CARNEY: That's Volume Two.

Q (By Mr. Carney) In order to try to expedite the process, did I show you this morning when we met -- and I'm going to read off these exhibit numbers -- Monsanto Exhibits -- and they're the ones at the front of this notebook -- 38, 39, 44, 60, 64, 68, 69, 88, 72, 74, 100 and 106, and they're all at the beginning of Volume Two of that notebook? Did I show you those and did you have a chance to review them?

A Yes, this morning.

Q Are these exhibits, the numbers which I just read into the record, representative examples of letters that

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Monsanto sent to Westinghouse in the period starting February 1970 --

A They are.

Q -- and through the '70s?

A They are.

Q What was the purpose of these letters, starting in February 1970 and running through to the end of the '70s?

A It reflects Monsanto's program for keeping the customers informed of developments for PCBs in the environment.

Q And these are all letters to Westinghouse?

A Yes.

Q And did Monsanto also send some letters to its other customers?

A Yes.

Q Could you, Mr. Papageorge, go into the Bloomington Westinghouse plant and visit it uninvited?

A Oh, no.

Q And why is that?

A Well, there are two good reasons that occur to me at the moment. There is, of course, the safety consideration. You can't have anybody off the street walk into a plant in which some dangerous situations could exist. Another very important reason, really, is that there's a lot of competition between different manufacturers and they do

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have some secrets that they don't want their competitors to see or know about. So they have to -- they have an obligation, really, to protect that confidential information and they don't want any stranger coming by and becoming familiar with this information and passing it around. It's traditional, really, in industry to only permit people to visit with an escort.

Q Was -- you visited plants from time to time of customers, PCB customers of Monsanto?

A Yes, sir.

Q And did you also have occasions to invite customers into Monsanto's, the headquarters, for meetings with Monsanto in St. Louis?

A Yes.

Q And I'm not going to go through all of the meetings, because I know you've had some meetings, but I want to cover one. There was a meeting, and I can show you a document if you needed to refresh yourself, but I believe there was a meeting in St. Louis where Westinghouse came to St. Louis in -- I'm trying to find the -- I think it was in 1970.

A About April or so.

Q Yes, I think that's it. Let's see if I can get the exhibit. I think it's Monsanto Exhibit 56. You might turn to that.

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A Fifty-six?

Q Monsanto 56.

THE COURT: That is not in Volume Two.

MR. CARNEY: Is it not?

Q (By Mr. Carney) Let me show --

A It's a call report, sir.

Q Yeah, that's a call report.

A That's a Bloomington visit, Bloomington plant.

Q Yeah, let me just show, if you can't find it --

MR. CARNEY: Sometimes these tabs are hard to find, Judge. I have the same problem. Have you found it, both of you?

THE COURT: [Nodded.]

THE WITNESS: I have.

Q (By Mr. Carney) I'm confused. This is a visit where you actually went to Bloomington?

A Yes, sir.

Q Okay, and in that meeting, I'm just going to read one paragraph of this call report, and this was -- the date of the call report is July 22, 1970; is that correct?

A That is correct.

Q And you actually went to Bloomington along with a couple of other Monsanto people?

A Just one other, Mr. Graham.

Q And in that meeting, the call report says, in the

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fourth paragraph, "The utility industry, according to McClain, is living from hand to mouth regarding capacity. Capacitors are the key. Thus, if Monsanto should cut off the Aroclor supply, the industry would need a long lead time to phase in some other impregnate. Otherwise, there would be a snowball effect on the shortage of electrical generation capacity, which could lead to serious blackout problems."

Do you recall that somebody at Westinghouse, a McClain, actually made that statement?

A He did.

Q And was there concern by Westinghouse that Monsanto would cut off its PCB supply before they had developed a substitute?

A There was a great concern, yes, sir.

Q And was there a concern by other electrical users like these?

A Yes.

Q The same type concern?

A Yes.

Q I'm going to skip a few things and go to -- there was mention in this case by, I think, one of the plaintiffs' experts about a Yusho incident. Are you familiar with that?

A Yes, sir.

Q And I'm not going to ask you to explain it because

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I think the jury heard about the eating of the PCBs in the rice oil in Japan. Early on, the writers when they wrote about that thought it was PCBs that was causing these health problems?

A That's true.

Q And I think there was various health problems mentioned about the yellowing of the fingernails and skin discoloration, and I think this witness even mentioned that there were some problems with birth defects. Do you recall whether the writers later determined that it wasn't really the PCBs that had caused those problems but some contaminant?

MR. MURRAY: I object, Your Honor. If he has a scientific article that he wants to introduce, that's fine. But asking him what he recalls some writer saying isn't proper.

THE COURT: All right, counsel, do you have a document?

MR. CARNEY: I do have an article, Your Honor.

THE COURT: Why don't you lay the proper foundation.

MR. CARNEY: Your Honor, I don't know if we can come up with the article, if we have it here in the courtroom. We probably have it in our workroom or we can get it.

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Let me do this. I will defer this because I think we can have our expert -- can't we, Carol? -- cover this matter.

MS. RUTTER: [Nodded.]

MR. CARNEY: Okay.

Q (By Mr. Carney) Now, Mr. Papageorge, we know that these PCBs were shipped by tank car to Bloomington and then they were pumped inside the plant through pipes. Is there any way after the liquid gets into the plant to have some kind of a label on the liquid that can then be seen by the worker that you know of?

A No, that's impossible.

Q And because of that situation, is that why Monsanto sent the technical bulletins and the brochures and the letters to the industrial hygiene department of Westinghouse?

A Exactly.

Q Now, I was going to show you a notebook of labels, but I think I'm going to save time and skip over that and just ask you this: Was there a point in time when this environmental issue came up when Monsanto added an environmental warning to the label?

A Yes.

MR. CARNEY: Mr. Murray, can we just -- do you have any objection to that environmental label?

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MR. MURRAY: No.

MR. CARNEY: I won't bother showing it to him, okay?

Q (By Mr. Carney) And, basically, that environmental label -- I can show it to you, but just to save time, can you just summarize it quickly? We'll have it as an exhibit.

A Of course, I don't remember all the words, but it indicates that studies indicate that polychlorinated biphenyls were being found in the environment and extreme care should be taken to prevent their entry into the environment so they don't get into the rivers and streams and that sort of message.

Q Okay. And did this new label then get put on all the drums that contained PCBs?

A That wording did appear on all the drums starting in about May 1970.

Q And did you also put this label on tank cars with this environmental label?

A Eventually, yes.

Q Okay, now I want to hand you another volume, and this is Volume Five. And to save time today --

THE COURT: Counsel, I'm trying to find Volume Five. I have Volume Four, but I don't have Volume Five.

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THE COURT: Maybe we didn't get that to you.

Q (By Mr. Carney) Did I -- these -- it looks like a lot of documents, but I think, actually, it's about five or six documents, but they're rather thick. Did I show you this morning these documents so that we could save some time this morning?

A You did.

Q And can you generally just identify them as to what type of document is contained in this? And I'm going to read the numbers. Exhibits 216, 217, 219, 212, 213, 214, 222 and 223.

A Well, these are copies of Monsanto product bulletins, referring to PCBs. And the first two are entitled, "The Proper Handling of PCBs in the Electrical Industry." And the remaining copies describe the PCB products generally as to what the properties are and where they're used and so on.

Q Okay. And did I include in this notebook all of the product brochures and bulletins on PCBs?

A Oh, no. This is just a good sample of them.

Q Do these brochures contain any information about product toxicology and safe handling?

A Yes, they do.

Q And who prepared those sections on toxicology and safe handling?

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A Monsanto's corporate medical department.

Q And to whom were these brochures and bulletins sent to?

A Of course, they're sent to customers of the PCBs, as well as future potential customers, and anyone else who is interested in PCBs generally.

Q So Westinghouse would have gotten these documents?

A Automatically, yes, with each revision.

Q Now, look at Exhibit 217.

A I have it.

Q What was the title of that brochure?

A The title is, "The Proper Handling of Aroclors and Their Mixtures in the Electrical Industry."

Q And that was a -- it's got a Monsanto logo on the cover page?

A Yes, it does.

Q And the date is what?

A May 1st, 1956.

Q And some of the brochures here have various dates on them; is that correct?

A Yes.

Q And this is the document that's got seventy-six pages plus some diagrams in it or -- yeah, seventy-six; is that right?

A Yes.

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Q And Chapter Nine, if you'd look at Chapter Nine, that chapter is entitled, "Dermatology and Toxicology"?

A It is.

Q And what I'd like to do is, I want you to read just a few sections of that for me. It's a couple of pages long. But -- or, I'll read them to you. Maybe that will be faster, and you follow along. In the, I think, second paragraph, first sentence, it says, "If Aroclors are spilled on the skin, the skin should be washed in the usual manner with soap solutions"?

A I see that, yes.

Q And on down the page, the last paragraph of that first page, "Laboratory technique" -- I'm sorry, I think going over to the next page, the top of the page, it says, "Laboratory technique merely requires keeping the hands free of the liquid and handling it under a well ventilated hood"?

A It does.

Q Do you know how you can better tell or warn somebody than to tell them to keep their hands free of the liquid?

A I can't think of a better way to say it.

Q Could you have just said, "Avoid letting your hands come in contact with the liquid," Wouldn't that have been better?

A I don't know if better; it's equivalent.

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Q Couldn't you have just said, "Avoid all skin contact"? Wouldn't that be better?

A Well, I don't know. Keeping free of liquid, to me, is much clearer.

Q At any rate, it goes on to say, second from the bottom paragraph of that page, "If Aroclors are used at elevated temperatures in open systems, methods must be designed to exhaust any vapors arising." Do you see that?

A I'm having a hard time finding it.

Q Okay, let me see if I can find it -- no, I think -- I'm sorry, it's the bottom of page seventy-five.

A I have it.

Q Do you see that? Did I read that correctly?

A Yes, uh-huh.

Q And at the end of the chapter, I believe it says, "If workers are exposed to Aroclor vapors at relatively high levels, as may be the case when opening a heated capacitor impregnating chamber, a respirator should be worn during these short intervals"?

A I see that, yes.

Q Did Monsanto have any ovens that it used in making the PCBs?

A No.

Q Any impregnating ovens?

A No.

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Q So this was, this safe handling brochure that was sent to all the customers, this was specifically designed for the electrical industry?

A It was.

Q Where you knew that they were using ovens in the process?

A Yes, sir.

Q And that they might have elevated temperatures with the PCBs?

A Right.

Q There was reference made in this case, I think, once or maybe even twice, so I don't want to pull the letter out, but I showed it to you. Do you remember when there was a letter that was in one of your notebooks, I think, where Westinghouse asked about which creams to use or what Monsanto would recommend?

A Yes, I recall that.

Q And do you recall that Monsanto's response was that, "At Monsanto, we prefer skin prevention rather than use of creams," or something like that?

A Yes, I do.

Q So, I take it that Monsanto didn't always use the same words when they were -- sometimes they say, "Keep the liquid free" -- "Keep the hands free of the liquid," and another time they might say, "Avoid prolonged skin contact,"

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and another time they might say what Monsanto prefers in their use?

A That's correct.

Q And these other brochures that I showed you this morning, they each have a "Dermatology and Toxicology" section or a "Safe Handling" section in them?

A They do.

Q For example, the first brochure is dated 1954. Take a look at the Chapter Nine there, at the bottom of page seventy-three. Do you see that?

A Seventy-five?

Q It's Exhibit 216, the first brochure that's in this.

A Oh. I have it.

Q Okay. And that brochure, under "Dermatology and Toxicology," it says, it talks about keeping the hands free of the liquid again?

A Yes, it does.

Q And it also talks about if you use the liquid at elevated temperatures in open systems, you want to exhaust -- design the plant to exhaust any vapors?

A Yes.

Q And I don't know that I want to spend much time on them, but I think you said that the back -- the Exhibits 212, 213, 214, those are titled, they're similar titles,

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different dates? Is the title there, "The Aroclors: Physical Properties and Suggested Applications"?

A Yes, sir.

Q And those would be sent, as well, to all customers or potential customers?

A Correct.

Q And just for an example, look at Exhibit 212. One of those -- how do you describe those? Are those brochures, too, or technical bulletins?

A Well, the terminology, both the terms could be used to describe it.

Q Okay. Let's just look on page eleven --

A I have it.

Q -- of that one. There's a section on toxicity. It's entitled, "Toxicity," in big, bold print?

A I see it.

Q And it says, "Experimental work on animals shows that prolonged exposures to Aroclor vapors evolved at high temperatures or repeated oral ingestion will lead to systemic toxic effects"?

A Yes.

Q And it says that, "Repeated bodily contact with liquid Aroclors may lead to an acne form skin eruption"?

A It says that.

Q And then it says, "Suitable draft ventilation to

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control the vapors evolved at elevated temperatures, as well as protection by suitable garments from extensive bodily contact with liquid Aroclor should prevent any untoward effect"?

A It does.

Q Turn to Exhibit 222. Is that another Monsanto technical bulletin for Aroclors?

A Yes.

Q And turn to page twenty-four -- well, on page twenty-three, it again has a "Safe Handling" section on it?

A I see it, yes, sir.

Q And then, just to get a date, some of these are dated; some of these look like they're in code. Do you see on page twenty-four, are you able to determine the date?

A I believe I can. It's not too clear, but it looks to me like April of '66.

Q Okay, it's '66-4; is that it?

A I think --

Q I say it's 04/66.

A Zero-four-six-six.

Q So that would be April?

A April '66.

Q And, again, these technical bulletins would come out periodically and be updated periodically?

A Yes.

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Q And some of these brochures and technical bulletins warn specifically about chloracne and some of them don't?

A That is correct.

Q Let me talk about two more topics, and I'm going to sit down. One is, Mr. Murray asked you some questions about the Kimbrough/IBT/Pour meetings where these opinions were discussed?

A I remember that.

Q Did you come to have a lot of respect for Dr. Renate Kimbrough as a top-flight scientist?

A Oh, yes, very much so.

Q And did she spend a lot of time studying PCBs?

A Yes.

Q Was she recognized in the industry as being one of the leading experts in the field?

A Yes.

Q And did she attend any of these meetings? You said there were four or five meetings where people gathered and the different opinions were expressed. Did she attend the meetings?

A She attended one of those sessions, yes.

Q And did she voice her opinions?

A She participated and, yes, she did voice her opinions.

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Q And Mr. Murray left off with there was this dispute between IBT and Kimbrough, between IBT, Kimbrough and Pour, and, at some point in time, did you come around to agreeing with Dr. Kimbrough, Renate Kimbrough?

A Well, yes, at these meetings that I'm referring to, which occurred in November of '75, where we met with representatives of the government agencies that were very interested in PCB toxicology and health effects. The position that Monsanto took was that we had three different opinions or three different groups of professionals looking at these slides and two of them agree, that is, the group that represented the IBT team and then, of course, Dr. Kimbrough with her pathologist, Dr. Squires, agreed that the IBT study and the Kimbrough study came up with different results. There were some differences in the study regarding the type of test animal, but the third party, Dr. Pour, came up with a different opinion.

Q After these meetings -- let me ask you this, just to cut, to get to the point: By the end of 1975, after the November meeting, or at least by very early in 1976, had you come around to accepting Dr. Kimbrough's view --

A Yes.

Q -- of what these -- about what was being demonstrated in her tests of the 1260 PCB?

A There was no argument with her observations. The

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frustration came up as to why the difference.

Q And you had IBT having a study that had some slight, I don't know, slight, they were different than her study --

A That's --

Q -- on the same 1260?

A That's the frustration, yes.

Q But eventually, by 1976, January, had you concluded and accepted the interpretation of both IBT and Kimbrough's pathologist that her slides could be -- should be interpreted as the carcinoma?

A Yes.

Q And then, after you accepted that as, I guess, two out of three coming down on one side, did you continue, then, in 1976 espousing Dr. Pour's views that differed from the other two views?

A No. Dr. Pour's report, as I recall, we never used it after that.

Q Okay. And did you ever see that press release that was drafted? It never went out?

A It never went out, no, sir.

Q And did you see it back at the time? I know you've seen it recently.

A I was copied in. I'm one of the carbon -- I'm one of the addressees on those cover letters.

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Q Now, after that, after that dispute was resolved in your mind and in Monsanto's mind, did anyone else do any test? Because you still had IBT saying one thing and you had Kimbrough studies showing more tumors than IBT, did anybody else do anything?

A The representatives, the governmental agencies --

Q Let me ask you this: Why didn't Monsanto say, "We've got these two tests. We'd better do another one"?

A We did consider it.

Q Okay.

A But we found out shortly, early in '76, that the government was going to conduct its own rat studies with PCBs and we confirmed that and we decided, well, all right, since the government is going to do this, it's in good hands; we will not run a duplicate study.

Q And when did those studies start? Do you know, approximately?

A Yes. As I recall, about the middle of '76.

Q Okay. Six months after this dispute that was going on?

A About that, yes.

Q And did -- was the National Cancer Institute, is that a governmental agency?

A Yes, sir, it is.

Q Were they participating in that study?

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A They were the sponsors of the study at their facility in Little Rock, Arkansas.

Q Now, my question is: What were the results of that study?

A The lifetime feeding study that was conducted by the NCI came up no finding of any cancer of any kind.

Q So they're studies --

MR. MURRAY: Your Honor, I object to him talking about studies that are not in evidence.

THE COURT: The objection will be sustained. Counsel, you have to lay a foundation.

Q (By Mr. Carney) Well, before I -- what material was used in terms of chlorination in that study?

A The type of material that Monsanto called Aroclor 1254.

Q Did Monsanto supply the material?

A Yes.

Q Now, the Kimbrough and the IBT studies that had this variance, what material was in those two studies?

A They -- the two studies that were discussed used Aroclor 1260.

Q And that's the higher chlorinated PCB?

A Correct.

Q Now, to this very day, are you aware of any animal study that has shown any kind of cancer in the 1242 PCB, the

WATER_PCB-SD0000069989

PCB that was sent to Bloomington?

A There's none that I'm aware of.

Q You weren't aware of it back then and you haven't learned of it up to today?

A That's true.

Q And on my last point, you did invite some of the Bloomington people to the Anniston plant while you were plant manager down there?

A Yes, sir.

Q Do you recall when that was?

A Nineteen sixty-seven.

Q And do you recall any of the names of the Bloomington people that came to Anniston to visit?

A Mr. Pickett, Mr. Atkins is it? I'm not positive of the second man. McNally.

Q McNally?

A McNally, that's it.

Q And were they given a plant tour when they were down there?

A As part of their visit, yes.

Q Did you spruce up the plant, do you recall, in anticipation of the visit, or make any special preparations?

A Well, you may recall, we were already starting on our program to clean up the plant. We were in our second year of it, so the plant was looking pretty good to start

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with. I don't recall any special cleanup effort.

Q And during the course of either the tour or the course of the meeting, how long did it take -- we're talking in terms of how long were they there?

A Well, most of the day, really.

Q It started in the morning?

A Started in the morning. Eight or 9 o'clock. I forget the exact timing. And the tour was scheduled 2:30 to 3:30, something like that, giving them time to get to the airport and return or go on to their trip.

Q And I'm going to save a little time and did I show you a few interoffice memos that referenced that trip?

A Yes, you did.

Q And did -- were they given any information about safe handling, told how Monsanto handled PCBs?

A Yes, they were.

MR. CARNEY: I don't think I have any further questions, Your Honor.

[Continued in Volume Number 6.]

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THE COURT: Redirect, counsel.

REDIRECT EXAMINATION

BY MR. MURRAY:

Q Mr. Papageorge, do you remember when I had you originally and I asked you about the plant procedures and the closed system and all that?

A I recall that, yes, sir.

Q And you remember when Mr. Carney asked you about the plant and you started talking about the leaks and the oil on the floor and things like that?

A Yes, sir.

Q And then you remember what he just said about the visit to Anniston in 1967 by the Bloomington workers, you said the plant looked pretty good?

A Yeah. I'm the one that said it started, yeah, it was looking better in '69, yes, sir.

Q What was that plant like, Mr. Papageorge?

A In what way, sir?

Q Well, I'm just wondering whether it was clean, whether it was dirty; whether it was clean at one time and dirty at another time; whether it was clean for the first three years and then dirty in 1969; or dirty in the first three years and clean in 1969?

A Well, I'd better describe it as, when I arrived, it was dirtier than when I left. Some of the practices that

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were in place then, I changed and I mentioned, as an example, the quick maintenance to repair drips and leaks, the use of catch basins to catch any spills.

Q Do you remember telling Mr. Carney that those were instituted in 1969?

MR. CARNEY: Objection, Your Honor. It mischaracterizes his testimony.

MR. MURRAY: He can tell me if it does, Your Honor.

THE COURT: Counsel, rephrase your question, please.

Q (By Mr. Carney) Did you tell Mr. Carney that you instituted those changes in 1969?

A No, I thought I said that they were completed by 1969, and I mentioned how it helped us get an outstanding housekeeping award.

Q When those Bloomington people came to the plant, they were there for how long?

A Most of the day.

Q Do you remember that?

A Sure, yeah.

Q Who was there?

A Who was where?

Q From Bloomington, what people were there from Bloomington?

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A I thought we mentioned them earlier. Mr. Pickett and Mr. McNally.

Q And you remember taking them around the plant?

A I didn't take them around the plant. I had others do that.

Q You remember their visit?

A Yes.

Q You visited with them? You talked with them?

A I met with them. I introduced them, introduced the program and the opening statements that were made. I sat through the presentations and discussions. I had lunch with them, returned back to the plant and then the manufacturing supervisors took the two Westinghouse individuals for a walk through the plant.

Q You -- did your memory improve since 1987?

A I think I know what you're referring to, sir. I did --

Q I'm sure you do.

A Huh?

Q I'm sure you do.

A I think you're referring to a deposition in 1987 when I was first asked that question without any documents to help refresh my memory, and I do admit that, at that point in time, after twenty years, I didn't remember the specifics of the meeting, but I did remember some

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Westinghouse people coming by. Keep in mind, they're not the only visitors that we had over the five-year period. But, later, as I thought about it and saw documents, I must tell you that I have total recall of that meeting. It's as crystal clear in my memory as anything.

Q Did you have documents in front of you at the time of the deposition?

A No, sir. They were given to me later, I think, as the deposition progressed. I was shown copies but, at the very beginning when the questioning started, I could not recall the details.

Q Mr. Papageorge, isn't it a fact that the lawyer who was asking you these questions gave you the memo, Mr. Benignus', first, before asking you any questions about it, gave you a chance to read it?

A I sure don't remember that happening at all, because I recall being -- having a total blank on the visit, whereas a memo or so might have helped me recall the incident.

MR. CARNEY: Your Honor -- go ahead.

MR. MURRAY: Page 276, counsel.

Q "Q The memo indicates that as of 1967, the time of the memo, that people at Westinghouse had never seen the Monsanto facility that made their PCBs; correct?"

A That's what it says, yes.

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Q And you don't recall any visit by Westinghouse people to your facility prior to this; is that correct?

A Correct.

MR. CARNEY: What page are you on?

MR. MURRAY: I'm on 276. I'm moving to 277.

MR. CARNEY: Could you show the witness -- could you show the witness a copy?

MR. MURRAY: He told me he remembered what I was talking about.

Q (By Mr. Murray) Do you need to see the copy?

A I don't remember all the details, sir. You have me at a disadvantage.

Q Sure. I take it this testimony went on for some time; didn't it?

A I don't know where you're starting and where you're ending.

Q Take as much time as you need, Mr. Papageorge, to review that testimony.

MR. MURRAY: Your Honor, while he's looking at that, could we approach the bench?

THE COURT: Yes, you may.

(The following proceedings took place at the bench outside the hearing of the jury:)

MR. MURRAY: Your Honor, the questions were asked of him:

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"Q Did Monsanto have any reason to believe that anything was wrong with those studies?"

Here it is in black and white. And I would just like to point out -- excuse me -- I would just like to point out this:

"I'm returning the documents on a quality criteria. These have not been very helpful in drafting the Aroclors paper. This is not because the references are inappropriate but because they tend to confirm my notion that much of the data are either" --

Then it goes on, Your Honor, to talk about how the specific gravity shown in the studies can't be correct because the normal values are higher than that.

THE COURT: That's not correct, counsel.

MR. MURRAY: I'm sorry, Your Honor?

THE COURT: It is not coming in. I have already ruled on this document. This document has been shown to me probably for the fourth time. The court has ruled that the document is unduly prejudicial and that, certainly, the probative effect of the document is outweighed by the prejudicial effect of the document. The document is not coming in for the fourth time.

[Proceedings were then resumed within the hearing of the jury as follows:]

THE COURT: All right, counsel, ask a question.

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Let's proceed.

Q (By Mr. Murray) Have you finished reviewing it?

A I have looked at this copy of the transcript and I do see a reference to the memorandum that you refer to where Mr. Benignus is informing Monsanto people that the people from Westinghouse would like to visit the plant.

Q Did you also see where he referred you to the memo where the agenda was listed?

A I'm having trouble finding that.

Q Do you want me to help you?

A I would appreciate that, sir, yes.

Q Beginning right here on Page 284, line twenty-one.

THE COURT: I'm sorry, what is the page number?

MR. MURRAY: Two eight-four, line twenty-one, Your Honor.

THE WITNESS: Okay, I see the reference to the memorandum that outlines the agenda for the meeting. I see the reference for the memorandum to Mr. Benignus in which he attempts to set up a meeting. I have a hard time finding a reference to the fact that I was questioned about such a meeting and did not really recall the details.

Q (By Mr. Murray) Let me show you that, too. He asked a question about lunch. He says --

THE COURT: Page and line number, counsel.

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MR. MURRAY: I'm sorry, 286, line five.

Q "Q Would that be some cafeteria in the plant or what type of facilities did you usually make available when people like this came?

"A I don't recall this specific one, but it's possible that we went to a restaurant. It's possible that we had something catered into the plant or the local country club. It could be any one of those."

You didn't remember lunch back then; did you?

A Yes, sir. But the two documents you indicated there made no reference to where lunch was to be held. After twenty years, I frankly forgot.

Q Well, I'm going to go onto something else, Mr. Benignus(sic), and we'll come back to this.

You would agree with me, would you not, Mr. Papageorge, that in looking at a warning, it's important to read the whole warning; right?

A Well, certainly, you might miss something important.

Q You don't want to take something out of context; do you?

A No.

Q Take a look at the entire warning on that Exhibit Number 217 Mr. Carney was talking to you about, where he has talked about laboratory technique. Technique merely

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requires keeping hands free of the liquid and handling it under a well ventilated hood. That's Exhibit 217, page seventy-six. I believe he had a big thing up here showing that part; right?

A I have it, uh-huh.

Q Look at the very beginning of that warning, Chapter Nine, Dermatology and Toxicology.

A I have it.

Q Read the first paragraph to the jury.

A "Skin patch test using Aroclor 1254 (biphenyl chlorinated to the extent of fifty-four percent by weight) applied to gauze and placed in contact with the skin showed no primary irritancies or sensitization. The tests were conducted under competent medical supervision and the standard procedure recommended by Drs. Lewis Schwartz, Samuel M. Peck, Reprint Number 2552, Public Health Reports, Volume 59, Number 19 (April 28, 1944), was used."

MR. CARNEY: Let me object and maybe we can get an agreement on it. But, the blowup that I showed was the '56 brochure and now you've got him reading under the --

MR. MURRAY: Fifty-six?

MR. CARNEY: No, I think -- I'm sorry, that's my mistake. I was looking at the next year's brochure.

Q (By Mr. Murray) Aren't you telling the people who

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read this by giving them that paragraph that if you get it on your skin, it ain't gonna hurt you?

A This is communicating to the industrial hygienist and medical people who understand the words "primary irritancy and sensitization." It is not meant for the worker out in the plant.

Q Is there anywhere in here where you tell the same people that you just told, "It won't hurt you if you get it on your skin, that it might cause chloracne"?

MR. CARNEY: Objection to the form. It's argumentative. It's also not characterizing the document correctly.

THE COURT: It will be overruled.

THE WITNESS: I don't see any reference in this particular document to the chloracne situation you referred to.

Q (By Mr. Murray) And were you're telling them to just, "keep it off your hands"? It says, "Laboratory technique merely requires keeping the hands free of the liquid and handling it under a well ventilated hood." Does that mean, Mr. Papageorge, if you handle this stuff in the laboratory, all you've got to do is wash your hands?

A No, it says, "keep your hands free of liquid."

Q It says, "Laboratory technique." What does that mean? I don't understand that phrase.

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A Well, it's the use of the material in the laboratory, but the fact the -- the important sentence there is keep the hands free of the liquid. A good industrial hygienist will catch that and say, if it's important in the lab, it's important everywhere, free of liquid.

Q You said that this booklet is designed for industrial hygienists?

A Well, it's one of the individuals that would be very likely to read at least that portion of it.

Q This is a pretty thick book; isn't it, Mr. Papageorge?

A Yes.

Q It covers all kinds of topics; doesn't it?

A Yes, it does.

Q Including how to unload it from a railroad?

A Yes.

Q General description of storage tanks, detailed description of gasketing and pump packing, sampling; the entire procedure of ever doing anything with Aroclors are covered in this book; isn't it?

A That's right. It's designed for a multi-talented management at the customer's facility.

Q They'd have to be pretty multi-talented to understand what to do with Aroclors on your hands by the information you gave them; don't they?

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A Well, by multi-talented, I would suggest that I'm needing industrial hygiene people and medical people, you need manufacturing supervisors, you need laboratory people, all kinds of people are involved in the subjects discussed in this thick document.

Q Was that document designed to be passed around the plant?

A This is not designed with the worker in mind. This is designed for his supervisors, his bosses, his professionals that help him understand what is safe, what is proper, and so on.

Q You said you changed your mind about Dr. Kimbrough's work about in January of 1976; right?

A Well, it's -- we're talking here about a very short period of time, from November through the Christmas holidays, into early January. The position that was taken in our visits to Washington already supported Dr. Kimbrough's results. What followed in the next six weeks or so was one of what do we do next? What studies should we be conducting? Who else is going to conduct? And this is when we got the clear message that the National Cancer Institute was going to make studies and, at that point, the decision was made we will help them in every way possible, but we will not institute another set of studies.

Q The only thing I asked you, Mr. Papageorge, was

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when you changed your mind about Dr. Kimbrough's study.

A I didn't change it, sir. When I was sitting there with Dr. Kimbrough two feet away from me, she knows and you can ask her, that we supported her observations. There's no contention there.

Q You believed that what was there was cancer?

A Well, in my mind as a layman, I understood it was cancer predicting. I didn't get the impression it was an absolute cancer, but I knew it was a different observation than that one made with the IBT studies, and that's what caused all the frustration, why the difference.

Q Mr. Papageorge, didn't you tell Mr. Carney just a few minutes ago that you changed your mind about Dr. Kimbrough's study and agreed with her findings?

A Well, I didn't understand the question as a changing of mind. It was already jelled. It's the company decision to proceed with either further studies or rely on the federal studies. That's what happened in January.

Q Did the company take the position that Dr. Kimbrough's study was correct?

A Yes.

Q Let me show you a document which I have labeled as Plaintiffs' Exhibit 166.

THE COURT: Counsel, have you provided copies of the document to the defendants?

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MR. MURRAY: Yes, sir, I have provided them a copy of all my documents.

THE COURT: What is the exhibit number again, please?

MR. MURRAY: One sixty-six.

THE WITNESS: I have quickly looked over this document.

Q (By Mr. Murray) Before I ask you anything about it, I want to check with counsel.

MR. MURRAY: I apologize, Your Honor. We didn't know we were going to have to use this.

[Item given to the court.]

Q (By Mr. Murray) This is a press release; is it not?

A It appears to be, yes, sir.

Q From Monsanto Company?

A That's what it says.

Q Dated September 26, 1980; correct?

A Correct.

Q Let me refer you to page two of the study and ask you to read that first full paragraph on that page?

A "The cancer-causing label resulted from a single animal study conducted by a public health researcher in 1975, and later discredited by peer review. The cancer stigma has persisted. However, despite this and results of

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a later animal study performed by the National Cancer Institute (1978), the conclusion of the NCI study was that PCBs were not" -- underlined -- "cancer-causing compounds. (Copy of the NCI news release attached.)"

Q Now, is not Monsanto saying in this document that Dr. Kimbrough's study was discredited by peer review?

A It does say that.

Q Who was the peer?

A I don't know. That's 1980, sir. I don't know what happened.

Q Are you aware of anything that happened between 1975 to 1980 to discredit Dr. Kimbrough's article?

A No, I'm not.

Q Be honest with me, Mr. Papageorge. The peer review that they're talking about here is Dr. Pour; isn't it?

A I don't know, sir. If I knew, I'd tell you.

Q Let me ask you something, Mr. Papageorge. The proposal that you drafted to go before, I forget what they call it, the committee of the people who make decisions at Monsanto -- you know what I'm talking about?

A I believe that I do, yes, sir.

Q What is that?

A The corporate management committee.

Q Yes, corporate management committee. You drafted

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the proposal ahead of the time of the meeting; right?

A I had several drafts that I worked from, and I finally sent one out for comment and discussion from which I then developed and put together a final presentation.

Q That's what I'm getting at. That was the procedure when the corporate management committee had something on its agenda, somebody would come in, explain the situation to them, and they would make a decision; right?

A That's normally the practice, yes, sir.

Q They didn't come up with those twelve points at that meeting?

A True.

Q That was something that had been discussed, options looked at, somebody came in, made a proposal to them most likely; correct?

A That's right.

Q And that's the normal way things work in a large corporation like that; isn't that correct?

A Well, that's fairly typical of what I saw in Monsanto.

Q There's nothing wrong with that? I mean, that's the way large corporations have to work; right?

A I can't speak for other corporations. I don't know how they do it.

Q Let's go back to your deposition.

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A All right.

Q Getting back to that meeting?

A Yes, sir.

Q You were specifically asked whether you called --

MR. CARNEY: What page, Mr. Murray?

MR. MURRAY: Two eighty-eight, line ten.

Q (By Mr. Murray) Do you recall whether this meeting went off as scheduled?

A No, I don't.

Q Did you -- you didn't remember that meeting at all that day; did you?

A Well, I --

MR. CARNEY: Could you show him the transcript, Mr. Murray?

MR. MURRAY: I've shown him the transcript, Mr. Carney. I'll be happy to show him again.

MR. CARNEY: There's about ten pages that were not discussed, and I think it gets a little confusing.

MR. MURRAY: Absolutely, there is, and you're welcome to look. I think it goes beyond ten pages.

MR. CARNEY: I think it goes a lot more than ten pages.

Q (By Mr. Murray) But you didn't ever give him any specific information about the meeting because you didn't recall that?

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A I didn't recall the details at the time of this deposition, that's true. I did recall having visitors in the plant. I did recall at one time there were Westinghouse people at the plant. But, after twenty years on a subject I hadn't thought about since, it was difficult for me to recall details such as did the meeting go off as scheduled. I just couldn't recall.

Q I can understand that, Mr. Papageorge, and I'm just wondering what happened between '87 and '94, with an even further length of time passing by, that maybe your recollection had gotten better?

A Sir, you don't know me very well. After this deposition. I sat down and gave it some long serious thought. See, by the time this trial took place, my recall was very clear as to what had taken place. I remember vividly the display table with the respirators and gloves on it and so on, and I recall the room in which it was held and so on. The details came back to me and, once that happens to me, I'll remember it forever.

Q There wasn't anything, any other written memo, was there, regarding this meeting that wasn't discussed in here?

A Not that I recall, no, sir.

Q There were never any minutes taken of the meeting?

A No.

Q Or a memo drafted saying what happened at the

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meeting?

A No.

MR. MURRAY: I'm going to have to get a binder like Mr. Carney's got because I have trouble with these.

Q (By Mr. Murray) Mr. Carney asked you about, I think, what he called the secret ingredient that Westinghouse put into the PCBs?

A It was secret to me.

Q Monsanto knew, did it not, that when it shipped its PCBs to Westinghouse, they were going to add that ingredient?

A I personally didn't know it until years later. Who else at Monsanto may have known this, I have no way of knowing. The subject never came up until later years, much later.

Q Do you have any reason to believe that Westinghouse was adding this ingredient behind Monsanto's back?

A No, I didn't sense that was the reason, no.

Q Monsanto not only knew that, because you had the patents, Monsanto knew what Westinghouse was going to do with it; right?

A Just having a patent issued doesn't mean it's being used.

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Q No, no, you had Westinghouse patents so you knew what it was that it was going to be used for; didn't you?

MR. CARNEY: Objection, there's no foundation.

THE COURT: Objection will be sustained.

Q (By Mr. Murray) Well, let me ask you this: Didn't Mr. Carney show you those patents? Didn't you identify them as Westinghouse's patents?

A Yes, sir. But I don't know if Monsanto ever had copies of them.

Q Well, how did you know what they were?

A By reading them, sir.

MR. CARNEY: I object. We got copies of them in the course of litigation.

Q (By Mr. Murray) So, you had never seen those things prior to the litigation?

A This morning, no.

Q I see. Do you have any information to tell this jury that Monsanto didn't know what Westinghouse was doing with the PCBs once it got to the plant?

A Do I have any information that Monsanto didn't know?

Q Yes. You've been the corporate spokesman for Monsanto in this litigation; haven't you?

MR. CARNEY: Objection. I don't think there's --

THE COURT: It will be sustained.

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MR. MURRAY: Can we approach the bench, Your Honor?

THE COURT: Counsel, you don't need to approach the bench on that issue. He has not been designated as a corporate representative.

MR. MURRAY: He has, too. Can we approach the bench?

THE COURT: Counsel, proceed.

Q (By Mr. Murray) Just tell me, Mr. Papageorge, do you have any information to believe that Monsanto didn't know what Westinghouse was doing with these PCBs?

A I have no information to help me there, sir.

Q All right. Your instructions, Mr. Papageorge, when you took over as environmental manager in 1970, I believe you told Mr. Carney, was to share everything; is that right?

A Yes, sir.

Q And in your correspondence back and forth with customers and the public, if somebody wrote to you with questions, you would give them the answers?

A As best I could, yes, sir.

Q And I assume it wouldn't matter whether it was a customer or a hospital or whatever, if somebody called and asked you for information on the product, you would give it to them?

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A As best I could, yes, to the best of my ability.

Q Let me sow you a document that I've marked as Plaintiffs' Exhibit Number 79.

MR. CARNEY: Could you hold it until I get a chance to look at the exhibit? Did you say 78?

MR. MURRAY: Seventy-nine.

THE WITNESS: I have read the document.

Q (By Mr. Murray) Do you recognize it?

A Yes, I do.

Q This was a letter --

MR. CARNEY: Your Honor, could we approach on this?

THE COURT: You may approach.

[The following proceedings took place at the bench outside the hearing of the jury:]

MR. CARNEY: Your Honor, this is a letter to the Buffalo Children's Hospital, Buffalo, New York. Apparently, they must have sent a letter to Monsanto on birth defects in animals. It says, "We, therefore, are disturbed by the article's reference to birth defects in animals. To our knowledge, no laboratory has evidence to confirm this statement," and they enclose some literature on the product which we don't have. It is after Dr. Bechtold left the plant. I think we're getting into something that's extremely --

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MR. MURRAY: This isn't --

MR. CARNEY: It's not relevant. I can't understand how the letter -- well, to the Buffalo Hospital has anything to do with warnings to Westinghouse.

MR. MURRAY: I don't even know if this thing was originally objected to. The reason I want it is not for what's on the front page but for what's on the back. This is 1970. The man doesn't have any articles concerning poisoning or Aroclors.

THE COURT: All right. I will permit you to examine him with regard to the last paragraph in this particular letter. Please don't reference the fact that this deals with the children's hospital. Also, while you're here, you indicated Mr. Papageorge was designated as a corporate representative of Monsanto?

MR. MURRAY: Yes, sir.

THE COURT: There is nothing in my pleadings. There is nothing in my file that indicates this.

MR. MURRAY: For the purpose of 30(B)(6) deposition, Your Honor, he was designated as a corporate representative.

THE COURT: That doesn't mean anything at trial. If he's designated as a 30(b)(6) witness, then that's fine at trial -- I mean, at a deposition. That was a

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1987 deposition that you're reading from. In this trial, he is not designated. I've looked at your witness list and I've looked at the defendant's witness list.

MR. MURRAY: Your Honor, I didn't mean to imply anything. The point I was making, and I wasn't allowed to continue, I was going to ask him, "You've been a corporate representative for Monsanto before; haven't you? You were never asked to look into this matter?" I never got a chance to finish it.

THE COURT: Let's proceed.

MR. CARNEY: Your Honor, my concern here, I wasn't focusing on this, but what this opens the door for, in order for me to respond to this, first of all, something going to the Buffalo Children's Hospital is prejudicial. I don't know what that has to do, what earthly reason it has to do with a warnings case to Westinghouse, number one. And for me to respond, I've got to get into the context of the letter, which talks about birth defects in children, and this is --

THE COURT: This goes back, and we have covered this issue, this is the issue that deals with Monsanto saying that, in forty years, it hasn't had one single incident observed of PCB problems. I mean, that's the issue here. And you can use the letter and ask him if

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he's ever written a letter along those lines. That's the only thing that's pertinent in this letter, so let's get it done. This guy's going off the witness stand in three minutes. He has to come back tomorrow.

[Proceedings were then resumed within the hearing of the jury as follows:]

Q (By Mr. Murray) Mr. Papageorge, the day of this letter --

THE COURT: Wait a minute, slow down. Let her get seated, all right?

Q (By Mr. Murray) The date of this letter is August 31st, 1970?

A It is.

Q Did you tell the person that wrote this letter that, "I regret I cannot refer you to articles concerning poisoning cases with Aroclors because, after exhaustive search, we have not found a single reported incident"?

A I did.

Q I'll show you a document which we've marked as Plaintiffs' Exhibit Number 44.

A I have read the document.

Q This is from a Mr. Mather; correct?

A Yes, sir.

Q Who is he?

A As I recall, Mr. Mather was a Monsanto employee in

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the research department.

Q This memo is dated December 17, 1951; correct?

A Correct.

Q Mr. Mather writes --

MR. CARNEY: Your Honor, can we approach the bench on this?

THE COURT: All right, ladies and gentlemen, we are going to adjourn for the day.

Mr. Papageorge, you have to return tomorrow at 9:00 a.m. You can step down now.

Ladies and gentlemen, justice requires that you not make up your mind about the case until all of the evidence has been seen and heard. You're not to discuss this case among yourselves, nor are you to permit anyone to discuss this case in your presence.

Ladies and gentlemen, don't forget that we start tomorrow at 9:00 a.m. and we will end tomorrow at 4:30. Ladies and gentlemen, have a good evening.

[At this time, the jury panel was excused for the evening; proceedings continued in the courtroom as follows:]

THE COURT: All right, counsel, let me take a look at Plaintiffs' Exhibit 44. Just bring it over here, please.

All right, Mr. Carney?

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MR. CARNEY: Yes, Your Honor. There is no foundation on this document.

MS. RUTTER: We stipulated to the foundation.

MR. CARNEY: What I'm talking about, there is no foundation that this witness has ever seen the document. In fact, it was prepared about the time that he joined the company, I think a few weeks before he actually joined the company. The reference here on this 1933 incident was the Swann Chemical incident that involved bad benzene, the bad benzene spec, the ingredients in the PCBs.

THE COURT: Is this the one where the fourteen persons were involved in a PCB incident?

MR. CARNEY: Yes, Your Honor, at the Swann Chemical plant and Dr. Kelly testified about that.

MS. RUTTER: That's Meigs that you're referring to, Your Honor. That's separate from Swann.

MR. CARNEY: Meigs came in in '56, so that would be after this.

MS. RUTTER: Fifty-four.

MR. CARNEY: Fifty-four. It would be after this memo. And the other reference is to the Drinker study, which was chlorinated naphthaleneS. Now, we don't -- this author, whoever he was, didn't have that knowledge, but I think now, to put a memo in by this

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guy on something that we know there's no dispute about the evidence in this case about what those two incidents were --

MR. MURRAY: Judge, there's nothing in here. Your Honor --

THE COURT: One at a time. Are you done, Mr. Carney?

MR. CARNEY: So I think it's prejudicial and it's not relevant.

THE COURT: Mr. Murray?

MR. MURRAY: It's absolutely relevant and there's nothing in here that references either Drinker or the other one. My guess is, this top one probably is the one that happened at Swann, but these other ones are just talking about the general literature.

MR. CARNEY: That's the --

MR. MURRAY: A quick look in the literature. We've been contesting the fact that the literature shows what Dr. Kelly and Mr. Papageorge say it does.

MR. CARNEY: Again, this is a letter that the premise to this is a letter to the children's hospital where they inquired about birth defects in animals. What that has to do about anything in this case, I don't know.

MR. MURRAY: We don't know what he inquired of

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them because we don't have that letter.

MR. CARNEY: Unfortunately, we don't have the --

THE COURT: Counsel, paragraph one is out. Paragraph three is out. Paragraph two is fair game. The jury will just have to weigh the credibility of the documents.

We're going to finish Mr. Papageorge tomorrow morning, I hope, relatively quickly.

[Court adjourned on this cause for this day at 6:04 p.m., to resume the following morning.]

oOo

[The following morning, Friday, the 19th day of August 1994, beginning at 9:00 a.m., proceedings were conducted in the courtroom within the presence of the jury:]

THE COURT: Good morning, ladies and gentlemen.

Mr. Papageorge, would you be kind enough to return to the witness chair?

[The witness resumed the stand.]

THE COURT: Mr. Papageorge, I remind you, sir, that you are still under oath to tell the truth.

Pull that microphone up so that you may be heard.

Mr. Murray, you may proceed.

MR. MURRAY: Thank you, Your Honor.

REDIRECT EXAMINATION (Continued)

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CERTIFICATION OF REPORTER

I, Sharon J. Morfick, Certified Court Reporter, Certified Shorthand Reporter, and Certified Verbatim Reporter, hereby certify that I am the Official Court Reporter for Division 6 of the City of St. Louis Circuit Court, that on Friday, the 1st day of July 1994; Monday, the 18th day of July 1994; and Monday, the 8th day of August through and including Tuesday, the 30th day of August 1994, I was present and reported all the proceedings had in the case of JUDITH BECHTOLD v. MONSANTO COMPANY, Cause No. 922-0911; and I further certify that the foregoing pages contain a true and accurate reproduction of the proceedings.

I further certify that the cost of preparing this transcript is as follows: 2851 pages

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Sharon J. Morfick

Sharon J. Morfick, CSR, CCR, CVR
Official Court Reporter

This transcript of the record on appeal was completed and attorney was notified of said completion on March 31, 1995.

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