NORTH CAROLINA
RANDOLPH COUNTY

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION

MID-STATE FARMS COOPERATIVE COMPANY,
Plaintiff

vs.

INTERNATIONAL PROTEINS CORPORATION; EAST COAST TERMINALS, INC.; SOUTH PACIFIC PROTEINS, INC.; and MONSANTO COMPANY,
Defendants

72 CVS 76

NORTH CAROLINA
WILKES COUNTY

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION

HOLLY FARMS POULTRY INDUSTRIES, INC.,
Plaintiff

vs.

WILBUR-ELLIS COMPANY; INTERNATIONAL PROTEINS CORPORATION; EAST COAST TERMINALS, INC.; SOUTH PACIFIC PROTEINS ASSOCIATION, INC.; and MONSANTO COMPANY,
Defendants

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DEPOSITION OF WILLIAM B. [illegible]

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The deposition of William B. Papageorge was taken at the Albert Pick Motor Inn, Greensboro, North Carolina, commencing at 2:00 o'clock p.m. on Thursday, the 3rd day of August, 1972.

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Graham Erlacher, Official Court Reporter

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WILLIAM B. PAPAGEORGE

having been previously sworn, testified further as follows:

EXAMINATION BY MR. VANCE

Q Mr. Papageorge, I believe in your testimony Friday afternoon you told us about certain reports from Swedish people, organizations, reporting PCB's in the environment and as a result of that Monsanto made some studies on their own.

MR. SMITH: I believe I'll object to the form.

Q (By Mr. Vance) After the Swedish reports, Monsanto made some studies on its part about PCB's in the environment, is that correct?

A That is correct.

Q And I believe you stated that even before these studies were completed, you stated that, "We felt we had no real right to contribute to the presence of the foreign material in the environment," is that right?

A That's my personal statement, yes, sir.

Q Now, the foreign material you referred to is PCB or PCB's, is that correct?

A I was referring to polychlorinated biphenyls which were being found in places where normally they would not be expected to be found.

MR. JORDAN: Mr. Papageorge, could you speak a little bit louder? I'm having a little trouble hearing

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you.

THE WITNESS: Yes, sir.

Q (By Mr. Vance) Yet Monsanto did continue to market polychlorinated biphenyls even after that decision was reached, isn't that correct?

A We continued to market polychlorinated biphenyls under certain conditions.

Q And these conditions were decided upon by Monsanto itself?

A Yes, sir.

Q And one of these conditions was in relation to plasticizer applications. Did you not state that along about April 1970, the company notified the U. S. Department of Agriculture and notified its customers that sales for this purpose would be suspended as of August 30th, 1970?

A In April we recommended to the United States Department of Agriculture that the use of polychlorinated biphenyls in pesticide formulations not be approved in the future. And it was in June of 1970, as best as I can recall, that we informed our customers of the termination of sales to these uses, which we in Monsanto referred to as plasticizer uses.

Q So I'm incorrect as to this August 30th, 1970 date?

A The date of informing the customers was about

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June of 1970. The effective date of termination of these sales was August 30th, 1970.

Q At that time, was there any offer on the part of Monsanto to recall or re-purchase the material containing PCB which had been sold to these customers?

A I do not remember any offer of that type, no, sir.

Q Now, Monsanto, I believe you stated, removed PCB's from use in hydraulic fluids - sale for use in hydraulic fluids - between the latter part of 1970 and the first quarter of 1971?

A That is correct.

Q Was there any action on the part of Monsanto to repurchase this material?

A No, sir.

Q Then I believe you stated that from August 1970 to 1971, the first quarter of '71, the company removed PCB's from sales as a solvent in carbonless reproduction paper?

A That is correct.

Q And therefore, according to your testimony, the only uses left were one, fluids in electrical transformers and capacitors, and two, heat transfer fluid in a closed system. Is that right?

A That is correct.

Q Now, what is a closed system?

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A Well, my definition of a closed system is one wherein the liquid is contained in the storage tank, the pipelines, the heating furnace. In other words, there is no opportunity for this liquid to mix with the material being processed.

Q Now, are these the types of closed systems that you say that Monsanto continued to sell to?

A That is right, sir.

Q Is a pasteurization plant in Wilmington included in this type of a closed system?

A Yes, sir.

Q What is your understanding of this type of pasteurization system in Wilmington? How does it work? What I mean by that, what is the principle of the heating?

A As I understand it, a heat transfer fluid capable of withstanding high temperatures is heated in a furnace -- let's call it -- which is fired with -- I believe in this case -- natural gas, and when the temperature reaches a predetermined high level the fluid is circulated through a pipe system into a device which is designed as a large screw, the fluid flows through the root of this screw and then through the flights back to the source of heat in the furnace. And this process is repeated where the fluid is heated at one unit and transfers this heat into the fish meal at the other. And the process is repeated continuously.

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Q And what kind of material are the flights made of, if you know?

A In this case, sir?

Q Yes.

A I have no scientific way of determining other than a visual inspection, which I was able to make, and I would estimate that that was a mild steel or ordinary steel, carbon steel construction.

MR. SMITH: For the record, would you let it show that the witness is referring to an inspection made at the same time, as you and I know, that the attorneys were present, after the litigation began.

MR. VANCE: If you so wish.

Q (By Mr. Vance) And this pasteurization plant was located on the coast of the Atlantic Ocean, very near the coast in Wilmington, North Carolina, isn't that correct?

A That's my understanding, yes, sir.

Q And it is not unusual for pasteurization plants for fish meal or feed to be located on the coast, in the coastal area, is it?

A I am not qualified to answer that, sir. I know very little about the fish meal industry.

Q Well, do you know where other plants are located in the United States -- fish meal pasteurization plants?

A I am aware of two to three more that I've heard

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others discuss, and that's the limit of my knowledge.

Q One or more of those plants is on the west coast, is it not?

A Yes, sir.

Q And they are located in an area accessible to the shipping of fish meal into the country?

A That's my understanding.

Q Now, you as a chemist know of the effect of salt air on metal parts and mild steel, as you referred to, do you not?

A Yes, I am aware of what can happen.

Q And you are aware of the fact that salt air has a very corrosive effect on steel and cast iron and other metals of that type, are you?

A Yes, sir.

Q Isn't it true that a system of this nature is subject to leaks and spillage due to corrosion and other kinds of action?

A Well, yes, sir. This will vary, of course, with the time of exposure, concentration of the corrosive ingredients, and the material being handled, the thickness of the metal, the quality of the welding, the fabrication. It is subject to many factors. It's difficult to predict.

Q What I think I'm asking then, Mr. Bayegeorge, is that it is not uncommon for a system of this nature to have

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leaks, or for the fluid to leak out of it at one time or another. Isn't that right?

A I have no information, sir, to tell me that it is common to have these kinds of leaks.

Q Well, from your experience as a chemist, wouldn't you say that it would be common?

A No, I wouldn't say it's common. I would say it's possible.

Q Wouldn't you say it's probable?

A It would only be a guess on my part, sir.

MR. SMITH: I object and instruct him not to guess.

Q (By Mr. Vance) You are familiar with the engine oil and crankcase oil in an automobile, in that type of system, are you not?

A Yes, sir.

Q You drive an automobile?

A Yes, sir.

Q Isn't it very common for engine oil in an automobile to leak from the automobile or from the system?

A I have heard of oil leaking from automobile engines. I have no way to determine whether it is common. I have no measure of this.

Q Well, that is a closed system, isn't it?

A Not entirely, sir. It has a vent. That system

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does breathe through the atmosphere.

Q Well, if it were working perfectly -- all elements working perfectly, there would be no leak of engine oil from the system, would there?

A There would not be a leak of liquid oil, but there still would be vapors from the hot oil.

Q But you do not know of any automobile owner who hasn't experienced puddles of oil under his automobile in his driveway from time to time, do you?

A I don't have puddles of oil from my car, sir.

Q You never have had any puddle?

A No, sir.

Q From your automobile?

A No, sir.

Q Well, most driveways have dark areas where automobiles have parked from time to time, have they not, and garages have these dark areas where people have parked automobiles. You are aware of that, aren't you, Mr. Papageorge?

A I'm not aware of it, sir. I have not gone around looking at driveways of others. I have seen an occasional one, but that doesn't tell me an awful lot about the ability of a car system to keep its oil intact.

Q All right. Well now, Mr. Papageorge, do you know any warning which Monsanto gave East Coast Terminals as to the harmful effect of Therminol FR-1 on chickens?

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A The only warning I'm aware of that went to East Coast Terminals was by the label on the packages containing the fluid that was purchased by East Coast Terminals, in which it refers to a recommendation that these materials be used in such a way as to not get into the environment.

Q Can you give us a little more definitely what that label said, or what you recall that it said?

MR. SMITH: Do you have a label, Mr. Vance?

MR. VANCE: No, sir, I don't.

MR. SMITH: It's attached to the answer.

MR. VANCE: Let's ask the witness.

A (By the witness) What the label says, in addition to the trademark which describes the material in the package and Monsanto's name appearing on it and some numbers that tell us what particular lot of production material this represented -- and I believe there are also some numbers on the label that are an administrative code that describes this label for re-ordering purposes, there is also -- as I remember -- the word "caution" in reference to washing hands, breathing vapors, wearing clothes which have been exposed or which contain the material. There is also a reference to the fact that some studies have shown that polychlorinated biphenyls are found out there in the environment and that there are some species of wild life that apparently were being affected. And the label goes on to

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say, as I recall, "extreme care must be taken in the use, handling, disposal of these materials." I think that about covers the basic ideas on the label.

Q Well now, the label was industrial type warning for the handling of this material primarily, wasn't it?

MR. SMITH: I object to the form of the question.

A I wouldn't call it primarily, sir. Parts of it were related to the industrial hygiene aspects of handling the material, yes.

Q And the label didn't mention the harmful effect that the material may have to chickens or chicken feed, did it?

A Not specifically, no, sir.

Q And did the label mention the ingredient polychlorinated biphenyls?

A I believe it did, sir. Yes, sir.

Q Was this label put on the drums by reason of any governmental regulation?

A No, sir.

Q Did you have any part in wording the label that went on the drum?

A I participated in the modifications that were made to the label following this receipt of information about the polychlorinated biphenyls in the environment.

Q Were you aware that the Inorganic Pb-1 was being

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used in systems for the heating of fish meal?

A At what point in time, sir?

Q At the time you were advising in regard to the label?

A No, sir, not specifically in fish meal.

Q Were you aware that this material was being marketed for use as a heating element for feed or types of feed for animals?

A Not specifically, no, sir.

Q What use were you aware of then that this material was being marketed for at the time you were working on the label?

A I was aware of the general application of high temperature fire resistant applications. I was generally aware but not by specific application of its use in the processing of chemicals, plastics, varnishes, and lacquers, some food applications, petroleum operations. That's my general understanding of the application.

Q And this label was prepared for the drums with this information in mind, is that correct?

A That was my information when I looked at the proposed changes, yes.

Q Now, looking back at the information you had at the time that you helped prepare the label and your company was marketing this Therminol for the use for which it was

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noticed, isn't it true that one of the major sources of PCB's in the environment was due to spillage from industrial use, accidental spillage or otherwise?

A Sir, I have no way of evaluating how much of the polychlorinated biphenyls were introduced via industrial spillage, whether it be accidental or otherwise. And the amount of polychlorinated biphenyl introduced into the environment via such things as plasticizer applications, hydraulic fluids, or even this carbonless reproduction paper, I have no way of determining which was the major contributor.

Q Well, I'm not asking you which was the major contributor, but what I am asking you isn't it true that one of the major sources of PCB's in the environment is not attributed to industrial spillage, accidental or otherwise?

A Yes.

Q Did you say yes on that?

MR. SMITH: Let him finish his answer.

MR. VANCE: I didn't hear his answer.

A (By the witness) Yes, but -- I said, "Yes, but". Let's be very careful to distinguish--

Q (By Mr. Vance) I say as of the date that you were working with the label,

A That is correct. Let's keep in mind and keep distinctions between electrical use in transformer as

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distinguished from the industrial use as a hydraulic fluid in a metal plant, dye casting operation. They are so different that it's erroneous to group them together.

Q Well, let's look at the reports of PCB's in recent years for just a minute. You have read the reports of fish kills in 1969 at Escambia Bay, have you not?

A Sir, there were no fish kills in Escambia Bay in 1969 due to polychlorinated biphenyls.

Q Where is Escambia Bay - for my knowledge?

A It's located near Pensacola, Florida, and as I recall, it empties into the Gulf of Mexico.

Q Do you know Bill Woods of the Game and Fresh Water Fish Division in Florida?

A No, sir.

Q Have you read his report?

A No, sir.

Q Well, isn't it true that the fish kills in Escambia Bay were traced to lubricants at a Monsanto Company plant in Florida?

A No, sir.

MR. SMITH: Mr. Vance, do you have any such reports?

MR. VANCE: Yes, sir.

Q (By Mr. Vance) You say you are not aware of his report or this source of PCB's in Escambia Bay?

A I didn't say that, sir.

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MR. SMITH: Object to the form of the question.

Q (By Mr. Vance) Are you aware of the report?

A I'm not aware of the report that you have mentioned, no, sir.

MR. SMITH: Object to the form.

Q (By Mr. Vance) What are you aware of in regard to the fish kills in Escambia Bay?

A Sir, I'm not aware of any fish kills in Escambia Bay that are related to polychlorinated biphenyls. I have heard of fish kills in Escambia Bay several times in the past, even before I was assigned my present duties. I never was told nor could I ever find out what these fish kills were due to.

Q And you haven't read any reports attributing the source of these PCB's to lubricants at a Monsanto plant, is that right?

A Well, all right. Now, the question has changed. I'm aware of polychlorinated biphenyls being introduced into Escambia Bay from an industrial accident. There were no fish kills related to these spills.

Q When was this introduction into the Bay of PCB's?

A I believe the latter part of 1969.

Q All right, sir. You are aware then that PCB's were introduced into the Bay in 1969 as a result of an industrial accident, is that correct?

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A That's correct.

Q But what you're saying is you are not aware of any fish kills as a result of that accident?

A That's right.

Q Now, are you aware of the report of 50,000 turkeys, or approximately that number, damaged or killed as a result of PCB's in Detroit Lakes, Minnesota?

MR. SMITH: Object to the form. Mr. Vance, I asked you for the previous report. Could I see that one and also this one?

MR. VANCE: Mr. Smith, the report I was referring to was from the "Rural Herald" of February 19th, 1970, and I have a copy somewhere but it would take me a while to get it.

MR. SMITH: In the last question you referred to the report, and I'd like to have a copy of any matter to which you were referring.

Q (By Mr. Vance) Let me start my question again. I don't remember.

A Please.

Q Are you aware of reports of turkeys being affected by PCB's at Detroit Lakes, Minnesota?

A I am aware of turkeys existing in Minnesota. I do not remember the reference to Detroit Lakes. I have never heard that before.

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Q I don't mean existing in Minnesota. We know that turkeys— you are aware of the turkey incident?

A A turkey incident in which polychlorinated biphenyls were claimed to be found in the tissues of these birds.

Q And approximately what date was that, if you know?

A I believe it was after July of 1971.

Q And is it true that the PCB's were attributed to feed mill rations, or was it not?

A No, sir. The source of the polychlorinated biphenyls in that instance has not been determined to this date.

Q Now, have you attended any briefing sessions with FDA Commissioner James D. Grant?

A No, sir.

Q Have you read any reports on these sessions?

A I am aware of a briefing conducted by Commissioner Edwards, and by "aware" I mean via copies of handouts that they gave the press, and this hearing was held - as I recall - on September 30th, 1971.

Q Well, do you agree, except for isolated incidents involving fish, almost all of the high levels of PCB's found have been associated with accidents?

MR. SMITH: Object to the form.

A Yes, sir. From my information I have, in those

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instances where we have been able to determine the source of polychlorinated biphenyls, they invariably have been traced back to an accident of some sort.

Q Were you aware of the Campbell Soup Company finding high PCB levels in New York State chickens in 1970?

A Yes, I was.

Q When was that in 1970?

A The latter part of 1970 -- November, December, somewhere in there.

Q And approximately 145,000 chickens were destroyed as a result of this incident, were they not?

A I don't remember the number, sir. I recall several newspaper clippings, and the number -- as I remember -- seemed to vary with each article.

Q Were you aware of these incidents before July 1971?

MR. SMITH: Object to the form. What incident are you talking about?

MR. VANCE: The Campbell Soup incidents, the Escambia Bay incident, the Yusho incident in Japan.

A (By the witness) I was aware of the Yusho incident, the Escambia Bay incident, and the New York Campbell Soup poultry incident before July 1971, yes.

Q And I am sure you were aware of other incidents at that time that I haven't mentioned this morning, isn't

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that correct?

MR. L. MOORE: Objection.

A Yes, sir.

Q (By Mr. Vance) Now, were there any FDA regulations involving use of PCB's in closed systems in July of 1971, to your knowledge?

A To my knowledge, there were no regulations by FDA.

Q That's as of July 1971?

A That is correct.

Q When, Mr. Papageorge, were you first aware of any problem relating to PCB's at East Coast Terminals in Wilmington, North Carolina?

MR. DIXON: Object. I believe that's repetitious. I believe you asked him that on Friday.

MR. VANCE: Did I ask for the date? I don't recall it if I did.

MR. L. MOORE: July 12th.

MR. VANCE: Excuse me just a minute. If it's repetitious, I don't mean to be.

Q (By Mr. Vance) Was your answer July 12th on that, when you were first aware of any PCB problem?

A Yes, sir, late in the working day of July 12th.

Q Now, what did you do as a result of the information you obtained about East Coast Terminals in Wilmington?

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Did you make any contact with East Coast Terminals?

A Yes, I did make contact.

Q Who did you make contact with?

A With Mr. Dean Norton at Wilmington.

Q And do you remember what day this took place?

A Yes, sir, July 26th, 1971.

Q All right. Tell us about this contact. What took place?

A I called Mr. Norton and through our discussion determined that the pasteurizing unit was still operating. I confirmed from him that he still had six drums of Therminol FR fluid in inventory. I was led to believe from the discussion that he was under some pressures to continue operating. He had plans for a shut-down and overhaul of the system. I attempted to determine whether or not he could shut down immediately and make some corrective repairs, resume his operations, and then shut down later for the complete overhaul. And he informed me that this could not be done. I asked him if Mr. Fullman had reached him. I told him I understood he had, and he agreed that Mr. Fullman had called him. I asked him if he understood from Mr. Fullman that we were suggesting that he shut down and in fact it would be preferable if he drained the system and used another fluid. And as I recall, he agreed this was part of the discussion. He did say that he did not quite

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understand Mr. Pullman in terms of how serious a matter this was. I attempted to convey to Mr. Norton that this was a serious matter, and told him that from where we were situated the unit should be shut down, and that we were going to inform some government agency - probably the FDA - that a problem might be in existence in this particular situation. And my impression was that Mr. Norton did not have the total authority to make that decision to shut down the unit, and I personally had hoped that my conversation would lead him to call the proper principals and get this authority. And as best as I recall, I told him he left me no option other than to call the government agencies. I suspect he was upset with me - at least this is an impression I had over the telephone. And then he said, "Well, fellow, you've got to do your thing and I'll do mine." And from that comment, I decided we had no other recourse but to report to the FDA.

Q Now, Mr. Papageorge, had you already notified the FDA when you talked to Leon Norton?

A No, sir.

Q I'll ask you if you didn't tell Leon Norton that you had notified the FDA that East Coast Terminals was using Terminal #1-1 in violation of FDA regulations?

A No, sir, there is no such regulation. We had not called FDA. We would have preferred working with Mr. Norton

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to correct the problem.

Q And did you tell Dean Horton that East Coast Terminals had ignored Monsanto's request to cease using Therminol FR-1 and to change over to a USDA approved product?

MR. HUTCHINS: Objection.

Q (By Mr. Vance) Did you make that statement?

A I don't recall making that statement. There is no such thing as a USDA approved product to my knowledge.

Q And there was not at that time, was there?

A Not to my knowledge.

Q And did you tell Dean Horton that East Coast Terminals was using Therminol FR-1 in violation of FDA regulations?

MR. HUTCHINS: Objection.

A I could not have advised him, sir, because there is no such regulation. I did not do that.

Q (By Mr. Vance) I'm not asking if you could or not. You say you did not?

A I did not, so, sir.

Q Did you later have a conversation with Mr. Wally Pratt of South Pacific Proteins?

A Later that day, yes.

Q Did you tell Mr. Pratt that Therminol FR-1 was banned from use because it contained polychlorinated

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biphenyls?

A I don't remember that statement, no, sir. I don't recall.

Q Could you have made that statement to him?

A I don't see how, since the material is not banned for use in heat transfer systems at that time.

MR. MARSHALL: I submit that the answer was not responsive to the question.

Q (By Mr. Vance) What do you mean by saying that Therminol FR-1 was not banned at that time? Can you elaborate on that?

A Well, in my understanding, a ban must be by some statute of some government that prevents the use of some material.

Q Well, according to what you have told us, Monsanto was still selling Therminol FR-1 to closed systems at that time, isn't that true?

A That is true.

Q Did you tell Mr. Pratt that FR-1 Therminol contained polychlorinated biphenyls and therefore falls into the same class as DDT and may be harmful to wild life?

A I do not recall saying that, sir.

Q Did you make some statement similar to that?

A As I remember - let me see if I can recall the conversation. Mr. Pratt was interested in polychlorinated

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biphenyls and wanted some idea of what these materials were like and all, and it's conceivable - although I don't remember the exact words - that I used PCB to help explain some of the similarities that have been used in other articles before.

Q Have you talked with Mr. Pullman about this matter involving East Coast Terminals?

A Yes, sir.

Q What has Mr. Pullman advised you?

A Is there any particular conversation?

Q Yes, I mean about his contacts with East Coast Terminals in regard to Therminol FR-1 and a replacement for Therminol FR-1.

MR. SMITH: Now, you asked him about the conversation on Friday that he described?

MR. VANCE: No, I mean any conversation he's had with Mr. Pullman.

MR. SMITH: There were several, and you asked him about the first one.

Q (By Mr. Vance) Well, start off with the first one and then go on up.

A My first telephone conversation with Mr. Pullman occurred, as best as I can recall, either late on the 12th or because of the time zone change I may have had to call him early on the 13th of July, 1971. And during this

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conversation I mentioned to Mr. Pullman what little information I had gotten up to that point regarding a fish meal pasteurizing unit at East Coast Terminals in Wilmington, North Carolina, and asked him if in his experience in marketing heat transfer fluids he had any information. He was not aware of East Coast Terminals. He had some experience, as I understood him, with some fish meal pasteurizing unit somewhere and I don't at this time still know where, but he offered to try to help me in getting more information relating to this East Coast Terminals installation. This was on the 12th or 13th of July, 1971. That was the first conversation I had with Mr. Pullman. The second conversation with Mr. Pullman occurred on the 14th of July, and during this conversation he told me that he had not succeeded in reaching Mr. Charles Burgess who apparently was on his way to Peru, but he had had a discussion with Mr. Dean Norton at East Coast Terminals and had established that fish meal was being pasteurized, the fluid in the pasteurizing unit was Therminol FR-1, that Therminol FR-1 had been ordered and received recently for make-up, that Mr. Norton was aware of the unit on the west coast at Stockton, California, that he was aware of some discussions involving the replacement of that fluid to a material that did not contain polychlorinated biphenyls. Mr. Pullman also mentioned that he had talked to Mr. Norton

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about replacing the fluid at East Coast Terminals' unit, that they should do everything they can to prevent leakage into the fish meal, and that Mr. Morton had six to eight drums of fluid still on hand and had planned to operate until his supply was exhausted. That was in general what we discussed in that second conversation.

Q To your knowledge, did Monsanto ask East Coast Terminals to stop using Therminol FR-1?

MR. HUTCHINS: Objection.

Q (By Mr. Vance) When you were aware of their using Therminol FR-1 in this system?

A I cannot speak for Mr. Pullman, but I believe in my conversation with Mr. Morton I attempted to impress on him that he should not permit polychlorinated biphenyls getting in his fish meal.

Q Well, from your conversations with Mr. Pullman, isn't it true that you found that Mr. Pullman suggested a replacement for Therminol FR-1?

A That is correct, yes, sir.

Q But he never advised East Coast Terminals to stop using the supply on hand, did he?

MR. HUTCHINS: Objection.

A This I don't know, sir.

Q (By Mr. Vance) To your knowledge, did Monsanto ever offer to re-purchase the Therminol FR-1 on hand in

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Wilmington?

A I believe an offer-- well, I was told that an offer had been made that involved the taking back of the material on hand, both in drums and in the system, and an offer to send a replacement fluid. I don't know any of the details of that offer.

Q You don't know who made the offer and when it was made?

A I know of an individual who was involved in these discussions. I do not know if he is the one that made the original offer.

Q And who was that?

A Mr. James Roder, R-o-d-e-r?

Q R-o-d-e-r?

A Correct.

Q Is this Mr. Roder?

A Yes, sir.

Q But you were not principally engaged in that transaction, were you?

A That is not my area of responsibility. I was not involved directly, no, sir.

Q Now, we have been talking about Mr. Fullman. Mr. Fullman is in the sales of Hexcente, is he not?

A Yes, sir.

Q And what is his position with Hexcente?

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A He's a field salesman. I believe that's the appropriate title.

Q A field salesman. Can you classify his department?

A I think it is the typical marketing kind of function where he represents a portion of Monsanto in the sales of a given line of products for a given geographic area.

Q Well, can you elaborate on that any more? Can you tell us the breakdown of those products, whether it is all heating fluids or what type of products he is restricted to?

A I don't know exactly, sir, but I do know he was involved in heat transfer fluids. I believe he was involved in industrial fluids at that time. I don't know what else he was responsible for.

Q Did you ascertain from him that he had been involved in some sales of heat transfer fluid to the Wilmington plant, pasturization plant?

A As best I can recall, he was not aware of the Wilmington plant at all.

Q I thought you got this information from Mr. Pullman about the Wilmington plant.

MR. SMITH: Object. I believe the testimony was quite otherwise, Mr. Vance. Mr. Hanover.

Q (By Mr. Vance) You got it from Hanover?

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A Yes, sir.

Q Do you know the name of the salesman who was involved with the sales to the Wilmington plant?

A There was no salesman involved, sir.

Q Well, there were order-takers for the Chemical from the Wilmington plant, were there not?

A Yes, sir.

Q Do you know the names of these order-takers or who transacted the orders with the Wilmington plant?

A I know the name of only one, although I suspect there were more than one involved.

Q Who is the one that you know the name of?

A Mr. Jenkins.

Q Where is he located?

A In St. Louis.

Q I called them an order-taker, but what is Mr. Jenkins' title and what does he do?

A I do not know his title, sir, but he is involved with receiving orders as placed by customers and performing the necessary clerical tasks to relay that order to the plant for subsequent shipment.

Q Do you have any memorandums or notes or other writing of these conversations that you have had with Dean Norton, Wally Pratt, or Mr. Pulliam?

A Do I have them in my possession, sir?

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Q No. I mean were there any memorandums made?

A I made some pencil notes at the request of our attorneys in an attempt to recall the sequence of activities of that week.

Q Had you made any memorandums, notes or writings of these conversations for the company prior to the request of your attorneys?

A No, sir, that is not customary.

Q When did you make these penciled notes?

A I made some on Saturday - Saturday, the 17th of July.

Q Of 1971?

A 1971. And I believe I made a few more the following week, the early part of the following week.

Q Where are those notes now?

A I don't know where they are physically. I gave them to one of the company attorneys.

Q Do you remember the name of the attorney you gave them to?

A Mr. Richard Stohr.

Q Is he on the legal staff of Monsanto?

A Yes, sir.

Q Now, in your conversation with Mr. Pratt, did you advise him that East Coast Terminals was not advised about PCB's because Monsanto did not associate the name East Coast

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Terminals with any food or feed industry?

A I don't recall, sir.

Q Did you make any statement like that or to that effect?

A I honestly don't recall.

Q Did you in fact report to FDA, or make any report to the FDA, regarding the Wilmington pasteurization plant?

A I did not talk to the FDA regarding the plant.

Q Did you make any report to the FDA?

A No, sir.

Q Do you know of any report that was made to the FDA by Monsanto?

A Yes, sir.

Q Tell us about that.

A This was a telephone call to FDA in Washington on July 16th, 1971, made within five minutes after I had finished speaking to Mr. Porter, in which the FDA was informed that we had information that led us to believe that polychlorinated biphenyls were probably getting into fish meal where they have no right to be. We did not know the extent of the problem. We had suspicions that they might be getting into human food, and we felt that since their responsibility was to look into matters of this sort that they should be aware of this situation.

Q Now, who did you say made the report?

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A Mr. Elmer P. Wheeler.

MR. HARRELL: Note to Mr. Wheeler?

THE WITNESS: Mr. Wheeler is the Monsanto representative who placed the call to EPA.

Q (By Mr. Vance) Now, Mr. Wheeler is the environmental control officer at Monsanto, is that right?

A I believe his title is Manager, Environmental Health.

Q Have you had any additional conversations with Mr. Fallon about this matter - that is, in addition to the conversations you've related to us?

A No, sir.

Q Mr. Papageorge, in addition to the claims being made in this proceeding, that other claims have been or are being made against Monsanto as a result of PCB's in the environment?

MR. SMITH: I'm going to object and instruct him not to answer. I'll discuss with you that question.

MR. VANCE: Isn't this a proper question on a discovery deposition?

MR. SMITH: No.

MR. JORDAN: If it isn't proper, you sure did do an wrong in that case we had.

MR. HARRELL: Next Court submits that it is a proper question; it should be answered and if not

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answered we will look to Monsanto to pay the cost and expenses of having the question answered.

MR. JORDAN: We take the same position for the plaintiff.

MR. VANCE: Is your objection as to form or substance, Mr. Smith?

MR. SMITH: It's both.

MR. VANCE: While I'm on this line of questioning, let me try another one.

Q (By Mr. Vance) Are you aware of the existence of any policy of insurance that Monsanto contends provides coverage for any of the claims alleged against Monsanto in the complaint?

A I am aware, sir, of insurance coverage. I do not know any of the details and how they relate to this matter.

Q Do you know the name of the company the coverage is with?

A I'm aware of two companies. I don't know which one is involved.

Q Would you give us those names?

A Liberty Mutual.

MR. SMITH: Thank you, sir. I'm learning something, sir.

Q (By Mr. Vance) Liberty Mutual?

A I've heard Liberty Mutual mentioned, and I've

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heard Travelers mentioned.

Q Do you know the policy limits?

A No, sir.

Q Do you know which company is defending this action on behalf of Monsanto?

A No, sir.

MR. VANCE: Mr. Smith, can you get us this information?

MR. SMITH: I will counsel with you, yes.

MR. VANCE: For the record, when Mr. Smith said that he will counsel with you, he was addressing his remarks to Mr. Vance. That was both with respect to other claims that might have been made against Monsanto and also with respect to some of the insurance matters. If Mr. Smith makes any such information available to Mr. Vance, we would request that that information also be made available to us.

MR. SMITH: My suggestion is that you put it in the form of an interrogatory. It may be that the information can be protected by order. I think you can get it a whole lot quicker and cleaner that way than through asking some witness like this.

MR. VANCE: Off the record.

(Discussion off the record.)

MR. VANCE: Can we take about a ten-minute break

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right now?

(A brief recess was taken.)

Q (By Mr. Vance) Mr. Papageorge, what is the difference between a polychlorinated biphenyl and a biphenol?

A Biphenyl or biphenol?

Q Biphenol.

A Chemically, sir - correct me. Are you referring to the chlorinated versions of both biphenyl and biphenol?

Q Yes.

A The phenol--

MR. JORDAN: How do you spell that?

A P-h-e-n-o-l - is a benzene with an oxygen and hydrogen present. So a biphenol would be two of these as one group. A phenyl group is used to describe the benzene as it normally exists, and biphenyl would be two benzene groups to form a single group. So the difference then is the presence of oxygen, or the key difference is the presence of oxygen in the phenol and the lack of oxygen in the phenyl - p-h-e-n-y-l.

Q (By Mr. Vance) What effect does polychlorinated biphenyl or substances which contain PCB, what effect do these substances have on corrosion?

A Sir, if I heard you - you said biphenyl or biphenol?

Q Biphenyl - PCB I'm referring to now, biphenyls.

A These materials are non-corrosive, non-reactive;

therefore there is no effect.

Q They have no corrosive effect on steel?

A No, sir, this is one of their attractive characteristics.

Q Have you referred to them as being non-reactive?

A I may have used the word "non-reactive". It should be "relatively non-reactive".

Q You referred to them as breaking down or being destroyed by sunlight or combustion, incinerator type combustion?

A Yes, sir. There is evidence that these things do happen.

Q Yes, and yet one of their attractive features is their practically non-reactive status, isn't it?

A That is correct.

Q In fact, I believe you said that in glass buildings PCB's are considered to last the lifetime of the building?

A In their application as a sealant, yes, that is correct.

Q Now, you have given us the benefit of talks, the information in talks that you have made to various groups on the history and uses of PCB's. At the time you made these talks, were you being paid by Monsanto Company?

A Yes, sir, I was an employee of Monsanto.

Q Did you consider these talks as a part of your job

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with Monsanto?

A Yes, sir.

Q Did your superiors in Monsanto know that you were making these talks?

A They knew I was making talks. They did not know the contents.

Q They did not know what you were going to say? Is that what you are saying?

A Not specifically, no, sir.

Q Well, it was part of your job to tell Monsanto's story and serve, in effect, in a public relations capacity, is that true?

A I don't know that I personally felt like a public relations employee. I did attempt to share with interested people what knowledge or information I had picked up relating to polychlorinated biphenyls.

Q If you received any honorariums for these talks, or remuneration outside of Monsanto, were these honorariums paid to Monsanto?

A There were no honorariums offered or received.

Q Were your comments at these talks written up from time to time?

A I never wrote any of these talks up, no, sir.

Q Or any comments of yours reported by newspapers or periodicals? Have you seen these?

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A Yes, there were. There were some instances where someone attempted to write up the discussion, yes.

Q Do you know of any of these comments written up that you would consider erroneous?

A In every case there is some misunderstanding on the part of the journalist preparing the article, yes, sir.

Q Have you asked any editor or writer to retract or correct any comments attributable to you?

A No, sir.

Q Have any of your superiors ever asked you what you did say in your talks?

A No, sir.

Q Have any of Monsanto's officials ever attempted to correct any statements that you have made?

A No, sir.

Q Have you ever asked any of the people to whom you spoke not to record or publicize what you said?

A There were some occasions when I was approached regarding the recording or the submission subsequent to the talk of this information in writing, and in every case I requested that this not be done because of my experiences relating to misunderstandings and I wished to avoid this from happening.

Q Can you tell us when you made these requests and at what meetings?

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A There were so many meetings, I cannot recall specifically. As best as I can recall, and my memory is hazy, I believe I was approached when I spoke to the meeting we held on the premises of the U. S. Department of Agriculture with representatives of the broiler industry. I believe at that time I suggested that recordings and notes not be made. Another instance I vaguely recall was the discussion before the -- and I believe this is the correct title of the organization - the Association of Grocery Manufacturers, a meeting that was held in Washington. I believe that was an understanding I had with the individuals that called that meeting.

Q And you say you asked that your comments not be recorded because of the experience you had had in the past of recorded statements-- what was that comment again?

A My experience does not relate specifically to polychlorinated biphenyls, but limited experience I had, many times there are misunderstandings by people listening to discussions, and these misunderstandings only complicate what in the case of polychlorinated biphenyls is already a confusing subject, a complicated subject, and I wished to avoid any of this and I requested that these records and recordings not be made.

MR. VANCE: All right. That is all at this time. Off the record.

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(Discussion off the record.)

EXAMINATION BY MR. JORDAN

Q Mr. Papageorge, when you were employed at the Sauget, Illinois plant, what were your duties?

A I was responsible for the manufacture of about roughly a third of the products manufactured at that plant.

Q What were those products?

A Phenyl, sodium sulfide, various chlorinated benzenes - correction; chlorinated ~~phenyls.~~ phenols

Q Would that be PCB's?

A No, sir. There were some chemical intermediates which we referred to as amines, and I also had the responsibility for the manufacture of two or three so-called rubber chemicals.

Q Now, by responsibility for manufacturing, do you mean that you were the plant superintendent?

A I was one of three superintendents who had manufacturing responsibilities, and each of us reported directly to the plant manager.

Q And who did the plant manager report to?

A He reported to the Director of Manufacturing for the Organic Chemicals Division.

Q And who did the Director of Manufacturing for Organic Chemicals Division report to?

A At that time he reported to the General Manager

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and Vice President of the Organic Chemicals Division.

Q And who did the General Manager and Vice President of the Organic Chemicals Division report to?

A One of the Group Vice Presidents of Monsanto Company.

Q How many Group Vice Presidents were there?

A As I recall, sir, at that time there were three Group Vice Presidents.

Q Now, we're talking about the years of 1964 and '65, are we not?

A Yes, sir.

Q And who did the three Group Vice Presidents report to?

A The President and Chief Executive Officer of Monsanto Company.

Q Now, what were your duties when you were employed at the Anniston, Alabama plant during the period from 1965 to '69?

A I was the plant manager or location manager, and my duties involved all those activities relating to the efficient operation of the plant to produce economically good salable products.

Q Did you have complete charge of the Anniston plant?

A Yes, sir.

Q What chemicals were manufactured at the Anniston

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plant?

A Polychlorinated biphenyls.

Q Is that PCB?

A That is a common expression, yes, sir.

Q What other chemicals?

A Biphenyl, terphenyls, hydrogenated terphenyls, chlorine, caustic.

Q Did you say chlorine?

A Yes, sir.

Q Were all of these known as organic chemicals?

A Yes, sir.

Q And will you define an organic chemical?

A I will attempt, sir, to define it. It has many definitions, depending on individual viewpoints.

Q Well, viewed from the standpoint of a chemist.

A Organic chemicals are those chemicals which contain in their structure in every instance carbon in combination with sulfur, hydrogen or oxygen, or a combination of all those or nitrogen.

Q What's the difference between an organic chemical and an inorganic chemical?

A The inorganic chemicals do not have carbon present as a basic element in their structure.

Q Now, carbon is an element, is it not?

A Yes, sir.

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Q What is benzene?

A Do you mean chemically, sir, or physically?

Q Well, how do you make it? Where do you get it from?

A It can be obtained as a petroleum product, as a coal tar product. There are even methods of manufacturing it, starting basically with carbon and hydrogen. It is a combination of carbon and hydrogen.

Q Well now, is the benzene that was used at the Anniston plant to manufacture PCB, was it manufactured in that plant?

A No, sir.

Q Where did it come from?

A I don't recall the exact source other than it is a petroleum source. I don't know the plant, the physical location.

Q Was it fractionated or refined from petroleum?

A Yes, sir.

Q Was that done by Monsanto or by supplier?

A The distillation of the benzene was done by a supplier.

Q Do you know who the supplier was in 1970 and '71?

A As best as I recall, it's one of the two - it's either Enjay or Esso.

Q Enjay?

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A E-n-j-u-y or Esso, one of those two petroleum chemical producers.

Q You mean Humble Oil and Refining when you say Esso?

A I understand there is a relationship between Esso and Humble. I associate the source of benzene for this operation in Anniston with the beginning letter "E", so it's either Enjay or Esso; I'm not sure of myself.

Q Does the Anniston plant still make PCB?

A No, sir.

Q Was it manufacturing PCB in 1970 and '71?

A It was manufacturing polychlorinated biphenyls in 1970 and terminated production of polychlorinated biphenyls, as best as I recall, about April or May of 1971.

Q Did the Anniston plant have an inventory on hand when it terminated?

A I do not know.

Q Do you know whether orders were filled from that plant after April or May of '71?

A Not specifically, no, sir.

Q Who would know?

A Well, of course, the people at the plant would know.

Q Who succeeded you as plant manager when you transferred to St. Louis?

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A Mr. Gene Jesse.

Q Is he still the plant manager at Anniston?

A Yes, sir.

Q Well, he would know whether they had an inventory on hand, wouldn't he?

A I cannot speak for Mr. Jesse.

Q Well, when you were plant manager, do you know whether you had inventories on hand?

A Not unless I looked at the records.

Q Well, you had the records that were available, didn't you?

A Yes, sir.

Q Isn't it a part of official plant management to maintain adequate inventories but not to get overstocked?

A Yes, sir.

Q And as plant manager, wasn't it your duty to keep up with your inventory?

A Yes, sir.

Q Now, you spoke of chlorine being manufactured at the Anniston plant. What's it made out of?

A Chlorine is an element, a chemical element.

Q Well, where does it come from? Where do you get it?

A In our operation we made it. We started off with salt—

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Q Salt?

A Salt, yes.

Q Is that industrial salt?

A I don't know about that particular terminology, sir, but it's salt that's mined from salt mines.

Q Is it shipped into the plant in freight cars?

A Yes, sir.

Q Do you know where the salt comes from?

A I believe the mine is in Louisiana, sir.

Q And how is the benzene shipped in to the Anniston plant?

A Normally in tank cars, railroad cars.

Q From the refinery?

A Yes, sir.

Q Now, what process do you use to convert salt into chlorine?

A It is the introduction of an electric current into a brine made of course from salt and water which breaks the salt into chlorine and the water into hydrogen, and we make caustic as a by-product.

Q You make what?

A Caustic, caustic soda.

Q So you get caustic soda and chlorine? Is that what you get out of this?

A And hydrogen.

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Q What's done with hydrogen?

A Some of it is used to make these hydrogenated terphenyls that I mentioned, and some of it is flared.

Q Do you mean burned?

A Burned, yes, sir.

Q Hydrogen is a gas, isn't it?

A Yes, sir, at normal temperatures and pressures, yes.

Q Now, when the chlorine has been manufactured in this method that you described, what does it look like?

A It is a gas. I have never seen it with my own eyes.

Q It is a clear colorless gas?

A I don't know about the color, sir. It may have a yellow or greenish tint to it. I don't recall.

Q Well now, is chlorine sometimes manufactured in solid form?

A Not to my knowledge.

Q Where does the chlorine come from that is put into a swimming pool, for example?

A It is my understanding - and keep in mind I am not close to this kind of product - it is usually a situation where the chlorine is part of a chemical material, but it is loosely held to this bonding, and in the presence of water that chlorine is released and performs as free elemental

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chlorine.

Q How, could chlorine be classified as a killer of bacteria?

A It is used for that purpose, yes, sir.

Q Is it toxic?

A It depends on the levels. It could be, yes, sir.

Q How do you define "toxicity"?

A I must rely on my definition of whether a material is toxic or not by consulting with members of our medical department. I have no personal expertise to make these judgments.

Q In your testimony last week, you stated, "I think it's appropriate to mention that the early reports of polychlorinated biphenyls in the environment invariably reported the presence of the higher chlorinated types. I discussed that in addition to our work in developing more refined analytical methodology --

MR. CHIPLEY: Mr. Jordan, would you tell us where you're reading from?

MR. JORDAN: Page 13.

Q (By Mr. Jordan) "--Monsanto's program for learning more about the toxicity of these materials through animal laboratory studies." Now, you used the word "toxicity" in that sentence. Will you define what you meant by the word "toxicity"?

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A What effect do measured exposures of a chemical produce in given species of animals as tested under what I am told and led to believe are the accepted protocols for conducting these kinds of studies.

Q Well, are you talking about the effect that it has on the animal?

A Yes, sir.

Q And is that a deleterious effect? Is a toxic effect a deleterious or harmful effect?

A It may or may not be.

Q Does it depend upon the amount of the toxicity as to whether or not it's harmful?

A All right. That's one way to express it.

Q Now, when the manufacture of PCB was terminated at the Anniston plant in 1971, did Monsanto have other facilities for the manufacture of PCB?

A Yes, sir.

Q Where?

A Sauget, Illinois; Newport, Wales; and a half interest in Japan.

Q Are those the only three places where PCB's have been manufactured since the spring of 1971 by Monsanto?

A That is correct.

Q Now, at Sauget, Illinois, did Monsanto have a facility in which PCB's can be burned?

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A Yes.

Q Is that an incinerator?

A Yes, sir.

Q Does Monsanto have any other facility to destroy PCB?

A No, sir.

Q What temperature must be obtained in the incinerator to destroy PCB?

A At least eight hundred degrees Centigrade, which is a little bit above fifteen hundred degrees Fahrenheit.

Q How long has that incinerator been in operation?

A I believe we placed it in operation about May or June of 1971.

Q When was the construction started?

A The fall of 1970.

Q Did you participate in the decision to build this incinerator?

A Yes, sir.

Q Why was the decision made to erect the incinerator in the fall of 1970, or whenever it was made in 1970?

A We were advising our customers that polychlorinated biphenyls should not be disposed of in such a way that the escape to the environment would occur. Our information at that time - and it still exists today - that the only way to make certain that polychlorinated biphenyls are completely

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destroyed is to expose them to high temperatures for the necessary length of time to make certain that they are destroyed. In order to help our customers with this disposal problem, we decided that the erection of such a unit would be mutually beneficial. We would destroy any scrap material that we generated and could offer to our customers this service to help them dispose of their waste materials.

Q When did you first start advising customers that the only way to destroy PCB's was by exposing them to very high temperature for a period of time - for an appropriate period of time?

A I personally started advising customers in early 1970.

Q Well, who else in Monsanto started advising customers of this fact?

A Our marketing representatives.

Q When did they start?

A About the early part of 1970.

Q Who were the marketing representatives who so advised customers of Monsanto?

A I can't recall all of their names, sir. I would suppose that all of the field salesmen that sold the polychlorinated biphenyls were aware of this information.

Q Who made them aware of it?

A Their supervisors, marketing managers.

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Q Who told the supervisors and marketing managers about it?

MR. SMITH: Mr. Jordan, you've used the word "it" several times. How about restating your whole question?

Q (By Mr. Jordan) The subject we're discussing is the dissemination of information to customers that Monsanto had found that the only way to destroy PCB was to burn them up in an incinerator at a temperature of 1500 degrees Fahrenheit for a sufficient period of time. That's what we're talking about.

MR. SMITH: I object to that being the testimony. There has been considerable testimony about the whole subject.

Q (By Mr. Jordan) Now, you said the marketing people were told by the supervisors and management people to disseminate this information to your customers, is that right?

A That is right, sir.

Q My question is who instructed the supervisors about this subject matter?

A I'm going to have to guess, sir.

Q Your best information about it; your best information on the topic.

A The best information I have - normally these kinds of information are discussed in staff meetings at which the

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marketing director is present along with, let's say, the research director and the manufacturing director, the engineering manager, and all of the parties interested in this group of products we're talking about. During these discussions it's conceivable that the incineration unit -- and I know the incineration unit was discussed.

Q At staff meetings?

A At staff meetings. It's conceivable then from that point on that the marketing director in turn held his own meetings with his managers. And I am also aware of meetings to which salesmen were invited to attend. I personally was not present at all of these sessions, but it was conceivable that this is the way the message gets out to the field.

Q Were you present at some of these meetings?

A I was present at some staff meetings, yes, sir.

Q When was the first staff meeting which you attended where the subject of construction of an incinerator to burn up PCB's was first discussed?

A The best as I recall, it was about February of 1970.

Q And where was that meeting?

A St. Louis.

Q Who first broached the subject of construction of an incinerator? Who in Monsanto; who first had the idea?

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A I don't know.

Q Who first spoke to you about it?

A I don't believe any one individual mentioned it. It was at one of those staff meetings in early February at which this subject along with many other subjects was brought up for discussion.

Q Now, at what level of Monsanto's management would the decision be made to make the capital expenditure necessary to build the incinerator?

A As best as I can recall, the levels to which a project of this nature must go are dependent upon the estimated cost of the project. This project, as I remember, was over half a million - somewhere between a half a million and a million dollars. To the best of my recollection, this went to the Corporate Management Committee.

Q Is that the same thing as the Executive Committee?

A No, sir, I believe both terms are used, sir, to describe different committees of Monsanto.

Q Would the Executive Committee be consulted about a project of this size?

A I don't know.

Q Now, is the President of the company a member of the Corporate Management Committee?

A Yes, sir.

Q And who else are members or were members of that

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committee in 1970 besides the president of Monsanto?

A I don't believe I ever knew the total membership, but I recall some of the members.

Q Give us the ones you recall.

A The Chairman of the Board of Directors.

Q Who is that?

A Mr. Charles Sommer.

Q Was he Chairman at that time?

A Yes, sir.

Q Is he still Chairman?

A Yes, sir.

Q All right. Who else? Give me the name of the President.

A The name of the president was Mr. Edward J. Bonk.

Q Is he still President?

A No, sir.

Q When did he retire or when did he no longer serve as president?

A I believe it was March or April of 1972.

Q He was President then during 1970 and '71?

A Yes, sir.

Q Did he retire?

A Yes, sir.

Q Now, who else was on the Executive Committee besides the Chairman of the Board and the President in 1970?

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I mean the Corporate Management Committee in 1970.

A Mr. John Gillis.

Q What is his position?

A I believe his title is Senior Vice President.

Q Are all three of these men members of the Board of Directors?

A Yes, sir.

Q All right. Name anybody else you can think of who was on the Corporate Management Committee who made the decision to build the incinerator.

A Well, sir, I don't know that I said that they made the decision. I suspect that this project recommendation was brought to their attention. I don't remember whether or not they are the ones to give the final approval.

Q Would the Board of Directors be the ones to give final approval?

A The approval? I don't think so. The approval may have been made on a lower level. I don't remember the point at which these projects are approved.

Q Well, in your present position, let's say, if you want to incur an expenditure of a thousand dollars, would you have authority to do it?

A In my present position?

Q Yes.

A It will depend on the type of expenditure.

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Q Well, doesn't the company have guidelines as to what dollar amount of a capital expenditure has to be approved at certain corporate levels?

A Yes, sir.

Q Are you familiar with those guidelines?

A I have not kept up to date on them. In my present position, I have no authority for a capital expenditure, sir.

Q Well, going back to the Corporate Management Committee, who else was on it in the winter and spring of 1970 besides these people you've named?

A Mr. Harold Bible.

Q What's his title?

A At that time it was Vice President, Administration, I believe.

Q Was Mr. Winckler a member of that committee?

A No, sir.

Q What is his full name?

A Howard - middle initial - "S"; I don't know what the "S" represents - Winckler.

Q Do you recall whether Mr. Charles H. Benner was a member of the Corporate Management Committee?

MR. SMITH: I believe he's already testified to that.

MR. JORDAN: All right. If he has, I've forgotten it.

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Q (By Mr. Jordan) How about Mr. James J. Kerley?

A Yes, he's another member.

Q What's his title?

A I believe, sir, it's Vice President, Finance.

Q How about Mr. John B. Eck? Was he a member of the Corporate Management Committee?

A Yes, sir.

Q And he is vice president of what?

A He was one of the Group Vice Presidents.

Q Which group?

A I don't know that it had any title, sir.

Q He was a member of the Board of Directors, wasn't he?

A Yes, sir.

Q And what about Mr. Monte C. Throndhl? Was he a member?

A Yes, sir.

Q And is he also a Director?

A Yes, sir.

Q What about Mr. Edward J. Futrell, Jr.? Was he a member of the Corporate Management Committee?

A Yes, sir.

Q Is he also a Director?

A Yes, sir.

Q And what is he - Secretary of the company?

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A Yes, sir.

Q Now, Mr. Beck and Mr. Gillis and Mr. Sumner and Mr. Throdahl who are members of the Corporate Management Committee are also members of the Executive Committee of the Corporation, are they not?

A That I don't know, sir.

Q What is the Executive Committee's function, do you know?

A No, sir.

Q Have you ever attended a meeting of the Board of Directors?

A No, sir.

Q Have you ever attended a meeting of the Corporate Management Committee?

A Yes, sir.

Q For what purpose?

A To present before that committee a status report on our knowledge of polychlorinated biphenyls.

Q When was that?

A In April 1970.

Q Is that the only time you have ever appeared before the Corporate Management Committee?

A Yes, sir.

Q Did you prepare a written report for the committee?

A I prepared notes from which I made an oral presen-

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tation.

Q What happened to those notes?

A I do not recall. I don't remember.

Q Sir?

A I don't know. They may be around yet.

Q Do you think that you might find them in your office someplace?

A I can't promise. I don't know. I had no reason to keep them.

Q Now, when the Corporate Management Committee meets, is it not true that minutes are kept of those meetings?

A Yes, sir.

Q And there would be minutes of this meeting where you made this report on polychlorinated biphenyls?

A Yes, sir.

Q Do you remember what you reported to the committee in April of 1970?

A Some of it. I remember some of the presentation.

Q Tell us what you remember.

A As I recall it, at that time I reported to the committee that the reports that we were still receiving from many sources were still referring to polychlorinated biphenyls of the higher chlorinated versions as being found in the environment. I reported to them that we had informed via mailing our customers that polychlorinated biphenyls were

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being found in the environment and that some of our products contained polychlorinated biphenyls. I reported to them that we were planning to terminate sales to what we called at that time open system applications. We also informed them of our plans to terminate the marketing of polychlorinated biphenyl products through distributors. And we also discussed that our years of experience with the electrical applications and the closed heat transfer system applications lead us to believe that in these applications there was excellent opportunity for control both by Monsanto and the customer - and it takes both to prevent these materials from getting into the environment - and at the same time enjoy the safety features, specifically the fire resistant feature, that these fluids had to offer. So our recommendation at that time was to continue marketing to the electrical applications and to the heat transfer applications.

Q Did the corporate management committee take any action on that recommendation?

A Well, sir, I did not stay until the end of the meeting. There was action taken. I don't know if it was a direct result of this meeting or not.

Q How long were you at the meeting to make this report?

A As I remember, my presentation took twenty to thirty minutes. That was the extent of my stay in the room.

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MR. JORDAN: Shall we adjourn for lunch?

(Whereupon, at 12:35 p.m., a recess was taken for lunch.)

AFTERNOON SESSION

Q (By Mr. Jordan) Mr. Papageorge, just before lunch you were telling us about your report to the Corporate Management Committee of the company, and you said that you reported that there had been a mailing to customers. When was that mailing sent out?

A The previous February, February 1970.

Q And what was communicated to the customer in that mailing?

A As best I recall, it mentioned that polychlorinated biphenyls were being reported as being present in the environment, that there were some claims that some species of wild life were being affected, and the letter went on to say that some of our products -- and it referred to them by their various trademarks -- contained polychlorinated biphenyls of the type being reported as being present in the

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environment. And as I recall, it also referred to the need for being careful of how these products are used, handled, disposed of. I believe that's the general gist of the letter.

Q Did that letter include the announcement that Monsanto was going to proceed with the construction of an incinerator to destroy these materials?

A I don't believe so, sir.

Q Were there any letters sent out announcing the construction or the beginning of operation of the incinerator?

A No, sir.

Q Now, is this letter which you have referred to that you sent to customers available in the files of Monsanto at the present time - a copy of it?

A Yes, sir.

Q Who signed it?

A There were two individuals that signed.

Q Who?

A Mr. Don Olsen.

Q Who is he?

A He was Marketing Director for Functional ~~Foods~~ Fluids.

Q For what?

A Functional ~~Foods~~ Fluids.

Q All right. And who else signed it?

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A Mr. Walter Scholl, Marketing Director for Plasticizers.

Q Now, did the letter go to all customers who purchased the PCB's?

A They went to all customers who were on our records as of February 1970 who purchased any product that contained polychlorinated biphenyls.

Q Now, did the letter go to any designers or engineers?

A Yes, sir.

Q What designers and engineers did it go to?

A I don't remember all of them by name. I was informed that it went to those equipment manufacturers on record at that time.

Q Well, did it go to manufacturers of heat exchange equipment?

A It went to one that I am aware of.

Q Which one?

A Joy Manufacturing Company.

Q Do you know whether it went to William J. Moran Company?

A I don't have any information that tells me that.

Q Now, why was it sent to Joy Manufacturing Company?

A They were on our list as recommending the use of these heat transfer fluids in systems.

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Q In open systems as well as closed systems at that time?

A I am not aware that Joy Manufacturing Company was involved in open system applications.

Q Now, is there a list available of all persons, firms or corporations to whom this letter was sent on February 1970?

A I believe so, sir.

Q Sir?

A I believe so.

Q Okay. And that's in the file at Monsanto in St. Louis?

A I personally do not have it. I assume it's in the file.

Q Now, when you reported to the Corporate Management Committee that this letter had been sent out, was there any expression of approval or disapproval by the committee members?

A Not to me, sir.

Q Sir?

A Not in my presence.

Q Now, what kind of open system applications were these heat transfer fluids containing PCB's used in in 1969 and '70 before it was terminated?

MR. SMITH: Object to the form of the question.

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Q (By Mr. Jordan) I understood you to say that in 1970 you reported to the committee in April, I believe?

A Yes, sir.

Q That a decision had been made to terminate the sale of chemicals containing PCB to people for use in open system applications?

A Yes, sir.

Q Now, what open system applications are you talking about? Would you describe them?

A Yes, sir. Such applications as the use of polychlorinated biphenyls in sealant materials such as caulking compounds; applications such as the use of polychlorinated biphenyls in the carbonless reproduction paper application; the use of polychlorinated biphenyls as a pesticide extender; the use of the polychlorinated biphenyls as an ingredient in fire resistant industrial hydraulic fluids.

Q Well, when you say open system applications--

A Yes, sir.

Q Have specifically what kind of system are you talking about? A system of what?

A It is the type of system which because of its very nature is extremely difficult to maintain by the user in such a way and to use in such a way that we can all be assured that PCB's escaping into the environment is controlled.

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Q Well now, if an application of the use of heat exchange fluid with PCB in it involved pumps with gaskets, would you regard that as a closed heat transfer application or an open heat transfer application?

A That's a closed application, sir.

Q And suppose that such a system had an overflow valve and a place for the overflow fluid to go into a container. Would you still regard that as a closed heat transfer application?

A Yes, sir.

Q Suppose that a system required replenishment of the fluid from time to time. Would you still consider that to be a closed heat transfer application?

A Yes, sir.

Q What would be the reason to replenish it? What would happen to it?

A It could be many.

Q What?

A If I can cite some "for instances", some examples. Suppose--

Q Something that you know happened.

A I will cite you examples of my personal experience with heat transfer systems within Monsanto. There are situations when a pump needs some repair -- either a bearing must be replaced or a mechanical seal must be replaced. In

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order to work on this pump, it must be isolated from the remaining system. This is normally accomplished by shutting off valves on both sides of the pump in the system. There is then trapped in a piece of the system some fluid. That must be carefully removed and drained into a container. Now, many times in this removal that fluid is - let's call it - dirtied. It picks up dirt and lubricating oils and water and other materials. It is not deemed wise to re-introduce it into the system under these conditions. When that pump is repaired and placed back into service, additional fluid must be added to the entire system to supplement that which was removed initially. That is an example of a circumstance. This can also apply to the repair of portions other than the pump in a system of this sort. It could be the heating coils; it could be the valving system; it could be the piping itself - and so on.

Q Well now, when these instances occurred in your own experience, what was done with the PCB that was replaced?

A It depends, sir, on the period of time we are discussing. During 1970 in our plants, we saved or stored that material in sturdy drums pending the start-up of our incinerator.

Q What did you do before you started to build the incinerator?

A We had at our disposal a land-fill operation for

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the proper burial of this kind of material to prevent its escaping into the environment.

Q Was it buried down at Anniston?

A Yes, sir.

Q Was it buried at Sauget, Illinois?

A Yes, sir.

Q Is it still buried?

A Not since we have our incinerator, sir.

Q Well, have you dug it up, burned it up?

A No, sir.

Q Well, it's still in the ground then?

A That is right, sir. There is no reason to dig it up and create further problems.

Q Was a contract let to some person or firm to build the incinerator?

A Yes, sir.

Q Who built it?

A The contract, sir, for the design of the unit was let to the John Zink Company in Tulsa, Oklahoma. I do not know who actually fabricated the unit -- whether it was one of their own shops or whether they subcontracted it.

Q Is that the only incinerator in the country that can burn up PCB's that you know of?

A No, sir.

Q Where is another one?

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A I am aware of one located near Gloucester City, New Jersey. There is another located in Model City, New York, outside of Niagra.

Q Who operates the one in New York?

A That is the Chemtrol Pollution Services Company. Chem-Trol

Q Who operates the one in New Jersey?

A The Rollins-Purle Company.

Q What kind of business is that company engaged in?

A They are both engaged in the business of providing disposal services to industry.

Q How long have the incinerators been in operation?

A I do not know.

Q Did you or anyone from Monsanto inspect either of those facilities before making plans to build your own?

A No, sir.

Q Do you know of any other incinerator in the country capable of destroying PCB?

A The Rollins-Purle people, I am told, have a unit located near Baton Rouge, Louisiana, and I understand they also have one and I believe it is near Houston -- it is in Texas; Houston or Dallas, I'm not real sure.

Q Do you know whether there is one on the west coast?

A I'm not aware of any on the west coast.

Q Mr. Papageorge, before constructing the incinerator at Sauget, did you obtain any governmental permits -- that is,

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did Monsanto, either from a municipal authority or the state?

A Yes, sir.

Q What kind of permit was obtained and from whom?

A As I understand it, the Illinois - the State Environmental Protection Authority issued a permit to the Monsanto plant in Sauget, Illinois to operate the incinerator for the disposal of polychlorinated biphenyls.

Q Was the permit issued before the plant was built?

A Not to my knowledge, no, sir.

Q Do you know whether the design and specifications for the plant were submitted to this Illinois Environmental Authority?

A It was.

Q You say the plans were?

A Yes, sir.

Q What fuel is used to fire this incinerator?

A I'm assuming you mean the fuel required to bring it up to temperature?

Q Yes.

A As I recall, it can use either natural gas or fuel oil - natural gas being the preferred fuel.

Q Now, when the polychlorinated biphenyl is burned in this incinerator, does it burn into a gas?

A That's a highly technical question, sir. All

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materials prior to burning are changed to a gaseous state instantaneously.

Q Now, where does that gas go?

A It is consumed; it is burned. It combines with oxygen, the air.

Q Well, does anything go out of a stack at the top?

A Yes, sir.

Q What?

A It will be a combination of carbon dioxide and water vapor goes out the final stack of the unit.

Q Air?

A A combination of carbon dioxide and water vapor are the two materials that are emitted from the final stack in the system.

Q When that incinerator is in operation, does it sound like a jet airplane?

A There is a roar, yes, sir, in the process.

Q Is anything reclaimed by humans in this burning process? Is there any by-product?

A Not for marketing, sir, no, sir.

Q Well, is there one for any other purpose?

A There is a scrubbing device to remove the resultant hydrogen chloride gas that is formed to prevent it from going out the stack I referred to earlier. The weak acid that is formed is mixed with other waste in the plant where

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it is neutralized before it goes on to the local municipal treatment plant.

Q Has Monsanto sent out any literature to its customers about this incinerator, any brochure? Any written material of any kind?

A I don't recall, sir, any brochure or document mailed to-- a general mailing kind of thing sent out to customers.

Q Was anything specifically sent to individual customers?

A There have been on a case-to-case basis in response to inquiries either by mail or telephone letters or memorandums written to customers in which we describe the terms under which this service is available.

Q What are those terms?

A That we will dispose of fluids containing polychlorinated biphenyls when delivered to our plant in Sauget, Illinois, for a charge of three cents per pound for each pound received; that the container cost and freight cost must be paid for by the individual who has this scrap material; that the container must be capable of making this trip without leakage or loss of material; and that the amount of water present must be kept to a minimum.

Q What is that minimum?

A Something less than two percent water, as I recall.

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Those are the terms as I remember them.

Q Well, would a steel drum such as you ship it in be the kind of container that it could be shipped back in?

A Yes, sir, assuming that it has not been damaged in previous transit.

Q You also said when you went to this meeting--well, first, when you went to this meeting of the Corporate Management Committee in April, do you recall mentioning to the committee that plans had been commenced to construct the incinerator?

A I do not recall mentioning the incinerator specifically. I do recall some remarks relating to our desire and plans for providing assistance for the proper disposal of these materials.

Q Well, by the April meeting, the decision had already been made to construct the incinerator, had it not?

A Sir, I don't remember if in April we had enough technical information that would lead us to say with assurance that such an incinerator was practical. We had hopes in April but not firm plans with blueprints and all.

Q The project was under consideration in April, wasn't it, and it had been for some time?

A The project was being considered. Test runs had been made in March.

Q Where?

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A In Tulsa, Oklahoma. To the best of my knowledge, the reports were not back yet from the test runs that were made in March and the subsequent runs that were made in April.

Q Do you recall mentioning those test runs to the committee?

A I do not recall specifically, no, sir.

Q I also understood you to say that you reported to the committee that a decision had been made not to market chemicals with polychlorinated biphenyls in them through distributors.

A That is correct.

Q Now, was the reason that you made -- that the company made that decision was so as to have greater control over which customers actually received this material?

A That was the intent, sir.

Q Who made that decision, Mr. Papageorge?

A I don't recall, sir.

Q The letter that went out in February, did it go to Baker Engineering, too?

A Yes, sir.

Q Prior to the time that the decision was made not to market PCB through distributors, was it marketed by various distributors?

A Yes, sir.

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Q They are people not connected with Monsanto?

A That is correct, sir.

Q When was the decision made to terminate marketing through distributors?

A As best I can recall, it was made sometime about April of '70 and implemented sometime that summer - May or June.

Q Who gave the order to implement the decision?

A I don't remember the specific individual stating that order in so many words, sir.

Q Was it given orally or in writing?

A To my knowledge it's not in writing. I haven't seen any document. I can only guess as to who made the final decision.

Q Who according to your best judgment made the final decision?

A I would guess however that it was Jamie Springgate.

Q Who is he?

A Director of the Plastisizer Business Group.

Q Now, what steps did Monsanto take in winnowing out the customer list, the customers who would not be sold PCB?

MR. SMITH: I object to the form of the question.

A I am not personally knowledgeable of the specific details of what steps were taken. I cannot speak on that

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subject.

Q Well, who could? Who could furnish information as to what measure was taken to select customers to whom sales would be made and to eliminate customers to whom sales would not be made?

MR. SKINN: I object to the form of the question, because I do not know if there's any such process occurred.

MR. JORDAN: Well, I'll ask the witness some more questions then.

MR. SKINN: All right.

Q (By Mr. Jordan) Mr. Papageorge, I understood you to say that one of the things that had been decided and which you reported to the Corporate Management Committee was that you weren't going to make any more sales through distributors; you weren't going to allow any more marketing through distributors.

A That was a recommendation, sir, that I made to the Corporate Management Committee.

Q And that recommendation was simply not put into effect, was it not?

A Subsequently, yes, sir.

Q In the summer of 1970?

A Correct.

Q That then meant that from then on you had

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customers to whom you would make sales from your own customer list - correct?

A Correct.

Q Now, if you knew that a customer, let us say, had been using this material in an open system application, did you not terminate sales to that customer?

A That is right, sir.

Q And if you knew that a customer, let us say, making transformers was sealing the material inside the transformer, you continued to sell to that customer?

A That is right.

Q So some customers you decided to continue to sell to and some you continued to sell to, is that correct?

A That is correct.

Q Now, my question is who made the decision as to which customers would be sold and which customers would not be sold?

A I was not personally involved in the details. I am told that this is the way it worked.

Q Well, who did?

A The market managers, I would estimate, would be the logical individuals to assign appropriate people to this task. How they went about it, I do not know. I don't get that close to the details of--

Q What individual in the company could give us

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testimony that would throw some light on this topic?

A I can only guess, sir. It would have to be the marketing managers of the various product lines.

Q How about the marketing manager of the product line that included polychlorinated biphenyls?

A Well, there are at least four that come to mind.

Q Who are they?

A At that point in time, it would have to be for plasticizers Mr. Willis S. Clark; for dielectric fluids it would have to be Mr. Paul Kanigan. Those are names that I have mentioned previously. For heat transfer applications at that time, it would have to be Mr. J. F. Fallon.

Q Now, you say at that time. Are you talking about 1970?

A 1970, yes, sir. For hydraulic fluid applications, it would have to be Mr. Norman F. Johnson.

Q Here you told how these men went about ascertaining what uses were being made of PCB's by the customers?

A Only on a very erratic case-by-case situation.

Q Sir?

A I did not get any routine blow-by-blow -- if you will -- account of exactly what was going on. I would only hear about a case on a rare occasion where a peculiar problem might have been raised, a unique problem.

Q What problems do you recall that were unique which

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you heard about?

A All right. Let me try to recall one. There was a situation where a company that manufactures fire sprinkler protection systems was using polychlorinated biphenyl fluids in a sensing device which would sense high temperatures and release the water intended to extinguish a fire. They were particularly disturbed at their inability to purchase any polychlorinated biphenyls for this application. I was approached as to perhaps giving my support for continued sales to this application based on the fact that the amount used was very small and the benefits from this use were quite large. That's an example. Another example--

Q Well, what happened about that one?

A At the time, I concurred from my near judgment that this kind of application was justified.

Q Well, that's kind of like being a little bit pregnant, isn't it?

MR. MINK: Object to the form.

MR. JORDAN: I withdraw the question.

Q (By Mr. Jordan) Go ahead.

A There is another application in which an individual had been manufacturing some devices that were used in our military services communications gear. His device involved the use of polychlorinated biphenyls. His approach to the manufacture of this device was the only one, at

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least as he claimed, that met the military specifications required. He had a military contract to fulfill, and when he was denied the polychlorinated biphenyls he made a special plea that we continue selling to him.

Q Well, was his plea granted?

A No, sir.

Q What did you tell him to do?

A I told him that we had— not knowing his particular application, we were at a disadvantage in helping him with an alternative material, that we were sorry; that from what he described, what was described to us, that eventually this device of his does get into the environment when it was discarded.

Q Who was that person?

MR. SMITH: I object if it is a customer — military or otherwise. I'll take it under advisement and furnish you if no trade secrets or other security measures are involved, but I think I'll object at this point, and I instruct you not to answer.

A (By the witness) Is that enough examples of the kind of things, sir?

Q (By Mr. Jordan) Are there any trade secrets or military secrets involved in this matter that you've just testified about?

MR. SMITH: I don't know, and I'm instructing him

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not to answer.

MR. JORDAN: I'm asking the witness.

MR. SMITH: I instruct him not to answer. I'll try to find out.

MR. JORDAN: I'd rather have it from the witness than you, Mr. Smith, as to whether any trade secrets or military secrets are involved, if he knows.

MR. SMITH: I instruct him not to answer.

MR. JORDAN: Very well.

Q (By Mr. Jordan) Now, what other special instances occurred? I believe you characterized them by the word "unique".

A Yes, sir. There's another that comes to mind. This is a company that is in the laboratory supply business, and for generations they had been purchasing polychlorinated biphenyls and selling them to laboratories for use in optical microscopic work in which the fluid would be introduced on the end of the microscope and the microscope would be lowered down to the specimen, and the specimen would then be immersed in the liquid, and because of its properties again polychlorinated biphenyls did this job better than any other known chemical. And this individual put in a plea that he be allowed to continue to purchase polychlorinated biphenyls for this operation.

Q Was his plea denied?

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A Yes, sir.

Q Can you think of any other unique situation where the plea was granted?

A I can't think of any, sir.

Q Do you know if anyone connected with Monsanto ever made any inquiry of either South Pacific Proteins, Inc., or East Coast Terminals, as to what uses the PCB's were being used by either of those corporations prior to the time that you called Mr. Horton?

A I had called Mr. Horton, as you recall, on July 16th.

Q Right.

A And I am aware of Mr. Pullman, Monsanto representative, talking to Mr. Horton prior to that date.

Q I believe Mr. Pullman talked to him about three or four days before that?

A Either the 13th or 14th, somewhere in there.

Q All right. Now, prior to Mr. Pullman's telephone call to Mr. Horton, do you know whether anybody at Monsanto ever made any inquiry of either East Coast Terminals or South Pacific Proteins as to what they were using PCB or Therminol FR-1 for?

A I believe, sir, I found out subsequent to that week that Dr. George Roscoe had contacted someone with South Pacific Protein Company earlier that week.

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Q Well, before that week had anybody connected with Monsanto ever made inquiry of either East Coast Terminals or South Pacific Proteins as to what they were using PCB for?

A Not to my knowledge.

Q Mr. Papageorge, are you familiar with the term used in some corporate circles "campaign on item"?

A No, sir.

Q Do you know what "recall of an item" is?

A I have an understanding, sir, as it applies to recall of automobiles and such things that appear in the popular press.

Q Did Monsanto ever recall any of these PCB heat exchange fluids?

A No, sir.

Q Now, aside from this letter which was sent out, I believe you said, in February of 1970 to this list of customers and engineers and contractors, had Monsanto distributed any other communication either to its customers or contractors or engineers or anyone else in which the subject of PCB was discussed or mentioned?

A Can you help me, sir, in the time period here?

Q Since that letter. First, was that letter the first communication that was circulated by Monsanto which dealt with this topic of PCB?

A The February 1970 was the first, yes, sir.

Q Now, has there been any mailing or distribution since that time which dealt with PCB?

A Yes, sir.

Q When was the next one?

A It was sometime in May, May and June of 1970. The letter informing customers of what we called open system applications was sent out informing them of the August 30th, 1970 termination date. There was also a letter sent to our distributors informing them that we would no longer use their services in marketing polychlorinated biphenyls. And another letter--

Q When was the letter sent to the distributors?

A Sometime in that period, April, May, June of 1970; somewhere in there.

Q Now, another letter you mentioned?

A The other letter went to the open system users telling them about the termination of sales to this use on August 30th.

Q Was that about the same time?

A About the same time. And about the same time was a letter that went to heat transfer customers in food processing informing them about the termination of sales for that application.

Q In food processing?

A In food processing, yes, sir.

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Q Now, did you ever send out a letter to processors of animal feed or poultry feed?

A Yes. They got this February 1970 mailing.

Q Did they get any subsequent mailing?

A Not to my knowledge.

Q What about animal renderers? Were they send a letter?

A I am only personally aware of the February 1970 mailing.

Q Now, these other mailings that you have mentioned, do you know who handled these mailings?

A I know which group was responsible for their composition and mailing.

Q Would you give us that information, please?

A The letter to distributors and to open system users was handled by the Plasticizers Business group. The letter to the heat transfer users and the food industry was handled by the heat transfer marketing group - heat transfer fluid marketing group.

Q Now, do you know of any other mailings related to PCB?

A Yes, sir. Are we interested in mailings subsequent to July 1971?

Q Sure.

MR. SMITH: I believe I'll instruct him not to

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answer as to sailings subsequent to July 1971.

MR. VANCE: Mr. Smith, isn't this a discovery deposition?

MR. SMITH: Yes, but this case is based - as you know - on conditions as of July 1971.

MR. JORDAN: Not necessarily. What they have done since is significant, too. Certainly on the issue of liability - if they're straightening up and flying right now.

MR. SMITH: I've instructed him.

MR. JORDAN: You're not going to let him answer?

MR. SMITH: That's right.

Q (By Mr. Jordan) I understand that you came into the St. Louis office at or about January 1st, is that correct?

A Yes, sir.

Q And at that time, you were connected with the Organic Chemical Division?

A That is correct.

Q Who was General Manager and Vice President of that division in 1970?

A Howard Kinetler.

Q Is he retired?

A No, sir.

Q Is he still with the company?

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A No, sir.

Q Did he quit or was he discharged?

A He changed companies, sir.

Q Who is he with now?

A I believe it's the AFM Corporation. I'm not positive of that.

Q Is he still in Ft. Louis?

A No, sir.

Q Where is he located?

A I heard that he's on the east coast somewhere.

Q When did he leave Monsanto?

A As best I recall, about April or May of '72 - 1972.

Q Now, prior to his leaving, to whom did he report? That is, who supervised him or gave his orders?

A Just prior to his leaving, sir?

Q During 1970 and 1971.

A There was a change of duties that occurred in that period of time.

Q Well, before that change occurred, who did he report to?

A He reported to Thomas E. Smith, Group Vice President.

Q And who did Mr. Smith report to?

A To the President of Monsanto Company, Mr. Koch.

Q Did he also report to the Corporate Management

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Committee?

A I do not know that the corporate management committee was in this line of authority.

Q How long has the Corporate Management Committee existed at Monsanto, to your knowledge?

A Several years under that name, sir.

Q Did he report to the Executive Committee -- that is, the group vice president?

A If by the term "reporting" you mean to receive instructions and this kind of thing?

Q Yes.

A I don't know that they ever reported to any of these committees.

Q Now, during 1970 and '71 before this corporate change was made, who was your immediate superior to whom you reported?

MR. SMITH: Mr. Jordan, I believe that Mr. Vance went into a great deal of this on Friday.

MR. JORDAN: I don't think so.

A (By the witness) Prior to the corporate change -- and I'm assuming you mean that change whereby Monsanto reorganized from a division sub-unit to a company sub-unit -- I was reporting to Mr. Charles J. Smith.

Q (By Mr. Jordan) And what was his title?

A Assistant General Manager, Organic Chemicals

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Division.

Q And did he report to the General Manager and Vice President, Mr. Minckler?

A That is correct.

Q You never made any report directly to Mr. Minckler?

A On occasion I would go either alone or with Mr. Smith into Mr. Minckler's office and bring him up to date on activities in my area of responsibility.

Q What were the names of the other business groups in this Organic Chemicals Division prior to the reorganization?

MR. SMITH: Object. We went over that Friday.

MR. JORDAN: That's not on the record, Mr. Smith.

A (By the witness) The groups, as best I can recall them, had the following titles. General Chemicals Group, Specialty Products Group, Fertilizers Group, Rubber Chemicals Group, Food and Bio Chemicals Group.

Q (By Mr. Jordan) "Bio", you said?

A Yes, sir. I believe that's it, sir.

Q Now, all of these groups were under Mr. Minckler's overall direction?

A Yes, sir.

Q Which of these groups that you have named had any connection with or responsibility for the manufacture or marketing of polychlorinated biphenyls?

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A The Plasticizers Group and the Specialty Products Group, and to avoid confusion let's go back one more step. The Specialty Products Group is a combination of two groups that occurred, as best I can recall, in early 1971 of a group which was known as the Functional Fluids Group and the Paper Chemicals Group.

Q Combined into this Specialty Products Group?

A The Specialty Products Group which existed prior to this reorganization we discussed.

Q Now, what was the name of your business group, the one you were connected with?

A At what point in time now?

Q Prior to the reorganization.

A Just prior to the reorganization, I was not assigned to a specific business group. I was a staff member reporting directly to Mr. Smith.

Q Well now, before you became a staff member, what business group were you assigned to?

A Prior to that, I was assigned to the Specialty Products Group, which is the successor to the Functional Fluids product Group.

Q What does "functional products" mean?

A This was the expression used to describe those chemical materials that are used primarily in energy transmission, whether it be heat or power or electrical

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energy.

Q When did you assume the staff function that you have described?

A All of these start back in January 1970.

Q I understood you to say that you were first with the Functional Products group?

A That's correct.

Q Which later became a part of the Specialty Products group?

A That's correct.

Q And then you were transferred away from the group and put on staff and reported directly to Mr. Smith?

A Yes, sir.

Q Now, when did that change occur?

A About June of 1971 I was assigned to report to Mr. Smith.

Q Well now, was that in connection with this overall corporate reorganization that you referred to?

A No.

Q When did the overall corporate reorganization take place?

A I don't know when it took place legally. I understand sometime in September of '71, but we were informed as employees of Monsanto in early November 1971.

Q Were you furnished with some inter-company docu-

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ment that informed you of these changes?

A There were the bulletin board notices which described in some detail the reorganization, and the usual follow-up at meetings conducted by the immediate supervisor.

Q What plant facilities did your business group have before you went into the staff position in June 1971?

A It had responsibility relating to several plants in Fernando, or units within locations in Monsanto.

Q Such one?

A It had an interest in units at Nitro, West Virginia; Anniston, Alabama; Sauget, Illinois; St. Louis, Missouri; Texas City, Texas. That's all I can recall at the moment.

Q What about the company in Japan in connection with that?

A Well, relating to the Japanese operation, this was an indirect interest and was devoted -- in fact, it was devoted entirely to an exchange of technical information with an attempt to exchange a minimum of commercial information, so that we could both benefit from our marketing experiences.

Q In connection with any of the other firms, subsidiaries or affiliates?

A They had a more direct interest in the manufacturing unit at Newport, Wales, in the United Kingdom.

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Q What was manufactured there?

A Polychlorinated biphenyls and the related products.

Q What other related products?

A These are the products that I mentioned earlier -- the biphenyl, the terphenyls, etcetera.

Q You needn't go over that again.

A All right. And then there is also an interest in a unit at Antwerp, Belgium.

Q What was manufactured there?

A This is where we blended many ingredients to formulate the hydraulic fluids.

Q Does that include the polychlorinated biphenyls?

A One of the ingredients was polychlorinated biphenyls.

Q Were polychlorinated biphenyls manufactured at Antwerp?

A No, sir.

Q Where were the manufactured and brought there?

A Newport, Wales.

Q Do you have any other connection with a foreign operation?

A No, sir.

Q Now, what was the business address of your group manager in 1970-71 prior to June?

A 800 North Lindbergh Boulevard, St. Louis, Missouri.

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C3166.

Q Was that also your business address?

A Yes, sir.

Q And was it Mr. Winckler's business address?

A Yes, sir.

Q Did you have a private office during that period of time?

A Yes, sir.

Q Was your office on the same floor as Mr. Winckler's office?

A Yes, sir.

Q And was your business group manager's office on the same floor as Mr. Winckler's office?

A Yes, sir.

Q Was Mr. Leith, the Vice President's office on the same floor?

A No, sir.

Q Now, were any of the sales offices situated at that business address?

A None are, yes, sir.

Q That is the corporate headquarters of the Kewaunee Company, is it not?

A That is correct.

Q This address you gave us?

A Yes, sir.

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Q And these members of the Corporate Management Committee have their offices at that address, do they not?

A To the best of my knowledge.

Q They do?

A Yes, sir.

Q The President and the Chairman of the Board, is his office at that address?

A That's my understanding.

Q He did in 1970 and 1971?

A Yes, as far as I know.

Q Does Monsanto have a general sales manager, or did you in 1970-71?

A I have not heard that expression used, sir.

Q Well, what is the title of the man, the head man in sales and marketing?

A I find it difficult to answer, because in the first place, I don't know all there is to know about the marketing function. On the other hand, I'm under the impression that each business group has its own marketing organization and is responsible for its own marketing activities.

Q So there's no overall executive who coordinates the marketing activities and sales activities of each business group?

A I understand that Vice President John Ellis has

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some role in the marketing effort. I do not know what it consists of.

Q Did he have that role in 1970 and '71?

A Yes, sir.

MR. JORDAN: We've been going about an hour and ten minutes. Do you want to take about a five-minute break?

(A brief recess was taken.)

Q (By Mr. Jordan) Mr. Papageorge, are any sales or marketing people located on the same floor where your office is located?

A Yes, sir.

Q Which sales people are on the floor that you are on?

A Mr. Cussing Payton.

Q Who?

A Cussing Payton.

Q What's his title?

A I believe it's Marketing Manager, Functional Fluids.

Q Does that include the marketing of PCB?

A Yes, sir.

Q All right. Anyone else?

A Mr. Paul Hodgson. He's the Manager for dielectric Fluids.

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Q Does that include PCB?

A Yes, sir. Mr. Thomas Gossage, who is currently Marketing Director for the Specialty Products Group.

Q Was he a marketing director back in 1970 and '71?

A In 1970, that job was assigned to Mr. Don Olsen.

Q Where is he now?

A He is at the same Monsanto headquarters location on a different floor of the same building.

Q Did he receive a promotion?

A He is now Marketing Manager for Food and Fine Chemicals.

Q When did he become Marketing Manager for Food and Fine chemicals?

A I don't recall the exact date. It's either late 1970, early 1971.

Q Any other sales people on the same floor with you?

A Yes, sir. There are many, many people on that floor, sir, some of whom I don't even know.

Q I mean that you know about that would have something to do with sales of products in your business group, or what was your business group in 1970-71.

A All right. I don't want to confuse the group, because there have been so many changes lately. There is a new person, Mr. George Fagan.

Q What was he doing in 1970-71?

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A He was a field salesman in our Detroit area.

Q Does each business group have its own sales organization, or did have its own sales organization?

A It did and does.

Q I understood that the business group set-up had been changed under this company reorganization plan.

A Not the business group, sir. The business groups maintained their identity. They now belong to companies instead of divisions.

Q And these companies are not separate corporate entities, are they?

A No, sir.

Q And the company into which your business went is the Monsanto Chemical Company?

A The Monsanto Industrial Chemicals Company.

Q Industrial Chemicals Company?

A Yes, sir.

Q You spoke of a determination being made to terminate the sale of PCB heat transfer fluid to customers who were food processors.

A What were the first words? I spoke of - you said?

Q Yes, that's what I understood you to say.

A Yes, sir.

Q How was the determination made as to which customers were in fact food processors?

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A In my discussions with the appropriate marketing managers, I was informed that this was based on our representatives' intimate knowledge of the customer's application, as well as a pre-screening of the records where some names are quite obvious and well known to many of us as being in the food industry.

Q Well, for instance, Holly Farms Poultry Industries, you'd know that that was a food processor, wouldn't you?

A I personally would, yes, sir.

Q And your sales people would, would they not?

A I can suspect that, yes, sir.

Q Now, do you recall that Monsanto made a decision to decline to sell PCB to the Kopel people in Stockton, California?

A I am aware of the Stockton, California unit. I am aware of discussions relating to the fluid in the unit, and I am aware of plans to replace that fluid. I am not aware of any refusal to sell.

MR. SMITH: Mr. Jordan, I would object to the form, because I think the testimony was that there was exchange with a commodity pasteurizing company which was an operation of Kopel, and your question did not contain that.

Q (By Mr. Jordan) When did Monsanto recommend to Kopel Commodity Pasteurizing Company that a change of heat

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fluid in the pasteurizer from PCB to some other material?

A I do not personally know, sir.

Q Well, do you know approximately when?

A I am under the impression that this was sometime in late 1970 or early 1971.

Q And why was that recommendation made to Kepel?

A I was not personally involved; therefore, I can only guess as to what went on in people thinking.

Q Tell me what you know about it, what you have been told.

A I am under the impression that it is our desire to be extremely and extra careful in introducing polychlorinated biphenyls into any situation that would lead into human food.

Q Well, did Pensacola know that Kepel was pasteurizing fish meal which was being used as an ingredient of animal feed?

MR. SMITH: Object unless you rephrase your question.

MR. JORDAN: He knows who I'm talking about.

MR. SMITH: I want the record to be clear.

Q (By Mr. Jordan) You know who I'm talking about, Mr. Papageorge, when I say Kepel?

A I believe so, sir. I think I do.

Q Did Pensacola know that Kepel operated a pasteuri-

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ning in Stockton which pasteurized fish meal for use in animal food or poultry food?

A Sometime, and this again, sir, is information given to us by others, sometime in 1970, early 1971, in perusing our customer list, our marketing people saw the name "Commodity Pasteurizing". This led them to believe there must be some food processing involved. And in pursuing and trying to determine exactly what went on in this application, this is when they first became aware of fish meal pasteurization at Stockton, California.

Q Now, when they became aware, who was it? Who were the people that you referred to that became aware of the fish meal pasteurization in California?

A I can only refer to these individuals with them I had been discussing these matters. Mr. Fallon - J. H. Fallon, Dr. James Nader, and Mr. Donald Rauch.

Q Now, have you told us what Mr. Rauch's title or duties were?

A I don't believe I have. He is the engineering specialist relating to heat transfer fluid applications.

Q Do you know whether he visited - or either of these other two people visited the Stockton plant?

A I do not know.

Q Now, when you found out - when these people you mentioned, when they found out that Kepro Commodity Pasteur-

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ling Company was pasteurizing fish meal, did they then conduct any other inquiry to determine whether any other purchasers of polychlorinated biphenyls were pasteurizing fish meal at other locations in the country?

A I do not know.

Q Do you know?

A I do not know.

Q You made no such inquiry?

A No, sir.

Q Did the business group with which you were associated in 1970 and the first part of 1971 adopt any policies with reference to sales of small quantities of PCB to customers?

A No, sir.

Q Will you describe in detail what your duties were in 1970?

MR. SMITH: Object. I think that was gone over in great detail on Friday.

MR. JORDAN: Mr. Borrello says it wasn't.

A (By the witness) I think I can best describe my duties as being a communications focal point for matters relating to our products and their impact on the environment.

Q (By Mr. Jordan) Now, which products are you talking about other than polychlorinated biphenyls?

A Well, there are other plasticizers and wood treat-

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ing chemicals, and I mention these because at some point in time some particular questions would arise that I was available for environmental matters on any of the many products handled by the business group.

Q Well, was your principal interest and concern during 1970 centered around the environmental aspects of polychlorinated biphenyls?

A Yes, sir.

Q And did that interest continue to be your primary interest up into 1971?

A It changed through the early part of '71. It became less demanding of my time. But the latter part of '71, it again became— it required a lot of my attention.

Q Beginning in July of 1971?

A Yes, sir.

Q Mr. Papageorge, I have before me a copy of an article which has your picture—

A Yes, sir.

Q From April 21, 1971 issue of "Chemical Week", and the article is entitled, "Pollution cop's lot not 'appy." Now, do you recall this article?

A Yes, sir.

Q Do you recall who was the person that interviewed you and obtained the material which was incorporated in this article?

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A Sir, I remember the individual.

MR. SMITH: Let him look at it, Mr. Jordan, if you will.

MR. JORDAN: He says he remembers the article.

Q (By Mr. Jordan) Do you remember the person who interviewed you to obtain the material which was incorporated in the article?

A Yes, sir. I remember the article and I remember the individual; I don't remember his name.

Q Well, what company was he connected with?

A As I understood it, he was a writer for McGraw-Hill, which was the publishing firm that publishes "Chemical Week".

Q And you don't recall the name of the person who interviewed you?

A Not clearly. I can only guess - Schwartz, or something like that.

Q Was it a man?

A Yes, sir.

Q Where did the interview take place?

A In New York City.

Q At whose office?

A The Kaiser's offices in New York City.

Q Did you go to New York City for the specific purpose of having this interview?

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A Yes, sir.

Q Did Monsanto pay your expenses?

A Yes, sir.

Q Was the appointment made sometime in advance of the actual interview?

A Yes, sir, it was a matter of a few days.

MR. MARSHALL: Off the record.

(Discussion off the record.)

Q (By Mr. Jordan) Well, this article refers to you as a pollution cop, doesn't it?

A Yes, sir.

Q Did you suggest that caption to the writer?

A No, sir.

Q Well, are you a pollution cop?

MR. SMITH: Object to the form.

A (By the witness) I really don't know how to answer that, sir. I try to be helpful, in all I know, in this particular area with what little information I have to share with others.

Q (By Mr. Jordan) Now, the statement -- there are several things said in this article. It starts off by saying you have "the ticklish job of guiding the company's $3-million research and control program aimed at halting pollution of the environment by its polychlorinated biphenyls (PCBs)." First, let me ask you in the spring of

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1971, had Monsanto adopted a two million dollar budget for the research and control program on PCB?

A That is a good estimate, yes, sir, of the cost.

Q Did you furnish that figure to the writer?

A I believe so, yes, sir.

Q And he called you Manager of Environmental Control for Monsanto's Organic Chemicals Division. Was that your title in 1971 in the spring?

A More correctly, I was Manager, Environmental Control, Functional -- let me think a bit - Specialty Products Group of the Organic Chemicals Division.

Q Were there some other Managers of Environmental Control in this same business group that you were in?

A No, sir.

Q Were there any other environmental people in that business group?

A No, sir.

Q Now, how long before this article was published did you give this interview?

A About a month.

Q Do you receive "Chemical Week"?

A I see copies of "Chemical Week". I am not on their mailing list.

Q Does Monsanto subscribe to it for Monsanto's library?

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A I would assume so. I haven't asked. It's there.

Q You see it there in the company's offices?

A Yes, sir.

Q Does the company have a library there at headquarters?

A Yes, sir.

Q Does Monsanto have in that library all current publications that relate to chemical affairs -- chemical engineering and chemistry in general?

A It has many, sir. I don't know if it has all of them.

Q How many publications would you say are received each month in the library?

A I have absolutely no idea.

Q Hundreds?

A I don't know.

Q How often do you visit the library?

A Two or three times a year.

Q Two or three times a week?

A A year.

Q A year? Was that also true in '70 and '71?

A Approximately so, yes, sir.

Q Is there anyone in charge of the library to screen articles and route them to various people in the company for that particular interest?

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A To my knowledge, not automatically. It's made on request.

Q Sir?

A Sorting of articles is made on specific request.

Q Well now, where was your picture taken for this publication?

A I'm trying to recall, sir. That picture was taken in the St. Louis general headquarters area.

Q That was before you went over for the interview?

A After.

Q Sir?

A After the interview.

Q After the interview?

A Yes, sir.

Q Did you send it then to McGraw-Hill, or did someone else send it for you?

A Someone else mailed it.

Q Was the picture taken by Monsanto's photographer or was it some outside photographer?

A I believe he was a Monsanto photographer.

Q Were you furnished with a proof of this article before it was published so that you could look it over and check it for accuracy?

A I didn't see it, no, sir.

Q Sir?

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A I did not see the article before it appeared.

Q After it came out you read it, didn't you?

A Yes, sir.

Q Was it accurate?

A In spots to a degree.

Q Well, the second paragraph of this article -- and I quote -- reads as follows: "The trouble is, the government doesn't think the program goes far enough--but some of Monsanto's PCB customers (who have been asked to pitch in and help) think the company has overreacted." Did you furnish an interview for that information?

A Not word for word.

Q The substance of it.

A The substance? I can't recall the exact words, but when it says "the government", it has to be. There are some people in the government, some individuals, who don't feel that we have gone far enough. And then on the opposite side of the coin, there are some individuals in industry who felt that we had gone too far. That's the substance of the thought.

Q The next paragraph reads, "Despite the headaches, Monsanto is pushing ahead with its program, which has four main objectives: (1) eliminating open-system applications of PCBs, such as in coatings and plasticizers; (2) controlling spillage or other loss from closed-system operations;

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(3) developing a less-persistent type of PCB; (4) eliminating loss or contamination during manufacture." Now, were those the four main objectives of the two million dollar program?

A Yes, sir. The only hesitation I have is that much of the two million dollars went to get information such as analytical methodology and toxicity information that do not necessarily tie directly to those four points.

Q Now, in your testimony Friday, you said -- and I quote -- line 14, page 3 of this extract, "Polychlorinated biphenyls are manufactured in this country -- well, let me turn it around and put it this way. The principal manufacturer in this country has been Monsanto Company through the years." And this article says, "As the lone U. S. manufacturer of PCBs (at Anniston, Alabama, as well as Sauget), Monsanto was the only company that had to respond to evidence presented early in '70 that these materials are in the family of persistent chlorinated hydrocarbons that build up in animals and affect their reproductive cycles." Now, in 1970 and '71, was Monsanto the lone U. S. manufacturer of PCB's in this country?

A Subsequent to the date of that "Chemical Week" article, I was informed that there is good evidence that polychlorinated biphenyls were being manufactured by another company and could conceivably have been manufactured

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in the past.

Q What other company?

A Geneva Industries or Geneva Chemical Company. I don't know the exact official description.

Q Located where?

A In the Texas area, I believe.

Q Do you know where in Texas?

A No, sir.

Q Who told you that Geneva Industries or Geneva Chemical Company manufactured polychlorinated biphenyls?

A Our marketing people who represented us. The marketing people who represented us.

Q Which ones?

A Mr. Cunning Payton, I believe Mr. James Rader, and Mr. Don Roush, have all at one time or other mentioned this to me.

Q Did they say what the source of that information was?

A They indicated that they got their information from the Monsanto people in the marketing function in the field.

Q In Texas?

A In the southwest.

Q Which marketing people did they get that information from in the field?

A I do not know.

Q They didn't tell you that?

A No, sir.

Q Well, when you granted this interview, at that time you thought that Monsanto was the lone U. S. manufacturer, is that correct?

A That was my understanding at that time.

Q When were you first told that -- by these three gentlemen you named -- that they had learned from some source that Geneva Chemicals or Geneva Industries also manufactured polychlorinated biphenyls?

A It was either the latter part of 1971 or the early part of 1972.

Q Well now, to refresh your recollection, I am going to ask you if you recall making a talk at the Midwest "Chicks" Seminar of Poultry and Egg Institute of America at Kansas City in December 1972?

A Yes, sir.

Q And that talk was written up in a periodical called "Egg Industry/January 1973". Did you know that?

A Yes, sir.

Q Did you see that article?

A Yes, sir.

Q How did you happen to see it?

A Someone sent me a complimentary copy of the

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journal.

Q And you are quoted in there about various PCB matters, are you not?

A Yes, sir.

Q And this article, which was published in January, 1972, states that, "According to the environmental protection record for the Monsanto Chemical Company, St. Louis, Missouri, Monsanto is the only United States manufacturer of PCB (polychlorinated biphenyls)." Was that the state of your information when you made this speech in December in Kansas City?

A Yes, sir.

Q So your conversations with these gentlemen about Geneva Chemical took place sometime after your December speech in Kansas City?

A Yes, sir.

Q The December '71 speech?

A Yes. If I recall, it was the first week in December.

Q Do you know whether anybody connected with Monsanto had made any effort to either confirm the accuracy of the information concerning Geneva Chemical or Geneva Industry, or confirm its inaccuracy, as a manufacturer of PCB?

A It is my understanding that Dr. Foyton addressed himself to this question, but I do not know exactly what action he took.

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Q Well, did he ever tell you whether he had run the thing to the ground and found out if the thing was true or untrue?

A No, sir.

Q So you still don't know whether it's a fact or not, do you?

A I have not confirmed it, no, sir.

Q When is the last time you discussed this topic - that is, Geneva Chemical or Geneva Industries - with Dr. Patton?

A About February or March 1972.

Q Did he tell you to quit running around and making a statement that Monsanto was the sole manufacturer of PCB?

A No, sir.

Q Well, what did he tell you?

A He told me that there is strong evidence as reported by field representatives that our ex-customers had a source of material that was domestic, and the rumor has it that Geneva is producing it.

Q Now, in this "Chemical Week" article of April 1972, there is the statement that, "These materials" - and he's talking about PCB - "are in the family of persistent chlorinated hydrocarbons that build up in animals and affect their reproductive cycles. (Among other things, PCB's were linked with thinning of peregrine falcon egg shells.) Did

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you give that information to the reporter?

A I don't recall giving it to him in exactly those words.

Q I'm talking about in substance did you tell him that? I'm not asking about exact words.

A The exact words are quite important, sir -- respectfully.

Q Do you recall using "persistent chlorinated hydrocarbons"?

A Yes, sir. As I recall, I referred to some of the letters which the reporter did not pick up. There's a fine distinction in all of these.

Q Did you mention "falcon egg shells" to him?

A I repeated -- I told him that early reports had implicated PCB's as being responsible for the demise of the peregrine falcon. I also told him that subsequent reports had exonerated PCB's. But you'll note that he doesn't include that last statement.

Q Well, did you write him a letter and upbraid him for not including your other statement?

A No, sir.

Q You didn't take any exception to the way he reported what you said?

MR. SMITH: Objection to the form.

Q (By Mr. Jordan) Did you?

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A If by "exception" you mean by approaching him personally?

Q Well, did you write a letter and say, "Dear Mr. Schwartz: I just read your article and I noticed that you said that I told you that PCB's were linked with the thinning of peregrine falcon egg shells. And you recall that I also told you that PCB's had been exonerated of that charge." Did you write him something to that effect?

A No, sir. As a matter of policy, we never get into an argument with journalists and newspaper writers.

Q That's a very wise policy.

MR. JORDAN: Off the record.

(Discussion off the record.)

MR. JORDAN: Back on the record.

Q (By Mr. Jordan) Mr. Papageorge, the next sentence is a direct quote. "Papageorge says: 'We don't know how serious a hazard PCB is to the environment - no one really does.'" Did you make that statement to the reporter?

A Yes, sir.

Q Did you tell the reporter that Monsanto got into the PCB business through the acquisition of Swan Chemical?

A Yes, sir.

Q Back in the early '30s?

A Yes, sir.

Q Did you tell him that the first signs of PCB

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trouble turned up in 1966 when a Swedish biologist named Soren Jensen identified these materials in the bodies of fish?

A I don't know that I used those exact words, sir, but the thought was that the first inkling that anyone had was the fact that these scientists claimed they had identified some peaks and valleys on a chart as being caused by polychlorinated biphenyls.

Q Well, did you give him the name of this Swedish biologist, Soren Jensen?

A Yes, sir.

Q How did you happen to know about Mr. Jensen's work?

A By the time I was assigned the task of becoming familiar with polychlorinated biphenyls, Mr. Jensen's work had already received wide publicity in the scientific community. So that when I was discussing polychlorinated biphenyls with our research people and medical department people, I was at this time told about this work. This was in early 1970.

Q Now, the article goes on to say, "In '68 Monsanto began studying the Swedish work." Is that correct?

A To the best of my knowledge, that is correct, yes, sir.

Q Then the article says that, "Robert Risebrough,

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marine biologist at the University of California (Berkeley) identified PCB in San Francisco Bay area birds in '69. Risebrough's work received wide circulation in 'Environment' (January/February 1970) just one month after Monsanto began its control program." Did you give him that information?

A We discussed it, sir, but I don't recall whether he was already aware of this work.

Q Well, is what he says accurate?

A As best I recall, yes, sir.

Q Did you tell him that Monsanto ran into more trouble when representative William Ryan (D., N.Y.) called for a ban on the product?

A I don't recall that - mentioning it.

Q Do you recall representative Ryan's speech in April 1970?

A Yes, sir.

Q Where did he make it?

A I believe he had a press conference in New York City.

Q Did Monsanto call a press conference to answer his charges?

A No, sir.

Q Risebrough - this marine biologist - at California (Berkeley) is quoted as saying that, "The possible PCB hazard, like so many environmental hazards, is one of long-term, low-

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level exposure." Do you agree with that?

A No, sir.

Q Is he mistaken when he makes that statement?

A That's his opinion, sir. I don't know he has any basis for having that suspicion. In my opinion, that's a statement we could all make about many, many chemicals.

Q Well, is it a fair statement about PCB?

A I have no evidence that tells me that that is a truthful statement or a factual statement.

Q Has Monsanto done a test or had any test done by someone else to determine how long this PCB material remains in the environment?

A Yes, sir.

Q What is the half life of it? Does anybody know?

A The half life, sir, for a complex mixture of chemicals such as polychlorinated biphenyls cannot be determined. The half life concept only applies to a pure material, and it originates, really, with radioactive life span for radioactive materials.

Q Well, were those tests made by Monsanto or were they made by an outside lab?

A They were made by Monsanto.

Q When were they made?

A Oh, in the period 1969, 1970, on into 1971.

Q Now, how did you determine what was done? What

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was the nature of the test to determine the life of this material in the environment?

A Well, there are about four different pieces of evidence that are looked at, and I will try to-- do you want us to describe them?

Q Yes.

A One bit of evidence is the fact that reports coming in from many laboratories throughout the world have always referred to the presence in samples from the environment. This includes sediment; it includes fish samples; animal tissues. That the type of polychlorinated biphenyl being identified looked most like the higher chlorinated type. Now we compare this bit of information with our knowledge of the type of polychlorinated biphenyls that were the more popular types --

MR. KAUFMAN: Could you stop a moment?

(Discussion off the record.)

Q (By Mr. Jordan) Go ahead.

A So when we compare what is known as being sold to the marketplace and what is being reported in environmental samples, there is some indication that the lower chlorinated isomers are not being accounted for. That is one clue. We conducted studies in our laboratories in which we introduced polychlorinated biphenyls in samples of river water obtained from non-industrial river source and

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measured the remaining residual amounts of polychlorinated biphenyl in the water after given periods of time. That information also told us that the lower chlorinated types were disappearing - some of them as fast as hours after exposure to a normal river water sample that contains - and I don't know exactly what types - but the normal micro-organisms that are present in nature. We duplicated in our laboratory on a laboratory scale the bacterial action that takes place in a typical municipal sewage treatment plant. We got a sample of activated sludge from a city system, introduced it into the laboratory vessels, bubbled air through it to simulate the air activation of the systems, and introduced polychlorinated biphenyls and then measured their presence after so many hours of exposure. These studies again confirmed that the lower chlorinated materials do disappear.

Q What about the high chlorinated materials?

A The higher chlorinated materials also disappear but not as rapidly. We have not run tests long enough to tell us exactly how long they will last in the environment.

Q Will you tell us what you mean by the lower chlorinated biphenyls?

A These are the biphenyls which contain one chlorine, two chlorine, three chlorine, four chlorine, and some of the five chlorine per group - chlorine groups on each

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biphenyl group.

Q There are 210 combinations, aren't there?

A Yes, sir.

Q Now, what are the higher chlorine groups?

A The higher chlorine would be some of the fives - the five seems to be the breakpoint. The six chlorine, seven and eight chlorine, the materials normally extracted, do not contain the nine and ten chlorine types.

Q How much chlorine is there in your Aroclor 1262?

A I'm sorry; would you repeat that?

Q How much chlorine is there in 1242?

A I believe you mean Aroclor 1242. Forty-two percent by weight chlorine.

Q Well, how many in terms of those numbers you have given us?

A I don't recall the exact break-down, but it is predominantly the three chlorine type.

Q What about 1248?

A That is somewhere between the three and four predominantly.

Q And that is forty-eight percent by weight chlorine?

A That is correct. Shall I continue with my other studies that done--

Q Sir? Have you finished your answer?

MR. SMITH: No, he said he hadn't and he wanted

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to know if you'd let him finish.

MR. JORDAN: Yes. I'm waiting on him.

A (By the witness) As part of our animal feeding studies, we saved tissues from the animals as they were sacrificed throughout the two year period. We analyzed these tissues. Let me back a bit. It was not only the two-year period, but we also saved some animals and kept them on a diet free of polychlorinated biphenyls for sixty additional days - a two-month additional period. We saved samples of the animals at intervals through this two-year - two-month period, analyzed the tissues of these animals, and the results of that study told us that in animal metabolism, the process of the metabolism of the animal also degrades the lower chlorinated polychlorinated biphenyls. So to summarize these studies I described, all indicate that polychlorinated biphenyls are handled by the environment - some faster than others, but there is evidence that even the higher chlorinated will eventually disappear.

Q Didn't you testify the other afternoon that polychlorinated biphenyls have been found in the Polar Ice Cap, at the bottom of the ocean?

A There are reports that polychlorinated biphenyls have been found in those areas. I have not been able to confirm any of this.

Q Nobody knows how long they've been there, do they?

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A No, sir.

Q Now, coming back to the article in "Chemical Week", did you tell the reporter that Congressman Ryan was preparing reports on PCB's in the environment which would appear to come out around May 1st?

A Yes, sir.

Q Well, did the Congressman prepare such a report?

A As I remember what happened about May 1st is Congressman Ryan introduced proposed legislation which-- Congressman Ryan introduced three bills for legislation. In one of those bills he proposed a total ban on the use and manufacture and movement in commerce of polychlorinated biphenyls. In another one of his proposed bills, he was proposing the partial banning which would permit the use of polychlorinated biphenyls under certain conditions. I don't recall which of these came first, but it had some reference to either a total ban or a partial ban of polychlorinated biphenyls.

Q Well, was a committee hearing conducted on this legislation?

A I'm sorry?

Q Were committee hearings conducted on this legislation?

A No, sir.

Q Do you know what happened to it?

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A As I recall, Congressman Ryan withdrew each of his first two proposals, and his latest version has been submitted with the support of about -- and I don't remember the number; let's say twenty additional representatives, and I don't recall at this point whether this was the total ban proposal or the partial ban proposal.

Q Is that still pending?

A To the best of my knowledge, that is still pending committee consideration, yes.

Q Have any committee hearings been conducted on the proposal?

A No, sir.

Q Does Monsanto have any legislative representation in Washington?

A I'm not familiar with the expression. We have representatives in Washington, yes, sir.

Q Well, do you have any legislative liaison man, or anybody that keeps up with legislation that might affect the company?

A Yes, sir, we do.

Q And who is that?

A Sir, there are several individuals, some of whom I know and some of whom I have never met. The office is headed by Mr. Dan Richard.

Q That's the Washington office?

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A Yes, sir. Vice president, governmental affairs.

Q Vice president -- what?

A Governmental affairs.

Q Is he a lobbyist?

MR. CHINN: I object to the form.

A I don't know, sir. I'm not familiar with that type of activity.

Q Well, when legislation is pending in Congress that might affect Monsanto, does he talk to the Congressmen about it?

A I have never been present when he has done this, so I personally don't know.

Q Well, haven't you heard in the company that he does look after the company in Congress when something affects the company that's pending in Congress?

A No, I haven't heard that.

Q Do you know whether anybody connected with Monsanto has communicated with Congressman Ryan about his PCB legislation?

A Yes, sir.

Q Who has?

A Mr. Sam Pickard and Mr. John Hazen.

Q Have you ever been to talk to the Congressman about it?

A No, sir.

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Q Now, this article quotes you as follows -- and this is a direct quote -- "'Some of our customers have accused us of overreacting to the dangers.' Papageorge says, 'but we're intent on following through on any possible loss of PCBs to the environment.'" Did you make that statement to the reporter?

A I don't recall the exact words, sir.

Q Well, is that substantially what you said to him?

A That's the thought.

Q You wouldn't say that this is an inaccurate quotation, would you?

A No, I cannot, because I don't remember the exact words that I used.

Q Now, the next paragraph reads, "First step in Monsanto's breakdown was to halt sales for any application where entry into the environment could not be controlled. In most cases the company was able to spot orders for such uses by the quantity requested. It also has stopped selling Aroclor through distributors." Did you tell the reporter that?

A I don't recall that portion about size of order, or words to that effect.

Q It goes on on that subject here, he says, "Order size also is the tip-off on potentially polluting heat transfer applications of PCBs. Papageorge points out that

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new material bought in small quantities invariably is for makeup in systems to replace what is lost when samples of the liquid are taken periodically during operation. Monsanto has shut off sales for such use in the food industry because of the risk of direct contamination if any of the PCB escaped into the food." Does that refresh your recollection that you talked to him about order size being the tip-off on potentially polluting heat transfer applications of PCB?

A I remember talking order size, and the journalist is the one that brought up the question, and as best I can recall, I informed him that one must have a very intimate knowledge of a system in terms of its size, its design, the details, the application, the amount of repair activity that's involved -- shutting down the draining system and all. One must know its system quite thoroughly before order size enters any comment.

Q You did discuss order size with this reporter, didn't you?

A Yes, but in terms of the total picture.

Q What about this statement? "Monsanto points out that new material bought in small quantities invariably is for makeup in systems to replace what is lost when samples of the liquid are taken periodically during operation." Did you tell him that?

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A I don't believe so. It doesn't make sense to me.

Q Where do you reckon he got that from if he didn't get it from you?

A I have no idea. I'm not aware of any system that takes as many samples it must replenish its supply of material.

Q Now, he says under caption "Educating Customers", "To back up its policy, Monsanto has set up an education program for its customers, showing how to avoid losses during use and handling of PCBs. Papageorge says he has found the best way to get cooperation from a user is to go directly to the company's president or vice-president." Did you tell him that?

A I believe I recall this specific reference to the vice president. It was in response to the question, "Suppose a customer refuses to do these things. Does it help to go to the top management?" And I said, "Yes, it helps to go to the vice president."

Q Has Monsanto gone to the presidents and vice presidents of its customers to get their cooperation in this program of avoiding losses during use and handling?

A I am aware of a few instances. We have not found that to have to be the rule.

Q What about this education program for customers? Did Monsanto actually set up an educational program for

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customers?

A I don't know that. The use of the word "set up" implies a very formal kind of thing. There were discussions with customers, some of them held by our sales representatives, some of them I participated in. We include the wording on our labels as part of this program.

Q Now, did you tell him what the price of PCB was?

A As I recall, he asked me was it about twenty or twenty-five cents a pound, and I said, "That's a good range."

Q Well, is that correct?

A Yes, sir.

Q And did you point out to him that it got a good response because there's no substitute for PCB, so it hasn't no contained substitute?

A A good response in what area, sir?

Q From your customer.

MR. SMITH: I object to the form. I don't understand myself.

Q (By Mr. Jordan) Mr. Hagenmeyer, right after the paragraph after he talks about your education program and how to avoid losses during use and handling and the best way to get cooperation from users is to go directly to the company president or vice president, then he quotes as follows: "'In every case we have gotten a good response.'

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he says, 'because there is no substitute for PCB, or at least no economical substitute.' (The material sells for 20-25¢ lb.)" Do you remember telling him that?

A Yes, sir, I remember that now. This was good response in terms of understanding the need for controlling the escape of polychlorinated biphenyls. We did get good response in those instances where we had these discussions.

Q Now, he goes on and he quotes as follows: "'We tell our customers that if they ignore us, we may be forced to stop selling them PCBs...and the message usually gets through,' adds Papageorge." Did you tell him that?

A That sounds right, yes, sir.

Q Then he says, "To back up the message, Papageorge makes personal inspections of customers' unloading facilities to make sure spill-prevention programs are working." Did you tell him that?

A In essence, sir. I cannot possibly make inspections of the thousands of customers involved. I have made inspections of some of them.

Q Did you tell him you made inspections?

A Yes, sir, I told him I made inspections of some customers, yes.

Q To make sure that their spill prevention programs were working?

A Yes, sir.

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Q What customers were you inspecting on spill prevention programs?

A They were primarily in the dielectric application, transformer manufacturers and capacitor manufacturers.

Q Have you inspected any heat transfer customer facilities?

A No, sir.

Q Now, the reporter goes on to say under the caption, "Recover or Destroy", "One of the main objectives of Monsanto's program is to keep PCBs away from water supplies. Papageorge notes that once the material gets into the water, it spreads out, leading to widespread effects. To prevent this, Monsanto is buying back at full price materials sold to customers for other than closed-system use. The company also reprocesses PCBs contaminated by smoking or other means. PCBs are recovered by passing contaminated material through a series of clay filters." Did you give him that information?

A Basically, sir, yes, sir.

Q And then you talked about the new incinerator at Sauget, and you told him that that incinerator will give you a way to handle PCBs that cannot be recovered or reused. Do you recall telling him that?

A Yes, sir.

Q The article says, "The complaint against PCBs has

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been that when plastics coated with these materials are placed in incinerators at relatively low temperatures that PCBs are not destroyed. But the new, 10-million-lbs. /year incinerator built for Monsanto by John Zink (Tulsa) will operate at 3,000 F., reduce PCBs to carbon dioxide and water." Do you remember telling him that?

A We had a discussion of all the details of this incinerator, and it's very likely we covered these points, yes, sir.

Q Well, did you give him that 3,000 degree Fahrenheit temperature figure?

A I told him that it can operate up to 3,000. I noticed he left out the fact that hydrogen chloride is generated and that there other details of the operation are omitted.

Q Well, he went on to say, "Hydrochloric acid formation will be prevented by use of a scrubber and by neutralization of the resulting fluid." Did you tell him that?

A Yes, sir.

Q Is that what you thought he left out?

MR. CHILL: Mr. Jordan, I asked you to show him the pleas. You read him a part and he said he didn't include that, and you read some more and he said he did include it. So I object to the form of the question.

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THE WITNESS: Okay.

Q (By Mr. Jordan) This article goes on in describing things that Monsanto was doing in tightening up the manufacturing operations and standards, and he quotes you as saying -- quote -- "'You get a feeling of bone dryness in the plant,' says Papageorge. 'There is none of the hosing down you find in most chemical plants.'" Do you remember telling him that?

A Yes, sir.

Q And then he says that, "Other measures include complete monitoring of all vents and traps for leaks at all sample points. All tanks are 'buttoned up' so that operators don't have to look in. And all of the air and gas that escapes the plant is passed through a [illegible] eliminator. In addition, process temperatures were lowered to prevent vaporization." Did you give him that information?

A Yes, sir, although the way it reads it appears that all of these things were done in every instance. It varies from point to point that these things were done throughout the manufacturing unit.

Q It says, "Monsanto even provides clothing for all the workers, and after the clothes are cleaned all the cleaning fluid is collected for destruction in the incinerator." Did you tell him that?

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A Yes, sir.

Q The next paragraph says, "For PCBs used in capacitors, the little boxes on poles that boost electrical power, Monsanto is installing a distillation column, scheduled to go on stream in June, to produce a PCB without the persistent impurity." Did you tell him that?

A Yes, sir.

Q It goes on to say, "The material can then be further chlorinated for transformer use. The problem with capacitors is that they are small, hard to collect after they have been replaced. They could easily end up in a land fill, crushed so that the material inside leaks onto the ground." Did you tell him that?

A Yes, sir.

Q "Seeking substitutes: Monsanto admits to looking for some substitutes for PCB. What the company has primarily gained from the PCB furor was an awareness that it must test all new products for environmental effects." Did you tell him that?

A Yes, sir.

Q Then he quotes, "'We don't yet know what tests will be required, what data will be acceptable, or even what animals to test on,' says Papageorge, 'but we have worked out a checklist approach for all new chemicals. We hope that we will be batting 1,000 when the federal government

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details its toxic substances act.'" Do you remember making that statement to the reporter?

A I don't recall that "batting 1,000," but the rest of it in essence is accurate.

Q Now, this other article I referred to a while ago in the "Egg Industry" reporting on your speech at the Midwest "Quickie" Seminar said, "Monsanto--

MR. SMITH: Mr. Jordan, would you give him a copy of anything you're going to ask him about?

MR. JORDAN: I only have one copy.

Q (By Mr. Jordan) "Monsanto has discontinued supplying PCB's for most uses, especially for any application remotely connected -- directly or indirectly -- with feed or food for animals. The action was taken due to recently uncovered data concerning PCB's in the environment." Did you say that in your speech at Kansas City?

MR. SMITH: What's the date of that article that you're reading from?

MR. JORDAN: January 1972, a speech made in December 1971.

A (By the witness) Yes, sir.

Q (By Mr. Jordan) It said, "Papageorge said in high school chemistry, we learn that when you put benzene under proper temperature and pressure, you produce some hydrogen and biphenyls (two benzenes together). If you add

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chlorine, it attaches itself randomly to the benzenes. The product 'is not a pure chemical, but a god-awful mixture, depending on how many chlorines are attached.'" Did you make that statement in your speech?

A I don't remember the expression "god-awful", but basically it's correct.

Q Well, you don't deny saying that? They've got you directly quoted here.

A Sir, as I remember that article, the use of quotation marks is the most liberal of any article I've ever seen. I honestly do not remember making many of those statements that are attributed to me by quotes.

Q Well, Mr. Papageorge, isn't it a fact that the product is a god-awful mixture, depending upon how many chlorines are attached?

A Well, sir, it could well be. I don't know if the expression "god-awful" is a good adjective and means the same to all people. It is complex. It's a challenge to the analyst. It does introduce problems that are unique.

Q Now, this article on your speech says that "because of PCB's characteristics of resisting breakdown, new uses were found during the mid-1930's, Papageorge continued." Do you remember saying that?

A Yes, sir.

Q Now, what do you mean by "characteristics of

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resisting breakdown"?

A That's this property I discussed last week, as I recall, whereby these polychlorinated biphenyls do not readily react with acids and alkalis and the normal kinds of things that lead to breakdown of most other chemicals, and because of this property it added durability to many products in which it was included.

Q Now, if I understood your testimony last week, I believe you said the more chlorine you put in it, the more viscous it becomes?

A That is correct.

Q So finally you can put enough chlorine in benzene to make it a solid?

A Correct.

Q Does the company make quality control or lab tests from time to time of this material as it is being manufactured?

A Yes, sir.

Q And do those tests include measurements of viscosity in terms of poises?

MR. SMITH: In terms of what?

MR. JORDAN: Measurements of viscosity in terms of poises - p-o-i-s-e-s. The witness knows what I'm talking about, Mr. Smith, even if you don't.

A (By the witness) The physical property of vis-

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cosity is determined for each batch of material manufactured.

Q (By Mr. Jordan) Do you know whether it's actually measured? You know what the measurement of viscosity is, don't you?

A There are various ways to determine it, yes, sir.

Q What is the unit of measurement of viscosity?

A Well, there's the one referred to as poises. There's another referred to as stokes. Different mathematical approaches to describe this viscosity property.

Q Which one is used in Monsanto's tests, or was used in 1970-71?

A I believe the results are reported in centi-poises.

Q In ~~center poises~~ centipoise?

A Yes.

Q Are those tests results recorded?

A Yes, sir, they are recorded.

Q I can't tell from this copy whether this is a picture of you or not. I'm going to ask you and you tell me if you think it is.

A That was supposed to have been me, yes, sir.

Q You aren't very photogenic, are you, sir?

A That's right, sir.

Q That quotes you in this box up here opposite your photograph, "PCB's have certain valuable properties...fire

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resistant, doesn't react with acids or alkalines...good insulating properties that last forever. Notice that these are the characteristics that plague us today." Do you remember making that statement in your speech?

A I believe so, yes, sir.

Q Now, in this Kansas City speech, do you recall that you also referred to the 1966 Swedish investigators' identification of the unknown material which interfered with insecticide analysis as being PCB's, and you were frankly surprised and disbelieving?

A That is correct, sir.

Q But you said that his reports kept coming in; the PCB's were out there in the environment. Monsanto in late 1967 decided to have a look.

A Yes, sir.

Q That is true, of course?

A To the best of my knowledge, yes, sir.

Q And you went on to say, "We developed our analytical methodology, capable of detecting this material down to parts per billion - a new standard since no attempt had been made to operate at such a low concentration before." Do you recall saying that?

A Yes, sir.

Q And he further quotes you, "The analytical methodology is so sophisticated we say that we're aware of in the

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business. It takes experienced chemists and expensive equipment. Those of you who have had this work done for you by labs are aware it's expensive work." Do you remember making that statement?

A Yes, sir.

Q "Sometime in 1968, 'we convinced ourselves that, sure enough, this material was out there in the environment. The next question was: what harm does it do?'" Do you remember making that statement?

A Yes, sir.

Q I continue the quotation. "Throughout 1968 and 1969, we received reports of PCB's being found in some sports fish, fish-eating birds and shellfish. The problem appeared to be one of possible harm to most species of wild life in the environment and it appeared to be the more highly chlorinated versions." Do you recall making that statement?

A Yes, sir.

Q I continue to quote, "No one had detected the lower chlorinated materials. This led us to believe, initially, that the latter were probably degrading and not really a" -- it says a program; I guess that means problem. Is that what you said?

MR. SMITH: Which one?

A (By the witness) I believe so.

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Q (By Mr. Jordan) "This led us to believe initially that the latter" - that is, the lower chlorinated material - "were probably degrading." Now, later did you discover that the lower chlorinated materials were probably not degrading?

A No, sir.

Q Did you find that the lower chlorinated materials at some point in your studies were more damaging to poultry than the higher chlorinated?

A This of course depends on amount introduced to the animal or the bird. It's a function of amount and time of exposure, yes. As I indicated the other day, the laboratory studies did indicate that the Leghorn chicken - which was the test animal used - did show an effect.

Q Now, in this speech, did you state that "Monsanto began a multi-pointed program," which included, "continue refining analytical capabilities; begin trying to develop replacement products; start animal feeding studies; initiate biodegradation studies; educate customers as to potential problems." Did you make that statement in your speech?

A Yes, sir.

Q When were those animal feeding studies started?

MR. SMITH: I object again. I think we went over that Friday.

MR. JORDAN: The ones he's talking about in this speech.

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Q (By Mr. Jordan) When were they started?

A The studies were started in early 1969 as background work for the two-year feeding study which was started in May of 1969.

Q Well, were any studies started in 1968?

A I am not aware of any, sir, but it's possible that the preliminary work could well have started in '68.

Q There's a box in this article, it says, "Initial experiments revealed that reproduction capabilities were adversely affected, but nothing indicated that PCB materials were highly toxic." Did you make that statement?

A Yes, sir.

Q And the article also says that with the chicken, "The first warning signal was lower hatchability of the eggs," and that that showed up - that some of it showed up at four parts per million. Do you remember saying that?

A Yes, sir.

Q Did you tell them in this speech that that was the first indication we had that the lower chlorinated materials could also be a problem"?

A Yes, sir.

Q And then the article quotes as follows: "We saw it as an environmental problem and we had better get out of the business." By late 1969, a plan was formulated to drop all PCB business that could not be controlled in terms of

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escape into the environment." Do you remember making that statement?

A Yes, sir.

Q It goes on to say, "It's easy to reach such a decision in the conference room, but difficult to implement." Then they quote, "There are thousands of customers involved and many don't appreciate environmental problems. Many businesses depend entirely on this one product, and they don't have research departments and resources to find alternative materials." And it continues, "It was an emotional situation. In some quarters, we were hailed as heroes - usually by the person who hasn't been affected - and in other quarters we were S.O.B.'s." Do you remember saying that in your speech?

A In essence, yes, sir; not in detail, no.

Q And then it continues the direct quotation, "By May 1976, we dropped all businesses where PCB's might leak into the environment, such as paint, adhesives, sealants and ink. The only businesses we would continue to serve were electrical transformers, electrical capacitors and heat transfer systems." Do you remember saying that?

A Yes, sir.

Q Now, the article goes on to state that you "explained that in commonly used steam heat transfer systems, water is heated into steam and the steam is trans-

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ferred to the process for sterilization. It condenses as it cools and is returned to be recycled. The recycling is carried on as a closed system, within pipes." Do you recall saying that about the steam systems?

A In all these instances, I remember the essence of the words or the thought. I don't remember the exact words.

Q Sir?

A I don't recall the exact words, no, sir. The essence is there.

Q That's not a direct quote?

A That's right.

Q The article goes on to say, and this is not a direct quote, "PCB's were used for this system because they can withstand extremely high temperatures without being vaporized." And then it's a direct quote, "This means when you design the system, you don't need safety valves or the high-pressure design of steam systems." Do you remember saying that?

A Again, in essence, yes.

Q Now, the next paragraph reads -- and it's not a quotation -- "These should be closed systems and with proper maintenance can be operated as such. Monsanto figured that, with proper care, they can live with such a system." Do you remember making a statement like that?

A Again, in intent and essence, yes.

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Q Now, your next statement is a direct quote in this article, "'When the unfortunate North Carolina fish meal contamination broke, we realized we had neglected one very important consideration: attitude of the operators, and ability to inspect, repair and maintain the closed system.'". Do you remember making that statement?

A Not that way, sir, no, sir.

Q Then they misquoted you?

A Yes, sir.

Q Have you got a copy of the speech you made at that Egg Institute?

A I don't have, sir.

Q What?

A As I talked here the other day, I just talked from memory.

Q Well, what did you say about the unfortunate North Carolina fish meal contamination?

A I cannot recall the exact words, but I can attempt to recall the thoughts - if that's of any help.

Q What?

A I don't recall the exact words, but in essence the thought that I had was as follows: Up to this point in time, there was no information from any one of our hundreds - in fact thousands of heat transfer customers that an accidental situation of this sort could occur and

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the operator of the unit not take some action to prevent his product from going to the marketplace. This is inconceivable from our understanding of this kind of system and these kinds of applications. And with the information we had, we just could not then have jumped into a conclusion that would say that heat transfer systems in applications of this type were not controllable. And throughout our use of the words "controlling polychlorinated biphenyls", it is not intended to imply just Monsanto is going to control these things; the user plays a very important role, and once the material is in his hands control is entirely up to him. Monsanto cannot -- it does not have the resources or the authority to control a customer in his use of the product.

Q Well now, this article, right after the quotation I just read you appears this quotation: "Also, in a system like this, the problem must occur before you can locate it." Do you remember making that statement in this speech to the gas people?

A I don't remember the statement, but it's possible, yes, sir.

Q Then the article says, "As a result of the fish meal incident" -- referring back to the unfortunate North Carolina fish meal contamination -- "Monsanto reviewed its policy and decided it was too much to expect all heat

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transfer systems to be entirely leakproof at all times. So it was decided not to service any heat transfer system related -- directly or indirectly -- to food or animal feed." Did you make that statement in your speech?

A In essence, yes, sir.

Q Now, Mr. Papageorge, were you aware that in the Japanese incident which you referred to in your testimony earlier today--

A Yes, sir.

Q That the PCB reached food from a so-called closed system?

A I was aware, sir, but I'm trying to recall when. We had heard about an incident in Japan. The information we had was garbled. We attempted to get clarifications. We could not get a description of the system or the process used. We could not get a description of the particular fluid that was used. And none of this was truly confirmed until the Food and Drug Administration sent representatives to Japan. And I am trying to recall -- September or October or thereabouts, 1971. And the first report we had was given by a representative of the Food and Drug Administration to a meeting in Washington of the Association of Grocery Manufacturers, I believe about November of 1971. This was again reviewed for us by Japanese representatives in a meeting at Hollis Roach, North Carolina, in December of

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1971.

Q Well, the Japanese contamination occurred in 1968, didn't it?

A That is right, sir.

Q Well, you folks had a company over there that was making this stuff, didn't you?

A Yes, sir.

MR. SMITH: Objection to the form of the question. "This stuff" -- there's no evidence to relate "this stuff" to anything in the Japanese incident.

MR. JORDAN: I'm talking about this polychlorinated biphenyl. Instead of using great big words, I'm trying to use simple ones.

Q (By Mr. Jordan) Your company in Japan was making it in 1968, weren't you?

A No, sir.

Q When did you stop making it over in Japan?

A I believe 1969, sir.

Q '69?

A Yes, sir.

Q Then I say -- were you making it in '68 in Japan?

A I don't believe so, sir.

Q You said you didn't stop until 1969?

A Start -- start producing.

Q Oh, you started in 1969?

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A Yes, sir.

Q Well, did you have a company in Japan in 1968?

A I don't recall when Monsanto Mitsubishi was organized, so I don't know if it existed as such in 1968.

Q Now, Mr. Papageorge, when did Monsanto review its policy and decide that it was too much to expect all heat transfer systems to be entirely leak proof at all times and further decide not to service any heat transfer systems related directly or indirectly to food or animal feed?

A Following the incident which is the matter of discussion here, in July 1971.

Q Now, the article goes on to say that, "Monsanto went to each such customer, helped them drain and flush the units, and gave them replacement fluids. The PCB's were then destroyed by Monsanto. All of this was at no cost to the customer." Did you make that statement in your Kansas City speech?

A That was our program at that time, yes, sir.

Q Well, did you get the PCB's down at Kingston and take them back to Sauget and burn them up?

A I believe so, sir. I'm assuming you're talking about Inst Court Terminals.

Q Sir?

A This is with reference to Inst Court Terminals

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Company?

Q Yes.

A Yes.

Q Did you do that without expense to East Coast or South Pacific?

A I have no specific information, but I assume that it did cost them something.

Q This article says that you -- quote -- it says that in your speech you said it was all done at no cost to the customer.

A The intent there is to talk about -- to refer to the cost of the replacement material and the cost of incineration.

Q This article in reporting your speech also says that, "Toronto also decided to sell no PCB's for any new heat transfer systems, regardless of application. And a program was begun to try to convince all remaining heat transfer applicants to change over to other fluids." Did you make that statement?

A Yes, sir.

MR. MAYES: It's 5:00 o'clock.

MR. SPOONER: Let's quit.

(Thereupon, at 5:00 o'clock p.m., the deposition was adjourned until 9:30 a.m. on Tuesday, August 8, 1972.)

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