NORTH CAROLINA } IN THE GENERAL COURT OF JUSTICE
RANDOLPH COUNTY } SUPERIOR COURT DIVISION

TRI-STATE FIBERS COOPERATIVE COMPANY,
Plaintiff

vs.

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

72 CVS 76

NORTH CAROLINA } IN THE GENERAL COURT OF JUSTICE
WILKES COUNTY } SUPERIOR COURT DIVISION

HOLLY FARMS POULTRY INDUSTRY, INC.,
Plaintiff

vs.

WILKES-ELLIS COMPANY; INTERNATIONAL PROTEIN CORPORATION; EAST COAST TERMINALS, INC.; SOUTH PACIFIC TRADING ASSOCIATION, INC.; and MONSANTO COMPANY,
Defendants

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DEPOSITION OF WILLIAM B. HARGROVE

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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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and
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Graham Erlacher, Official Court Reporter

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EXHIBITS

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MR. JORDAN: Before commencing, I was advised that yesterday afternoon when I was examining the witness and when I asked him certain crucial questions, one of Monsanto's attorneys, Mr. Moore, would shake his head in the negative, in a negative manner in the presence of the witness, and if the witness gave a negative answer he'd nod his head in approval. Now, I don't know if he did that intentionally or inadvertently.

MR. LARRY MOORE: Which Mr. Moore are you referring to?

MR. JORDAN: Mr. David Moore. Maybe it was out of enthusiasm and zeal, but at any rate, whether intentional or inadvertent, I do not think that counsel should give any display of any thought which would constitute any signal or admonishment to the witness.

MR. SMITH: Now, Mr. Jordan, I was here and I didn't observe any such, and I am sure that there was nothing advertent or inadvertent in the way of any signaling, and I think the witness conducted himself admirably in answering a long series of questions commencing on Thursday afternoon and he's still on the stand, and you can ask him anything you want to.

MR. JORDAN: I state again on the record I do not think that counsel should display any sign or signal of any sort, whether advertent or inadvertent, in the presence of

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the witness.

MR. SMITH: Well, we all agree on that.

WHEREUPON,

WILLIAM D. PAPAGEORGE

having been previously sworn, testified further as follows:

EXAMINATION BY MR. JORDAN

Q Mr. Papageorge, in the excerpt of the minutes of the meeting of the corporate management committee at Monsanto which has been furnished us, and I refer specifically to the May 11th, 1970 meeting, there is this notation: "Close the loop on heat transfer applications where fire resistance is vital and replace with alternates in other cases. Complete: December 30th, 1970." Now, first, were you at the meeting where this matter was discussed and this notation was made?

A No, sir.

Q Do you know what "close the loop on heat transfer applications" means?

A I can describe it as I understood it, sir. I do not know what was intended with that expression at that meeting. But those of us who had to implement programs in the marketing of heat transfer fluids use that expression to describe our attempt to control the use of these fluids in such a way from point of manufacture to the packaging, to the shipping, to the use and the return of that material

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for proper disposal without losing way to the environment. This included, of course, our discussions with our customers, and of course included -- and this, by the way, played a very important role in the total "close the loop" approach -- the information on the label to inform the user regarding the proper handling, use, disposal of polychlorinated biphenyls.

Q Were you involved in the implementation of this directive which I read you?

A To a degree, yes, sir.

Q To what degree?

A I believe a very minor degree.

Q Well, describe what, if anything, you had to do with it.

A I was involved in the information that went on the label. I was involved in responding to customer telephone calls and letters requesting information on suggestions on how to dispose of the material. I was involved in such basic questions as, "Gee, what are polychlorinated biphenyls?" in response to customer questions.

Q What sort of questions did the customers ask?

A Well, they ranged from, "What are polychlorinated biphenyls?" "Are they in the product that I purchased from Monsanto?" "How should I handle them?" "Will they harm my employees?" "What kind of drum may I use to return it to

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Monsanto?" "What will it cost me for disposal?" "Is there any other way to dispose of this material?" "Can't I just dump it in the sewer?" Those kinds of questions.

Q What would you tell a customer when he asked you if he couldn't dump it in the sewer?

A I told him I strongly recommended he not do so.

Q Why?

A Because we didn't want polychlorinated biphenyls in the streams and rivers.

Q Why didn't you want it in the streams and rivers?

A Primarily because of the furor being raised about the presence of polychlorinated biphenyls in river systems, water systems.

Q You say your reason for not wanting it dumped in the sewer to go into streams and rivers was because of the furor that had been raised about it?

A That is right, sir.

Q Is that your only reason?

A Although we had never confirmed in our own studies, we did consider that it is possible that the presence of polychlorinated biphenyls in the water systems of this country could have an effect on wild life on the upper end of the food chain.

Q What effect?

A The effect that was being claimed at that time

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was the effect on the reproduction ability of certain of the fish-eating birds.

Q You were aware of the poultry studies that had been made, were you not, in 1970?

A Are you referring to Monsanto, sir?

Q Yes.

A Yes, sir.

Q Do you know whether any person connected with your business group in May of 1970 attended the meeting of the corporate management committee at which this directive I read you was adopted?

A To the best of my recollection, I believe Mr. Howard Hinchler and Mr. John Mason attended that meeting representing the Organic Chemicals Division, not the business group.

Q Mr. Papageorge, have you ever made any recommendation to your fellow employees or your superiors at Monsanto with reference to PCB's which were not followed by the company?

A I am having difficulty responding to your question, sir, because time is a factor here. Some of my recommendations were not followed immediately but eventually they were implemented to the point where today every recommendation I made has been implemented.

Q When were all of your recommendations finally

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implemented by the company?

MR. SMITH: I object to the form.

A The last recommendation was finally implemented March 31st - let me think. I'm sorry - June 30th, 1972.

Q And what was that last recommendation?

A It involved - no; I'm sorry. It was March 31st, 1972. It involved the use of a monochlorinated biphenyl in hydraulic fluid formulations.

Q What was the recommendation that you made?

A Contrary to the technical information we had which indicated the monochlorinated biphenyl did not pose any of the situations that the polychlorinated biphenyls were experiencing, I recommended to our management that the emotional situation was such that the continued use of the monochlorinated biphenyls was not wise in my opinion and that we should seriously consider phasing out of that application.

Q When did you make that recommendation?

A As best I recall, the latter part of 1971.

Q To whom did you make it?

A It was made to Mr. John Mason at one time, and at a meeting at which several individuals were present - John Mason again being present, and I remember Mr. Charles J. Smith was present.

Q Mr. Smith, the vice president that you identified

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yesterday?

A No, sir. The vice president is Mr. Thomas K. Smith.

Q What is Mr. Charles Smith's position?

A At that time he was an Assistant General Manager of the Organic Chemicals Division.

Q What was Mr. Mason's position?

A Same title, sir.

Q Was there anybody else present at the meeting at which you repeated this directive?

A There were others present. I am not positive just who those individuals were. I believe Mr. James Springate was present. He is Director of the Plasticizers Business Group. And as I recall, there were one or two other individuals present, but I don't recall who they were.

Q Mr. Papageorge, in late 1970 or early 1971, when it was discovered that Monsanto polychlorinated biphenyls were being used as a heat transfer medium in the Kopel Commodity Pasteurizing Company's unit in Stockton -- that was brought to your attention, was it not?

A Not at that time, sir.

Q When was it brought to your attention?

A The week of July 12th, 1971.

Q Now, I understood you to say that when that discovery was made by the Monsanto people, they got in touch

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with the Kopel Pasteurizing people and persuaded them to remove the PCB from their system and put in some other heat transfer agent.

MR. SMITH: Object to the form. I don't believe that's an accurate characterization of his testimony.

Q (By Mr. Jordan) Is that what happened? If it's inaccurate, you tell me what happened.

A I do not know all the details, sir. I do know that the Commodity Pasteurizing-- I was told that the Commodity Pasteurizing Company in Stockton, California, was identified as a customer of a heat transfer fluid that contained polychlorinated biphenyls, and because of its name our people had suspected it had something to do with human food. Someone in Monsanto contacted someone at Commodity Pasteurizing Company.

Q Do you know who in Monsanto made that contact?

A No, I do not, sir.

Q Who could tell us that? Who would know?

A I am going to guess -- a Mr. Jack Fallon or Mr. Don Roush.

Q Is that Mr. R. R. Fallon?

A J. R.

Q J. R.?

A Yes, sir.

Q He's Marketing Manager for Heat Transfer and

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Process Fluid, or was at that time?

A At that time, yes, sir.

Q And who else did you say?

A It could have been a Mr. Donald Roush, who was - I don't know the exact title, but he was an engineering specialist on heat transfer systems.

Q Had Mr. Roush conferred with Joy Manufacturing people in Texas past about heat transfer systems?

MR. FLERICK: Object to the form.

A I do not know, sir.

Q Do you know whether he conferred with William J. Moran Company personnel?

A I do not know.

Q You say he is an engineer?

A Yes, sir.

Q What kind of an engineer?

A I believe he is a mechanical engineer by training.

Q Now, if Monsanto had learned in 1970 that East Coast Terminals was using polychlorinated biphenyl as a heat transfer fluid to pasteurize fish meal, would Monsanto have taken the same measures that it took with reference to Kopel?

A This would have to be the decision of the marketing manager, sir. I can't guess as to what they would have thought at that time.

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Q Well, if it had been brought to your attention, would you have recommended that the same measures be taken that were taken at Kopel?

A Not unless I had information that led me to believe that a potential problem existed.

Q Well, did they have a problem at Kopel?

A Not that I know of.

Q Well, despite the fact that there was no problem, the change was made at Kopel, was it not?

MR. SMITH: Object to the form.

A Sir, I don't know at this moment if the changes have ever been implemented. I do know that serious discussions were held, and I'm also told that the Kopel manager - that the Commodity Pasteurizing managers, and I really don't know how that ties in with Kopel, were very easily convinced that this was the wise way to go; there was no problem.

Q Did you participate in any of those discussions?

A No, sir. All I'm telling you is what I have heard from marketing people.

Q What you were told by the marketing people?

A That is right.

Q They said that when they learned that Commodity Pasteurizing was using PCB as a heat transfer fluid to pasteurize fish meal, that they recommended that it be

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removed and some other material substituted?

A That is correct.

Q I show you a letter dated August 7th, 1970 - a copy of a letter - East Coast Terminals, addressed to the Monsanto Company, with an attached purchase order. Read the letter first. Now, look at the purchase order, if you will. Have you ever seen these documents, or copies of these documents before today?

A No, sir.

MR. SMITH: Would you mark that as an exhibit?

MR. JORDAN: It's from East Coast Terminals, Inc., by Noah H. Morton, Manager Operations, to Monsanto Company, Anniston, Alabama, Attention Sales Department. There's a note at the bottom, "Enclosure Purchase Order No. 4031," and the purchase order 4031 is attached. I'll ask the reporter to mark this - have any other exhibits been marked - as Plaintiff's Exhibit 1 of Papageorge Deposition.

(The document above referred to was marked Plaintiff's Exhibit No. 1, Papageorge Deposition, for identification.)

Q (By Mr. Jordan) Now, Mr. Papageorge, this document which has been marked Plaintiff's Exhibit 1, Papageorge Deposition, is a letter from Mr. Morton of East Coast Terminals to Monsanto Company, is it not?

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A That's what it says, sir.

Q Enclosing a purchase order?

A That is correct.

Q And the purchase order calls for one 600 pound drum Therminol FR-1?

A That is correct.

Q Is Therminol FR-1 a polychlorinated biphenyl?

A Yes, sir.

Q Or was it?

A Yes, sir.

Q Is Therminol a Monsanto tradename?

A Yes, sir.

Q And the purchase order, number 4031, is dated August 7th, 1970, and it's addressed to Monsanto Company, Anniston, Alabama, is it not?

A That is correct.

Q And it says, "For fishmeal CFRI.", doesn't it?

A Yes, sir, it does.

Q And that means that this Therminol was for fish meal operations, does it not?

A I guess so, sir; I don't know.

Q And this has never been brought to your attention prior to today?

A No, sir.

Q You spoke earlier this morning about participating

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in label information sometime in the spring of 1970?

A Yes, sir.

Q Was the label which Monsanto attached to its polychlorinated biphenyl products changed at any time during 1970?

A Yes, sir.

Q What changes were made?

A Additional information intended to inform the user of the material that the package on which the label was affixed contained a material known as polychlorinated biphenyls, which at that time were being reported as existing in the environment, and there were some reports that some wild life was being affected, and it also goes on to say that extreme care must be taken in the manner in which this material is handled, used, what products it is in, and how it is disposed.

Q Now, prior to those changes, were those warnings on the label or not?

MR. MARHILL: Object to "warning".

Q (By Mr. Jordan) Well, those statements that you say.

A That statement that I just described - in essence - that information that I just described was not on the label prior to 1970, no, sir.

Q When in 1970 was this label change made to add

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this information that you have just related?

A Sometime in the period in the summer - June, July, August of 1970. I don't recall just exactly when.

Q Did you recommend that these additions be made to the label?

A I recommended some of the wording be included. There were others, of course, interested in the wording.

Q Who else participated in the composition of the new label?

A Mr. James R. Savage.

Q Have you identified who he is?

A I don't recall, sir, but at that time he was and is Manager, Manufacturing.

Q For the entire company?

A For the business group concerned, which at that time was called the Functional Fluids Group.

Q Okay.

A The Director of Research of that group, Dr. William Richard. I don't recall the exact individual, but somebody represented the marketing function.

Q Of the group?

A Of the group, yes, sir.

Q You don't recall who that was?

A No, sir.

Q Now, were there several meetings between you and

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Mr. Savage with Dr. Richard with reference to these label changes before the exact wording was finally agreed upon?

A I don't believe there were several meetings, sir. The subject came up at a meeting, and during this meeting I received suggestions as to the wording. I then went back to the office and at some later time composed the paragraph, and if I recall correctly, I wrote a memorandum in which I told the individuals concerned that "here is my proposed wording; I would like to have your comments before we proceed with the printing of labels and implementing of the program" - words to that effect.

Q Now, to whom did this memorandum go that you prepared?

A It went to those individuals I mentioned as well as others.

Q Who else did it go to?

A As best I recall, it went to the director of the business group, Howard S. Bergen. I believe Mr. John Mason saw a copy of it. I don't know if he was an addressee or received a carbon copy.

Q Who was Mr. Mason?

A Assistant to General Manager.

Q Of the group?

A Of the Organic Chemicals Division to whom the business group reported.

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Q I see. All right. How about Mr. Kinckler?

A No, sir, Mr. Kinckler did not receive a copy.

Q Is that memorandum still in existence?

A I do not know, sir. I have not seen it since it was issued a couple years ago.

Q Did you retain a copy for your own file?

A I normally do, sir.

Q Well, you haven't destroyed any files in the last two years, have you?

A No, sir.

Q Well, will you look in your file and locate that memorandum, please, so that it can be produced?

A All right.

Q Now, did the memorandum contain any of your reasons for recommending the change in the label?

A No, sir.

Q Did you discuss your reasons with Mr. Richard and Mr. Savage or anyone else?

A The individuals involved, sir, were very familiar with polychlorinated biphenyls. I doubt if at the meeting there was any discussion regarding reasons. It was a suggestion raised by someone in the group and I don't know who, that this was a proper way to communicate to the customer receiving the material what little we knew of the material at that time.

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Q What were your reasons for making the label change?

A To inform the user of the material that he had in his possession a material which must be handled properly and used properly.

Q Did you have any other reason?

A No, sir.

Q Now, what do you mean that "he had in his possession a material that must be used properly"? Will you explain that, please?

A I used that to describe and distinguish between such uses that might lead to-- well, to go back to our definition, open system applications. Those systems where the material is introduced readily and easily into our environment.

Q Well, are you saying that it would be an improper use to permit it to get into the environment?

A That is correct.

Q Now, did you consider putting on the label a statement that the material should not be used in such a manner as to permit any of it to enter human or animal food?

A As I recall, that was considered in our discussions and we all agreed that the use of the words "proper use" - I forget the exact words, but I believe on the label there is the word "use" - u-s-e - used. We thought that would be enough to cause the user to consider his particular applica-

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tion.

Q So while you considered advising the customer that it should not be used in such a manner as to get into anything which would be consumed by human beings or animals, you rejected making a specific statement to that effect, is that correct?

A To me, sir, the word "rejected" is a strong negative kind of word.

Q You decided--

MR. SMITH: Let him finish his answer.

A We decided, sir, that rather than list food uses, plastic uses, carbonless paper uses, on and on, with limited space available on the label and there being no specific reason for isolating food use as being unique from other uses, we felt that the word "use" was appropriate to cover all possible uses, and it's the judgment of the user then as to whether or not his particular application is something for him to be concerned with and seek further information.

Q Well, I am looking at one of your labels and I don't see anything on here about proper use. Could you find the words "proper use" if it's on here?

A I don't know if I used the words "proper use", sir, defined on the label.

MR. VANCE: Would you identify that?

HARTOLDMON0028539

MR. JORDAN: Let's mark this Plaintiff's Exhibit No. 2 to the Papageorge deposition.

(The document above referred to was marked Plaintiff's Exhibit No. 2, Papageorge Deposition, for identification.)

Q (By Mr. Jordan) Are the words "proper use" on the label anywhere?

A No, sir.

Q Now, you say there wasn't room enough on the label to put-- isn't there plenty of room right here on this label where I'm pointing to put the words, "Warning: do not allow to enter food or feed." Isn't there ample room for that?

A The answer to your specific question is yes, sir, there is room.

Q But that's not on there, is it?

A That is correct, sir. But also there are other similar expressions that could have been worded for use in paints and lacquers and gasketing, and on and on, and there was no information regarding food use that was anymore unique than it was for these other uses to warrant special wording on the label. And you will also note there is the word "use" in the wording.

Q That says "prevent entry". "Extreme care should be taken to prevent any entry into the environment through spills, leakage, use, disposal, vaporization or otherwise."

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A That is correct.

Q Is this the label that you finally composed and circulated to the other people?

A Sir, we are addressing ourselves to the modification on an existing label. I had nothing to do with information that appeared on the label prior to this time.

Q Then what you put -- your contribution to the label reads as follows, does it not? "This product contains polychlorinated biphenyls, which some studies have shown may be an environmental contaminant. Extreme care should be taken to prevent any entry into the environment through spills, leakage, use, disposal, vaporization or otherwise. Contact your Monsanto representative regarding reclamation or disposal of used fluid."

A That is correct.

Q And that's what was added to it?

A That is right.

Q And that's all that was added to it?

A That is correct.

Q Now, was there anything that you had in your original draft deleted by your colleagues?

A I don't believe so, sir.

Q Are you uncertain about that?

A To a very slight degree. As I best can recall, rather than deletions - if my memory serves me right - there

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were additions made to what I had proposed.

Q Do you recall whether you prepared more than one draft of the label change?

A I may have composed for communicating purposes the final wording that showed on the label. I do not specifically recall the memorandum. It may well have been handled over the telephone to the individual whose duty it is to take the necessary steps to design the label, order the labels, and have them delivered to the using site.

Q Who was that individual?

A Mr. G. F. Lido.

Q What is his title?

A I don't know, sir.

Q Well, what is his job?

A That part of his job with which I am familiar is the role he plays in Monsanto relating to the wording and design and administration involved with labels.

Q Now, since this label change was made in the middle of 1970, have there been any other label changes for labels to go on your polychlorinated biphenyl products?

A Not that I recall, sir.

Q What is Dr. Richard's field of expertise?

A From my working relation with Dr. Richard, sir, I would assume that he is quite knowledgeable in organic chemistry.

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Q Does he have a Ph.D. in organic chemistry?

A All I know, sir, he has a doctor of philosophy degree but I do not know its nature.

Q But in your dealings with him, you find him to be very knowledgeable in organic chemistry?

A That is right, sir.

Q What is Mr. Savage's field of expertise?

A Chemical manufacturing.

Q Does he have degrees in chemistry or chemical engineering?

A I believe, sir, he has at least one degree in chemical engineering.

Q Now, what about Mr. Bergen? What is his area of expertise?

A His formal training is in chemical engineering, but I believe his professional career has been primarily in marketing of chemicals.

Q Was there a gentleman associated with your business group named Robert Kountz -- I believe it's spelled K-o-u-n-t-z.

A Yes, sir.

Q What was his position?

A He is engineering manager.

Q And in what field is his expertise?

A Chemical engineering.

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Q During 1970 and 1971, did you make any recommendations with reference to NCB to Mr. Howard Minckler?

A Yes, sir.

Q Were those recommendations implemented?

A Yes, sir.

Q What recommendations did you make to Mr. Minckler in 1970?

A I don't recall any recommendations in 1970 that I made to Mr. Minckler.

Q Do you recall any in 1971?

A Yes, sir.

Q What recommendations did you make during that year to Mr. Minckler?

A I recommended to him that from the information we had at hand that we should inform some government agency of a situation that was developing at East Coast Terminals Company in Wilmington, North Carolina.

Q Is that the only recommendation you made to him during 1971?

A That is the only recommendation I recall, sir.

Q Did you testify last week that the decision to market a product or not to market rests with the director of a business group?

A That is right, sir.

Q Well, the decision to curtail the sale of poly-

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chlorinated biphenyls was made by the corporate executive committee -- I mean the Corporate Management Committee, was it not?

A No, sir. It's my understanding that the business group through its Assistant General Manager recommended to the Corporate Management Group that this action be taken, and the Corporate Management Group concurred. That is my understanding of how it happens.

Q All right. Do you know whether the corporate Executive Committee of Monsanto was apprised of any of the decisions which were made in 1970 and 1971 with reference to polychlorinated biphenyls?

A Sir, I know nothing about the workings of the Corporate Executive Committee. I have had no experience whatever.

Q In the Monsanto library, do you have a poultry science publication?

A I do not know.

Q What about a chemical engineering journal?

A Is that the name of a journal, sir, or a general classification?

Q In general, chemical engineering.

A There are, sir. There are several journals in our library. On the other hand, our library has access to any other journal published in the world. They can get copies

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of any articles that we request.

Q From where?

A I don't know just how they go about it. Our request is made by telephone, confirmed by a form, and in a few days' time I get a copy of the article. I don't know whether it came from their own copy of the journal or whether they subscribe to some service that provides this information.

Q Did you ever request that the library assemble all literature relating to polychlorinated biphenyls?

A No, sir.

Q Did you ever ask the library to assemble literature concerning polychlorinated biphenyls' environmental impact or effect?

A Not as a broad request, no, sir.

Q What kind of request have you made to the library about articles concerning polychlorinated biphenyls?

A The request would be of this nature - I would hear about an article or I would see an article referred to in some other article, and with the information I had I would submit a request by journal, by author, by title of article, by dates - any information I had.

Q Did you keep copies of those requests?

A I don't know, sir. The secretary may keep them. I don't have any use for them personally.

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Q Do you recall did the library get you the reported literature of the Swedish research?

A No, sir. As I recall, when I arrived to take over my responsibilities in this area, copies of the article were made available to me from the individuals who had already been involved up to that point.

Q All right. Now, what other research information was made available to you when you arrived on the job in January of 1970?

A I don't remember all of the articles. As I recall, it was a loose-leaf folder with material in it that was about three or four inches thick, in which there were articles which mentioned polychlorinated biphenyls.

Q Do you still have that loose-leaf folder two or three inches thick with articles about polychlorinated biphenyls?

A I believe so, sir, yes.

Q Was one of the first things you did after you came on board in St. Louis in January 1970 was to study the material in that folder?

A Yes, sir.

Q Did you study all of it?

A Yes, sir.

Q How long did it take you to make a study of that file which was two or three inches thick?

HARTOLDMON0028547

A I really don't recall, sir. I carried that book with me for several weeks, reading at every opportunity. I did not keep records of the time it took me.

Q Was the material filed in a binder of some sort?

A It's a loose-leaf three-ring notebook.

Q Is that notebook in your desk now?

A The last I recall, it was still there. It is fairly obsolete today, but I think it's still there.

Q Have you added anything to it?

A Not to that book, no, sir.

Q Now, have you compiled a separate book of additional material?

A Not a book, sir, no, sir.

Q Well, have you compiled additional articles, literature and reports?

A Yes, sir.

Q In some other fashion?

A Yes, sir.

Q How have you compiled that material? Physically, I mean. Is it in a file?

A No, sir, there is no file, sir. I keep copies of these in a packet held together by a rubber band by chronological order.

Q And is that packet in your office?

A Yes, sir.

HARTOLDMON0028548

Q How large is that packet of materials which you have been assembling?

A As I recall, three or four inches.

Q Now, the three-ring notebook and the four-inch packet as held together by a rubber band, do these two things contain all of the articles or literature or reports that relate to polychlorinated biphenyls that have come to your attention during the two and a half years approximately that you have been in your work in St. Louis?

A No, sir, if I understand your expression "come to my attention".

Q Well, are they all the ones that are in your possession?

A No, sir, they do not include the popular press articles.

Q Now, where are the popular press articles kept in your office?

A It is a file folder in which I drop these various clippings and copies of clippings.

Q How many such folders do you have?

A One for each year of 1970, '71, and '72 year to date.

Q Are those clippings sent to you by a clipping service?

A Not directly.

HARTOLDMON0028549

Q Well, do they come from a clipping service indirectly?

A Some of these articles come from a clipping service indirectly, yes, sir.

Q What clipping service is it?

A I don't recall I ever knew, sir.

Q Well, how did they get to your office? Who are they routed through?

A The clipping service articles?

Q Yes.

A Through Mr. E. V. John's office.

Q And what is Mr. John's position?

A Director of Public Relations.

Q For Monsanto?

A For Monsanto Industrial Chemicals Company.

Q That is the division, the company group that you are connected with?

A Today, yes, sir.

Q And prior to the formation of that, how did those clippings get to you? Did they come through Mr. John's office?

A Yes, sir.

Q What was his title before the company reorganization last year?

A I believe he had the title of supervisor of public

HARTOLDMON0028550

relations with assignments relating to the Organic Chemicals Division.

Q Now, do any of the other clippings that you have in these three file folders - have they originated from any other source than a clipping service via Mr. Johns?

A Yes, sir.

Q Now, where did they come from?

A People all over the world.

Q Well, are they sent directly to you?

A Not in every case, no, sir.

Q But they all wind up in your office if they relate to PCB?

A Yes, sir.

MR. JORDAN: I'm going to ask the reporter to mark this document as Plaintiff's Exhibit 3, Papageorge Deposition.

(The document above referred to was marked Plaintiff's Exhibit No. 3, Papageorge Deposition, for identification.)

MR. MARSHALL: Off the record.

(Discussion off the record.)

Q (By Mr. Jordan) Mr. Papageorge, I show you a document which appears to be on Monsanto letterhead with Monsanto's St. Louis address, which has been marked Plaintiff's Exhibit No. 3, Papageorge Deposition, and the type-

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written heading is, "The Polychlorinated Biphenyls," sub-heading, "Literature References," and then there are a number of articles and authors and dates named, and then attached to it is a three-page document on Monsanto letter-head with the caption - let me get correctly what it is - "Polychlorinated Biphenyls Control of Escape to the Environment," and then attached also is a one-page document which is captioned, "Summary - Interim Status Chronic Toxicity with Arochlors." A-r-o-c-h-l-o-r-s. How do you pronounce that?

A Arochlors.

Q And attached to that there's another one-page document on Monsanto letterhead captioned, "The Polychlorinated Biphenyls," sub-captioned, "Biodegradation Studies." Is that correct?

A That is correct.

Q Now, first, have you ever seen this list of literature references before?

A Yes, sir.

Q When did that first come to your attention?

A I put this list together in May or June of 1970.

Q All right, sir. Now, have you ever seen the three-page document which is entitled, "Polychlorinated Biphenyls Control of Escape to the Environment"?

A Yes, sir.

Q Do you know who prepared that document?

HARTOLDMON0028552

A Mr. John Mason.

Q And when did he prepare it?

A The same period - May or June of 1970.

Q And who is Mr. Mason?

A At that time, Assistant General Manager of the Organic Chemicals Division of Monsanto Company.

Q Now, do you know why Mr. Mason prepared that three-page document?

MR. SMITH: Are you talking about the second item?

MR. JORDAN: Yes, the three-page document.

A (By the witness) As I recall, sir, there was in June of 1970 a meeting called - I believe under the auspices of the Massachusetts Institute of Technology, the meeting to be held at Williams College in Massachusetts - I believe it's Williamstown, Massachusetts - of a group of eminent scientists to discuss environmental problems as it relates to our global system. And it is my understanding that Mr. Mason was approached - and I don't know whether it was by telephone or memorandum or letter - relating to Monsanto's position at that time to the marketing and control of polychlorinated biphenyls. And this is Mr. Mason's response to that request.

Q Do you know whether he read this paper at that meeting or whether it was distributed to the scientists at that meeting - that is, the three-page document?

HARTOLDMON0028553

A Mr. Mason did not attend the meeting. He sent this to some individual who was involved in organizing the meeting. I do not know how it was used at the meeting.

Q Did you attend the meeting?

A No, sir.

Q Now, did Mr. Mason discuss this document with you before he released it?

A Yes, sir. I was present when he had a pencil draft. We did not discuss it word by word, but we discussed the general thoughts and his intent on what he was proposing to present.

Q Did you make any recommendations to him as to changes or additions or deletions to his pencil draft?

A I am sure I had some comments, sir, to offer, but I don't remember specifically what they were.

Q Anyhow, he took into consideration your comments and reaction, did he not, before he prepared the final draft? He consulted you about it?

A We talked about it. He considered them. I don't recall whether he accepted them or rejected them.

Q Do you recall whether anyone else was consulted by Mr. Mason regarding the preparation of this three-page paper?

A No, I do not, sir.

Q All right. Do you know whether he had more than

one pencil draft?

A No, I do not.

Q Now, I want to turn to the next sheet of the stapled documents which is captioned on Monsanto's letterhead, "Summary - Interim Status Chronic Toxicity with Aroclors." Do you know who prepared that document?

A Mr. John Mason prepared the document.

Q Was that prepared about the same time as the other one?

A Yes, sir.

Q Did you go over a pencil draft of that one with him?

A In this instance, he asked me to review the status of the toxicity studies at that time. I reviewed with him my understanding and suggested that it be best that he consult with representatives of our Medical Department who were qualified much more than I to discuss matters of this sort.

Q Did he tell you that he would consult with them?

A He asked me to call the Medical Department and make that request for him.

Q Who did you communicate with in the Medical Department?

A Mr. Elmer P. Wheeler.

Q Is Mr. Wheeler a medical doctor?

HARTOLDMON0028555

A No, sir.

Q What is his training and expertise?

A I don't know exactly his training, sir, but his expertise is in industrial hygiene and public health.

Q Now, is there any physician in your medical department?

A Yes, sir.

Q Is there a medical director?

A Yes, sir.

Q Who is he?

A Dr. Emmett Kelly.

Q And does Mr. Wheeler work under Dr. Kelly's supervision?

A Yes, sir.

Q You made an appointment then for Mr. - what is it; Wade - to see Mr. Wheeler?

A No, sir. I requested of Mr. Wheeler that he prepare a summary to forward to Mr. Mason.

Q Do you know whether Mr. Wheeler did that?

A I was told and I concluded there was such a summary, and I don't know how many meetings it took between the two individuals involved that resulted in the final draft.

Q You mean Mason and Wheeler?

A Correct, sir.

HARTOLDMON0028556

Q Well, was the final draft then submitted to you for ultimate review?

A No, sir.

Q Did you see the final draft?

A I got a copy of this packet we have here as an exhibit after it was put together.

Q Okay. And that was before it was sent to Massachusetts?

A At the same time.

Q Now, the third or last sheet, which is captioned, "The Polychlorinated Biphenyls Biodegradation Studies," did Mr. Mason prepare that?

A Yes, sir.

Q And did you review a draft of that sheet?

A Yes, sir.

Q Did he have it in pencil draft when you reviewed it?

A Correct, sir.

Q And did you make some suggestions with reference to the contents of that paper?

A I believe I did. I remember the discussion.

Q Now, did you furnish Mr. Mason this list of literature references that is the first page of this document?

A Yes, sir.

HARTOLDMON0028557

Q And did you get that up from your notebook?

A I got this from the bundle that I referred to that's held together with a rubber band.

Q Now, this is just a few of the things that are in that bundle, is that right?

A This is the list of the initial articles, the early articles. Since then the list has grown.

Q Now, at the time you made this up -- I believe you said sometime in April or May?

A May or June of 1970.

Q Did this list at that time comprise all of the articles that were in your bundle held together with a rubber band?

A Sir, what is shown in the exhibit is a single sheet. The list today, as I recall, is at least four, maybe six pages long. I don't know if in June of 1970 the list was more than this single page.

Q So you can't tell us whether this contains everything that you had before you in June of 1970?

A I cannot, no, sir.

Q All right.

MR. JORDAN: It's ten minutes of 11:00. Do you want to take about five minutes?

(A brief recess was taken.)

Q (By Mr. Jordan) Mr. Papageorge, I understand you

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testified that you made recommendations to a number of people from time to time. First I want to ask you what recommendations you made to Mr. Howard S. Bergen during 1970 and '71, and I'll confine this question to matters relating to polychlorinated biphenyls.

A Yes, sir. It is difficult to recall specific instances, because these contacts were generally informal - were always informal in nature. But as best I recall, we had discussions about the installation of a high temperature incinerator for the disposal of waste polychlorinated biphenyls, and as best I could, I encouraged him to approve such a project and he concurred. I don't recall any other discussion in which I specifically recommended to Mr. Bergen any specific action.

Q Do you recall ever discussing with Mr. Bergen the Yusho incident in Japan?

A No, sir. He knew more about the incident, or as much about the incident as I did.

Q Did he ever talk to you about it?

A No, sir.

Q Now, what recommendation did you make during 1970, 1971 with reference to PCB to Mr. Donald Clare?

A As best I recall, sir, we had some discussions early in 1970 relating to methods for communicating with customers what we knew about polychlorinated biphenyls, and

HARTOLDMON0028559

I recommended that perhaps I could be of some help if I accompanied his marketing representatives to as many customers as we could practically visit, and he concurred.

Q Did he concur in that recommendation?

A He did concur, yes, sir.

Q Did you visit any customers in North Carolina?

A No, sir.

Q Did you accompany the marketing representatives to visits to other customers elsewhere?

A Yes, sir.

Q Did you visit any customers in California?

A No, sir.

Q Florida?

A No, sir.

Q Louisiana?

A No, sir.

Q Texas?

A No, sir.

Q Maryland?

A No, sir.

Q Did you visit any customers who were engaged in the import business or who handled products which were imported?

A I don't know enough about our customers' overall activities to know whether or not they are engaged in

HARTOLDMON0028560

Laporting.

Q Well, did you visit any terminal facility?

A No, sir.

Q Any other recommendation that you can recall having made to Mr. Olsen?

A No, sir.

Q Now, you told us about your discussion with Dr. Richard with reference to the label change of 1970. What other recommendations have you made to Dr. Richard?

A I recall making recommendations that we should consider reformulating hydraulic fluids in which no polychlorinated biphenyls were used as an ingredient, irrespective of whether they were of the higher chlorinated types or the lower chlorinated types.

Q When was that discussion with Dr. Richard?

A Early 1970.

Q Did he concur in your recommendation?

A Eventually, yes, sir.

Q When you say eventually - did he at first decline to concur?

A It wasn't a declining, sir, so much as the time it takes to administratively inaugurate a program and to start executing the necessary studies that it takes.

Q Well, did he take your recommendation under advisement?

HARTOLDMON0028561

A That's a good way to express it, yes, sir.

Q And how long was it before he implemented your recommendation by approving it and taking action?

A I do not know exactly when he took action leading to the eventual reformulation program. I can only recall that within a matter of weeks, I understood that personnel in the laboratory were indeed active in this type of work. Now, I don't know how many weeks prior to that he called them in and had discussions with them.

Q What kind of laboratory activity was going on in connection with that recommendation?

A I don't know all the details, sir, but it involves the blending of many ingredients to produce a fluid which has certain characteristics, and then tests are conducted to determine whether or not these characteristics had been achieved.

Q In other words, the laboratory was developing a substitute for PCB's?

A No, sir, they were developing a substitute for hydraulic fluids that at one time contained polychlorinated biphenyls.

Q Well, how long did that development take place? How long before it was completed?

A There are over -- and I don't know the exact number -- there are over a dozen different fluids, some of

HARTOLDMON0028562

which were reformulated rather early in the summer of 1970, which meant perhaps two or three months after the program started. Others were not reformulated until the first quarter of 1971. It is a matter of overcoming some serious technological problems.

Q Were those problems overcome?

A Yes, sir, eventually they were.

Q Now, do you recall any other recommendations to Dr. Richard?

A I recall discussions off and on relating to programs to be conducted in our research department at which Dr. Richard would seek my suggestions relating to what kinds of activities were appropriate, what the timing should be, and at these discussions I do recall some suggestions relating to biodegradation work--

Q What?

A Biodegradation work.

Q What were those suggestions?

A I don't recall in detail, but they related to continuing work that was being conducted in Wales, a recommendation that a professor at a University in Wales be consulted.

Q About what?

A To conduct biodegradation work for us. There was a discussion held where I suggested that we accelerate our

HARTOLDMON0028563

activities relating to biodegradation work by adding some manpower and more facilities in the laboratory.

Q Was that done?

A Yes, sir.

Q When?

A Sometime in the summer of 1970 and fall of 1970.

Q What were the additional personnel engaged in doing?

A Conducting the studies relating to our evaluation of the rate of degradation of polychlorinated biphenyls and of the substitute alternative materials which were intended to replace polychlorinated biphenyls.

Q Were those studies finished?

A Some phases were finished and some are continuing to this day.

Q Did you receive a report from the laboratory on those studies?

A From time to time, yes, sir.

Q And what did you do with those reports?

A It varied with the report. In some instances I would share this with other interested people within Monsanto. In some instances these individuals received their personal copies. I would become familiar with the contents of the report and file it in the appropriate file.

Q Now, what file did you put the laboratory reports

HARTOLDMON0028564

in?

A I have a file that's entitled "Research by function."

Q Did you put all the lab reports in one research file?

A I believe sir - I'm trying to recall. The intent was to have one research file, but as the file would get voluminous, it may have ended up in several pieces with the same title.

Q Is that in a filing cabinet in your office?

A Not in my office but near it.

Q What?

A Near my office but not in it.

Q In the secretary's office?

A In her work area.

Q Sir?

A In my secretary's work area.

Q How long have you had a full-time secretary?

A I have never had a full-time secretary.

Q Do you share a secretary with someone else?

A Yes, sir.

Q Who is the person with whom you share the secretary?

A At what point in time, sir?

Q In 1970.

A In 1970, I shared a secretary with Mr. E. S. Bergen

HARTOLDMON0028565

and Mr. William Kuhn. I believe throughout 1970 this was the situation.

Q And what about in '71?

A At some point in '71, Mr. Kuhn was relocated and I shared a secretary only with Mr. Bergen. And later Mr. Bergen was relocated and I shared a secretary with - there were several individuals that occupied the offices there. There was a distribution manager. There was a computer systems manager.

Q Who was the distribution manager?

A Mr. Howard Tigges.

Q And who was the computer manager?

A Paul Parrsott (Parisot) - P-a-r-r-s-o-t-t (Parisot), I believe is the way he spells his name.

Q Did the secretary work for all of these men?

A There were different girls involved, different women involved during this period of time.

Q Well, who was the secretary that you used in 1970? What was her name?

A Mrs. Mary Schirra.

Q Is she still employed by Monsanto?

A Yes, sir.

Q And who does she work for now?

A I'm not certain of all the individuals that she works for, but I do know - and I'm not quite certain - I

HARTOLDMON0028566

think she works for a Mr. Robert Dilger as one of several individuals.

Q What is his position?

A He is Director of the General Chemicals Business Group.

Q Now, what other secretarial help have you had during 1970, 1971, besides this lady you have identified?

A Mrs. Myra Standley, Mrs. Louise Irschik.

Q Are both of these ladies still employed by Monsanto?

A Yes, sir.

Q All right. Go ahead.

A Then I had a series of secretaries hired from an agency that provides temporary secretarial help, and I do not recall their names. They were strangers to me. They stayed a few days and left and were replaced.

Q Now, which of those ladies had the primary responsibility for filing documents that passed across your desk?

A All of them.

Q They all did?

A Yes, sir.

Q Those permanent employees we're talking about?

A And the temporary.

Q Now, are these files maintained in the work area

HARTOLDMON0028567

where the secretaries have their desks?

A That is correct.

Q Do these secretaries take dictation?

A Yes, sir.

Q And do they type?

A Yes, sir.

Q Did you maintain any correspondence files in 1970 and 1971?

A I don't know if I understand your definition of "a correspondence file".

Q A file where your secretary would file a copy of a letter that you dictated to someone.

A Yes, sir.

Q And did you also maintain such a file in 1971?

A Yes, sir.

Q Are these files maintained by name or number? What kind of filing system do you have?

A Are we talking still about this correspondence file that you referred to?

Q All your files. What system do you use?

A The system I have used is to file materials primarily by function, tempered somewhat by other special considerations such as I have a file, for example, that is marked "International".

Q Now, which files do you have which would contain

HARTOLDMON0028568

materials relating to PCB other than the ones you have already described?

A Well, there are files for PCB under many functions. For example, we just talked about the research.

Q Yes.

A Manufacturing, customers, marketing. I have one that's marked "Articles" in which I put these newspaper clippings, article clippings that I have mentioned. Engineering. And then there is a voluminous one which is really miscellaneous but I call it "General legislative matters related to PCB." There's one marked "PCB-Legal".

Q What is in that "PCB-Legal" file?

A This is any correspondence that I receive from my Monsanto legal representatives.

Q Anything else besides correspondence?

A That's all, sir.

Q When did you open the legal file?

A From the very beginning, when I first set up the file.

Q Since January 1970?

A Yes, sir.

Q Now, you instructed your secretary with the setting up of these files, did you not?

A I gave her an idea of the kinds of things that I like to see, and she set up the details, yes, sir.

HARTOLDMON0028569

Q I see. Now, you have access to these files, do you not?

A Yes, sir.

Q How far are they physically from your office - thirty feet?

A At present they are just outside the door to my office.

Q Just outside the door?

A Yes, sir.

Q How many file cabinets are there?

A Three or four.

Q Three or four?

A Yes.

Q Are they letter-size filing cabinets or legal-size filing cabinets?

A Letter-size,

Q Does each of the files have about three or four drawers?

A Yes, sir. There is one three, and three fours, yes, sir.

Q So you have fifteen drawers?

A Yes, sir.

Q And that contains all of the file material that passed over your desk during 1970, '71 and '72?

A Yes, sir.

HARTOLDMON0028570

Q Do you have any file marked "Recommendations"?

A No, sir.

Q Do you have any file marked "Inter-office memos"?

A No, sir.

Q Well, into which file would this memo have gone that you said that you sent out on the label?

A It's the file marked 'Labels".

Q You have a "Label" file?

A Yes, sir. I didn't mention it, but there's a "Label" file.

Q Any others that you can think of?

A They don't come to mind right now, sir.

Q Do you have any file that would fit the general category of restriction on uses of polychlorinated biphenyls?

A Not that type of category. It would either go into the general file, or if it referred to a specific customer it would go in the customer file, or if it is a document from a marketing group referring to that matter it would go into the marketing file.

Q What goes in the engineering file?

A The engineering file, for example, contains correspondence from our engineering group relating to the incinerator program, from the testing to the design and erection and start-up.

Q Anything else in the engineering file except the

HARTOLDMON0028571

incinerator program?

A I believe there is also in this file reference to a distillation column that was installed for the manufacture of the lower chlorinated polychlorinated biphenyls for use in capacitors.

Q Anything else in the engineering file?

A I believe in that file there is also some correspondence relating to a test program we conducted in which we were seeking methods for disposal of solid materials which contained polychlorinated biphenyls.

Q All right. Anything else in the engineering file?

A There is correspondence relating, I believe as best I recall, to the charging and budgeting of these engineering costs - this type of correspondence. I can't recall any other specific items, sir.

Q Mr. Papageorge, do you have a Joy Manufacturing Company file?

A No, sir.

Q Do you have a William J. Foran Company file?

A No, sir.

Q Do you have any file captioned "Heat transfer"?

A No, sir.

Q Or anything similar to that?

A No, sir.

Q Well, we've got off on furniture and files. Does

HARTOLDMON0028572

anybody share an office with you?

A No, sir.

Q You have a private office?

A Yes, sir.

Q And how long have you had a private office?

A How far back in time, sir? I've had one for many years.

Q Did you have one all through 1970 and '71 to the present?

A Yes, sir.

Q Now, you talked about talking to Dr. Richard about these biodegradation studies, and you mentioned that you recommended employing a Welsh professor. What was the name of that gentleman?

A Professor Charles Evans.

Q And what university was he connected with?

A Bangor University in North Wales, and I believe it's spelled B-a-n-g-o-r.

Q Was the professor employed?

A A grant was given to the professor to conduct studies for Monsanto, yes, sir.

Q How much was the grant?

A I don't recall the details, sir, but it seems like there were two studies. I recall the first one was about two or three thousand U. S. dollars - somewhere in that

HARTOLDMON0028573

range.

Q What was that study?

A What was it?

Q Yes.

A The objectives of that study were to isolate bacteria that would destroy polychlorinated biphenyls.

Q When was that study completed?

A I think about by December of 1971.

Q Do you have a copy of the professor's report in your file?

A No, sir.

Q What happened to his report?

A I don't know. I never saw his report, sir.

Q You mean he never made a report?

A He must have made a report to the research personnel in Wales.

Q Well, do you know whether Dr. Richard ever got a copy of that report?

A No, I do not know.

Q Do you know what the report consisted of; what it contained; what results he got?

A I was told, sir, that he had isolated a culture of bacteria that could destroy polychlorinated biphenyls. That's all the information I needed.

Q Do you know what kind of bacteria it was?

HARTOLDMON0028574

A The scientific name was given to me, sir, but not being a bacteriologist it made no impression upon me.

Q All right. Now, what was the second study that Professor Evans did?

A As I recall, he was going to attempt to find a more commonly occurring strain of bacteria, or strains, to accomplish the same end result.

Q Did he succeed in doing that?

A I have not heard that he had succeeded, no, sir.

Q Well then, this original report of his, the bacteria must have been a rather esoteric and unusual bacteria, is that true?

A I am not— I don't feel qualified to say that it was. All I know is that he got the strain of bacteria from his garden. The strain was developed from a soil sample in his garden, which tells me that those bacteria must be naturally occurring.

Q What other recommendation did you make to Mr. Richard?

A I believe we discussed the recommendation relating to the reformulation of hydraulic fluids.

Q I think you've already told us about that.

A Yes, sir. Budgeting, and activities relating to biodegradation. I also discussed with him the need for additional personnel to conduct polychlorinated analyses in

HARTOLDMON0028575

the laboratory.

Q What kind of analyses?

A I am assuming you are referring to the technique or the instrument used?

Q You said that you discussed with him getting additional personnel to do polychlorinated biphenyl analyses.

A That is correct.

Q What I want to know is what sort of analyses are you talking about?

A I'm assuming, sir, you're talking about the types of samples that we analyzed?

Q No. What was the purpose of the analyses; what were you seeking to discover?

A We were seeking to determine the polychlorinated biphenyl content of many varieties of samples, a great variety of samples.

Q Well, would samples come from all over everywhere?

A Yes, sir.

Q From all over the world?

A There were samples that came from countries other than the United States, yes, sir.

Q And were these studies made in Monsanto's laboratory in St. Louis?

A Yes, sir.

Q And were reports of those studies forwarded to you?

HARTOLDMON0028576

A In some instances, yes, sir.

Q Do you have those in your files now?

A I believe so, yes, sir.

Q All right. Now, do you recall any other recommendations to Mr. Dickard?

A No, sir, I do not recall any more.

Q Now, what about Mr. Robert Kuntz, the engineering manager? Did you make recommendations to him?

A I did not make recommendations to Robert Kuntz, sir. I made requests for his services.

Q And what did you request?

A Studies relating to the feasibility of incinerating polychlorinated biphenyls.

Q When did you first make that request of Mr. Kuntz?

A Early 1970.

Q Did he comply with your request?

A Yes, sir.

Q Do you have those studies in your files?

A Yes, sir.

Q Would that be in your engineering file?

A Yes, sir.

Q When you made such request of Mr. Kuntz, was it a written request?

A I don't believe so, sir.

Q Now, can you recall any other requests that you

HARTOLDMON0028577

made of Mr. Kountz?

A I recall a request I made of Mr. Kountz relating to a study to help us locate the existence of incinerators throughout the country that were capable of destroying polychlorinated biphenyls.

Q Did he give you a report on that?

A He gave me a report, yes, sir.

Q Do you have that in your files?

A It was not a written report, sir.

Q He just gave you an oral report on that one?

A That is correct, sir.

Q Now, anything else that you recall that you had contact with Mr. Kountz concerning PCB's?

A I requested of Mr. Kountz that he furnish me a brief summary of the conditions required for destroying polychlorinated biphenyls.

Q Did he furnish you such a summary?

A Yes, he did.

Q Is that in your file?

A Yes, sir.

Q Anything else from Mr. Kountz?

A I don't recall anymore, sir.

Q Mr. Papageorge, would your files that you described contain all of the information that Monsanto has assembled during 1970, '71 and '72, with respect to poly-

HARTOLDMON0028578

chlorinated biphenyls?

A I don't believe so, sir.

Q Where else would they be - any such information - besides your file?

A I cannot personally speak for all of the functions involved, but it's very possible that all of these departments that I have mentioned have kept files on polychlorinated biphenyls.

Q But you have been the main PCB man during the past two and a half years, haven't you?

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

Q (By Mr. Jordan) Do you know what I mean by that?

A I don't know about the main PCB--

Q Let me put it this way. Haven't you been the principal person in the Monsanto organization who has had concern with respect to the PCB within the past two and a half years?

A That word "principal" is one I don't understand. If it applies to authority to approve large money expenditures, I am not principal. If it applies to making decisions for the marketing in the business group, I am not principal. So I don't know quite how to respond to your question.

Q Well, let me put it this way - maybe you can answer this question. Haven't you been the primary spokesman for Monsanto with reference to PCB during the past two

HARTOLDMON0028579

and a half years?

A For certain audiences I was not the primary spokesman.

Q Well, who was?

A For example, in the discussions with Congressman Ryan we discussed yesterday, Mr. John Mason and Mr. Sam Pickard were the principal spokesman. I think I might be able to help you.

Q All right.

A I served at least as a starting point in Monsanto to which people with a question would go, and from that point I would find the appropriate group within Monsanto capable of responding quickly and efficiently to the question.

Q Would it be fair to say then that you were the principal coordinator in Monsanto during this two and a half year period for any matters relating to KAN?

A That is probably true, yes, sir.

Q Now, do you recall any other recommendations that you made to Mr. Kountz?

A No, sir.

Q Now, what about Dr. Robert Keller, the director of Applied Sciences in the Organic Chemical Division? Did you make recommendations to him during 1970 and '71?

A Yes, sir.

Q What recommendations did you make to Dr. Keller?

HARTOLDMON0028580

A The recommendations to Dr. Keller had to do with the analytical methodology development for determining polychlorinated biphenyls and for the speedy analyses of samples as they arrived into the laboratory.

Q Well, what specifically was the recommendation about the methodology?

A My recommendation was that I would support him, and I encouraged him, and I would recommend that he devote more of his resources in terms of people and time to further improving the methodology that was available to us.

Q Did you make any specific recommendation with regard to methodology?

A I am not qualified to make that kind of recommendation, sir.

Q You just sort of were encouraging him and cheered him on to greater effort?

A That is correct, sir.

Q Now, did you make any other recommendation to Dr. Keller?

A As I recall, we had discussions again relating to forward planning and budgeting, and he would consult with me as to what I thought we would need insofar as I knew, and in those instances I recall making recommendations, for example, to add additional personnel to the staff.

Q Do you recall discussing any figures in connection

HARTOLDMON0028581

with budget?

A No, sir. I'm assuming you are talking about dollars, sir?

Q Yes, sir.

A No, sir, just talking in terms of people.

Q In other words, you wanted to budget more people. Is that what you're talking about?

A That's right, and that of course relates to more money. And he has that detailed information.

Q And did he follow that recommendation?

A Yes, sir.

Q Now, can you think of any other recommendations to Dr. Keller?

A I made recommendations to Dr. Keller relating to the appearance of his staff at discussions relating to polychlorinated biphenyls.

Q I'm not sure I follow that. Could you be a little more specific?

A Yes, sir. I would get on occasion requests that Monsanto share its information relating to the analyses methods used for determining polychlorinated biphenyls. Since this is an area which I don't feel I have the proper expertise, I have to use the services of Dr. Keller's group. At this point, I recommend to Dr. Keller that either he personally or one of his personnel be permitted to attend

HARTOLDMON0028582

the session or to be present at a meeting to discuss these methods.

Q Were these recommendations followed in each instance?

A Yes, sir.

Q From whom did you get such a request?

A From customers, from governmental agencies.

Q What governmental agencies?

A Well, I recall the Environmental Protection Agency, the Great Lakes Governors Pesticide Council. Those are all that come to mind at present.

Q Do you recall getting such request from any trade organizations?

A There is an association that is concerned with broiler production.

Q Yes?

A I did receive a request of that nature.

Q When was that?

A I believe sometime in September, October 1971.

Q Well, you accepted that invitation yourself, didn't you? Isn't that where you made your speech at Kansas City?

A No, sir. This was a discussion held on the premises of the United States Department of Agriculture in Washington.

HARTOLDMON0028583

Q Mint about prior to July of 1971? Did you have any such requests from any trade association?

A This is relating to analytical methodology? I don't recall any in this country, but we had requests from laboratories in Europe in the early part of 1970.

Q Well, were those requests complied with?

A Yes, sir.

Q By some of the people in Dr. Keller's division?

A Dr. Keller himself.

Q Now, does that cover everything so far as your recommendations or requests of Dr. Keller?

A That's all I recall, yes, sir.

Q By the way, in those files that you have there in those fifteen drawers, do you have any file with the word "environment" or "environmental" on it?

A No, sir.

Q Now, what about Dr. E. S. Tucker in the Applied Sciences Group? Did you make a request or recommendation to him?

A Yes, sir.

Q Would you tell us what those were?

A Those were primarily recommendations relating to priorities to establish, relating to which samples should be analyzed first.

Q Anything else?

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A On occasion, as I recall, I advised him on whether I should communicate the results of his analytical work personally or whether he should.

Q Well now, first, what were the priorities that were established that you recommended?

A I don't understand the question, sir.

Q You said you recommended to Dr. Tucker the priorities to be followed in analyzing samples for the presence of PCB.

MR. SMITH: I object to the form. I thought he said which samples to be analyzed first.

MR. JORDAN: That's what I said.

Q (By Mr. Jordan) You used the word "priority", didn't you?

A Yes, sir, I did.

Q All right. Now, what were those priorities?

A This varied from situation to situation. The laboratory has been and today has a large backlog of samples to analyze. Dr. Tucker is continually reviewing this backlog of work and seeks my advice relating to which answer are we interested in first.

Q Well, do you recall in 1970 what you told him as to what answers you wanted first?

A No, I don't, sir. There are hundreds. I don't remember from point to point.

HARTOLDMON0028585

Q Well, could you give us an illustration of what you are talking about?

A It might be something like this, sir. Customer "A" sends us a dozen samples. Customer "B" sends us another dozen samples. They arrive in our laboratory. They are stored. Eventually the laboratory is ready to start work on these dozen samples. They can only handle because of their resource limits a dozen at a time. I would get the telephone call, and Dr. Tucker would say, "Do I look at Customer "A" first or Customer "B"?"

Q Now, how would you make that decision? On what basis would you make the decision?

A I would base it on my information I had relating to the individual customer's particular problems. If there was nothing unique about either situation, I would suggest to him to take those samples you received first and work on them first. If, on the other hand, there was a situation where a customer was most anxious to get immediate results, I would suggest that perhaps that customer's samples be looked at first.

Q What kind of samples are we talking about, Mr. Papageorge?

A As far as customers are concerned, they normally involve water samples.

Q To see how much PCB is in the water?

HARTOLDMON0028586

A That is correct, sir.

Q Were there any other types of samples sent in by customers for analysis?

A On occasion we would get samples of sediment and soil.

Q Sediment, you say?

A Yes, sir.

Q And oil?

A Soil.

Q Soil. Any other type samples that customers requested to be tested?

A We have had samples of industrial fluids.

Q What kind of industrial fluids?

A Hydraulic fluids.

Q What about fertilizer?

A I don't recall any sample of fertilizer which we received for a polychlorinated biphenyl analyses, no, sir.

Q Did you receive any insecticide samples?

A No, sir.

Q Or pesticide samples?

A No, sir.

Q Did you receive any feed samples?

A I don't recall any sample of animal feed that was received in our laboratory for analysis, no, sir.

Q Didn't Holly Farms send you some feed samples?

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A I'm under the impression Kelly Farms sent us some fish meal samples.

Q You don't remember having received any chicken feed samples?

A I don't recall full complete feed, no, sir.

Q Have you received any samples from any customer who does rendering?

A I don't recall, sir.

Q Now, aside from these recommendations to Mr. Tucker about the priorities to be followed in making tests, did you have any other recommendations or requests to or with Dr. Tucker?

A The only other type of request I have made of Dr. Tucker involves participating in discussions relating to polychlorinated biphenyls with individuals who came to Monsanto for this information.

Q Who were these people? Who came to Monsanto?

A I recall representatives from our European operation from time to time arriving in this country and among other matters would be involved in this type of discussion. I recall representatives of our Japanese interests also involved in this kind of operation. I recall customers seeking to know more about polychlorinated biphenyls.

Q Would you name some of those customers?

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

HARTOLDMON0028588

answer, and I'll try to get the information and submit it to you under protective order.

Q (By Mr. Jordan) Anybody else? Do you recall any government people coming and seeking information that you referred them to Dr. Tucker?

A No, sir.

Q Did you ever have a competing chemical company come to you for information about PCB's?

A Yes, sir.

Q Who was it?

A Dow Chemical Company.

Q Who in Dow came to you?

A I cannot recall his first name - a Mr. Peterson.

Q Peterson?

A Yes, sir.

Q Did any other competitor ever come to you seeking this information about PCB's?

A Dow Corning.

Q Who at Dow Corning?

A Dr. Joseph - I believe his last name is Radawill - R-a-d-a-w-i-l-l. I'm not positive of that; it's something like that.

Q Any other competitor?

A DuPont Chemical Company.

Q Who was DuPont's representative?

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A I don't recall the man's name. I don't recall his name.

Q Now, any other competitor you recall coming to see you seeking this information about PCB's?

A Do I understand this involved coming to see me, or communicating?

Q Either by correspondence, telephone, or in person.

A Dover Chemical Company.

Q Dover?

A Yes, sir.

Q Where is that located?

A Somewhere in Ohio, sir.

Q Do you recall the name of the representative?

A As best I recall, I believe it's a Mr. Cohen - I believe it's spelled C-o-h-e-n. I believe it's spelled that way; at least that's my impression.

Q Do you recall any other customer coming to you or communicating with you about PCB? I mean competitor.

A I don't recall any others.

Q Let's take Mr. Peterson of Dow Chemical. How did he communicate with you and what was it he wanted to find out?

A As I recall, the St. Louis marketing representative for the Dow Chemical Company made an appointment for Mr. Peterson to visit with me.

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Q When was that approximately?
A It is very vague - late 1970.
Q All right. And did you meet with Mr. Peterson?
A Yes.
Q All right. What was the topic of discussion? What did he want to know and what did you tell him?
A As I recall, the discussion was one in which Mr. Peterson claimed ignorance of what polychlorinated biphenyls were and wished to have me describe the materials, where they are used, what we know of them - very much like the type of information that I presented the other day here.
Q Well, did you tell him what they were and how they were used?
A Yes, sir.
Q Did you discuss with him restrictions on uses of the material?
A Yes, sir.
Q Did he indicate that Dow was considering going into the PCB business?
A No, sir.
Q Well, why was he there seeking the information? Did he tell you why?
A As I recall, he did mention that Dow of course is well known to be in the manufacture of chlorinated products, chlorinated hydrocarbons.

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Q How long did Mr. Peterson visit with you on that occasion?

A It was a part of a day. I would say about a half a day.

Q Did he take notes of what you told him?

A No, sir.

Q Did you take him out into the plant?

A No, sir.

Q The visit was in your office entirely?

A The business part was in my office. We adjourned for lunch, and then he went his way and I went mine.

Q Did you introduce him to Dr. Tucker or Dr. Keller?

A No, sir.

Q Did he meet any other Monsanto people?

A Not at that time; not to my knowledge.

Q Did he later?

A I don't know.

Q You don't know whether he's been back since?

A I don't know.

Q I assume he thanked you for the information?

A Yes, sir.

Q You didn't tell him everything, did you?

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

A (By the witness) Well, sir--

Q (By Mr. Jordon) Mr. Papageorge, did you discourage

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Mr. Peterson to have his company go into the manufacture of polychlorinated biphenyls?

A That was one of my objectives. I don't know if I succeeded.

Q And you think that you sufficiently discouraged him that you wouldn't have any competition from him?

MR. SMITH: Objection.

A (By the witness) I'd like to think, sir, that this conversation has contributed to some degree to the fact that Dow Chemical Company has not entered the polychlorinated biphenyl business.

Q (By Mr. Jordan) Did you tell him that polychlorinated biphenyls were a god-awful mixture?

A I don't know if I used those words.

Q But you got that message across to him, didn't you?

MR. SMITH: Object to the form.

A (By the witness) I don't know. I did describe the complexity of the mixture, yes, sir.

Q (By Mr. Jordan) Did you tell him how dangerous it was if it got into various and sundry substances?

A No, I don't know if I used the word "dangerous", sir.

Q Did you talk about toxicity?

A I relayed to him the status of our studies at that time, yes, sir.

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Q Including toxicity?

A That's right.

Q Did you relate to him the status of your studies as to the environmental contamination aspects of polychlorinated biphenyls?

A Yes, sir, as it seemed to be indicated by the degradation studies in our laboratory and the effect on mammals and birds, yes, sir.

Q You gave him a message at least as strong if not stronger than the one on your label, didn't you?

MR. SMITH: Object to the form.

A (By the witness) My intent was to do so, sir. I have to assume he understood it this way.

Q (By Mr. Jordan) Did Mr. Peterson seem to be a little disappointed over what you told him?

MR. SMITH: I object to the form.

A (By the witness) Sir, I was left with the impression after our discussion that I confirmed some suspicions he'd had before our discussion.

Q I see. Now, let's turn to Dr. Rudawill of Dow Corning.

A Yes, sir.

Q When did you have a communication with him?

A Sometime about the latter part of 1971.

Q Did he visit you?

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A No, sir.

Q What was it? A telephone conversation?

A Yes, sir.

Q What was it about?

A As I recall, Dr. Radawell believed he had a line of products that were suitable alternatives for poly-chlorinated biphenyl applications. He wanted to inform me that he was going to approach some government agencies, and I didn't know at that time just which and at this time I do not know which one he approached in Washington, to propose his products as suitable alternatives. At the same time, he asked me if we would share with him our customer list.

Q You declined that request, didn't you?

A I declined it personally. He was insistent and I suggested this was a matter he must discuss with our marketing representatives. It was beyond my area of responsibility. And I offered to relay his interest to the appropriate people in our business group marketing effort for further discussions.

Q Did you do that?

A Yes, sir.

Q Did the marketing people turn him down?

A The last I understood, sir, they turned him down for most of it except for some small part of the business.

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Q What part of the business did they let him have?

MR. SMITH: I object to the part of the business they let him have.

MR. JORDAN: He said except for some small part of the business.

MR. SMITH: You asked for a customer list.

Q (By Mr. Jordan) What small parts of the business was he given?

MR. SMITH: Object to the form.

A It is my understanding, sir -- and I don't follow these things to the ultimate end -- that there was serious discussion relating to the application of fluids in vacuum pump service.

Q (By Mr. Jordan) Was he given customers' names?

A I believe -- I don't know if he actually received the names, but there was some serious discussion that this could possibly be achieved.

Q Well now, did Dr. Radwell tell you that he knew about problems that Nanamto had been having with poly-chlorinated biphenyls?

A Yes, sir.

Q Did you concur in his statement as to the problems that existed?

A Well, yes, sir. He did have some misunderstandings that I attempted to correct.

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Q What was his misunderstanding?

A Well, as I recall, he felt that we had received orders from some government agency to take the actions we had taken - these kinds of misunderstandings. He had an understanding that polychlorinated biphenyls were extremely toxic to human beings, and I attempted to share with him what we know about the effect on human beings - these kinds of misunderstandings I believe were straightened out.

Q Do you know what his position is at Dow Corning?

A No, I don't, sir.

Q Did he tell you what his relative position was in the company - whether he was the director of research or marketing or what not?

A I believe that he mentioned that he was involved with commercial development activities relating to his products.

Q Well, did you encourage him to go to Washington or discourage him?

A I did neither, sir. That's his business.

Q You only talked with him one time?

A I believe there was another telephone call in which he asked me if I would be present at a polychlorinated biphenyl meeting which was scheduled to be held in Durham - near Durham, North Carolina, in December of 1971.

Q Did you go to that meeting?

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A Yes, I did.

Q Was he present?

A He was present.

Q What was that meeting all about? What was the purpose of it?

A The purpose, as I understood it, was to give an opportunity to those scientists in industry, government, and universities, to share with each other the status of studies relating to polychlorinated biphenyls.

Q Mr. Papageorge, where was that meeting held?

A It is a place that was referred to throughout the meeting as Quails Roost in North Carolina.

Q Were some of the Japanese scientists present at that meeting?

A Yes, sir.

Q How long did the meeting last?

A Two days, as I recall.

Q Were the proceedings at this meeting, were they reported in any written document?

A Yes, sir.

Q Did you get a copy of that report?

A Yes, sir.

Q Do you have it in your files in St. Louis?

A Yes, sir.

Q Did you meet Mr. Radewell at this meeting?

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A Briefly and socially.

Q You didn't talk business with him?

A I think the only business we conducted was something along the lines he thanked me for my information, appreciated it, and that he had been to Washington, and that's all.

Q Well, when you talked with him on the phone, did you tell him that you had been having a hell of a time with this PCB problem?

A I don't use those expressions, no, sir.

Q Well, did you tell him that you had been having a god-awful time with them?

A I don't believe so, sir.

Q Well, anything similar to that?

A I don't believe so.

Q Now, when did the DuPont men communicate with you about the PCB?

A Sometime in 1970.

Q Do you recall approximately when?

A About the third quarter of 1970.

Q Do you know what the nature of that communication was?

A Yes, sir. This was again the general request for "sharing with me what you know about polychlorinated biphenyls".

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Q Did he come to see you?

A No, sir.

Q This was a telephone call?

A That is right, sir.

Q Well, did you tell him substantially what you had told Mr. Peterson?

A Yes, that same type of information.

Q The same type of information?

A Yes, sir.

Q Could you possibly recall his name, Mr. Papageorge? We would like very much to know his name.

A I'm going to take a guess, sir. I think it was Kolner - K-o-l-n-e-r.

Q K-o-l-l-n-e-r?

A Yes.

Q Did he identify himself as to what his position was in DuPont?

A I am under the impression that he has something to do with purchasing activities.

Q Purchasing activities?

A Yes.

Q Was this DuPont Chemical in Delaware that he called you from?

A I don't recall, sir. I don't remember.

Q Now, I believe you said that a Mr. Cohen from

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Hoover Chemical communicated with you. What was the nature of that communication?

A Again, it was a request to -- no, not in this case. Mr. Cohen was under the understanding that Monsanto had terminated completely the manufacture and sale of polychlorinated biphenyls. He called to determine whether or not this understanding was correct.

Q You told him that it was incorrect?

A I told him that it was partially true, that we were still manufacturing some of the polychlorinated biphenyls and were marketing to some of the applications.

Q When did you get this call from Mr. Cohen?

A Again, it was sometime in late 1970.

Q Well, did you give Mr. Cohen about the same kind of message that you gave Mr. Peterson and the current man?

A I attempted to, sir.

MR. JORDAN: It's lunchtime.

(Thereupon, at 12:30 p.m., a recess was taken for lunch.)

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AFTERNOON SESSION

Q (By Mr. Jordan) Now, Mr. Papageorge, you testified concerning the recommendation you made to Mr. Fusher. Now, what recommendations during 1970 and '71 with reference to PCB's did you make to Mr. Donald Cameron, the marketing representative in Belgium?

A I don't recall. I'll withdraw that. I did make a recommendation to Mr. Cameron relating to a proposed visit to Europe in which I suggested the types of agencies we might visit and the fact that I was personally interested in seeing incinerating facilities if they were available in Europe.

Q Well, were there any available for you to visit?

A Yes, sir.

Q Where?

A In Leverkusen, Germany.

Q Were they burning PCB's at that facility?

A Yes, sir.

Q Did you visit any other facility in Europe?

A Yes, sir. I visited the Rollins - I'm sorry - the Purle Burrell Brothers' installation just south of London in England.

Q Is that an incinerator?

A Yes, sir.

Q Were they burning PCB's?

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A Not at the moment I observed the unit, no, sir.

Q Well, had the unit been used for that purpose?

A Yes, sir.

Q Did you make any sketches of these or notes with respect to these visits to these two units?

A No, sir.

Q When was this visit?

A May of 1970.

Q All right. Now, did you visit any other incinerator facility in Europe?

A No, sir.

Q Did Mr. Cameron take you to these places, or did he just arrange for you to be permitted to observe the operation?

A He arranged for both visits, accompanied me to Germany.

Q Did the people who operate these facilities explain how they worked?

A Yes, sir.

Q Was that information useful to you in the construction of the Monsanto facility in Sauget, Illinois?

A Not directly, no, sir.

Q Well, was it indirectly of some use to you?

A It confirmed our beliefs that the incineration of polychlorinated biphenyl was practical.

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Q I noticed in one of these articles where you had made a speech or were interviewed that you told the reporter that the temperatures would be 3,000 degrees Fahrenheit.

MR. SMITH: Object to the form.

Q (By Mr. Jordan) Is that correct?

A As I recall, sir, I told the reporter that during our test runs we experienced a phenomenon which would indicate that the temperature achieved in the fire box exceeded 3,000 degrees Fahrenheit.

Q Now, in the operation of this incinerator at Sauget, what is the maximum temperature that's achieved in the fire box there?

A I have not been told the maximum, sir. I have been told that one of the conditions at which it operates successfully involves the temperature of 2700 degrees Fahrenheit.

Q 2700 degrees?

A Yes, sir.

Q Are records kept with respect to the operation of that incinerator to burn up these PCB's?

A I have not seen them personally, no, sir.

Q Well, does Monsanto burn anything else in this incinerator besides PCB?

A No, sir.

Q Who is the person in charge of the operation of

HARTOLDMON0028604

the incinerator?

A Mr. Russo is the operating supervisor.

Q Is he in the Sauget, Illinois plant?

A Yes,sir.

Q How far is that plant from the general office in St. Louis?

A About twenty miles.

Q Do you have to cross the river to get to it?

A Yes, sir.

Q Is the plant near the river?

A Yes, sir.

Q Now, do you recall any other contacts with Mr. Cameron with reference to PCB?

A There were many contacts.

Q What were they?

A They were of the type whereby we mutually would exchange information as we received it that related to polychlorinated biphenyls. It was an exchange information situation.

Q In other words, you kept him informed of the state of knowledge of PCB's and their effects?

A That is correct, sir.

Q Now, most of your communications with Mr. Cameron were either by letter or Telex, were they not?

A Correct, sir.

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Q Did you keep copies of these letters and Telexes?

A Yes, sir.

Q Do you have a file on Cameron or on Belgium?

A No, sir.

Q Well, where would your communications to Cameron be filed in your file?

A They would be filed under "PCB-International".

Q All right. And would the same thing be true as to communications with the Japanese people?

A That is correct.

Q And they are mostly either in letters or Telexes?

A That is correct.

Q Would that be likewise true in your communications with your people in Wales?

A That is correct.

Q And all of those are filed in "PCB-International"?

A Correct, sir.

Q By the way, are most of those file drawers of yours - those fifteen file drawers - full?

A At times, yes, sir.

Q Has any of the material been moved out of those file drawers since they were set up in 1970?

A I don't know how to respond to that, because some of these file drawers contained materials which are intended to be handed out to customers on request. So these drawers

HARTOLDMON0028606

are the drawers that fluctuate in terms of fullness.

Q I see. How many drawers are filled with materials that are handed out to customers on request?

A About six.

Q And do those drawers contain any information with respect to PCB's?

A Yes, sir.

Q What kind of information? What sort of documents are they which relate to PCB's that are given to customers?

A In that drawer I have, for example, copies of this packet of articles we referred to earlier.

Q Yes?

A I have copies of a technical bulletin.

Q Issued by whom?

A Issued by Monsanto.

Q How many technical bulletins has Monsanto issued on PCB?

A I have never counted them, sir. I am aware of - personally aware of about five of them.

Q What was the date of the earliest one?

A I'm going to guess. I am told that some of these date back into the 1950's.

Q Do any of them date in 1970 or '71?

A Yes, sir.

Q And you have copies of those there in your files?

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A I have a copy of that one, yes, sir.

Q Which one are you talking about?

A It is a technical bulletin that describes the physical, chemical and environmental characteristics of our polychlorinated biphenyl products which we market under the label Aroclors.

Q Do you have the number of that bulletin? Do you remember the number of that bulletin?

A Yes, sir. It's Technical Bulletin O/TL-366A.

Q Who prepared that bulletin?

A I do not know who prepared it. It was-- I am searching for the right word - guided by Mr. Willis J. Clark.

Q Did you participate in it?

A Yes, sir.

Q Was the predecessor bulletin O/TL-366?

A Yes, sir.

Q And what was the date of that?

A I don't recall ever hearing when the initial copy was published, but I believe I recall that the latest version that was available was dated somewhere about 1966.

MR. JARAL: I'll ask the reporter to mark this as Plaintiff's Exhibit No. 4 of the Papageorge Deposition.

(The document above referred to was marked Plaintiff's Exhibit No. 4, Papageorge Deposition, for identification.)

HARTOLDMON0028608

MR. MARSHALL: Did he say the date of 3074, the year?

MR. JORDAN: Not yet. I'm going to get that, I hope, in a moment.

Q (By Mr. Jordan) Mr. Papageorge, I hand you a document which has been marked Plaintiff's Exhibit No. 4 of the Papageorge Deposition, and I ask you to examine it, please, and state if that is the technical bulletin that you participated in preparing.

A Yes, sir.

Q Now, from just a hasty glance at it, I don't see any date on it. Could you tell me when this was prepared?

A Sometime in the latter half of 1970.

Q Over what period of time was this in preparation?

A From about April, May, 1970 to about July, August 1970.

Q On the last sheet I have found a date, or what I think may be a date, 3/70. Does that refresh your recollection as to its preparation?

A No, sir.

Q And who did you say was primarily responsible for the preparation of the bulletin?

A Mr. Willis Clark.

Q What is his position with the company?

A He is - I don't recall his formal title, but he is

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the Product Specialist in the Plasticizer Business Group who is responsible for the marketing of plasticizers containing polychlorinated biphenyls.

Q Now, is this the last bulletin, technical bulletin, that has been issued with reference to polychlorinated biphenyls?

A To the best of my knowledge, sir, yes.

Q Could you give us the date when the immediate predecessor technical bulletin was prepared?

A I believe, as I mentioned earlier, at least my information tells me it was sometime about 1966.

Q Oh, yes. All right. Now, turning to Mr. Paul Benignus--

A Yes, sir.

Q How do you pronounce that?

A Benignus.

Q Did you make recommendations to him in 1970 and 1971?

A Yes, sir.

Q What were they?

A These were recommendations relating to the proper handling and disposal of polychlorinated biphenyls as it relates to the use in electrical transformers and the electrical capacitors.

Q Well, what were those recommendations?

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A They involved suggestions that he continue to repeatedly inform his customers that these materials should not be permitted to be discharged into sewer systems, that the customers be informed of our willingness to accept this material for disposal. This is the general area of my recommendations to Mr. Benignus.

Q And were those recommendations made in 1970?

A Yes, sir.

Q Mr. Papageorge, I read you from the technical bulletin, Plaintiff's Exhibit No. 4, the following paragraph, "Some specific applications where the use of PCB should definitely be avoided are in paints and sealants for swimming pools, paints and waterproofing agents in silos and other buildings where food products for humans or animals are stored, and as a component of any container or wrapping used in the packaging of food products." Do you agree with that statement?

A Yes, sir.

Q Now, what recommendations did you make in 1970, 1971 to Mr. J. R. Fallon, the marketing manager for heat transfer and process fluids?

A At this moment I can only recall one recommendation.

Q When was that and what was it?

A As I remember, this was about May or early June,

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1970, with respect to his intent to inform customers in which heat transfer fluids were used to process human food that polychlorinated biphenyls would no longer be available to them from Monsanto.

Q Did he follow that recommendation?

A Yes, sir.

Q Did you participate in the decision which led to that recommendation?

MR. SMITH: Object to the form.

A I don't recall participating directly in that decision, no, sir.

Q Who did make that decision?

A I do not know. I was in Europe when it was made.

Q And when were you in Europe?

A In the early part of May.

Q 1970?

A 1970, yes, sir.

Q Prior to your leaving for Europe, had you discussed with anyone the proposal to withdraw the sale of PCB's from any food processor?

A No, sir.

Q Who told you about it when you got back from Europe?

A I don't remember the specific individual, sir.

Q Now, do you remember any other recommendation that you made to Mr. Fallon?

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A No, sir.

Q Is Mr. Fallon still the Marketing Manager for heat transfer fluids?

A No, sir.

Q What's his position now?

A I just heard last Thursday, sir, that he has terminated employment with Monsanto.

Q Well, was he Marketing Manager for heat transfer fluids until his termination?

A No, sir.

Q What was his position prior to his termination?

A I do not know the title of his position. I understand he was on special assignment reporting to the Director of Marketing of the Specialty Products Business group.

Q Who told you last Thursday that he had been terminated?

MR. SMITH: Object to his "being terminated".

Q (By Mr. Jordan) That he had terminated employment.

A I just don't remember. It was either Mr. Roder - I believe it was Mr. James Roder.

Q Did he tell you that he had resigned or was discharged?

A He didn't use either of those words, sir. He just said, "Mr. Fallon has a new job and has left Monsanto."

Q Now, I believe you said you made a recommendation

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to Mr. Norman T. Johnson, also a Marketing Manager for Industrial Fluids. What sort of recommendation did you make to Mr. Johnson?

A These were of a broad nature again, recommending that customers of hydraulic fluids for which Mr. Johnson was responsible receive the information required to understand the polychlorinated biphenyl materials and methods for proper handling and disposal of these kinds of materials.

Q When were those recommendations made?

A Throughout the year 1970.

Q Do you recall any other recommendations to Mr. Johnson?

A No, sir.

Q Now, what recommendations did you make to Dr. Cuming Peyton?

A The same type of discussions were held with Dr. Peyton that were held with individuals such as Mr. Johnson and Mr. Fallon and Mr. Sanignus. However, with Dr. Peyton the discussions in 1970 related to the application which we called plasticizer applications.

Q What recommendations did you make to Dr. John H. Burlandwho is vice president and general manager of the Mitsubishi Monsanto operation?

A My recommendations to Dr. Burland relating to polychlorinated biphenyls were generally the type, the

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nature that he would convey to the directors of Mitsubishi Monsanto the information Monsanto had regarding polychlorinated biphenyls and the program that Monsanto was practicing in the United States.

Q Now, I believe that you stated that your recommendations to Dr. Durland were usually by letter or by Telex?

A My communications were usually by letter or Telex.

Q Well, did these communications include your recommendations?

A My recommendation was given to Dr. Durland orally on one of his frequent visits to the United States.

Q Well, did any of your letters or Telexes contain any recommendations?

A Not that I know of, sir.

Q Copies would be in this file that's entitled "PCB-International", would they not?

A If such a letter exists, yes, sir.

Q Mr. Papageorge, I show you an article entitled, "Epidemiological Study on Yusho, a Poisoning Caused by Ingestion of Rice Oil Contaminated with a Commercial Brand of Polychlorinated Biphenyls," which was written by M. Kuratsune, T. Yoshimura, Hijuchi Matsuzaka, and A. Yamaguchi.

MR. SMITH: Is that one person?

MR. JORDAN: No, that's four persons.

Q (By Mr. Jordan) And it is published in "Environ-

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mental Health Prospectus, Experimental Issue No. 1," April 1972. Have you had occasion to have a copy of this publication that contains this article?

A Yes, sir.

Q What is your understanding of the meaning of the word "yusho"?

A It's my understanding that the expression "yusho" means oily, or oil.

Q Now, the references or bibliography at the end of this article include among others the following: Katsuki, S., 1969. Foreword, reports of the study -- for Yusho (chlorobiphenyls poisoning). And then the next reference is Kuratsune, M., et al, 1969, an epidemiological study on Yusho or chlorobiphenyls poisoning. And then the fifth reference is Tsukamoto, et al, 1969, the chemical studies on detection of toxic compounds in the rice bran oils used by the patients of Yusho. And then number fifteen in this bibliography is Kohnawa, M., et al, 1969, poisoning due to an oily by-product of rice bran similar to chickadema disease. I: Occurrence in toxicity tests, "National Institute, Animal Health Quarterly," 9:213. And Number 16 is another one by the same author, Kohnawa, in 1969. Poisoning due to an oil by-product of rice bran similar to chickadema disease. II: Tetrachloribiphenyl as toxic substance. Ibid. 9:220. And then the next one, on 17, is Choya, S.,

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et al, 1969. Pathological changes of poison in chickens due to dark oil, an oily by-product of rice bran. Ibid. 9:229. And Number 18 is Koga, K., et al, 1970. Studies on the toxic principal in a certain by-product of rice oil rendering. I: Toxicity on chicks. Japan Jezu Tschuical S-c-i - I guess that means Science 41:336. Another one by Koga, 1970, Studies on the toxic principal in a certain by-product of rice oil rendering. II: A survey of a toxic substance. Ibid: 41:439. And number 21, Goto, K., Sakaguchi, K., and then it says Sakaguchi and Ogawa, 1969. Hydropericardium assay of rice oil which caused Tusho, and Kanechlor 400 in chickens. Ibid. 60:533. Now, in 1969 and '70, were any of those articles which I have read to you in any of the literature which was either in the big notebook or in the packet with the rubber band on it in your office?

A No, sir.

Q Have you ever seen any of these before?

A No, sir.

Q Even though they were published in '69, many of them in 1969, none had come to your attention?

A That is correct.

Q Well now, did you ask Dr. Durland out in Japan to send you any literature that he might have that dealt with PCB's?

A Yes, sir.

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Q Well, did he send you any?

A Yes, sir.

Q Did he send you any of this material?

A No, sir.

Q I notice that Kobayowa's studies, his two were apparently published in the United States in the "National Institute of Animal Health Quarterly," and you didn't see either one of those?

A No, sir. I'm not aware that that is a U. S. publication.

Q I am told that it is.

MR. GRIFFIN: Object to the testimony of counsel.

Q (By Mr. Jordan) You are not aware of having seen any of these?

A No, sir. That is correct.

Q Is chlorobiphenyl the same thing as polychlorinated biphenyl?

A On a rare occasion, the expression chlorobiphenyl is used to describe polychlorinated biphenyls.

Q Now, what is Kanechlor 400?

A It is my understanding, sir, that that is the trademark for a polychlorinated biphenyl mixture marketed by a Japanese producer which is commonly referred to - at least by those of us in the United States - as Kenega Fugi. I am certain that is not the full formal name for that

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company, and as I can best recall this Kanechlor 400 is about— it contains about fifty percent chlorine by weight.

Q Which would just be two percent less than your 1248?

MR. SMITH: Object.

A Two percent more, sir.

Q I mean two percent more than your 1248?

A Yes, sir.

Q 1248 is forty-eight percent chlorine by weight?

A That is correct.

Q Now, this monograph or article that I asked you about described the effects of this chlorobiphenyls, or polychlorinated biphenyls, on human beings, doesn't it?

MR. SMITH: Are you talking about the article of April 1972?

MR. JORDAN: Yes.

A (By the witness) Yes, sir.

Q (By Mr. Jordan) And it says, "More than three years have passed" — speaking as of April 1972 — "More than three years have passed since the epidemic was reported. It is a heart-breaking fact that many patients at Yucho are still tortured by the sickness because no cure or treatments have been discovered yet."

MR. SMITH: I object to reading passages. If it's in the article, Mr. Jordan, you can mark it as an

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exhibit. Whether he agrees it's in there or not doesn't make any difference.

Q (By Mr. Jordan) Well, you've read the article, you said?

A Yes, sir.

Q And it goes on to say that, "In the summer of 1970, a mass clinical examination of the Yusho patients was carried out Fukuoka, and the clinical state of the patients examined were compared with their previous findings observed in the summer of 1969." So you knew from reading this article that these observations of these patients had started at least as early as the summer of 1969?

MR. SMITH: I'm going to object and instruct him not to answer about material that appears in an April 1972 publication. If you want to mark it as an exhibit, fine. But I can't see any relevance in this line of questioning or is likely to lead to any of it.

Q (By Mr. Jordan) Well now, you testified that you heard sometime - at sometime or other that there was an epidemic poisoning of people in Japan which occurred sometime in 1968. Do you recall that?

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

Q (By Mr. Jordan) Did you testify that you heard about that?

A I heard of an incident, sir, but I don't know that

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I said that it was epidemic or poison.

Q Well, when did you first hear about this situation in Japan?

A Sometime in the latter part of 1970, and I can't recall just where the question arose regarding this incident.

Q Do you mean that all during 1969 and '70 that Dr. Burland in Japan never at any time gave you any information about this epidemic of skin disease which occurred in Japan which produced over a thousand patients and which had widespread publicity throughout the Japanese nation?

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

Q (By Mr. Jordan) He never told you anything about it?

MR. SMITH: Object to the form.

A (By the witness) Sir, I have no information that tells me that that particular case had widespread -- that it was widespread and knowledgeable throughout Japan. As I indicated earlier, there was considerable confusion relating to this situation. Such rumors as "the owners of the rice oil company had vanished; they can't find them" - these kinds of things; very confusing. The clippings of newspaper articles that I received from Dr. Burland are fairly recent, and to the best of my recollection they are late '71. I am aware of them being available in somewhere in late '71. And the way the articles read would lead me to

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believe that it was not common knowledge in Japan - at least to the public press - prior to that time. There are many responsible scientists to this day who have raised some very important questions regarding this incident, and the most important question in my opinion relates to the presence of a foreign material which is considered to be a very highly poisonous material. It is known by the chemist as poly-chlorinated dibenzo furans - extremely highly poisonous. This material was determined to be present in French and German produced polychlorinated biphenyls by researchers located in Holland. It has not been determined or detected and its presence has not been found in American made or U. S. or - I'm sorry - U. K. produced material using Monsanto's process.

Q Well, Mr. Papageorge, when did Mr. Hurland go to Japan to take up his duties as Vice President and Director of Mitsubishi-Monsanto,

A I don't know, sir.

Q Well, was it before you came to St. Louis in 1970?

A That is right, sir.

Q And you say that at no time in 1970 did he ever give you any report on the fact that this epidemic was announced by the Japanese Ministry of Welfare and a study group was organized by the staff and faculty of medicine, pharmaceutical sciences, agricultural and engineering of

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the Kaushu University. He never told you about that?

MR. SMITH: Object to the form.

A I am not aware of any information of that type, sir.

Q Did anybody connected with Monsanto's Japanese operation furnish you with any information about the Yusho epidemic?

A Yes, sir.

Q Who did?

A Dr. Durland.

Q Anyone else?

A No, sir.

Q Well now, in 1970, I would like to know precisely what you knew about the Yusho epidemic.

A In 1970, all I knew about the Yusho incident is that somewhere in Japan there were people who exhibited some sickness that was claimed to have been caused by the presence of a polychlorinated biphenyl in a cooking oil which was extracted from rice bran. And that's all I knew.

Q Well, with that much knowledge, did you make any effort to find out any more about it?

A I personally at that time did not make any further effort, no, sir.

Q Well, you say you personally didn't make any. Did you ask somebody else to make an effort to find out more

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about this disease caused by the ingestion of what you understood to be polychlorinated biphenyl by these people in Japan?

MR. SMITH: Object to the form.

A No, sir.

Q You didn't ask Dr. Durland to gather information about this subject?

A Not at that time, no, sir.

Q Well, when did you ask him?

A Sometime in 1971.

Q When in 1971?

A I am going to be guessing a bit - mid-year.

Q And what did you ask him to do then?

A I don't recall the exact conversation.

Q Well, do you recall the substance of it?

A Yes, sir.

Q Relate that.

A I asked Dr. Durland if it were possible that we could get good English translations of any information available on this incident that we heard about, and he offered to try.

Q Well, did he get you anything?

A All that I received from Dr. Durland were newspaper clippings of English translations - I'm sorry - newspaper clippings of English language newspapers in Japan, as

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well as translations of articles written originally in Japanese.

Q Where did you file those documents?

A They are most likely filed under "PCB-International".

Q Were some of these newspaper clippings dated back in 1968 and '69?

A No, sir.

Q Did you receive any summaries in English which were attached to articles in Japanese?

A I did not receive summaries, no, sir.

Q Mr. Papageorge, if I understand correctly, you testified last week that you gave a talk before the Lake States Governors Pesticide Council on the subject of PCB's. When did you give that talk?

A About October 1971.

Q And where was the talk given?

A At the motel or hotel located near O'Hare Airfield in Chicago.

Q Was your primary concern with control and distribution of PCB products after they left Monsanto as contrasted with problems occurring in the manufacture of the products?

A My concern, sir, covered both areas. But there are other individuals who are more directly involved with

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Monsanto plant operations and impact on the environment.

Q Who are the people who are more involved with the plant operation and the impact of such operation on the environment?

A As I mentioned the other day, Desmond Bowser.

Q Who is he?

A I don't believe I recall his exact title. He is Manager of Environmental Affairs - something like that.

Q Where is his office?

A The world headquarters, Monsanto Company in St. Louis.

Q Anyone else?

A Mr. Paul Hodges, Manager of Environmental Protection, Manufacturing.

Q Where is his office?

A The same.

Q Anyone else?

A Each manufacturing plant has appropriate individuals concerned with environmental matters.

Q Who is that individual at the Couget, Illinois plant?

A Mr. Paul Wahler.

Q Who is that person at the Anniston plant - in 1970 and '71?

A Mr. Eugene Wright.

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Q Did he occupy that position throughout '70 and '71 at Anniston?

A To the best of my knowledge, yes.

Q Mr. Papageorge, I believe you testified that at some point in time Monsanto commissioned Industrial Biotest Laboratories, Incorporated, to conduct studies on toxicity, reproduction, and residue of certain of your Aroclors in white leghorn chickens?

A Yes, sir.

Q When was that study first commissioned?

A Sometime in 1969.

Q Do you recall when in '69?

A I wasn't present, sir. I do not recall.

Q Before you arrived in St. Louis?

A That is correct, sir.

Q Now, after you arrived in St. Louis, did you receive interim reports from time to time from Industrial Biotest Laboratories?

A Indirectly, yes, sir.

Q Now, by indirectly, how do you mean you received them?

A The normal contact for activities conducted at this consultant laboratory is through our medical department. They are also the department receiving the reports. Copies are made and distributed to interested people within Mon-

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santo.

Q By the medical department?

A Yes, sir.

Q Now, did you receive copies of those interim reports which were distributed by the medical department?

A Yes, sir.

Q Did you begin receiving them in January when you first arrived in St. Louis to begin your duties there?

A No, sir. I didn't receive a copy of reports relating to these studies until about April 1970.

Q Did you have some in May of 1970?

A I don't recall any in May, sir. We took the April reports to Europe with us. I don't remember any reports in May.

Q What did the April report disclose?

A As I recall - let me think. As I recall, in April those reports disclosed that the higher chlorinated biphenyls at the high dosage levels seemed to have an effect in test animals - and this is in reference to dogs and rats.

Q I'm talking about the chicken.

A Oh, the chicken report; okay.

MR. SMITH: I think you asked him about the reports in April, and I believe he ought to be able to answer it.

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Q (By Mr. Jordan) Go ahead.

A To quickly summarize, the higher chlorinated polychlorinated biphenyls at the higher dose levels showed an effect on the weight gain of the animals and on liver size. These are with reference to the mammals - the dogs and the rats. The lower chlorinated polychlorinated biphenyls at all dose levels showed no effects. With respect to the chicken studies, the higher chlorinated polychlorinated biphenyls at all levels showed no effects. The lower chlorinated polychlorinated biphenyls showed an effect on egg hatchability at ten parts per million in the daily diet of the birds, with no effect at one part per million and no effect - that's right - no effect at one; an effect at ten.

Q Now, were these reports with reference to the chicken studies among the preliminary reports that you had with you in April of 1970?

A To the best of my recollection, yes, sir.

Q Now, when did you receive the complete report on the white leghorn chickens?

A I would have to consult the record, sir. I don't know. I don't recall.

Q Well, let me show you a document which I will have marked as Plaintiff's Exhibit 5, Ragsdorge Deposition.

MR. SMITH: Is this the same document I gave you?

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MR. JORDAN: I don't know where it came from.

(The document above referred to was marked Plaintiff's Exhibit No. 5, Papageorge Deposition, for Identification.)

Q (By Mr. Jordan) Now, here's a document marked Plaintiff's Exhibit 5, which consists of eighty-six pages, on the letterhead of Industrial Bio-Test Laboratories, Inc., "Report to Monsanto Company; Toxicity, Reproduction and Residue Study on Aroclor 1242, Lot #AK-255; Aroclor 1254, Lot #AK-33; Aroclor 1260, Lot #AZ-3 in White Leghorn Chickens. June 4, 1970. IBT No. J7500." Now, is this a complete report on the chicken studies?

A This appears to be the complete report on the chicken studies of Monsanto's polychlorinated biphenyl products which were fed to the test birds at the levels one, ten and a hundred parts per million.

Q And does the date June 4, 1970 appear to be about the date on which you received the report?

A I don't remember the date I received the report, but it is on this report.

Q Do you have a system in your office when a document comes in it is stamped with a receiving stamp showing the date of arrival?

A No, sir.

Q Do you ever make a notation on anything when you

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get it when you receive it?

A No, sir.

Q Well, would you say that you received this sometime around June the 4th, 1970?

A Not necessarily, sir. It's possible I received this report as much as a month or two later.

Q Well, you did have some preliminary reports in April, you say?

A That is right, sir.

Q From this same laboratory?

A That is right, sir.

Q Did you have any before April, preliminary reports on the chicken studies?

A I personally did not, no, sir.

Q Did anybody in the company?

A As I recall, there were some reports, progress reports, sent to Monsanto prior to January 1970.

Q Who were they sent to in Monsanto? Did they go to the medical department?

A To someone in the medical department, yes, sir.

Q Did you discuss those with anybody in the medical department when you came to St. Louis - that is, the 1969 preliminary report?

A As part of my orientation, indoctrination, in the early part of 1970 I had discussions with representatives

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of the medical department.

Q Do you remember who they were?

A Mr. Elmer Wheeler and Dr. Emmett Kelly.

Q Now, in those discussions, did they show you some of the preliminary reports on the chicken studies?

A I don't recall them showing me any reports. They gave me an oral summary which told me that the studies were underway, what the feeding levels were, what the materials being tested were, and at that time, as I recall, we as yet had no evidence to lead to any conclusions.

Q Well now, were the chicken studies commenced at the same time the rat and dog studies were commenced?

A It is my understanding they were commenced later, because we had initially attempted to obtain some species of wild birds as a test animal. So as a result, this created a delay.

Q How much delay was it?

A A matter of months, sir, I am told.

Q But at least they were commenced in 1969 because you were told by the medical people that they had had preliminary reports on the chicken study?

MR. SMITH: Preliminary reports of progress being made of setting up studies.

A (By the witness) I don't recall that in early 1970 they had yet received preliminary reports. I was just

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made aware of the status of the studies as the representatives of the medical department knew them.

Q They certainly had received preliminary reports by April, had they not?

A Yes, sir.

Q On the chicken studies?

A Yes, sir.

Q Now, I draw your attention again to Plaintiff's Exhibit 3 which was identified this morning, and draw your attention to the page which is captioned, "Summary - Interim Status, Chronic Toxicity with Arochlors." Now, did I understand you to say that you suggested to the gentleman who was preparing this document that he go to the medical department to get information to complete this part of the report?

A That is correct.

Q And you said that you understand that he did do so?

A That is right.

Q Conferred with Dr. Wheeler? You set up the arrangement, did you not?

A That is right, sir.

Q Well, can you explain why there is no mention whatsoever of the interim status of the chicken report with reference to toxicity?

A No, I cannot, sir.

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Q There is not a word on that page about any of the chicken studies, is there?

A That is right, sir. I cannot explain that.

Q You have no explanation for that?

A No, sir.

Q All right, sir. Now, this Exhibit 3 was prepared for submission to a group of eminent scientists, was it not?

A Yes, sir.

Q Who met at Williams College?

A Yes, sir.

Q Sometime in June 1970?

A Yes, sir.

MR. JORDAN: We've been going about an hour and a half. Do you want to stop about five minutes so Mr. Smith can finish reading?

(A brief recess was taken.)

Q (By Mr. Jordan) Mr. Papageorge, just before we took a recess - which lasted about twenty minutes - I was asking you about this Plaintiff's Exhibit No. 3.

A Yes, sir.

Q During the recess, did you discuss the contents of this exhibit with counsel for Monsanto?

MR. SMITH: Object.

A Yes, sir.

Q On this summary - interim status, chronic toxicity

with Aroclors - which I asked you about before the recess--

A Yes, sir.

Q There is the statement in the last paragraph, "Interim or progress reports such as above have been provided periodically to the U. S. Food and Drug Administration, the U. S. Department of Agriculture and other governmental agencies. In addition, the data and the progress of the studies have been discussed candidly with Dr. Edward J. Burger, Jr., in the Office of Science and Technology, Executive Office of the President." Now, what interim or progress reports to your knowledge were provided to the U. S. Food and Drug Administration?

A The reports that we shared with the agencies listed were exact duplicates of the reports that Monsanto's medical department received from Industrial Bio-Test Laboratories.

Q Did those reports include any of the interim or progress reports relating to the chicken studies?

A To the best of my knowledge, yes, sir.

Q Well, do you know?

A I can only speak for some of the visits that were made which Mr. Wheeler and I participated in.

Q I'm talking about before June 1970.

A Some of those reports were given to the agencies in early June of 1970, and I was present in those discussions.

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I am led to believe that previous summary reports were given to agencies in early 1970 and late 1969. I was not personally present.

Q Is there any record at Monsanto which would document which reports, if any, were given to the U. S. Food and Drug Administration prior to June of 1970?

A I am not aware of such a record.

Q Have you had any discussion with Dr. Edward J. Burger, Jr., prior to June of 1970?

A No, sir.

Q Now, this Plaintiff's Exhibit 3, you said, was sent - a copy - to eminent scientists at Williams College. Do you know whether a copy of this exhibit was sent to the Food and Drug Administration?

A No, I do not know, sir.

Q Do you know whether a copy was sent to the Department of Agriculture or any other government agency?

A I do not know.

Q Do you have any data in your files concerning studies that were made by Monsanto of the effects of PCB prior to the studies which were commenced in 1969?

A Yes, sir.

Q What is that material?

A These are copies of two reports, and I believe they are both based upon the same study. One is a copy of

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an article that appeared in some scientific journal relating to the effect of vapors, at least one or maybe two of Monsanto's products containing chlorinated biphenyl products, and another is a copy of a pamphlet--

Q A copy of what?

A A pamphlet, which is issued under the auspices of the - I believe it is called the American Hygienic Association or American Hygienic Series.

Q What are the dates of those documents?

A Sometime in the 1950's.

Q '50's?

A Yes, sir.

Q Now, do you have any other documents in your files that have ever come to your attention which relate to any other studies made by Monsanto with respect to PCB prior to 1969?

A I have available to me a document on which the reports from studies to determine what is known by toxicologists on the LD-50s of each of the commercial Monsanto products containing polychlorinated biphenyls.

Q Do you have any others?

A Not in my files, no, sir.

Q Are there any others available in the files of Monsanto that you know about?

A I am aware - I have not seen but I understand that

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our medical department as part of their normal record-keeping system has some information of studies conducted for Monsanto for these products in the earlier years.

Q Conducted by whom?

A I do not know.

Q Have you discussed those studies with anybody in the medical department?

A No, sir.

MR. SMITH: Mr. Jordan, we have already furnished the plaintiff a copy of all the studies done by Monsanto or commissioned by Monsanto, and you have them.

MR. JORDAN: I'm asking the witness about what he knows, Mr. Smith.

Q (By Mr. Jordan) Mr. Papageorge, I show you Plaintiff's Exhibit No. 3 again, and I direct your attention to the bibliography which you say you prepared which comprises page one, the literature reference. I draw your attention to the article by S. Jensen, A. G. Johnels, M. Olsson, and G. Otterlind, in the publication "Nature", 1969, at pages 224 to 248. Was that the article that reported the findings of the Swedish scientist?

A I don't believe so, sir.

Q Do you know what that article reported?

A I don't remember.

MR. JORDAN: I'll ask the reporter to mark this

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as Plaintiff's Exhibit 6 to the Papageorge deposition.

(The document above referred to was marked Plaintiff's Exhibit No. 6, Papageorge deposition, for identification.)

MR. STOCKTON: What's the title of it?

MR. JORDAN: I'm letting Mr. Smith look at it. I'll get it in the record in just a minute.

Q (By Mr. Jordan) Mr. Papageorge, this Exhibit 6 is on Monsanto letterhead and is dated September 23rd, 1970, and it says, "Subject: Aroclor Plasticizers - a new series" - the word "new" is underlined - "of inert, chemically-resistant, fire-retarding plasticizers compatible with a wide variety of resins." And it's addressed, "Dear Customer:" and signed by Walter F. Huychoff, Product Manager, Plasticizers. Are you familiar with this letter?

A No, sir.

Q You haven't seen it before?

A No, sir.

Q Do you know whether this letter was sent out to the plasticizer customers?

A No, sir.

Q I understood you to say that a letter was sent to the plasticizer customers announcing the PCB-containing material was being withdrawn.

A That is correct, sir.

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Q Does this appear to be a follow-up on that?

A From the wording and the date, I would assume it is a follow-up on that.

Q Now, when was the letter sent out announcing the withdrawal of the PCB's from the plasticizer market?

A May or June 1970.

Q Do you know whether any similar letter was sent to heat transfer customers?

MR. SMITH: I object to the form of that question. I believe he's testified in considerable detail that there was no such letter sent.

Q (By Mr. Jordan) Were there any communications by Monsanto with the customers who purchased PCB heat transfer materials?

A At what point in time, sir?

Q In 1970.

A In 1970, yes.

Q And when was that communication sent to the heat transfer customers?

A In February 1970, a letter was sent to polychlorinated biphenyl customers among whom were heat transfer customers.

Q And what was the purport of that letter?

A This was the letter, as you recall, that described the polychlorinated biphenyls as being present in some

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Monsanto products, that reports were being received that indicated their being found in the environment, there were some claims being made that some species of wild life were being affected, and as I recall, it cautioned the recipient that in the future handling of this material to be careful and handle properly to avoid entry into the environment. Again, that's not word for word.

Q Do you know whether East Coast Terminals was on that mailing list for that letter?

A I have found that they were not on that mailing list, no, sir.

Q Now, was there any subsequent letter sent out to customers who purchased PCB materials for heat transfer fluid?

A Again, sir, I'm assuming before July of 1971?

Q Yes.

A Yes, sir.

Q When was that sent out?

A As I recall, about June or so of 1970.

Q That would have been about four or five months after the first one?

A Yes, sir.

Q Now, what did that letter contain?

A This letter was mailed to known customers on record who had heat transfer systems using polychlorinated

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biphenyl fluids in the processing of human food products.

Q Now, have you ascertained whether a copy of that letter went to East Coast Terminals?

A East Coast Terminals did not receive a copy of that letter either.

Q Well, do you know of any letter that was sent to East Coast Terminals at any time prior to July the 16th, 1971?

A Yes, sir.

Q Well now, I believe Mr. Pullman wrote them a letter.

A That's the letter I had in mind, sir.

Q That was sometime in July, wasn't it?

A Yes, sir.

Q Do you know of any communication that was sent to East Coast Terminals before the Pullman letter?

A No, sir.

Q Now, with respect to sales for electrical uses, did I understand that you testified that your only restriction on that was that you must know who your customer was. Is that correct?

A To the best of my understanding, that statement was correct.

Q My question is why must you know who your customer is for sales for electrical usage?

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A Since we introduced our program of restricted sales, there was some thought given to the possibility for a customer who at one time purchased polychlorinated biphenyls for use in these open type applications to attempt to purchase the polychlorinated biphenyl intended for electrical use and continue to use it in his product. Now, many sales to the dielectric application are sold under trademarks that are specific and unique to that application. There are a few that are sold under our general trademark of Aroclors. These sales under the Aroclor trademark are usually almost invariably sold in tank-car lots as distinguished from the barrel lot. Individuals who are concerned with the plasticizer sales had expressed the concern that an ex-plasticizer polychlorinated biphenyl customer would attempt to order a tank-car full of the Aroclor material under the guise of putting it into dielectric service. I have been present in discussions of this sort. I do not know what actions they took, but I am led to believe that they did something to prevent this from happening.

Q Well, was that the restriction - that you sell only to customers that you know are going to use it in the electrical application?

A That was my understanding, yes, sir.

Q Were the order takers in the heat transfer fluid

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departments given any instructions about screening orders?

A I do not know.

Q Who would be able to answer that question?

A It would have to be the marketing managers of the particular group of products.

Q Who were those marketing managers in 1970 and '71?

A For heat transfer applications?

Q Yes.

A It would be Mr. J. R. Fallon.

Q Anyone else during those two years?

A No, sir, I think Mr. Fallon was involved in that period of time.

Q Did Mr. Fallon ever discuss with you what measures he had inaugurated to screen orders for heat transfer fluid?

A No, sir.

Q Did you recommend that he take some such steps?

A Not specifically.

Q Well, did you recommend not specifically but generally?

A No, sir. I understood that this was his responsibility. He would take the necessary steps and meet his responsibility.

Q Have you ever seen any written directive to the order takers?

A No, sir.

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Q Are all of your polychlorinated biphenyl products sold either under the tradename of a customer or under the tradename Aroclor?

A Are you using the present tense? That's today, sir?

Q In 1970 and '71.

A No, sir.

Q What other designations were used in sales in 1970 and 1971 of PCB products?

A There was the trademark Therminol FR to describe heat transfer fluids containing polychlorinated biphenyls. There is a trademark Santovac to describe vacuum pump fluids containing polychlorinated biphenyls. On occasion, there would be the expression "PCB" followed by a number, usually a four-digit number, to describe a fluid containing polychlorinated biphenyls for some unique developmental type sale or application.

Q What did the "PCB" stand for?

A I believe that stands for "Monsanto Company Sample."

Q And would that be -- what would the four-digit number signify?

A That is a number in a log book which is sequential in order.

Q Each batch of this stuff that is made has a lot

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number, doesn't it?

A Each batch of what stuff, sir?

Q PCB material.

A Yes, sir.

Q In what size batches is it manufactured, or was it manufactured in 1970 and '71?

A There were two ways that it was manufactured. One is the batch by batch process, and as I recall, the batch size was about four thousand pounds.

Q Do you mean the finished material?

A Yes, sir.

Q All right. And what was the other method?

A The other was the continuous method, and as I best recall, it was arbitrarily established that a batch number would be assigned to every ten thousand pounds produced.

Q Of finished material?

A Yes, sir.

Q Now, this material varies in weight according to how much chlorine it has in it, does it not?

A It varies in weight per unit volume, do you mean, sir?

Q No, in weight. A given volume varies in weight dependent upon how much chlorine is introduced into it?

A That is correct, sir.

Q And the more chlorine, the greater weight for a

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given volume?

A That is correct.

Q Now, was the Therminol trademark used exclusively in the sale of heat transfer fluid in 1970 and '71?

A There were some few instances of old-time applications which were initially filled under the Aroclor label, and those customers continued to place their orders under that label.

Q But my question is was the Therminol designation used exclusively for the sale of heat transfer fluid in 1970 and '71?

A Yes, sir.

Q So that if someone at Monsanto received an order for Therminol, that person would know that it was going to be used as a heat transfer fluid. Is that true?

A Not necessarily so.

Q I thought you said that it was used exclusively in the sale of heat transfer fluid.

A From Monsanto's vantagepoint, this is our intent. What the customer does with the material received, I have no way of knowing.

Q I understand that, but when you receive the order for Therminol, you at Monsanto at least anticipate that the customer will be using it as a heat transfer fluid, do you not?

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A We anticipate, yes, sir.

Q That is the intended purpose for the Therminol compound?

A That is correct.

Q And the "FR" which is attached to the Therminol stands for "fire resistance", doesn't it?

A That is correct.

Q Now, how many different Therminol FR's did you have in 1970 and '71?

A In the early part of 1970, we had - as best I recall - five different types of Therminol FR's.

Q Were they designated as FR-1, 2, 3, 4 and 5?

A No, sir.

Q How were they designated?

A They were designated as FR-0, FR-LoTemp, and then FR-1, FR-2, FR-3.

Q Now, what was the difference between FR-0 and FR-LoTemp?

A It is the amount of polychlorinated biphenyls present in the blend.

Q Well, how much was present in FR-0?

A As best I can recall, sir, sixty percent.

Q Sixty percent?

A Yes, sir.

MR. HARRELL: Sixty percent PCB?

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THE WITNESS: Yes, sir. As best I recall, sixty percent.

Q (By Mr. Jordan) What was the remaining forty percent in the FR-0?

A Another chlorinated hydrocarbon, sir.

Q Well, was it a polychlorinated hydrocarbon?

A It was a polychlorinated hydrocarbon, yes, sir.

Q Is that different from a polychlorinated biphenyl?

A Yes, sir.

Q What is the difference?

A No biphenyls were present.

Q And the two things were blended together to make FR-0?

A Yes, sir.

Q All right. Now, what about FR-1@Temp? What was the percentage of the polychlorinated biphenyl in that product?

A To the best of my recollection, about seventy-five percent.

Q And what was the remaining twenty-five percent?

A This other chlorinated hydrocarbon.

Q Tell us the percentage of polychlorinated biphenyl in FR-1.

A One hundred percent.

Q So it was all PCB?

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A Yes, sir.

Q And what about FR-2?

A One hundred percent.

Q Now, what is the difference between FR-1 and FR-2?

A FR-1 is a mixture of polychlorinated biphenyls which together as a mixture contains forty-two percent chlorine on a weight basis.

Q What about FR-2?

A And FR-2 is also a mixture of polychlorinated biphenyls where the chlorine content is forty-eight percent by weight.

Q And what about FR-3?

A That is again a mixture. This time it is fifty-four percent by weight chlorine.

Q But it is all PCB?

A That is correct.

Q What is the chlorine content in the polychlorinated biphenyl in FR-0?

A I believe that is a forty-two percent material, sir, but it could be forty-eight percent. I'm not positive.

Q And what about FR-1eTemp? What is the chlorine content of the PCB?

A It is the same basic polychlorinated biphenyl. Forty-two or forty-eight percent - one of the two.

Q I notice with your Aroclors, you use a four-digit

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mark which at least in some instances is in a 1200 range. Is there any other range besides the 1200 range?

A At one time, yes, sir.

Q When?

A In the period prior to 1970. We had some 2000 series, ~~and a 3000 series~~, and we had a product that went under the 4400 series.

Q Now, in 1970 and '71, were your Aroclors also in the 1200 series designation?

A There was a series in 1970 which was referred to as the 5000 series.

Q Well now, what was the difference between the 5000 series and the 1200 series in 1970?

A The 5000 series are chlorinated terphenyls.

Q And the 1200?

A The 1200 series are chlorinated biphenyls.

Q Well, is there more chlorine in the 5000 series?

A Not necessarily.

Q Will you explain that answer?

A The 5000 series can also be chlorinated to predetermined chlorine levels, and they, too, were designated as percent by chlorine denoted by the last two digits of the four-digit number.

Q Now, in the 1200 series, do the second two digits like 1242, does the 42 refer to the percentage of chlorine

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by weight in that material?

A Yes, sir.

Q And 1260 would mean sixty percent chlorine by weight?

A Yes, sir.

Q Is Aroclor 1242, or was Aroclor 1242 the same as FR-1 in 1970 and '71?

A Yes, sir.

MR. SMITH: Mr. Jordan, you asked him a while ago about other trademarks, and I believe he didn't complete his answer. I don't want to interrupt you while you are on a particular line of questions, but he ought to have a chance to finish that - if there are any others. He mentioned Therminol and Santovac.

MR. JORDAN: PCB and Aroclor.

Q (By Mr. Jordan) Are there any other trademarks under which polychlorinated biphenyls were sold by Monsanto?

A Yes, sir.

Q What are the others?

A Pydraul - P-y-d-r-a-u-l.

Q What was that mark intended to designate?

A This describes the hydraulic fluids marketed by Monsanto.

Q All right. Any other trademark?

A There was a Monsanto trademark used in areas

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outside of the United States.

Q Well, I'm just concerned about domestic sales.

A All right.

MR. SMITH: Your question, I believe, was related to the earlier period - 1970 or so.

MR. JORDAN: I'm talking about '70 and '71.

A (By the witness) I can't recall any other trademark, sir. These are Monsanto trademarks. We're not talking about customer's trademarks.

Q (By Mr. Jordan) This material is supplied to customers under their own trademarks, is it not?

A It is supplied to customers under the trademarks of two customers.

Q Which two are those?

MR. SMITH: I believe I will object on that and instruct him not to answer. I will try to find the information. From my understanding, it has no relation to heat transfer.

Q (By Mr. Jordan) If those customers have no relation to heat transfer fluid, if you say so on the record that will end the matter.

A These have reference to dielectric fluids.

Q All right. We won't pursue it then.

MR. SMITH: Thank you.

Q (By Mr. Jordan) Mr. Papageorge, did the chicken

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studies which were made by the Industrial Bio-Test Laboratories have any effect upon or were they considered in making the decision to terminate the sale of heat transfer fluids to food processors?

A No, sir.

Q What were the factors which caused Monsanto to decide to terminate the sale of heat transfer fluids to food processors?

MR. SMITH: I object on the grounds that same question has been asked.

MR. JORDAN: I don't believe I've asked this witness that.

MR. SMITH: I believe you did.

MR. JORDAN: I don't think so. If I did, let him answer again and I'll pay for this part of the transcript.

MR. SMITH: Thank you.

A (By the witness) I was not personally involved in arriving at the decision to discontinue sales to human food processing applications. Therefore, I personally do not know what factors were considered in arriving at that decision.

Q (By Mr. Jordan) Well, did anybody tell you what these factors were?

A No, sir.

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Q You've never been told?

A No, sir.

Q Well, if you were never told what factors entered into it, into making the decision, how do you know that the chicken feed studies were not a factor?

A Well, sir, I know the purpose for which the chicken studies were made. I know that the information we received from these studies influenced our decision to terminate sales to open system applications. I also know that never in our thinking did we say or did we know that polychlorinated biphenyls are used as chicken feed additive or introduced into poultry feed of any kind as an ingredient, or that polychlorinated biphenyls are used as food additives. Therefore, I feel very confident that the results of the chicken studies were not the basis for this food consideration.

Q But you still say you don't know what the factors were for the food consideration?

A That is correct.

Q When did you learn about the excessive PCB residue showing up in chickens grown in New York State at the Campbell Soup plant, New Jersey plant?

A Late 1970, as I recall about November or December.

Q Did you make any investigation of that matter?

A As best I could, sir.

Q Tell us about your investigation of the Campbell

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Soup New York State chicken situation.

A I was in communications with a poultry feed company and a company that provided bakery meal to the poultry feed formulator.

Q Who were those two companies?

MR. SMITH: Let me ask the witness off the record.

(Discussion off the record.)

MR. SMITH: I believe I'll instruct him not to answer as to the names, and you can pursue it in any other way that you want to.

Q (By Mr. Jordan) Well, name the one that wasn't the customer.

A I believe I understand that it goes by the name of Rozanski Feed Company.

Q Where was it located?

A Somewhere in New Jersey.

Q Did you visit their place of business?

A No, sir.

Q What communications did you have with this company?

A A Mr. Rozanski called me with the typical questions of "what are polychlorinated biphenyls; how can they get into my product?" And I gave him the type of information that I described earlier, the general description of polychlorinated biphenyls - their uses and their characteristics.

Q Well, what kind of operation did he have? Did he

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describe his operation to you?

A He described it to me as an operation in which he collects stale bakery goods, sweepings from bakeries, damaged railroad food products, and as I understood it this was a crushing, grinding, sifting type of operation in which he ends up with a meal that he in turn sells and ships to animal feed processors, formulators.

Q Now, was the animal feed processor the customer of Monsanto that was involved?

A One of them, yes, sir.

Q How did you tell this gentleman that the PCB's had gotten into his material?

MR. SMITH: I object. He didn't testify he told him.

Q (By Mr. Jordan) Well, what did you tell him?

A I told him that I had no real way of determining how they could have gotten in there. I asked him if he had any painted surfaces in his facilities, whether he used hydraulic fluids, whether he had heat transfer fluids around, did he use any lubricant and if so did he know what the ingredients were in these materials. And then I said he might want to check back to his source of the raw materials, let's call them, and see if he could find anything from these sources.

Q What did he tell you he had? Did he say he had

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any painted surfaces in his operation?

A He told me he had some painted surfaces but had no way in the world of knowing what ingredients were used in these paint formulations. He indicated he had some lubricants around, that he used some pesticides, but that in every case he knew nothing about the ingredients of these materials.

Q Well, did you suggest that he go to the bakery to see whether or not the bakery was the source of the PCB contamination in his material?

A I don't know that I suggested any one bakery, sir. I just suggested that he go to all of his sources of material, whether it be a railroad salvage operation or a bakery or a macaroni factory. And I don't know what else he mentioned at that time.

Q Did you ask him to send some samples to Monsanto to be tested?

A No, sir.

Q Well, what else did you do to investigate this matter?

A We worked closely with our customer who is in the feed formulating business to establish the amount and type of polychlorinated biphenyl and to try to determine what food component could be the source of this material. We had the customer's chemist come to St. Louis and spend time in

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our laboratory learning the methodology for analyzing for polychlorinated biphenyls. We looked at some materials which are known by the chemist as extracts, which are the product of some work that is done in the laboratory, to isolate polychlorinated biphenyls from the remainder of the sample. These kinds of things.

Q Did you have the customer send any samples of its products to you to St. Louis for analysis?

A As I remember, there were some samples received from this customer. How many I don't know.

Q Were they analyzed?

A Yes, sir.

Q Did they contain polychlorinated biphenyls?

A We confirmed that they contained polychlorinated biphenyl, yes, sir.

Q Did you ever find out how the polychlorinated biphenyls got into this customer's feed, animal feed?

A Sir, as best as I could determine - and I should add that as time went on our contacts became less productive; we could not get information from the customer after a few weeks. The chemist who had been trained in our laboratory was reassigned, and our sources of information in essence dried out. But the best that I could tell, the source at that time of polychlorinated biphenyls appears to have been the bakery meal, this crushed product from Rozenkal's

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operation.

Q Now, was Rozanski selling? Was he feeding any chickens?

A Not to my knowledge, sir.

Q Did you check with any chicken feeders in New York?

A I don't know any chicken feeders in New York, no, sir.

Q I mean did you ask your customer to let you contact some of its customers to see what was happening to its customers' chickens who were being fed this contaminated feed?

A Sir, all the information we had at that time was that nothing was happening to the chickens.

Q Well, didn't you know that the State of New York had a quarantine on three counties and had all of the chickens in those counties killed?

A Yes, sir, but nothing happened to the chickens until they were killed.

Q Well, when the chickens got killed, they found 26.8 parts per million of PCB in some of that chicken fat, didn't they?

A I don't remember the number, but there were cases of high polychlorinated biphenyl content, yes, sir.

Q Now, did you speak with the New York authorities about their investigation of this matter?

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A No, sir.

Q You didn't even investigate it yourself?

A No, sir.

Q Well, did you receive any report from the State of New York about their findings?

A No, sir.

Q Did you receive any from the FDA?

A No, sir.

Q Or the U. S. Department of Agriculture?

A No, sir.

Q What investigation, if any, did you make to determine how the PCB's got into the bread meal at the bakery?

A No investigation other than that the indications were that the polychlorinated biphenyl probably got into the meal through the containers which are crushed and ground along with the contents of the containers.

Q Do you mean the plastic bakery containers?

A Not necessarily plastic; any of the containers - cardboard, paper, plastic.

Q Well, did you pursue an investigation of that?

A No, sir.

Q Why didn't you?

MR. SMITH: Mr. Jordan, on that point, you referred to bread meal at the bakery. I believe the

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witness's testimony was that Mr. Romansky reported that he made a kind of meal out of bakery products - stale bakery products and other things. I didn't want the question to imply that there was any bread meal made at some bakery.

Q (By Mr. Jordan) Well, Mr. Papageorge, let's kind of take another little attack at that. Mr. Romansky called you up and wanted to know about these PCB's?

A Yes, sir.

Q He wanted to know what it was, and you told him what it was?

A Right.

Q And he told you that he was having a problem with it in his product?

A Yes, sir.

Q So you traced his product into the hands of one of your customers.

A All right, sir.

Q Who was in the feed business?

A That is correct.

Q Now, was this customer a customer who bought Thermanol?

A No, sir.

Q Well, what was it he had bought from Monsanto that had PCB in it?

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MR. SMITH: Object. I don't know if there's any testimony that he did.

A (By the witness) This customer we are referring to, to my knowledge, had not purchased any Monsanto product that contained polychlorinated biphenyls.

Q (By Mr. Jordan) All right. But the customer's chemist came out to St. Louis, and you and the other people there in St. Louis had some sessions with him, and he was taught how to test to determine the presence of PCB in the feed that this customer was manufacturing?

A Yes, sir.

Q Did you determine from him that this customer was buying bread meal from Mr. Rozanski?

A That's what we were told, yes, sir.

Q And this was incorporated in their product that they sold to their customer?

A That is correct. That is my understanding.

Q Now, did you make any effort to find out from Mr. Rozanski where he was getting the bread meal that contained the PCB contamination?

A I asked Mr. Rozanski what his sources in material were. He refused to give me the names of any company. He would describe his sources only in general terms such as railroad salvage, macaroni and noodle factories, bakeries of all types. He would not tell me by name any of his

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locations or any of his sources or even the location of these places, these sources.

Q How, did your customer give you the names of any of its customers whose chickens had to be killed?

A No, sir.

Q Did you ask for any of those names?

A Yes, sir.

Q And did they refuse to give them to you?

A That is correct, sir.

Q How, did your customer furnish you with samples of what it had received from Mr. Rozanski?

A I believe so, sir, yes.

Q How, were those samples subjected to microscopic examination and analysis to determine the amount of the packaging material in those samples?

A No, sir.

Q What kind of study was made of those samples?

A We analyzed for the amount of polychlorinated biphenyl present in those samples.

Q How much was there?

A I don't recall, sir.

Q Well, was it substantial?

A They were substantial enough to leave me with the impression that this was a very likely source of polychlorinated biphenyls.

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Q Well, did you have the impression that it was probably from a leakage of some sort of polychlorinated biphenyl into the material itself?

A No, sir. The material identified-- our thinking was oriented to the packaging as being the source of the contamination.

Q Do you know how many parts per million of PCB's there were in these samples?

A Sir, over the two or three year period, I've heard so many numbers and so many samples I cannot recall. I cannot recall that specific incident.

Q Were there any records made of these tests of the Rozanski material that came from your customer?

A I don't recall if a record was made.

Q Did you learn at about the same time that you were making this investigation that the State of New York had imposed a quarantine on certain counties where fowls were being killed?

A At that time, no, sir.

Q When did you learn about the quarantine?

A Almost a year later. I had heard that the state authorities had been involved.

Q Now, when you found out from your customer that it was making chicken feed which had contaminated chickens, did you take any steps to prevent the recurrence of that

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happening?

MR. SMITH: What happening?

MR. JORDAN: Well, I just described it to the witness.

A (By the witness) Keep in mind our information was extremely sketchy. Also keep in mind that in that period of time we had - Monsanto had already restricted its sale of materials to applications which from data available was a source of polychlorinated biphenyls. Therefore, there was no further action that Monsanto could take to prevent a recurrence of this type.

Q (By Mr. Jordan) Then your answer is that nothing else was done about it?

A That is right, sir.

Q Now, did you learn that in West Virginia in July of 1969 that PCB's were found in milk samples?

A Yes, I did learn this.

Q When did you get that information?

A Sometime during the summer of 1970.

Q What, if anything, did you do when you learned of that situation in the summer of 1970?

A Well, this incident was related to the improper disposal of used transformer oil. As part of our program of informing the customer on the proper methods for disposal of these kinds of fluids, I used this instance as an

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example of the kinds of problems that can be created through improper disposal.

Q Did you call on the customer who had improperly disposed of this PCB fluid which contaminated the milk in West Virginia?

A I to this day do not know who that company or individual was or is.

Q What?

A I do not know who that would be, sir.

Q What did you find out about it?

A I was told that milk from a dairy herd that grazed in West Virginia that was moved in commerce, as I recall, into the State of Maryland was analyzed routinely for chlorinated hydrocarbon pesticides. As part of this program, the analyst detected polychlorinated biphenyls. Someone -- and I don't know who -- conducted an investigation to determine the source of the polychlorinated biphenyl. I am told that they analyzed insecticides used around the dairy farm. They analyzed the water. They analyzed some feed ingredients. And they finally determined that the polychlorinated biphenyls were present in the pasturage below high voltage transmission lines. In further investigation, they were able to determine that the source of the polychlorinated biphenyls was scrap transformer oil that was used as a defoliant for spraying weed killers to suppress the growth of brush

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underneath the transmission lines.

Q In other words, the PCB fluid had been used by the electric company as a vehicle for herbicide to spray the foliage underneath the power lines?

A I don't know if it was an electric company. Someone, sir, used this material.

Q Was there any effort made to find out who it was?

A To my knowledge, no, sir.

Q Well, to this day has Monsanto made any effort to determine who it was that was using PCB as an extender in a herbicide?

A No, sir.

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

Q (By Mr. Jordan) Now, did you learn in April of 1970 that there were PCB residues in milk in Ohio?

A Sir, I learned, as best I recall, in March 1970.

Q All right. Tell us what you found out about that.

MR. SMITH: I believe I'll instruct him not to answer. There is some other litigation, and I don't believe this would be the proper place to discover that.

MR. WALCH: Mr. Smith, it doesn't appear that other litigation should prohibit the proper discovery in this suit. We are not asking about the litigation, as I understand; we are asking about—

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MR. JORDAN: I'm just asking him about his investigation of the milk pollution in Ohio in the spring of 1970.

MR. [illegible]: We can probably go into that. It's now 4:30 - as a suggested time - and we might take that up in the morning.

MR. JORDAN: Okay.

(Thereupon, at 4:30 p.m., the deposition was adjourned until 9:30 a.m. on Wednesday, August 9, 1972.)

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