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

MID-STATE FARMS COOPERATIVE COMPANY,
Plaintiff

vs. 72 CVS 76

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

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

HOLLY FARMS POULTRY INDUSTRIES, INC.,
Plaintiff

vs. 71 CVS 1175

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

VOLUME II OF VI
(Pages 65 - 128)

DEPOSITION OF WILLIAM E. PARNICZKI

HARTOLDMON0028299

The deposition of William E. 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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HARTOLDMON0028300

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HARTOLDMON0028301

I N D E X

WITNESS	EXAMINATION BY	PAGE
William B. Papageorge	Mr. Vance	69

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HARTOLDMON0028302

WILLIAM B. PAPAGEORGE

having been previously sworn, testified further as follows:

EXAMINATION BY M. YUSEK

Q Mr. Witness, we are on the same question.

A If you'll permit me just a few minutes, I'll quickly summarize what I covered yesterday and pick it up from that point on. As you recall, I had a very brief session or discussion of the chemistry of polychlorinated biphenyls. I made some comments about their physical and chemical properties and pointed out that it's because of these unique properties that those materials are in such widespread, very valuable use in our industrial society of today. I mentioned that some investigators began to report the presence of what they claimed to be polychlorinated biphenyls out there in the environment. There was some initial confusion regarding whether or not these were truly polychlorinated biphenyls. I discussed our program for developing methodology that would help us confirm this information. I don't recall mentioning it, but I think it's appropriate to say that many of the early reports indicating the presence of polychlorinated biphenyls in the environment were based on the results of an instrument known by the chemist as a GLC. The GLC stands for gas liquid chromatography. Now, this instrument does not specifically identify polychlorinated biphenyls. It takes

HARTOLDMON0028303

another even more sophisticated instrument called a mass spectro photometer -- s-p-e-c-t-r-o p-h-o-t-o-m-e-t-e-r; I believe that's close to being correct -- to confirm the presence of polychlorinated biphenyls.

The majority of the early investigators did not use this confirmation technique. Also I think it's appropriate to mention that the early reports of polychlorinated biphenyls in the environment invariably reported the presence of the higher chlorinated types. I discussed that in addition to our work in developing more refined analytical methodology, Monsanto's program for learning more about the toxicity of these materials through animal laboratory studies. And if you recall, these were studies that were normally and to this day conducted for these materials that are intended for feed use, and this kind of study is unique as applied to industrial chemicals. This does not mean that we have not conducted other toxicological studies in the past, from the 1930's on, which were the normal type of studies that are used for industrial chemicals to establish information that is normally required for shipping purposes and handling purposes, again on an industrial basis.

Before those studies were completed, we became fairly well convinced that indeed some of these reports we were getting were true. Because of this, we felt that we

HARTOLDMON0028304

had no real right to contribute to the presence of the foreign material in the environment, and since we were manufacturers of this material we gave serious consideration as to what we can do to minimize the polychlorinated biphenyls into the environment. At the same time, we felt very strong responsibilities to many sectors of our society. We did not wish to take precipitous action on the very valuable product which had been in commerce for over forty years and up to this day, except for isolated instances, had caused no serious problem. In fact, it had given society many benefits.

We decided rather early that some applications of polychlorinated biphenyls were of the type that because of their nature lead to immediate introduction into the environment. We also decided that in these instances, perhaps alternative materials could be found that may not have all of the attractive characteristics of polychlorinated biphenyls, but the trade-off would not result in any serious disadvantage. So we reviewed the many, many applications and decided that what we called in our Monsanto terminology plasticizer applications - which it turns out to be somewhat on the order of miscellaneous open type applications - were the type that we should avoid.

The earliest specific use which came to our attention was the application as a pesticide extender, and

HARTOLDMON0028305

as I recall, about April 1970 we wrote to the Pesticide Regulation Division of the U. S. Department of Agriculture and recommended to them that they no longer approve formulations which included polychlorinated biphenyls as an ingredient, and that this was an opportune period since there was a re-registration of all pesticides underway at that time. We also, at about that time, informed our distributors that we would no longer require their services in handling polychlorinated biphenyls, and our reason for doing this is to assure ourselves better knowledge of where the material was being used. We informed our customers of the plasticizer category that we would no longer sell them polychlorinated biphenyls as of August 30th, 1970.

We seriously considered the industrial fluid application and found this to be a more difficult decision, because we knew that the fluids required fire resistance and yet we also knew their very nature was such that the prevention of leakage and loss was quite difficult. But because of our desire to be extremely careful and prevent losses to the environment, we chose to phase out of the business, and during the latter part of 1970 and finally by the end of the first quarter of 1971, we reformulated all of our fire resistant hydraulic fluids - removed the polychlorinated biphenyl ingredient and terminated that line.

Another use that we decided we must terminate was

HARTOLDMON0028306

its use as a solvent in the carbonless reproduction paper application. When we first made our original target date of August, 1970, it appeared that there was enough time to do the necessary research and development work by our customer so that we could terminate that application. The technological problems were very great. We were forced to delay the termination of sale of that material until the first quarter of 1971.

If I remember correctly now, the only applications now remaining that I haven't discussed so far are the use of these fluids in the electrical transformers and capacitors and its use as a high temperature, fire resistant heat transfer fluid in closed systems. We considered very thoroughly these two applications. We know of no alternative fire resistant materials which would perform satisfactorily in these applications. We also knew from our experience that these applications are the type which lead to the least amount of possibility for escape to the environment. They are closed systems. In the electrical applications, the fluid is contained in a metal hermetically sealed ~~can~~ container. The possibility of loss of liquid to the environment is extremely remote. And weighing these experiences against the highly desirable fire resistant property, we felt that this is an application that must be maintained, must be preserved.

HARTOLDMON0028307

Part of our program was the sharing of our experiences and new information regarding polychlorinated biphenyls with our customers. So by letters and by marketing representative calls, discussions with groups - I was even involved with many visits to major customers - we passed on to them our experiences. And it's most interesting that in every case we initially met with some skepticism because from their long years of experience they had never seen anything that would indicate to them that polychlorinated biphenyls could be a problem.

Let's keep in mind when I talk about problems, so far the only information established include the following: They are being discovered in the environment. Their presence in the environment in many cases to this day is still very baffling. We cannot explain why polychlorinated biphenyls are found in such places as the middle of the Atlantic Ocean or in the Antarctic ice cap. But we believe the reports are factual; it's out there. It is most generally found in industrial areas, which makes a lot of sense because these are industrial chemicals as distinguished, say, from pesticides that are broadcast over fields.

The only other problem in addition to its presence is the indication that some species of wild life seem to be affected by the presence of polychlorinated biphenyls. The initial furor about soft shelled eggs, or

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eggs with no shell at all, as it was initially attributed to polychlorinated biphenyls has been largely dispelled, and I think those of you that may follow articles on polychlorinated biphenyls will find that that accusation is no longer being made. Studies by the scientists at the Laurel Patuxent Wild Life Reserve in ~~Patuxent~~, Maryland, have issued reports that the brown pelican problem off Southern California cannot be attributed to the presence of polychlorinated biphenyls. In fact, when we shared our Leghorn chicken laboratory data with these scientists, they were surprised that we found an effect on the hatchability of Leghorns, because their studies with - I forget just which species but several species of wild birds, did not indicate this kind of information. So we can safely conclude that there is a significant species variation.

I'm going to try to summarize my own thoughts here. Initially the program was one of seeking more information. As we gained more information, we took some actions. We made some decisions regarding which applications should be retained and which should be discontinued. I mentioned our withdrawal from plasticizers. Maybe it's appropriate at this time to define what I meant by plasticizers, because many people begin to ask the questions such as, "Is it in my shower curtains at home?" "Is it in my floor tile?" "Is it in my car upholstery?" The answer to all three of those

HARTOLDMON0028309

In, No.!

In most instances, the polychlorinated biphenyls were used in industrial type applications. For example, there were some special paints - and this doesn't mean that every bucket of paint you see in the hardware store contains polychlorinated biphenyls. There were some special paints formulated by formulations known only to the paint formulator in which the polychlorinated biphenyls were added to give corrosion resistance to industrial paints, and those paints have found their application in corrosive environments - in factories, for example. The polychlorinated biphenyls found an application as a softening agent, which is what plasticizers are, in chlorinated rubber which is a material that finds wide industrial use as a gasketing material in industry for connecting sections of pipe or machinery, highly resistant to most chemicals. This application has lead to some fear or concern that polychlorinated biphenyls were in every automobile tire ever manufactured. I suppose at one time we would have liked to have that kind of market, but it never developed. The polychlorinated biphenyls would not have added any properties to an automobile tire that would have been beneficial. So it is not in automobile tires.

The polychlorinated biphenyls found fairly wide application in adhesives, both the liquid type and the types

HARTOLDMON0028310

that are called hot melt that are solids at normal temperature and become fluid when heated. I mentioned, I believe, the application as a sealant, a caulking type material. I think this gives you an idea of the kinds of things that these materials were used in.

We recognized all along, since we were not the only manufacturer of polychlorinated biphenyls in the world and that evidence we received would indicate that this was a worldwide problem, that we -- Monsanto alone -- could not control the problem with our resources. We had to get cooperation worldwide. So we initiated discussions with the Japanese producers and with the European producers and tried to influence their decisions regarding the application of these materials throughout the world. It has not been easy for us. We have been accused of creating a problem when one really didn't exist.

I believe at this point -- and this is a personal opinion -- that the European producers are now beginning to understand what we have been telling them, and this has been accelerated admittedly by Sweden's reaction by passing legislation for control of the use of polychlorinated biphenyls. The Japanese have taken even more restrictive steps to the point where the manufacturers in Japan have decided to terminate the manufacture and sale of the material. The use of polychlorinated biphenyls in Japan

HARTOLDMON0028311

has now been limited to material that is going to be imported and primarily used in their electrically operated transportation systems. In this country, there is no legislation or law against the use of polychlorinated biphenyls. It can still be manufactured; it can still be imported.

All the actions that Monsanto has taken are not brought about by any federal or state statutes. It's a considered judgment of Monsanto that its attempt to recuse the loss of this material in the environment is what we feel any responsible manufacturer would do. And I think you can appreciate for a material with all of these attractive properties this did create considerable emotion in many quarters. We have been praised in some and damned in others. And I suspect it varies with the impact it has on the individual concerned.

You may have seen in the popular press particularly such words as "hazardous", "poison", and the like. These are not descriptions of the material that can be scientifically supported. If we would look at all of the criteria, statutes, regulations, what have you, that refer to industrial chemicals and their classifications for shipping purposes, labeling purposes and the like, you will find that polychlorinated biphenyls do not qualify as poisonous materials. They are not that kind of material.

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Since I've been speaking sort of off the top of my head, I don't know if I've covered it adequately, but that is basically the kinds of thoughts that I share with the audiences at these meetings. I vary the talk a little bit, depending on the understanding that I think the audience might have. For example, to a group of scientists I may use a little more of the scientific expressions. But a group such as the conservation clubs in Michigan, I had to speak using different terminology. But that's basically the kind of discussion I have.

Q (By Mr. Vance) Thank you, Mr. Papageorge. Getting more down to the specific question in our matter before us, what have you found the effect of PCB's to be on chickens and chicken eggs?

MR. SMITH: You're directing your question to Mr. Papageorge?

MR. VANCE: Yes.

A (By the witness) I personally have found nothing, sir, because I do not have that expertise or the resources to conduct a study myself.

Q (By Mr. Vance) What do your reports show, or the reports of Monsanto?

A The reports that Monsanto received which are interpreted by individuals in Monsanto who are knowledgeable in this area and in turn summarized for my benefit, I am

HARTOLDMON0028313

told by these individuals that the lower chlorinated polychlorinated biphenyls fed to chickens in their diet for many weeks, and I believe it's something like -- I'm guessing a little bit -- twenty, thirty weeks, something like that -- does result in a situation where the hatchability of their eggs is affected at levels of ten parts per million in their diet.

Q Now, you mentioned lower chlorinated levels. Are PCB's also known as Aroclors? Is that the Monsanto name for them?

A "Aroclors" is Monsanto's registered trademark for commercial mixtures of polychlorinated biphenyls.

Q Now, what is the formula name that was used at the East Coast Terminals -- FR Thermanol -- do you know the number?

A Thermanol FR --

MR. SMITH: Are you asking specifically?

MR. VANCE: Yes.

MR. SMITH: What are you asking about?

MR. VANCE: I asked the name of the formula that was used, the Thermanol formula, the common name for it, that was used at East Coast Terminals, if he knows.

MR. SMITH: Well, are you referring to the alleged use of FR-1?

MR. VANCE: Yes.

HARTOLDMON0028314

MR. SMITH: Okay.

MR. MARSHALL: Are you referring to the use in the pasteurizing at East Coast Terminals?

MR. VANCE: Yes.

A (By the witness) It's my understanding that the fluid used in the pasteurizing unit at East Coast Terminals in Wilmington was at that time - at one time - Thermimol FR-1.

Q (By Mr. Vance) Now, is this classified as a lower level chlorinated PCB or higher level?

A That would be one of the lower levels, yes, sir.

Q Now, what have the reports shown that this formula has on chickens or chicken eggs?

A It's the report I mentioned previously of the effect on egg hatchability.

Q Is this the report that is based on the test which you mentioned in your talk to us?

A Yes, sir.

Q And what was the date of that test?

A The test, as I best recall, was started in 1969 and extended, as best as I recall, into early 1970.

Q And the report you are telling us about was made as a report on these tests which you say began in 1969 and ended or lasted through 1970 sometime?

A Yes, sir.

HARTOLDMON0028315

Q And these tests involved a formula which was similar or the same as Thermincl FR-1?

A Yes, sir.

Q And did I understand you to say that they showed only an effect, a toxic effect on chickens or chicken eggs if the PCB's were fed to these animals for a period of twenty to thirty weeks?

A Something like that. I don't want to imply that I remember those twenty to thirty weeks exactly. It's a period of many weeks, something of that magnitude.

Q At a concentration of ten parts per million?

A Yes, sir.

MR. SMITH: Mr. Vance, I believe we have furnished to some of the lawyers - I know Mr. Murrelle has it and I think you've seen an actual report. I don't mind your asking questions of Mr. Papageorge about them, but I think the reports themselves are the best evidence.

MR. MARSHALL: We don't have them.

MR. HARRELL: I don't either.

MR. HAGAN: We don't have them.

Q (By Mr. Vance) Now, are the tests that you referred to in 1969 and 1970 the only tests that your company has performed on chickens and chicken eggs involving Thermincl FR-1?

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A I don't personally know of tests prior to that period.

Q Do you know of any tests involving chickens prior to that period?

A No, sir, not personally.

Q Do you know of any tests subsequent to that period involving chickens?

A Yes. There were tests subsequent to that period in which we repeated part of the study to determine the effect between one part per million and ten parts per million in the chickens' diet.

Q When were these tests carried out?

A I honestly don't recall. Sometime in late 1970 or 1971. I recognize it's a large span there, but sometime in there.

Q And what did these tests show?

A As I recall, the effect on hatchability was noted at four parts per million and not at two parts per million.

Q What type effect did it have on hatchability?

A As I recall, or as I am told, it was a reduction in percent of eggs that hatched.

Q What did the tests show was the effect, if any, on the chickens themselves, any toxic effect on the animals themselves?

A I don't recall any information relating to the

HARTOLDMON0028317

chickens themselves, any adverse effects on the chickens themselves.

Q And when did Monsanto have the results of these tests?

A You're speaking now of the tests at levels of less than ten parts per million?

Q Yes.

A I don't recall the date. Sometime in late '70 on into '71. I just do not remember the date.

Q Now, Monsanto has made many more tests of PCB's on rats and rabbits than it has on chickens, has it not?

A I cannot say that, sir. I don't know what you mean by "more tests". The same materials were tested. The time periods are longer because of the nature of the animals being studied. It is customary in evaluating industrial chemicals to use mammals for such things as eye and skin irritabilities and toxic effects, and these were the tests that were run prior to the 1960's. So if you include those early tests along with these more recent tests, it could be that there were more tests run, yes.

Q Now, Mr. Papageorge, Monsanto was the first organization to develop PCB's in the United States, is that correct?

A I don't know that I can respond to that. We were the first -- we or our predecessors were the first to

HARTOLDMON0028318

commercially market polychlorinated biphenyls. I do not know anything about any other studies or use with polychlorinated biphenyls prior to that.

Q And this was in 1929 that Monsanto first put PCB's on the market, is that correct?

A Monsanto's predecessors, sir, in 1929, yes, sir.

Q And they have been on the market for sale to the public in one form or another continuously since 1929?

A That is correct.

Q And Monsanto is a major source of PCB's and has been throughout the years in the United States?

A That is correct.

Q Now, isn't it true that PCB's in 1929 were made of the same chemical compound as they are today? There has been no change in the formula? That's a layman's word for it.

A There was a change in the quality of the benzene used for the manufacture of polychlorinated biphenyls. We insisted through the years on higher and higher quality starting material to result in a purer product.

Q But the chemical attributes, the features - the physical and chemical features of PCB's in 1929 were the same as they are today. Isn't that right?

A Generally, yes.

Q And one of the main features of PCB's is that they

HARTOLDMON0028319

are practically non-destructible?

A I'd rather call it relatively non-destructible.

Q Well, how is a PCB destroyed?

A It can be destroyed by incineration. We have studies that indicate that they can be destroyed by bacterial action. There are studies that would indicate that they can be destroyed by the presence of ultraviolet light, sunlight. So the information we have indicates that eventually all isomers are destroyed - some within minutes and hours; some may take longer.

Q But PCB's are one chemical element which is known for its long-lasting capabilities, isn't that true?

MR. SMITH: Object to the form of "element". I'm not a chemist. I don't know whether it's an element or not.

MR. VANCE: Well, I'm not a chemist either.

MR. HARRELL: But he is.

Q (By Mr. Vance) If "element" is the wrong word, you correct me.

A Let me phrase it - the commercial mixtures of polychlorinated biphenyls do contain some isomers of polychlorinated biphenyls that are relatively long-lasting as compared to other industrial chemicals. On the other hand, these mixtures do contain isomers that do not last very long.

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Q Now, I believe you said that the tests made by Monsanto on chickens and other animals were made in 1966, is that right, after the Swedish report?

A These tests were initiated in 1969.

Q 1969. Now, prior to that time, I believe you stated that the tests performed relating to PCB's were of an industrial nature or shipping?

MR. SMITH: I object to the form. I don't believe that was his testimony.

Q (By Mr. Vance) Well, what kind of tests were performed prior to 1969?

A They were the tests that were performed generally by our industry to evaluate their products prior to introducing them into commerce, and it related to obtaining information that would permit us or give us enough knowledge so that we could properly handle the material, properly package it and properly ship it.

Q Can you elaborate a little bit more on what type of test that is?

A Well, all right. I again would like to preface my remarks - I am not a toxicologist. I pass on to you the information that in turn was passed on to me.

Q Well, I assume that the test you're referring to now does not involve toxicology, does it?

A Yes, it does.

Q All right, sir. Tell us how it does involve it.

A There are tests with laboratory animals, and the popular animals used are rabbits and rats and mice. Many laboratories choose different animals. They are fed dosages of proposed industrial chemicals to establish the levels at which become lethal to the animals, and from experience toxicologists know that certain levels qualify a chemical as being highly toxic or moderately toxic or mildly toxic. They have various adjectives to describe what they find. There are also tests in which these chemicals are introduced into the eyes of the animal, and from an inspection of their eyes these toxicologists are able to determine whether or not they are considered eye irritants. And it takes a person who is knowledgeable in this area to interpret the findings. There are tests in which the animals, the fur-bearing animal, the rabbit being the most popular, has its abdomen shaved exposing the skin, and the chemical is then applied to the skin and observations are made on the effects of this exposure to the skin itself and to the total animal - how it reacts to this exposure. And this helps establish the amount of absorption of the chemical that takes place in the animal's system to cause internal harm or damage, and it also shows what irritation occurs to the skin itself and whether then the animal, once it's recovered from the exposure, it's continually observed to determine whether

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permanent scarring, for example, remains or whether the skin heals itself. These are studies that only those people trained in the field can interpret for us. And from these kinds of studies, they advise us as to what labeling is required, what handling is required, does it take special clothing ~~coating~~, does it take special breathing apparatus, and so on. Speaking of breathing, there is another study in which the vapors of these chemicals are introduced into a chamber in which the animal is exposed, and the concentration that it takes to cause some effect on the animal is noted. And from this information, we are able - the toxicologist is able to extrapolate to what level is safe for human exposure.

Q Now, you're describing the industrial tests made of chemicals?

A Those are tests which - in my understanding - all chemicals undergo prior to commercialization and use.

Q Now, these tests are primarily designed to determine how these chemicals can be handled by humans, is that correct, whether they need gloves or how far they can be exposed to the chemical?

A That's right.

Q And you say that this was the kind of test performed on PCB's prior to 1966?

A Yes, sir.

HARTOLDMON0028323

Q And these tests involved rats, rabbits - any other animals?

A To the best of my knowledge, yes, sir. In fact - I'm not positive on this - but it seems to me that we even had some human studies, human skin studies.

Q You do not know of any tests involving chickens that were performed prior to 1969 using PCB's?

A No, sir. The chickens, to my understanding, are not a test animal for evaluating industrial chemicals.

Q A great majority of these animals do not survive these tests, isn't that correct?

A Well, the way the test is designed, it's designed to be lethal to the animal. The dose is increased until the animal does die, so as a result, that's true, many do die.

Q Now, I believe your attorney, Mr. Smith, made a statement in the last hearing we had that this was not an environmental case. Do you agree with that statement?

A Well, it all depends really on a person's individual understanding of the word "environment". And in my position, I look on the environment as including most everything - including us as parts of the environment.

Q So you would say it is an environmental case?

MR. SMITH: I believe I'll object.

MR. MARSHALL: Are you objecting to his answering the question, or are you just objecting for the record?

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MR. SMITH: Well, I'm objecting to the form. What does he mean by "this case"? Does he mean the case where the operator of the pasteurizer for six months allowed the heat transfer fluid to leak into fish meal without telling anybody?

MR. HENSON: No speeches, please.

MR. BARNHILL: Objection to remarks of counsel.

MR. SMITH: All right. Then I object to the form of the question.

MR. BARNHILL: The objection was just to the form of the question?

MR. SMITH: Well, I don't mind if the witness gives his personal opinion. It's all right with me. We all have them. If you want to rephrase your question or anything else, it's all right with me.

MR. HENRICK: Let him answer the question.

Q (By Mr. Vance) Can you answer that question?

A I have my personal definition of the adjective "environmental", and in my use of the word personally, I include most everything as being part of the environment.

Q Now, what countries are PCB's banned in now, Mr. Papageorge?

A There is no country in which polychlorinated biphenyls are banned.

Q Well, do you know of any governmental action

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involving PCB's in foreign countries?

A Yes, I do.

Q What do you know of?

A I know of the type control that's been imposed in Sweden and in Japan, which to the best of my understanding involves ~~permanence~~ permits, licensing, reporting pollution, on the part of the government, and the use is permitted under certain conditions.

Q Can you tell us what those conditions are and what the bans are?

A It is my understanding that the conditions that are permitted -- the uses that are permitted involve the use in closed systems where the user can assure the agencies involved that no polychlorinated biphenyls are escaping the system.

Q Now, are these closed systems used in Japan?

A Yes, sir.

Q I understood you to say earlier that the Japanese have taken more restrictive steps and use only as imported material.

A Yes, sir. The restrictions are administrative restrictions -- the issuance of licenses, documents, papers, reporting -- to the point where, as I understand it, the manufacturers of polychlorinated biphenyls in Japan decided that economically it was not an attractive market to them.

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So they on their own discontinued the manufacture of polychlorinated biphenyls, which forced the users of these materials to seek sources outside of Japan.

Q Now, you are acquainted with the— is it the Yusho incident in Japan?

A Yes, sir.

Q Is that the way you pronounce that?

A That's my understanding.

MR. MARSHALL: Can I have the spelling of that, please?

Q (By Mr. Vance) Can you spell it, Mr. Papageorge?

A I'll attempt. I believe it's spelled Y-u-s-h-o incident.

Q What is your information on that?

A As I understand it, in a section of Japan - which I believe is the ~~Yusho~~ Fukuoka Prefecture, which is a governmental subdivision of Japan - there was a situation that developed in, I believe, late 1968 in which people in that area began to exhibit some very strange symptoms, including nausea and acne, loss of appetite - these kinds of things, and as I understand it, these have been reported as being due to the presence of very high levels of polychlorinated biphenyls. And I understand that these levels were 2,000 to 3,000 parts per million in a cooking oil which is extracted from rice bran.

HARTOLDMON0028327

Q When did this incident occur?

A I believe it was late 1969.

Q Was this before or after the very strict governmental restrictions on PCB's in Japan?

A Before.

Q When did these governmental restrictions go into effect?

A Early 1972.

Q Now, do you know of restrictions in other countries? I'll point to Scandinavian countries.

A No, sir.

Q You don't know of any restrictions on the sale or use of PCB's in the Scandinavian countries?

A No, sir.

Q Do you know of any other countries that have restrictions?

A No, sir.

Q Do you know of any other countries where the industries themselves enforce restrictions on PCB's?

A Yes, sir, I do.

Q What are they?

A The United Kingdom, in which Monsanto is sole producer, in following the identical program that we have followed in the United States -- a self-imposed restrictive sales. In Canada, where I understand we were sole supplier,

HARTOLDMON0028328

we are following the identical program.

Q Do you know of any other countries other than the United Kingdom and Canada?

A No, sir.

Q Back to the Yusho incident, do you know or do you have an opinion, or do you have information, as to how the PCB's got in the rice bran in Japan?

A I understand from reports from FDA officials that the polychlorinated biphenyls were introduced into the cooking oil because of a failure in the processing equipment in which the oil was being extracted and distilled.

Q Would this be in an open system then as opposed to a closed system?

A I'm led to believe that this was a closed system.

Q Now, you have mentioned many industrial uses and other uses of PCB's on the market by Monsanto. Are these all sold under one business group, or the supervision of one business group or division in Monsanto?

A No, sir.

Q Could you classify the sales of PCB's of Monsanto for us as to usage or departments or however you have them classified?

MR. MURRILL: Mr. Vance, may I ask if you're asking about the old system before the reorganization?

MR. VANCE: Well, the old system before reorganized.

HARTOLDMON0028329

nation, yes.

A (By the witness) Those applications which we in Monsanto refer to as plasticizer applications were marketed by the Plasticizer Business Group which existed at that time. Those applications which we referred to as industrial fluids, which were also terminated, were marketed by the Functional Fluids Group which existed at that time.

Q (By Mr. Vance) Now, tell me again what the industrial— give me an illustration of industrial fluids use. Solvents?

A No, sir. These are fire resistant hydraulic fluids which are used in machinery in industry for the conveying or the handling of materials being manufactured.

Q I still don't understand that use. Can you give me an illustration?

A All right. Let me attempt this - I'm not very familiar with the metal industry, but I think I understand enough about it to attempt to describe it. Molten metal is on occasion poured into containers, the forms for ingots. This metal is conveyed or moved through a process. In some instances this movement is accomplished by hydraulically operated systems. The fluid in these systems, which lower and raise or shift, ~~the fluid in these systems~~ at one time contained polychlorinated biphenyls.

Q Now, when was this use taken off the market by

HARTOLDMON0028330

Monsanto?

A Beginning in about June 1970, phasing out through the remainder of 1970, with most of it completed by December of 1970, and about ten to twenty percent phased out in the first quarter of 1971.

Q All right. Now, back a minute to the plasticizer. Could you tell me again when this use was taken off the market?

A August 30th, 1970.

Q Was there any phasing out of this use?

A A short duration, sir. June, July, August 1970. From the time letters were sent to customers and the first notice was given until the termination date.

Q All right. Now, the industrial fluids was marketed by the Functional Fluids Group?

A Yes, sir.

Q And what division was that, if you recall?

A Organic Chemicals Division.

Q And is that the same division for the plasticizer?

A Correct.

Q All right. Go ahead now to the next use.

MR. SMITH: What's the question?

A (By the witness) The next use, sir?

Q (By Mr. Vance) I'm asking about the two groups, the marketing of PCB's, according to how Monsanto groups it.

HARTOLDMON0028331

You've given us plasticizers. Before the reorganization.

A Oh. I think it would help to say that all uses except for the plasticizers use were marketed by the Functional Fluids Group.

Q All right. Well, let's go on down on the uses now. We've got plasticizers, industrial fluids, and we know when the plasticizer was taken off and when the industrial fluid was taken off the market. Now, give me another one and the date, another use of PCB's.

A Well, the electrical use.

Q For transformers and—

A And capacitors, right.

Q And this was marketed by the Functional Fluids Group?

A At that time it had that title, yes, sir.

Q And is this still on the market this year?

A Yes, sir.

Q No restrictions on that, on this use?

A At what point in time?

Q As of now.

A Now? There are restrictions.

Q Well, we'd better start back then and tell us the dates and the restrictions which were imposed on this industrial use.

A Which industrial use?

HARTOLDMON0028332

Q The electrical use.

A The electrical use?

Q Yes.

MR. SMITH: I believe I will object to anything after July the 16th, 1971.

Q (By Mr. Vance) All right. If there were any restrictions prior to July 16th, tell me about those -- on the electrical use.

A None other than the customer must be an established manufacturer of transformers and capacitors and known to us to have been and still be in that business.

Q All right. What other uses now, Mr. Papageorge?

A I believe the only remaining use we haven't discussed is the heat transfer application.

Q All right. And is this use marketed by the Functional Fluids Group, or was at that time?

A That is correct.

Q All right. Can you give me again the dates and the restrictions imposed on this use?

MR. SMITH: You're talking about heat transfer fluids prior to July 1971?

MR. VANCE: Yes.

A (By the witness) As best as I can recall, in June of 1970, we informed those customers on record who were in food processing industries -- human food processing indus-

HARTOLDMON0028333

tries - that in our considered judgment, in spite of the good experience that polychlorinated biphenyl fluids had had in their applications, the use of these fluids could conceivably be involved in an accident which would lead to contamination of their product, and therefore we were suggesting converting their units to other fluids and that sales to their type application would terminate, and I think I recall the date as being July 31st, 1970.

Q July 31st, 1970?

A July 31st, 1970, yes.

Q Now, Mr. Papageorge, who at Monsanto, or what group, made this decision?

A Well, it would have to be the Functional Products Group.

Q Now, when you say Functional Products Group, who do you mean?

A That is the group that was under the supervision of Mr. H. S. Borgen.

Q And his offices are in St. Louis?

A St. Louis, yes, sir.

Q Now, what did you have to do with this decision, if anything?

A I was informed of the decision, and I concurred that this was a responsible action and that we should immediately implement it. And I also saw a draft of the

HARTOLDMON0028334

proposed letter to the customers, and I was asked if I had any comments to offer regarding the wording, and as I recall, the letter appeared to be satisfactory to me and I had no comments to offer.

Q Now, what action or part did you play prior to the time this decision was made? Did you make any recommendations to this group relating to this matter?

A No, sir.

Q Were you employed in the capacity of environmental director at that time?

A Yes, sir.

Q Well, isn't this the type of matter that your advice would be sought on by Monsanto?

A If there is a problem or a potential problem that should be considered, it would have been brought to my attention.

Q Well, weren't there problems at that time?

A Of what type? Heat transfer systems?

Q Right.

A No, sir.

Q Or PCB's?

A There were claims that PCB's were out in the environment, yes. There were claims that certain species of wild life were affected by PCB's, yes. But no claim that heat transfer systems were creating problems.

HARTOLDMON0028335

Q Well, what precipitated this decision?

A I don't know that I personally know, sir. I can only suggest the kinds of thoughts that were going through our thinking.

Q Well, if you would, if you are knowledgeable in that, I wish you would tell us.

A It's part of our desire to be responsible even at the expense of being, what some people might have considered and have told us, overly careful in the application of these materials.

Q You say that was the thought process behind the decision?

A That's my impression of the kinds of things we had discussed.

Q Well, this decision resulted in the taking off the market by Monsanto of Therminol FR-1 and other Therminol for heat transfer applications, isn't that correct?

A Of some heat transfer applications, yes.

Q And so it was a decision not to market this product from then on to customers in the human food processing industries, isn't that correct?

A Correct.

Q And you say that this decision was made at a time when there were no problems about the marketing of these products to these customers?

HARTOLDMON0028336

A That is right.

Q You just decided not to market it anymore?

A That's correct.

Q And can you tell me again what the reason was behind this decision?

A Yes, I can tell you again. It's our desire to avoid any possibility of any of this material getting into human food where it has no business being. And in spite of the good record we had had through many years of this application, we chose to be overly careful - to use that expression to define our activities - and inform all customers in human food processing that we will not supply this type of material to them any longer.

Q Well, had there been any tests to the knowledge of Monsanto that PCB's were harmful in human foods or had a harmful effect to humans at that time?

A No, sir.

Q Was there any other basis other than tests that you know of that Monsanto used in coming to this conclusion, or studies?

A I don't know, sir, of any tests that led to this conclusion. There were no tests conducted that gave us any information that would indicate that polychlorinated biphenyls are a hazard to human beings. It's just our considered opinion that polychlorinated biphenyls are

HARTOLDMON0028337

industrial fluids, not intended to be present in any human food under any conditions. Their use in heat transfer systems processing food for human consumption is something we decided we didn't want to be involved with and didn't want to market.

Q At that time, did Monsanto have any information anywhere of any human food being contaminated by PCB's in the heat transfer application?

A The only information we had was this Yusho incident.

Q In Japan?

A In Japan. And in 1970, the information we had relating to that incident was garbled and confusing, and it was not clarified until 1971 when representatives of the U. S. Food and Drug Administration made a personal visit to Japan and discussed the matter with the authorities there.

Q Now, you indicated that letters were written informing customers of this action by Monsanto?

A Yes.

Q And you reviewed a copy of the letter?

A Yes, sir.

Q Approximately how many letters were sent out, if you know?

A I don't recall the number. About a hundred.

Q So does that indicate that there were approximately

HARTOLDMON0028338

a hundred customers involved?

A About, yes, sir, to our knowledge.

MR. VANCE: Off the record.

(Discussion off the record and a brief recess was taken.)

Q (By Mr. Vance) Mr. Papageorge, I believe you had answered that approximately a hundred letters were written advising customers on record in the human food ~~and~~ processing industries of the decision of Monsanto to discontinue sales of products containing PCB's for heat transfer applications as of June 1970. Did you say that this indicated that there were approximately a hundred customers notified?

A That's approximately a hundred, yes. That's a good number, sir.

Q Now, were these customers in the human food and processing industry - is that correct?

A Yes, sir.

Q Now, does this include feed for animals as well as food for humans?

A No, sir.

Q And no action was taken at this time on sales involving heat transfer applications in food processing industries, is that right?

A That is correct.

HARTOLDMON0028339

Q Now, before I forget it, I want to back up to the Japanese incident. That did involve some chickens, did it not - the destruction of some chickens?

A That is news to me, sir. I'm not aware of that.

Q You're not aware of any?

A No, sir.

Q But did it involve fowl, other kinds of fowl - birds?

A No, sir. To my knowledge, no. I don't know.

Q Do you know of the hen incident in upperstate New York?

MR. SMITH: What is that, Charlie?

MR. VANCE: The incident where certain human food was changed to feed and sold to chicken processors.

A (By the witness) Yes, sir. If we have the same incident in mind, this occurred in 1970 - the latter part of 1970. Is that the same incident?

Q (By Mr. Vance) I think that's correct, yes.

A Yes.

Q And this incident did involve--

MR. SMITH: Just on the question of form - if you could localize. I'm not sure I know what you're talking about. Maybe you and the witness are on different wave lengths, but tell us what time and place you're talking about.

HARTOLDMON0028340

MR. VANCE: I'll ask the witness to do that.

Q (By Mr. Vance) Tell us the time and place of the occurrence of what we have referred to as the hen incident.

A As I recall, in the latter part of 1970, there was a reported incident in the State of New York in which older birds that were being purchased for eventual use in human food were determined in the laboratory to contain polychlorinated biphenyls in their tissue. An attempt was made to determine what the source of that polychlorinated biphenyl might be. The last I heard on that incident is that there is a claim made that the source of polychlorinated biphenyl appears to have been a meal that is made from crushed stale bakery goods. And the claim is also made that the source of the PCB must have been in the packaging that was included along with the bakery products in the crushing, grinding process.

MR. HAGAN: When was that?

THE WITNESS: As best I recall, the latter part of 1970.

Q (By Mr. Vance) Do you know approximately how many birds or hens were involved in this incident?

A There was a number that I read in some clipping, but I don't recall it now, sir.

Q I don't mean the exact number, but did it involve

HARTOLDMON0028341

hundreds or thousands?

A Thousands, yes, many birds.

Q And when you refer to birds, do you mean domestic birds - hens, chickens?

A Yes, laying hens as I am told, spent laying hens is the expression that was passed on to me.

Q All right, sir. Now, you told us about the action taken as of June 1970 by Monsanto. When was the next restriction placed by Monsanto for the sale of products containing PCB's?

MR. SMITH: You're talking about before July 1971?

MR. VANCE: Yes. I mean the next incident after June 1970.

A (By the witness) The next restrictions were placed after July 1971.

Q (By Mr. Vance) You mean from June 1970 until July 1971, or after July 1971, there were no further restrictions on the sale of PCB's?

A Not to my knowledge, no, sir.

Q During this period, did Monsanto perform any more tests on the uses of PCB's?

A Tests on the uses of PCB's?

Q Tests on the effects of PCB's in the environment.

A As I recall, this is the period in which the further chicken studies that I mentioned earlier this

morning. And we also began two additional studies. One was to establish whether or not polychlorinated biphenyls were carcinogenic - cancer causing, and the other was to establish whether or not they are teratogenic - in other words, cause birth defects. I believe that's the period when these studies were started.

Q Now, did you receive during this period reports of PCB's found in chickens and other animals? I'm asking you now from June 1970 on.

A I was aware of reports that appeared in the scientific journals and the popular press.

Q Can you tell us about these reports - what you were aware of and when?

A That is a very difficult question to answer, sir. There are many reports from all over the world, some very sophisticated and some in my opinion very unscientific, speculative. And I'm having a difficult time establishing the timing here. But in general, at least the impression I was left with in reading all of these reports is that it confirmed the results of Kenyanto's studies. That is all I personally try to recall. I do not attempt to remember authors and details of these kinds of studies. I find it impossible to remember, not being schooled and trained in that area.

Q What recommendations have you made to Monsanto

HARTOLDMON0028343

relating to further restriction of the sale of PCB's?

MR. SMITH: I'm going to object as to anything after July 1971, in order to be consistent.

Q (By Mr. Vance) Well, first give us your recommendations prior to July 1971.

A I recall a recommendation I made relating to the marketing of the lower chlorinated polychlorinated biphenyls in which I suggested that although there was no evidence in all the reports that we were seeing that these particular commercial mixtures were being identified in the environment, the fact that our laboratory reports indicated an effect on these birds should be enough for us to also restrict the sales of the lower chlorinated polychlorinated biphenyls.

Q For what uses?

A For any use where it can be introduced into the environment easily.

Q Now, Mr. Papageorge, do you know when you made that recommendation?

A Sometime in the period between April, May 1970.

Q As a result of this recommendation, what, if anything, was done by Monsanto?

A We had up to that point been very active in our laboratory seeking reformulations of fire resistant hydraulic fluids. The original formulations contained the higher

chlorinated polychlorinated biphenyls. With reports coming in that the polychlorinated biphenyls in the environment were of the higher chlorinated type, our initial attempt to reformulate was to substitute the lower chlorinated isomer mixtures for the higher chlorinated isomer mixtures. As a result of my recommendation, along with other people in Monsanto who also made similar recommendations, we in our research efforts abandoned the idea of using the lower chlorinated polychlorinated biphenyls for any further use in hydraulic fluids.

Q Now, what does that mean in regard to FR Therminol - Therminol FR-1?

A It has no relationship, sir. Keep in mind these are applications in which the material easily enters the environment. Therminol FR-1 is intended and designed for use in closed systems where the heat is conveyed through a metal wall, a metal surface. The fluid never comes in contact with the product being processed.

Q Did you make any further recommendations to Monsanto in addition to the one that you have told us?

A In what area, sir?

Q In any are relating to PCB's?

A Yes. I have made recommendation relating-- which eventually led to the design and installation of a unit for incinerating and destroying polychlorinated biphenyls for

HARTOLDMON0028345

disposal purposes.

Q When was this done?

A I'm sorry. When was my recommendation done?

Q Yes.

A My recommendation was sometime early in 1970.

Q And when was the process of destruction carried out, or the action taken by Monsanto I mean?

A Oh; action taken was immediate. However, there was a period of time during which tests were made by the designer of the equipment. The unit was designed based on the result of the tests. The erection, construction of the unit took place the latter part of 1970 or early part of 1971, and the unit was finally placed on stream, as I recall, about May 1971 - May or June 1971.

Q Is this a unit that is for sale to customers?

A No, sir.

Q Used solely by Monsanto?

A That is correct.

Q Does this mean that the customer has to return the product to Monsanto for destruction?

A We highly recommend to the customer that any liquid containing polychlorinated biphenyls be returned to us for proper disposal.

Q Now, this is done in order to keep the PCB's out of the environment, is that correct?

HARTOLDMON0028346

A That is our intent.

Q What customers were notified of this procedure?

A I do not know specifically by name the customers that were notified. We, through our marketing representatives and through discussions personally with our customers and through at least one journal that I recall, publicized the fact that Monsanto was going to install a unit, that we would be willing to accept return material prior to the installation of this unit and keep in stock until the unit was on stream. And by this kind of communication, it became widely known that we did have a unit that could do this incineration.

Q Is this the first instance of Monsanto going into the business of destroying PCB's for customers?

A Yes, sir.

Q Prior to that time, what, if anything, was done advising the customers or assisting the customers in the destruction of PCB's?

A Prior to which time, sir?

Q To May 1971.

A The customers were informed that they should not permit polychlorinated biphenyls to enter the environment. The proper way to dispose of these materials was by incineration at high temperatures. They were to seek units that were capable of performing this. If they could not find

HARTOLDMON0028347

such a unit, we were suggesting that they consider sending the material to us and we would store it in the intrim.

Q Was it the policy of Monsanto to give its customers this information?

MR. SMITH: What do you mean by "give"?

MR. VANCE: Furnish.

MR. SMITH: You mean in any form?

MR. VANCE: Yes.

A (By the witness) We took every opportunity, sir, to convey this message. The customers on record at that time and who were still receiving polychlorinated biphenyls were very interested in polychlorinated biphenyls, and in many instances they sought this information. And the most direct way we had, really, was via the label that appeared on every container of polychlorinated biphenyl material in which - I don't recall the exact words, but the reference was made that this container has in it polychlorinated biphenyl and that extreme care must be taken so it doesn't enter the environment either by disposal, use or handling, whatever is involved in the use of this material.

Q Now, do you say that all products of Monsanto which contained PCB's were labeled with a remark of this nature?

A Again, the period of time, sir, yes - the period we're talking about, yes.

HARTOLDMON0028348

Q Now, does that label read to the effect that some studies have shown that PCB's may be harmful to the environment?

A I believe that's the wording, yes, sir.

Q Do you know of any studies that showed that they were not harmful to the environment?

A Well, sir, that would be a very unique scientific report. I am not aware of any laboratory that submitted a report claiming a negative result, although I do know of work that was performed, the studies were negative and no reports issued.

Q Well, isn't it a fair statement to say that all studies have shown that PCB's are harmful to the environment?

A No, sir. The study made by the Patuxent Wild Life Laboratory I mentioned earlier in which they attempted to establish the effect of polychlorinated biphenyls on the brown pelican of Southern California demonstrated to their satisfaction that polychlorinated biphenyls were not harmful to the pelican. The same laboratory in studying those species of wild birds - and I can't recall the species - established to their satisfaction that polychlorinated biphenyls had not affected their birds or their ability to reproduce. Every report of an incident that occurred - I believe it was referred to as the Irish Sea or the North Sea incident - in late 1969, the report was finally

HARTOLDMON0028349

published late 1970 or early 1971 by the United Kingdom, mentioned the presence of polychlorinated biphenyls in the birds that were affected and some seal cubs, but concluded the polychlorinated biphenyls were not the cause of the death of these creatures. So there were some reports that exonerated polychlorinated biphenyls.

Q In other words, not every report showed that polychlorinated biphenyls were the result of the toxic effect on some animals. Is that right?

MR. SMITH: I object to the form of that question. I don't understand it.

Q (By Mr. Vance) It is the conclusion of Monsanto, or was as of 1970 and 1971, that PCB's are harmful to the environment. Is there any question about that?

A In my mind there is, sir.

Q And Monsanto has launched this campaign to keep PCB's out of the environment, hasn't it, because of the harmful effects that they have on the environment?

A I don't understand your reference to "lost its campaign."

Q Launched.

A [illegible] environment. And when we say harm to the environment, we are saying that there is enough evidence to indicate that some species of wild life are affected, and there are reports that do show that some species are very

HARTOLDMON0028350

vulnerable and some are not.

Q And you have been concerned - Monsanto has been concerned not only with the effect on wild life and animals but also humans?

A That's right, sir.

Q Now, has the FDA - Food, Drug Administration - taken any positive action on the restriction of PCB's in the environment?

A Yes. The FDA has established some guidelines which it has issued to its regional offices to help them in the event an incident occurs involving PCB's in certain feed items.

Q Is this feed and food or just food?

A Well, again, what time period are we talking about? This is an evolutionary problem. Things are happening every day.

Q Well, suppose you start with 1970 and go from there.

A 1970. When you say start-- in other words, tell you what I know of the FDA?

Q Right.

A In 1970, I became aware of an FDA guideline which was established for the level of polychlorinated biphenyl in milk, and this happened about - to my knowledge - the middle of 1970. About that time, it also established a

HARTOLDMON0028351

HARTOLDMON0028352

guideline for the level of polychlorinated biphenyls in edible fish. And those two guidelines, to the best of my knowledge, were in existence through the remainder of 1970 on up to July 1971. No, I forgot one. As a result of this incident involving laying hens in New York State, a guideline was established for a level of polychlorinated biphenyl in the edible portions of poultry.

Q What date was that, sir?

A Late 1970.

MR. MARSHALL: You say late--

THE WITNESS: Late - October, November, December, somewhere in that last quarter as I recall.

Q (By Mr. Vance) All right. Were there any others after late 1970?

A There were no more to my knowledge between late 1970 and July '71.

Q What about the one in July '71? What action was taken, if you know?

A In July '71, I believe this is the period of time when levels were established for animal feed. It's either July '71 or shortly thereafter. Animal feed, eggs - that's all I recall now as the additional items that were added.

Q What level was that, if you know?

A For which food item?

Q For animal feed.

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A Half part per million.

Q And what about eggs?

MR. MARSHALL: I didn't get his answer.

THE WITNESS: Point-five part per million.

MR. MARSHALL: .5?

THE WITNESS: Yes, sir.

A (By the witness) I believe eggs were also at .5 part per million.

Q (By Mr. Vance) What information do you have, Mr. Papageorge, about PCB's found in poultry at Holly Farms Industries?

MR. SMITH: Well, I object to anything after July 16th, 1971.

MR. HENSON: The information he has in this lawsuit - this is discovery. I can't see why we're not entitled to get this information from this witness.

MR. SMITH: I don't know that he has information, but I think---

MR. MARSHALL: The rule, as I understand it, it's not grounds for objection because it might not be competent or admissible upon trial. Any information which may tend to lead towards further development of information which will be competent is admissible. That is my view. I do think the question is proper, speaking for East Coast Terminals.

HARTOLDMON0028353

Q (By Mr. Vance) Well, let's start with prior to July 16th and see where we go. What information do you have relating to--

MR. MARSHALL: Just one further moment, please. If counsel for Monsanto insists upon the witness not answering the question with respect to information received, if any he did receive, after July 16th, 1971, then I want the record to show that in order to obtain this information, all costs so incurred will be charged to Monsanto Chemical Company.

MR. SMITH: Well, I do not object except as to matters which might - and I don't know whether the witness has any information or insofar as it might relate to the work product in trying the case or as it might relate to any information that can be obtained from counsel. Any information that he may obtain from Holly Farms, for example, it will not in my view be objectionable, and I share Mr. Marshall's view of the rule on discovery. But I do think there are some areas in which all counsel and all parties are interested, and they include the work product. And consultation with counsel-- so you just said, "Tell us all the information that you may have ever had," and I just don't know what he has on it, and I think it's important to have this exchange in order that there be an

HARTOLDMON0028354

understanding in the witness's mind as well as counsel's.

MR. VANCE: Maybe I can rephrase my question and go a little further.

Q (By Mr. Vance) When did you first hear of any incidents involving PCB's in poultry at Holly Farms Industries or others?

A Or others? I'm sorry - other firms?

Q Or other companies.

A July 12th, 1971.

Q And what information came to your attention at that time?

A Actually the information came in the form of a question. The question was something like, "Were any polychlorinated biphenyls shipped to a company known as East Coast Terminals Company in Wilmington, North Carolina?"

Q Who asked the question?

A Dr. George Lynn Rowser.

Q And who is he?

A He is a Monsanto employee who concerns himself with the marketing of animal feed ingredients. I do not know his formal title.

Q That question was asked to you?

A Yes, sir.

Q Did you know the answer to that question?

A No, sir.

HARTOLDMON0028355

Q What did you do?

A I consulted with the individuals in our marketing department who are involved with heat transfer fluids.

Q As a result of that, what happened? Go ahead and tell us.

A We consulted the record and determined that yes, heat transfer fluid containing polychlorinated biphenyls had been shipped to East Coast Terminals Company.

Q Now, what records were those that you consulted?

A This is a document produced by a computer machine on which the customers are listed by name and the amount of materials shipped by type on a monthly basis. It is noted.

Q And the name of East Coast Terminals was found by the computer?

A I don't know that the computer found it, but we consulted the report which was printed out from the computer and found the name East Coast Terminals listed on this document.

Q All right. As a result of that, what happened?

A I telephoned Mr. Romoser and told him yes, fluid was shipped to East Coast Terminals.

Q Do you remember what that information was about the fluid shipped to East Coast Terminals, the amount of the fluid, when it was shipped?

A I don't believe I recall the exact numbers, but

HARTOLDMON0028356

something in this order of magnitude - about a drum, which is about 600 pounds or so in August 1970; a drum or two, which would be what - 600 to 1200 pounds in December 1970; and then an additional quantity of about two to three thousand pounds in June 1971 - May or June. The report I was looking at was dated-- was the report that was available on July 12th, which I believe was current through June.

Q Was this report a written report that you obtained from the computer?

A Yes. It's a print-out, as we call it.

Q A print-out?

A Yes, sir, a print-out.

Q And you conveyed this information to Dr. Ronsser?

A Yes, sir.

Q Did Dr. Ronsser advise you why he wanted this information?

A Yes. When he made the request, as best as I can recall, he informed me that poultry feed was involved and that there was a suspicion that polychlorinated biphenyls were present, that an attempt had been made to locate the source of the polychlorinated biphenyls and the parties with whom he was discussing the matter were highly suspicious that fish meal from East Coast Terminals Company might be the source.

HARTOLDMON0028357

Q All right. What is the next information you received on this incident?

A As best as I can recall - and I do not recall whether I placed the telephone call at Dr. Fenoser's suggestion or whether a Mr. McNulty from Carolina By-Products Company reached me after receiving my telephone number - but somehow Mr. McNulty and I became involved in a telephone conversation, and as best as I can recall, this was sometime between - about July 12th, 13th or 14th, in that period of time --

MR. MANOR: Of '71?

A '71. And Mr. McNulty was very interested in determining the source of polychlorinated biphenyls. He was personally very concerned because he did not want his products to be contaminated - as he put it - with this material. He told me that a sample of feed - he did not identify the source of the feed - had been analyzed and was determined to contain something like 140 parts per million polychlorinated biphenyls, and wanted to discuss with me the possible sources of polychlorinated biphenyls. From our conversation, I was left with the impression that some symptoms must have been observed in chicken flocks; that Mr. McNulty told me he initially assumed it was due to an ailment referred to in the poultry industry as chickadema, edema and they were trying to establish whether or not it was

HARTOLDMON0028358

edema

chickadees; if so, what was the source of the problem. I remember that as part of the conversation. But as a result of Mr. McNulty's conversation, this is the first indication I had that some feed somewhere had this level of poly-chlorinated biphenyl in it.

Q What is Carolina By-Products Company, do you know?

A From my telephone conversation with Mr. McNulty, I was led to believe that his company processed the waste from poultry operations for subsequent use in animal feed.

Q Is this a company in North Carolina?

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

Q All right. What next happened so far as you know involving this incident?

A It was either late in the working day of July 12th, 1971, or early the following morning - July 13th, 1971, I telephoned our Monsanto representative assigned to our New York office who, I was told, had experience with heat transfer fluid applications, and asked him if he thought he could help get more information regarding an installation in Wilmington, North Carolina, known as East Coast Terminals. He had not heard of East Coast Terminals, but when I mentioned to him that it's my understanding that they processed fish meal, he volunteered to drop by--

MR. HATCHER: Objection to the "processed fish meal" and move to strike.

HARTOLDMON0028359

Q (By Mr. Vance) Go ahead.

A He offered to go see an individual whom I had never heard of before - a Mr. Charles Burgess - and get some more information regarding fish meal processing.

MR. MARSHALL: Excuse me. If you gave it, I didn't get the name of this man in New York that you called. Did you give that name?

THE WITNESS: I don't believe I did, sir. Mr. Jay Pullman.

Q (By Mr. Vance) All right, sir.

A At the same time - I didn't mention it, but when I talked to Dr. Ronoser and he told me about East Coast Terminals, he also gave me Mr. Leon Martin's name and his telephone number. And in my conversations with Mr. Pullman, I gave him Mr. Martin's name and telephone number in the event he could not reach Mr. Burgess.

MR. HEDRICK: I'm sorry - when you talked with whom?

THE WITNESS: When I talked with Dr. Ronoser initially, and when we discussed fish meal, East Coast Terminals, polychlorinated biphenyls, in that discussion I was given Mr. Martin's name and telephone number.

MR. HENSON: Gentlemen, that's a good place to stop, it seems to me. It's 12:30 nearly.

HARTOLDMON0028360

MR. MARSHALL: I agree.

MR. MURRELL: We agree.

MR. VANCE: Off the record.

(Discussion off the record.)

MR. SMITH: I want to put on the record that the witness is here, he's willing and able to testify. I have no objection to stopping for lunch, but we would prefer that you go on with it, with his testimony. It's only 12:30, not quite 12:30 now.

MR. VANCE: I have been informed by several counsel of record here who are parties to this proceeding that they have made plans for this afternoon, that this matter has been long and arduous since early Monday morning and we've been in continuous session morning and afternoon, and it is their desire that we terminate now and come back Monday morning early.

MR. SMITH: Could the record also show that the witness tried to get a reservation on the afternoon plane and has not been able to do so. He had an earlier reservation and cancelled it when it was apparent that he would be needed today, and he has no way to get home until very late tonight, so he would be here available.

MR. VANCE: Are there any further comments to put

HARTOLDMON0028361

on the record, gentlemen?

MR. MARSHALL: 10:00 o'clock Monday morning?

MR. VANCE: We usually start at 9:30, but what is the consensus?

MR. MARSHALL: Some of us have to travel.

MR. VANCE: You come from Wilmington, don't you?

MR. MARSHALL: Coming from the other direction this time.

MR. VANCE: Can we agree on a time, Mac?

MR. SMITH: You name it. You're calling it. We'll be here.

MR. VANCE: Let's say 10:00 o'clock Monday for the convenience of our counsel who have to travel a long distance. We'll try to go from 9:30 from then on.

(Whereupon, at 12:30 p.m., the deposition was adjourned to Monday, August 7, 1972, at 10:00 o'clock a.m.)

HARTOLDMON0028362