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IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

BEAUMONT DIVISION

NEIL SCOTT, ET AL]

No. B-84-1103-CA

MONSANTO COMPANY

VOLUME II

VIDEO DEPOSITION OF

WILLIAM PAPAGEORGE

May 20, 1987

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Houston, Texas

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Q How frequently were those uniforms provided?

A As needed. They were issued several sets of clothing that were laundered. When the individual would place them in the dirty laundry baskets and in their lockers, they always had at least one clean set.

Q So that as the worker chose he could wear a brand-new uniform each day or he could wear a uniform for a week at a time if he wanted?

A Or as soon as it got dirty he could go change, yes.

Q Now, with regard to the -- you said proper footwear. What is the proper footwear?

A The normal footwear would consist of a steel-toed, leather-top shoe or boot, or high-top shoe, with an oil resistant sole. Some jobs, such as entering a tank or a railroad tank car or tank wagon, where the surface was oily, they would wear a bootee, which was an oil-resistant overshoe over that leather shoe, or the leather shoe would be removed and a more substantial rubber boot would be used.

Q The bootees were designed to be oil resistant?

A Yes.

Q And were those worn in all departments in the plant?

A They were available to anyone.

Q No difference again between the PCB department and any other department?

A The difference would be primarily

appropriateness of other types of footwear in other locations in the plant.

Q Can you explain what you mean?

A There were available to some individuals the more flimsy plastic vinyl like a Saran Wrap -- that's exaggerating a little bit -- that could be put over their shoes and tied for some operations, but that would not be appropriate in PCBs, because it would not withstand the effects of PCBs.

Q Would it eat it up?

A It would literally dissolve and disintegrate.

Q So in the PCB area you had a bootee that was more substantial than supplied in at least some other areas of the plant?

A Yes.

Q What about with regard to these shoes? Were those supplied by Monsanto?

A Yes.

Q Were there any particular types of gloves that were required in the PCB department and others that were considered inappropriate for that particular department?

A The gloves that were required in that department were the oil resistant, liquid resistant types.

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Well, if I'm clear, then, whenever anybody would be doing work where but for the glove covering their hands they might come into contact with PCBs, they were required to wear the oil-resistant

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gloves to keep the PCBs from contacting their skin.

A Certainly, yes.

Q Okay. And with regard to the clothing that was issued, was that also true that if they were doing a job where PCBs might come into contact with their clothing that is when they would then wear the rubber-coated clothing that would keep the PCBs from coming into contact with their regular clothing?

A Yes.

Q And with regard to their footwear, if they were doing a job where their shoe or any part of it might come into contact with PCB oils, is that where they were required to wear these oil resistant bootees or rubber boots?

A Yes.

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

A Yes, there were rubber-coated skull caps that could be used. And should be used.

Q If there was any possibility of the oils contacting the skin?

A Yes.

Q Did you have available in the PCB department materials that employees could put on the portions of their skin that they could not cover with some type of rubberized material in order to protect from the possibility of PCB exposure to the skin?

A It was available.

Q And what was this material that was available?

A I don't recall the trade name. It was a lotion, skin lotion that repelled most oils for limited periods of time.

Q The purpose or the way you use that is if you thought you might have exposed skin that would come into contact with PCBs, you would put the lotion on.

A Yes.

Q So that it would keep the oils from soaking into the skin, then you remove both the lotion and the oils that got on it at the same time?

A That was the intent, yes.

Q And that was made available by Monsanto to its employees in the PCB department?

A Yes.

Q Then with regard to respirators, those were -- did each employee have a respirator issued to him in the PCB department?

A Yes.

Q What steps did you as the plant manager take to ensure that the employees in the PCB department always wore the necessary protective equipment to keep them from being exposed to PCB materials?

A I personally would make spot-checks when I was aware that a particular activity was to be performed. I would visit the area and make my personal observations. But for the constant surveillance, I relied on the supervisor, the superintendent, the supervisor and the foreman, as well as the chief operators. All of us had responsibilities in this area.

Q You recognized, I take it, that it was important to have some mechanism in place to ensure that individual workmen actually used the protective equipment in order to protect themselves?

A Certainly.

Q And you viewed that as part of your job?

A Yes.

Q It was not sufficient to you to simply say, I've made the materials available to the people to protect themselves, and whether they use them or not is not my concern?

A That's not sufficient, you are right.

Q Okay. Is it your opinion that during the time that you were the plant manager at the Anniston, Alabama, plant you were generally successful in enforcing the rules so that workers in the PCB unit were not exposed to PCBs?

A Yes.

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

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

Q Tell me about that one incident.

A One of the long-time employees, chief operator, working alone on the night shift, apparently was -- in a moment of poor judgment decided to perform some duties loading up a tank car with PCBs, did not wear his gloves, and he sheepishly confessed to me the following day or so, after he had gone to see the doctor with severely reddened skin on his hands and admitted that he should have worn gloves but the job was dirtier than he thought it would be and he didn't get around to washing his hands soon enough. That is the only incident I personally -- I saw the hands and I recall the incident vividly.

Q You as the plant manager had the authority to take action to enforce the work safety rules?

A Oh, certainly. The foreman did, too.

Q And did you frequently ensure that your supervisors reminded employees of the reasons behind the work rules, that is, the personal precautions were there for a purpose?

A Yes.

Q So that it was brought home to the employees that these work rules were not just unnecessary rules and regulations, but designed for their personal protection?

A Yes.

Q And as plant manager did -- as plant manager did you feel that constantly reminding the employees of the reason behind the work rules and the adverse things that could happen to them personally if they ignored them helped to ensure that they were generally followed?

A Yes.

Q And I take it in this case of this one employee you've described for me he didn't follow through on those instructions.

A That is correct.

Q And as a result he had some problem develop?

A Yes.

Q Okay. But that's the only incident you are aware of in five years as plant manager?

A Yes.

Q Were you generally aware of any significant exposure by your employees to PCBs?

A If it had occurred, I would have been

Q Was it mandatory that your workers take a shower at the end of each shift in the PCB department?

A No.

Q Were workers given paid time in which to take a shower at the end of the shift?

A No.

What I'm getting at is, you didn't have -- you didn't have a mandatory requirement that they take showers before they left, you didn't give them paid time, and so nobody tried to enforce any recommendation that they take showers before they leave. Is that correct?

A That is correct. Now, the possibility existed, and I don't know how many, where an individual might get material on him near the end of his shift. At that point it was mandatory, wash up. At that point he would wash up and we would pay the man overtime.

Q So that if someone did get any material on them, they would then be paid for taking a shower, including overtime, if that were necessary?

A Correct.

Q In the locker room area of the plant the employee, I take it, would wear his street clothes to work.

A Yes.

Q Change into the company-supplied uniform at the beginning of the day.

A Yes.

Q At the end of the day he would change out of his company-supplied uniform and back into his street clothes and go home?

A Most employees.

Q What did some employees do?

A Some wore their work clothes home.

Q Oh, okay. So some employees would actually wear the work clothes to work and not have to make the change in the locker room, and then wear them back home?

A Some would do that, yes.

Q Was that permissible?

A As long as the garment hadn't been contaminated.

Q Would it have been permissible for an

employee to wear home a work garment supplied by Monsanto that had any PCB product on it whatsoever?

A No.

Q Did you ever visit the PCB production unit at the Krummrich plant in Sauget or East St. Louis, Illinois?

A Yes.

Q What differences existed between those two departments with regard to work practices?

A I don't know that there were any basic differences. There were differences in types of clothing, for example. The Krummrich plant employees had the single-piece coverall jumper-suit type. As far as their operating practices and the objectives, they were, as far as I could tell, identical or similar.

Q The PCB department at the Krummrich plant was a toxic department, was it not?

A No. I don't know what you mean by toxic department.

Q I see.

A There is no such terminology in Monsanto.

Q Okay. The employees at the Krummrich plant were permitted paid time to take a shower at the end of each shift, were they not?

A Yes.

Did the employees at the Krummrich plant have the same rubberized gloves for working with PCBs, rubberized shoe coverings, rubberized head coverings and the like?

A Yes.

Q So that the possibility of an employee at the Krummrich plant coming into contact with PCBs was no greater than the possibility of an employee at the Anniston plant coming into contact with PCBs. Is that correct?

A That is correct.

Q Did the employees at the Krummrich plant also

have available to them these lotions or creams that they could put on their unexposed -- or on their exposed skin in order to keep PCBs from getting to the skin and being absorbed?

A Yes.

Q So, then, the level of protection at the Krummrich plant was fully as great as the level of protection at the Anniston plant?

A Yes.

Q And possibly the exposure at the Krummrich plant might be lessened to the extent that there's some unnoticed quantities of PCBs that got on the skin at the Krummrich plant, those would be washed off in the mandatory shower, whereas in the Anniston plant they might not be. Is that correct?

A It's only correct if you assume that the Anniston employees did not shower at the end of the shift.

Were they paid time and a half for the -- at the time and a half rate for the number of minutes that they showered, they had to shower?

A I forget the details, but that sounds like very close to what I recall.

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Q Any problem of toxicity with mineral oil?

A Not that I know of.

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Q The mineral oil is -- I -- I seem to recall sometime back that mineral oil was used in some products like baby oils and things like that. Is that mineral oil?

A That is a mineral oil. It's a highly refined mineral oil. That is an example of a mineral oil. Used as a medication that you buy in a drugstore. It's the same source. It's a matter of degree of distillation.

Q So the thing we think of as baby oil, if we can use the trademark, I guess, Johnson & Johnson's baby

PROTECTIVE ORDER MATERIAL UNDER SEPARATE COVER

PROTECTIVE ORDER MATERIAL UNDER SEPARATE COVER

oil, is a mineral oil? INSERTED ON PG #230 BY

A Yes.

Q And there are other types of mineral oils that have medicinal uses of some sort or another.

A The mineral oil used as a laxative --

Q Okay.

A -- is an example of something used by humans.

Q And is that the same type of mineral oil that went into these Pydrauls?

A It's the same basically, but I don't believe it was refined to the degree that it would be for human use and consumption.

Q Had more impurities in it?

A Yes.

Q The same thing, would that be true for the mineral oils that was used in transformers as well, that it was the same type of mineral oil that goes into Johnson & Johnson's baby oil but not quite as highly refined?

A That's my understanding.

PROTECTIVE ORDER MATERIAL UNDER SEPARATE COVER

Industrial hygiene at Monsanto was a matter that was in the province of the medical department and the industrial hygienists there?

A Correct.

Q And what the company's view, so to speak, from the industrial hygiene perspective is a matter industrial hygienists would have to speak to?

A Yes.

Q Not you?

A That's correct.

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And let me direct your attention now to another type of document that we've previously discussed. Let me show you a document that is titled Process for the Manufacture of Diphenyl and Santo Wax, dated November 1950, Document No. 11085 through 11229, and ask you if that's the type of manufacturing process document that we talked about yesterday that gave information on how one would go about in the plant

manufacturing a particular material, provide training material or reference material in the plant, and contain information about the safe handling of the product that was being manufactured.

A This would be representative of a type of document that would convey that information.

Q And those were standard documents that Monsanto had on its various manufacturing processes?

A Yes.

Q It was customary to have a document like that for every manufacturing process of Monsanto?

A Yes.

Q And those types of documents would be from time to time reviewed and updated to have the appropriate information as it was then in compliance with what was being done and what needed to be done?

A Yes.

Q Let me show you another document, entitled -- let me show you the document entitled Process for the Production of Aroclor, Pyranol, et cetera, at the Anniston and Krummrich plant, dated April 1955, Document No. 11238 through 11714, and ask if that's the type of operating manual that would be operative for the manufacture of PCB products and contain in it the information about how particular steps were to be done?

advise new people or train new people, provide refresher material for existing operators and the like.

A This document is the technical document describing the process for making the chemicals you described. It is not the document used in training or is it the document available to the operating personnel. That is a separate document.

Q Is it a smaller document?

A It's generally smaller and in laymen's language rather than highly-technical language, and does not contain all of the specifics this extensive document contains.

Let me direct your attention specifically to Page 12565 of this process manual that was available to all the workers in the PCB department. Under the Section E on that document number, where it refers to bathing, that specifically provided that everybody who worked in the PCB department at the Krummrich plant was required to bathe before leaving the plant each day?

A Yes.

Q And that was one of the differences or would have been one of the differences between the manual that was in force in your plant and the manual that was in force at the Krummrich plant?

A Yes.

Q So these types of documents, be they long form or short form, didn't get out in the public domain, so to speak, within Monsanto? And that's what I'm talking about. They didn't get beyond the author's draft and into a final form unless and until they had been reviewed by whatever people Monsanto thought were appropriate higher-ups to review them?

A Correct.

Q And after they had been reviewed and the accuracy had been confirmed and the proper coverage of each topic had been confirmed, then they would be actually made available for use?

A That is correct.

The Inerteen and Pyranol terms refer to the trade names used by General Electric and Westinghouse for dielectric fluids that either consisted wholly of or contained

PCBs. Correct?

A That is correct.

Q And Monsanto would actually in that Department 246 -- subdepartment A, is it?

A Yes, sir.

Q Actually either put the PCBs into a container that had an Inerteen label on it or blend it, if it was a blended Interteen, and then put it in a drum or container, whatever it might be, that had the Inerteen label on it?

A Yes.

Q And some of the Interteens were pure PCBs. Correct?

A Correct.

Q Some of them were -- were a mixture of PCBs and other chemicals?

A Correct.

Q The same thing is true for Pyranols, is it not?

A That is correct.

Q Okay. Let me get those back for just a moment.

Did the Anniston, Alabama, plant have a similar situation where they both manufactured PCBs and then also had PCBs they packaged under and did whatever was necessary to send out Interteens and Pyranols?

A Yes.

Q. Did the same safety precautions -- and what I'm talking about now, we described the rubberized gloves and head coverings and all this sort of thing that would be used by workmen if they were in a position to have PCBs come into contact with them -- did the same safety precautions apply for workmen who might have Inerteen or Pyranol come into contact with them?

A. Yes.

Q. Now, did the same safety precautions that applied to workmen who might be exposed to PCBs and to workmen who might be exposed to Inerteen or Pyranols also apply to workmen who might be exposed to Pydrauls?

A. Yes.

Q. So the safety precautions within Monsanto that related to workmen who were handling any PCB-containing dielectric fluid or any PCB-containing hydraulic fluid were the same?

A. Yes.

Q. Let me show you another document, entitled Standard Manufacturing Process, Aroclors, and it's got a parenthesis, Take Over Distilled, closing parenthesis, Department 246, Document No. 12972 through 13150, and ask if this is another one of those documents that would

have contained a technical description of the process and the handling of the chemicals involved in it at Monsanto.

A Yes, this is another example of such a document.

Q That's a 1976 version, is it not?

A Yes.

Q And is that -- that is the longer form, I take it from the fact it has standard manufacturing process on it.

A Yes.

Q Now, again, like with the technical bulletins, I haven't shown you all the copies of these types of documents I have. You appreciate and can understand there would be many more such documents that Monsanto would have regarding its PCB processes over the years it manufactured it?

A Yes.

Q And each of those documents would be a document that was prepared at the time it was prepared by somebody who was assigned that task and reviewed by the appropriate levels in the company before it was issued. Correct?

A Yes.

Q It would have been issued for the purpose of

providing information to particular people in Monsanto to assist them in doing their jobs and to do them safely and properly?

A Yes.

Q Let me show you a memo dated September 21st, 1967, from P. G. Benignus. Do you know who Mr. Benignus is?

A Yes, I do.

Q Who is Mr. Benignus?

A He's a former Monsanto employee who was involved with the marketing of PCBs in dielectric fluids and in hydraulic systems.

Q Does that memo relate to this visit that you recalled people from Westinghouse making to the Anniston plant while you were the plant manager there?

A It appears to be, yes.

Q Okay. And it seems to indicate that those people came from Bloomington to the plant.

A Yes.

Q Do you recall actually meeting with them at the Anniston plant?

A I do, yes.

What you supplied to Westinghouse as capacitor Inerteen was Aroclor 1242?

A Yes.

Q Were they a customer who typically bought by railroad car quantities?

A Are you referring to Westinghouse in general or Westinghouse Bloomington?

Q Westinghouse Bloomington in particular.

A Yes.

Q And those rail cars would leave the Anniston plant and travel as a sealed car until they got to the plant where the entire car would be unloaded to Westinghouse?

A Yes.

Q Westinghouse as a purchaser of PCB materials from Monsanto was looking to Monsanto to acquire information about proper handling or to protect the safety of its workers. Correct?

A Yes.

Q And you saw nothing inappropriate as the plant manager about having people at your plant as the manufacturer and seller of those PCB materials to Westinghouse give information to Westinghouse on those matters?

A Correct.

Q And in fact it was logical and made sense to you that the Westinghouse people would look to Monsanto as the manufacturer and seller of the PCBs for

information on toxicology and safe handling. Isn't that correct?

A Yes.

MR LACEY

Q Mr. Benignus notes in his memo to the fact that Westinghouse had been handling PCBs in a sloppy fashion. Correct?

A He does, yes.

Q Would Mr. Benignus be in a position to know that type of information?

A Yes.

Q In fact, he goes on to detail some specific information he had with regard to the Westinghouse handling of PCBs, does he not?

A Yes.

Q What specifically does he indicate he knew about Westinghouse's handling of PCBs?

A Well, in the memo Mr. Benignus refers to spills soaking in the workmen's shoes and clothing, no change of shoes or clothing are practiced. He refers to Westinghouse as considering the use of, to quote the memo, Vitron gloves, aprons and the like.

Q So Mr. Benignus, at least as of the date of that memo in 1967, was aware of the fact that the PCBs sold by Monsanto to Westinghouse were being allowed to get in contact with Westinghouse workers in a way that Monsanto would think was totally inappropriate. Correct?

A Correct.

Q There's no doubt in your mind that what Mr. Benignus describes is totally inappropriate? Correct?

A That is correct.

Q And potentially very hazardous to the workmen who are being exposed in that fashion. Wouldn't you agree?

A I don't know about very hazardous, but potentially harmful.

Q Well, Monsanto had had the experience itself of having workers who had, when they had substantial exposure before Monsanto enacted its work rules in the mid-Thirties or late Thirties had yellow atrophy of the liver, had it not?

A Yes, there was some experience before Monsanto acquired the facility, yes.

Q When work practices were sloppy, as they had been at Swann. Correct?

A All right. The degree of sloppiness is what I don't know.

Q I understand. But I mean what I -- the point I want to make is that Monsanto knew in the history of the plant that it had acquired from Swann that when there were some sloppiness in the work practices there had, to whatever degree, that workmen had developed --

some of them had developed yellow atrophy of the liver as a result. Correct?

A That's correct.

Q And that's very hazardous, is it not?

A Yes.

Q You can die from that, can't you?

A Yes.

Q Okay.

Now, Mr. Benignus then was aware -- and I guess you became aware of this memo when you got your copy of it --

A Yes, sir.

Q -- that Westinghouse's work practices had been very sloppy and that, for example, people were continuing or allowed at Westinghouse to work in soaked work clothes. Correct?

A That's what it indicates.

Q A practice that you certainly would not support at all.

A That is correct.

Q That would be a matter that you would consider very serious, would it not?

A Yes.

Q And from the standpoint of worker safety a practice that should be changed immediately. Correct?

A Yes.

Q Now, this visit provided an opportunity for Monsanto to impress upon Westinghouse personnel the importance of safe work practices, did it not?

A Yes.

Q They were going to spend the day at your plant where you could talk to them about the importance of good practice to keep their workers from coming into contact with PCBs. Correct?

A Correct.

Q A visit of this type was an opportunity for Monsanto to put together a well-prepared and well-presented program to meet the customer's needs, was it not?

A Yes.

Q Now, Mr. Benignus notes in his memo that he thinks this visit provides some opportunities to pass along some other information, doesn't he?

A It does.

Q Now, Mr. Benignus was a salesman, wasn't he?

A I would more correctly describe Mr. Benignus as marketing manager.

Q Well, okay. Let me -- he was responsible for salesmen selling the product?

A Correct.

Q And at this point in time he is responsible for getting the PCBs that Monsanto manufactured sold to customers as dielectric fluids.

A That is correct.

Q And one of the things that you're interested in doing when you're a salesman is touting the quality of your product. Right?

A Certainly, yes.

Q And he saw an opportunity to use this meeting to tout the quality of the product? Correct?

A Yes.

Q And Mr. Benignus was simply suggesting, of course, to the people at the plant what he thought the opportunities were. It was up to the plant people to decide how actually to allocate the time and what to do. Correct?

A That is correct.

Q Now, let me show you another document, Document 25282, which is a September 27th, 1967, memo written by Mr. Bryant to a variety of people, including yourself. That memo is the agenda for this proposed visit, is it not?

A It is.

Q Now, the purpose of the visit again was to learn about the safe handling of PCB products. Correct?

A [No reply]

Q That's why Westinghouse was coming?

A Correct.

Q And Monsanto was fully aware of the fact that Westinghouse had been handling the products poorly so that it's workmen in Bloomington were being exposed to PCBs in a way that Monsanto would think unsafe. Correct?

A Yes.

Q How much time did Mr. Bryant allot out of the agenda for the discussion of the matters that Westinghouse was coming to talk about?

A It appears he had here half an hour.

Q The remainder of the time allotted in the agenda was allotted to discuss and have things that related to the sales interests that Mr. Benignus suggested might be accomplished at this meeting, was it not?

A The item that Mr. Benignus suggested, as I read this schedule, was scheduled for half an hour from 10:00 to 10:30. The remaining items were not suggested in Mr. Benignus's letter. And I have no way of knowing today who proposed the remainder of the agenda.

Q But they're in Mr. Bryant's memo?

A Yes.

END of TAPE #1

TAPE #2

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Q Do you recall whether this meeting went off as scheduled?

A No, I don't.

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Q So you cannot tell us whether or not the Westinghouse people did arrive late on that day. Correct?

A That is correct.

Q You cannot tell us what portions of the agenda were scrubbed if the Westinghouse people arrived late. Is that correct?

A That is correct.

Q And you don't have any personal recollection about what happened other than that there was this visit? Correct?

A That is correct.

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Q You don't recall any of the topics that were discussed at the visit?

A That is correct.

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Q Do you know whether or not whatever may have been said at this meeting, if anything, about safe handling of Aroclors was followed up with any written communication with Westinghouse?

A I don't recall any.

Q Prior to this visit, would Westinghouse have had any source of information about the proper handling of PCBs other than the technical bulletins and customer literature supplied to it by Monsanto?

A Normally they would have the information reinforced by discussions with Monsanto's sales representatives.

Q Were they to relay that information in terminology that was consistent with the terminology used in the technical bulletins?

A Yes.

Q So if the technical bulletins said avoid

prolonged skin contact, then what the sales representative should be saying is avoid prolonged skin contact. Correct?

A Or words to that effect, yes.

Q Yes. In other words, they weren't authorized to give far more detailed warnings than the warnings or the safe handling recommendations contained in the product literature, were they?

A That is correct.

Q And in fact from the time that Dr. Kelly became the medical director at Monsanto there was a specific directive, was there not, that questions concerning toxicology and safe handling had to go through the medical department, and all things provided to others about toxicology and safe handling had to be approved by the medical department?

A That is correct.

Q And so it would not be within the province of a sales representative to be saying something to the customer about safe handling and toxicology of a chemical that it did not come from or was inconsistent with the specific directions from the medical department?

A That is correct.

Q And that was true even for you as a plant

manager?

A Yes.

Q It was true for you as people at this meeting with Westinghouse?

A Yes.

Q You-all were not authorized to tell Westinghouse more or go beyond what the medical department had already said about safe handling and toxicology. Correct?

A That is correct.

Q So you were in that situation where what needed to be conveyed or what was authorized by the medical department to be conveyed to Westinghouse was the authorized version that was already set forth in the technical bulletins?

A Yes.

Q And if there were to be something more detailed or more specific than what was set forth in the technical bulletins, that would have to come from the professionals in the medical department to professionals at Westinghouse?

A Yes.

Q Did you make any contact with the medical department about this visit and the problems that existed at Westinghouse?

A No.

Q So, as far as you know, from the information that Mr. Benignus sent out, the information that transpired at the meeting, nobody at the medical department was made aware of the extent of the problem that existed at the Westinghouse plant in Bloomington, Indiana. Correct?

A That is correct.

Q And therefore nobody in the medical department would have known of any need or any reason to call any of their technical counterparts at Westinghouse and read them the riot act, so to speak, about safe handling of PCBs?

A That is correct.

Q Are you aware of anybody in this time frame in the medical department contacting a technical counterpart at Westinghouse to set them straight on the proper handling of PCBs?

A No.

Did you ever personally visit the capacitor plant that Westinghouse had in Bloomington, Indiana?

A Yes.

Q When did you first visit that plant?

A I believe it was June or July 1970.

Q And is that the only visit you made to that plant?

A Yes.

Q What was the purpose of the visit?

A To share with the management of the plant Monsanto's understanding of the PCB issued -- issue and to give the management of that plant a status report on Monsanto's research studies, toxicity studies, analytical methodology, development.

Q The toxicology studies that you were giving a report on, were those the IBT studies?

A Yes.

Q What analytical methods were you giving a

Q Did you inquire of them whether or not they had cleaned things up?

A Yes.

Q Of whom did you inquire?

A Of the room full of individuals. It was a conference room full of eight or ten people.

Q And what was your specific inquiry in that line?

A I do not recall the exact words, but the essence was: Have you instituted any new practices regarding control of spillage on your employees' clothing, washing and the like? And I was assured they had.

Q Did you tour the facility while you were there?

A Yes.

Q What portions of the facility did you tour?

A I recall a -- other than their offices, I recall a -- a large enclosed area consisting of what I believe was a chamber in which the capacitors were impregnated with liquid and a rather complex conveyor system that carried the baskets of capacitors to the points where the employees were performing the next step in the process. And I also recall an outdoor area with a railroad siding.

Q Is that where the railroad cars with PCBs arrived and were unloaded?

A In some parts of that siding, yes.

Q Did you see any of the employees actually working with PCBs?

A There were a few individuals. But the line on that day was not actively producing capacitors. For some reason, it was idle.

Q So you actually weren't able to determine whether in the production operation things had in fact been cleaned up?

A That is true.

Q Did you learn whether the plant had started issuing plant clothing to the employees?

A I do not remember.

Q Did you learn whether the plant provided paid showers at the end of a shift?

A I do not know.

Q Did you learn whether the plant provided laundry and cleaning services for the clothing worn by employees at the plant?

A I don't remember.

Q Did you learn whether or not the plant provided impermeable shoe coverings to keep PCBs off of the shoes if they were going to be in an area where they could come into contact with PCBs?

A I do not remember.

Q Did you learn whether the plant provided impermeable trouser and torso coverings over their regular clothing if they were going to be in an area where they could come into contact with PCBs?

A I do not remember.

Q Did you learn whether the plant provided impermeable hand coverings for the employee, gloves or something like that?

A I do not remember.

Q Did you learn whether or not the plant provided impermeable head coverings of the sort that Monsanto had for its employees where they might come into contact with PCBs?

A I don't recall.

Q Did you learn whether the plant provided any barrier creams that could be applied by the employees to the bare skin if they were going to be in an area where they might come into contact with PCBs?

A I don't recall.

Q Did you specifically inquire about these other matters, the clothing, the protective coverings, the barrier creams and the like, and just not remember today what you found out? Or did you inquire at all?

A I recall inquiring about that -- those items. The answer given me seemed satisfactory. And the concentration then concentrated on environmental matters. The rest of the day was spent on those matters.

Q The primary purpose of your trip was environmental?

A Yes.

Q The other was incidental to the trip?

A Correct.

Q How many other customers' plants did you visit -- I'm looking just for an estimate at this point -- during this period of time?

A I never made a count. As best I recall, there were about a dozen plants at that point in time.

Q Now I'm talking about from '70 through the '76. Is that the time you're talking about?

A Oh, I'm sorry. I thought you meant the summer of 1970.

Q No, no. I'm sorry. I meant the entire time that you held this responsibility.

A I don't know the number. Couple dozen.

Q Somewhere on the order of 25?

A Something like that.

Q Now, Monsanto was willing for and even suggested to the companies that were its customers, that is, that were big enough to provide an indemnity Monsanto could rely on and who did sign one that they could in turn sell dielectric fluids to companies that Monsanto would not sell to direct. Correct?

A Correct.

Q Did you, for purposes of your job, consider companies to whom Monsanto delivered dielectric fluids, even though they weren't the technical purchaser, to be customers?

A Did I personally? No.

Q Okay. There were definitely situations, were there not, in the 1970s where, for example, if you were going to sell PCB materials to Westinghouse and they were to provide for a resale or whatever you might call it to somebody that Monsanto wouldn't sell to directly, what would actually happen is Westinghouse would place the order but direct that the materials be shipped to the third party?

A Yes.

Q And you did not consider those third parties to whom the materials were shipped directly by Monsanto to be a customer on whom you should make a visit or a call?

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Q What effort was made to provide any technical bulletins or other information on safe handling and toxicology to the locations to which PCBs were shipped?

A The environmental statements issued in early 1970 with some followups in subsequent years went to all entities listed on our ship-to, bill-to lists.

Q When you talk about environmental statements, are you talking about the sort of technical bulletins that we looked at earlier today?

A No. These were the memoranda designed to update all of these companies regarding the

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environmental presence of PCBs and our cautioning: Do not let it get to the environment. Those letters.

Q But not the documents that contained information on safe handling?

A The safe handling documents, I do not know who got them and who in Monsanto supplied them.

Q So you don't know whether or not they went to people who were ship-tos but not the technical purchaser under the purchase order?

A That is correct.

Q Let me hand you what has been marked by the court reporter as Exhibit No. 6 and ask if it's an exhibit consisting of three pages, ask if you recognize the letter that is dated February 2nd, 1972, from Mr. R. T. Richards at Texaco to you and the response that you wrote on February 4th, 1972.

A Now that I've read them, I recall the -- the two documents you refer to.

Q Okay. I'll tell you what. To make it convenient, let me have the reporter mark the letter that Mr. Richards wrote to you as Exhibit 6 A, and then we can distinguish between your response as Exhibit 6 and the Richards' letter 6 A.

[Exhibit 6 A marked]

MR. LACEY:

Q Let me hand it back to you. Now the reporter has marked Mr. Richards' letter to you as Exhibit 6 A. It was part of your function to receive letters of the type that Mr. Richards wrote to you which is marked as Exhibit 6 A?

A Yes.

Q This letter was written in February of 1972. Correct?

A Correct.

Q And by that time had your position at Monsanto become one that was somewhat well-known around the country as being associated with responsibility for PCBs at Monsanto?

A I believe so, yes.

Q So it wasn't at all surprising to find people who knew your name as the person to write to with questions about PCBs by this time, was it?

A That is correct.

Q Did you know Mr. Richards personally?

A No.

Q Had you ever visited the Texaco facilities?

A No.

Q They were not a customer that you went to?

A That is correct.

Q In Mr. Richards' letter he asked for certain information about PCBs. Correct?

A Yes.

Q So what we have here is -- as Exhibit 6 is a correct copy, then, of the file copy you kept of that letter?

A Yes.

Q And what we have as Exhibit 6 A is a correct copy of the letter that you received from Mr. Richards to which you responded?

A Yes.

Q And it is obvious from the way that letter is written that Mr. Richards was under the impression that Monsanto Aroclors had no PCBs in them. Correct?

A Yes.

Q In your response letter you talk about in the last paragraph of the first page disposal of scrap fluids by incineration. Correct?

A Correct.

Q And you reference a temperature exceeding 1600 degrees Fahrenheit. Why is that particular temperature so important?

A It takes very close to that temperature to achieve -- to achieve the total destruction of PCBs to reach three stable chemicals, one being water, the other being carbon dioxide and the third being hydrochloric gas.

Q If PCBs are burned at a lower temperature instead of creating those three chemicals other

chemicals can be created, can they not?

A Yes.

Q In particular, burning of PCBs at lower temperatures can lead to the production of dibenzofurans.

A I am told that, yes.

Q And can lead to the production of dibenzodioxins.

A I do not understand that is possible.

Q You do not?

A That is not.

Q I see.

A I'm told it's not feasible.

Q By whom have you been told that?

A Organic research chemists in Monsanto.

Q It is your opinion that in the incomplete combustion of PCBs, PCBs can be converted into chlorinated dibenzofurans. Correct?

A Correct.

Q But it is your opinion that in incomplete combustion of PCBs they cannot be converted into chlorinated dibenzodioxins. Correct?

A Correct.

Q And that opinion is held in part based on your knowledge of chemistry. Correct?

A Correct.

Q How long have you held the opinion that as a matter of chemistry chlorinated PCBs cannot be converted into chlorinated dibenzodioxins?

A I don't know that it happened on any particular day. It evolved to my present understanding at about -- it's after I was removed from PCB assignments. And at the moment it seems to me somewhere

in '77, '78, that period of time.

Q Did you hold a different opinion about the principles of chemistry prior to your removal of -- from the PCB area, and in specific I mean did you at that time hold the opinion that chlorinated PCBs could be converted into chlorinated dibenzodioxins by incomplete combustion?

A I had a suspicion based upon the presence of the benzene ring, chlorine and oxygen that under conditions that might be present those three types of chemicals could form the right combination to form the chlorodioxins. This was not based on any exotic science other than the presence of those three entities. And I followed very closely any research in those areas for several years until I reached this other point of understanding which exists today.

Q Let me show you another document, dated June 13th, 1975, written by you regarding PCB furans, 56289, and ask you if that helps you recall what these meetings with the FDA about furans were all about.

A I recall now some of the discussion. This was in response to an FDA inquiry regarding: Are there any chlorinated dibenzofurans in your PCBs? And this meeting was called to develop a program to get the right answers to that question.

Q And in fact it was when Monsanto undertook that investigation in response to the FDA request that it found furans in its PCBs?

A Eventually, yes.

Q Prior to that time Monsanto had been of the opinion it had no furans in its PCBs. Correct?

A Based on earlier analytical results with less sophisticated methodology, yes.

Q And part of the reason that the meeting called for the development of a more sophisticated analytical methodology was that Monsanto was concerned

A Correct.

Q Let me show you a memo dated November 10th, 1975, written by you to Dr. Calandra. He was with Industrial Biotest. Correct?

A Correct.

Q Dr. Roush and J. C. Weber. Document 1487, 1488.

A I recall the document.

Q That memo sets forth the agenda for a visit by you and Dr. Calandra, Dr. Roush and I'm not sure, Mr. Weber, I guess, to Washington, D.C., to meet with a number of federal agencies.

A Yes.

Q At the time that that meeting was undertaken had you already reached the opinion that Monsanto should cease the production of PCBs?

A I personally had in my own mind reached that

Q Those visits related in part to presenting Monsanto's position to these various agencies and in trying to influence them not to back the provisions in the proposed Toxic Substances Control Act that would ban the manufacture and sale of PCBs. Isn't that correct?

A I did not personally view it as that being the objective. The objective here was to respond to the findings of Dr. Renate Kimbrough and present Dr. Calandra's and Dr. Poor's opinions regarding the findings of the Industrial Biotest studies and their interpretations.

Q Dr. Renate Kimbrough had done studies with Monsanto PCB products on rats. Correct?

A She -- I don't know that she was -- many

product -- a product.

Q Okay. Dr. Kimbrough had taken a particular Monsanto PCB and undertaken a study of its toxicity on rats. Correct?

A Correct.

Q And the results of her study found that that PCB caused cancer. Correct?

A I think it's more correct to say that the pathologist who helped Dr. Kimbrough in the evaluation of the tissue samples concluded that he observed precancerous cells in the liver tissues.

Q To a layman, can you say that they caused cancer? Or you don't agree that's what the bottom line was?

A If in truth he saw precancerous cells, then a layman could rightfully say that cancer could form.

Q Okay.

A The question is: Did he really see that? And that's the discussion.

Q All right. Now, in that regard, Monsanto was obviously as a manufacturer of PCBs not pleased with the suggestion that its products caused cancer. Correct?

A Correct. Because it had no confirming reports from anywhere to support that.

Q Well, the only studies that Monsanto had done

that related in any way to whether PCB compounds could cause cancer in rats were the studies that Monsanto had commissioned at IBT. Correct?

A At this point in time?

Q Yes.

A Yes.

Q And, of course, those studies had come back giving PCBs a clean bill of health in that regard. Correct?

A If by your expression "in that regard" in terms of cancer findings. Otherwise they were not given a clean bill of health.

Q The Industrial Biotest study reports that were written, the final reports after revisions to the drafts, concluded that PCBs were not carcinogenic. Right?

A Correct.

Q Okay. And that was at odds with what Dr. Kimbrough had found. Correct?

A Correct.

Q Obviously that creates some amount of confusion and question in people's minds about what to conclude and how to understand it. Correct?

A Correct.

Q And at this point in time the problems at

Industrial Biotest have not yet come to public light. Correct?

A 1975. That is correct.

Q I mean you wouldn't have been taking Dr. Calandra with you to influence government agencies after he had been indicted for his conduct at Industrial Biotest, would you?

A Probably not.

Q That wouldn't be very persuasive?

A That is correct.

Q In fact, after the indictment and the conviction of certain principals in Industrial Biotest, that work is of very questionable scientific reliability. Correct?

A In some quarters, yes.

Q Well, can't you agree with me that work done by a scientific laboratory where the principals have been convicted of falsifying test results and submitting false reports to the government would not be the type of material that scientists would ordinarily rely on in forming opinions about matters?

A It would certainly cast a doubt on the data. But if the data were reviewed, audited for flaws, it's conceivable that some of these studies were not affected by whatever the individuals were accused of.

Q Well, if the falsification involved substituting new animals in place of dead animals, writing down measurements that did not exist and the like, then that would make the entire body of the matter suspect, would it not?

A Suspect, yes.

Q Now, at this point in time, when you are taking Dr. Calandra to Washington with you, there is no such pall over Industrial Biotest's work, because this hasn't yet happened?

A Correct.

Q Now, before Dr. Calandra and you and Dr. Roush went to Washington to talk about the proper interpretation of the Kimbrough work, Monsanto arranged for Industrial Biotest personnel to review Dr. Kimbrough's slides, pathological slides, did it not?

A Yes.

Q And that was done in order to determine whether or not the pathologist's reading of those slides that was associated with Dr. Kimbrough's work was a reading that was accurate or inaccurate. Correct?

A I don't know that this type of science lends itself to a black and white accurate/inaccurate interpretation.

THE WITNESS: Just based on what I know, the individuals asked to review the slides so that they could confirm that in truth the pathologists that looked at them originally was interpreting the way they, too, would interpret them. Dr. Kimbrough's pathologist was also permitted to look at Monsanto tissue slides. The FDA in the meantime had been given Monsanto Industrial Biotest slides long before this point in time, but for reasons unbeknownst to me had not reviewed them. And this is the situation that we faced at that visit.

MR. LACEY:

Q Okay. Well, I take it you are not in agreement that one can be correct or incorrect about pathological results, then.

A I was privileged to look through a microscope set up in my hotel room when some of these slides were reviewed. I'm not a toxicologist. But it strikes me as a very subjective distinction of various shades of pink that the pathologist tries to interpret. I can readily see where a difference of opinion can easily exist.

Q Let me try to ask it this way: After the Industrial Biotest personnel or whoever they arranged to have review the slides reviewed Renate Kimbrough's slides, did they conclude that the pathologist who had done the work for Dr. Kimbrough's study reached a

conclusion that they, too, would reach?

A No.

Q And from whom did you get that report?

A I believe Elmer Wheeler described to me the findings of those discussions.

Q Did Monsanto receive a report from Industrial Biotest pathologists that gave their review of those slides?

A I recall a report signed by Dr. Calandra which summarized the findings. I do not recall seeing a report where slide by slide the evaluation was described, nor did I see a summary of all those observations.

Q Was Dr. Calandra a pathologist?

A Yes, I understand he's a medical doctor majoring in pathology.

Q Was it Dr. Calandra who reviewed those slides of Dr. Kimbrough and concluded that there was no evidence of cancer?

A I don't know.

Q Were you present at the meetings where Dr. Calandra presented the Industrial Biotest view on the Renate Kimbrough study?

A Yes.

Q But you don't recall whether Dr. Calandra

indicated it was his own work as a pathologist that he was reporting on or the work of others?

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

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

A That is correct.

Q And were people within the medical department at Monsanto aware of the opinions that Dr. Calandra was going to render on behalf of Monsanto in these meetings with the various government agencies?

A Yes.

Q Did anyone in the medical department advise you of any concern about Dr. Calandra rendering the opinion that the pathologist who had reviewed those slides on behalf of Monsanto were of the opinion that they did not show any cancer or precancer or anything that we as laymen would refer to as cancer?

A That is correct.

Q And that had been approved by the appropriate people within the medical department?

A Yes.

Q Okay.

Let me show you a letter dated June 2nd, 1970, from you to a Mr. Sprouse with -- I guess it's with the TVA. It's not quite clear. Document 16741, 16742.

A I have read it.

Q Do you recall writing that letter?

A Yes, sir.

Q As part of your job and responsibilities at Monsanto?

A Yes.

Q In that letter you talk about the disposal of PCB-containing dielectric fluids. Correct?

A Correct.

Q You sent that letter to the TVA because you recognized that they used PCB-containing dielectric fluids. Correct?

A Correct.

So the letter was sent to the TVA because Monsanto was aware of a problem of leaks of PCB dielectric fluid in and among the electrical equipment they had?

A Yes.

Q Okay. In this letter did you provide any information to the TVA about what measures it should take to protect its workmen from exposure to these leaking PCB dielectric fluids?

A No.

Q Do you know whether or not technical bulletins and the like had previously been supplied by Monsanto to the TVA which would contain that information?

A No.

Q So it is possible that at the time you wrote this letter TVA had no information from Monsanto about how to safely handle PCB-containing dielectric fluids. Correct?

A Possible, but highly unlikely.

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Q Did Monsanto ever supply Congressman Ryan with all the information that he requested about PCBs?

A No.

Q That second letter went to several people at Monsanto, including the lawyers that were part of this policy team that you were involved with. Correct?

A It's a single person. The lawyer.

Q One person? The lawyer?

A Yes, sir.

Q Mr. Park?

A Yes.

Q What was Mr. Park's role on this matter? Was there some legal proceeding that he was involved in?

A No, Mr. Park was part of the task force that addressed PCB issues of all types, and he was a regular member and no particular issue legally was involved. He was our legal consultant for all matters.

Q And that involved in the committee's work many general business considerations of a nonlegal nature?

A Oh, yes.

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Was it thought that the policies that the company was developing had legal implications for the company?

A That's a constant thought.

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Q Let me ask you with regard to the business changes -- and I'm talking now about contractual business changes that Monsanto engaged in in the early Seventies where it modified the contracts with its customers to whom it sold PCBs and required the execution of indemnity agreements, who was responsible for developing that idea? Was that you?

A No.

Q Who within Monsanto came up with that idea?

A I don't know.

Q Did you review the proposed language of the indemnity agreement form?

A No.

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Q Did Monsanto, to your knowledge, ever stop selling PCBs to any customer because of their use in such a way as to bring a hazard to the environment?

A Not to my knowledge.

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Q Did Monsanto ever stop selling PCBs to a customer because of their use of \the product in such a way as to cause a hazard to health?

A Not to my knowledge.

And that was a response to the fact that your group had recommended getting out of all the other uses and they wanted to get out of those uses as quickly as possible, but your group had not recommended getting out of the dielectric uses of PCBs. Correct?

A That is correct.

Q The decision of that committee was to get out of whatever it was that was recommended to be given up in PCB use as soon as possible?

A Correct.

Q And the only reason that there wasn't a similar effort with regard to dielectrics is because your group didn't recommend it?

A Correct.

Q And it was not until you yourself personally reached the decision in November of 1975 that the wheels started rolling at Monsanto on getting out of the PCBs as dielectrics. Correct?

A Well, the timing was such that it coincided with my discussions with Mr. Fitzgerald. I have no way of knowing if Mr. Fitzgerald and others had also arrived at the same decision more or less coincidently.

Let me show you a memo dated July 14th, 1970, written by you to Messrs. Bergen, Mason -- is it Mason?

Mason.

Q Mason and Springate, Document 25625. Take a moment to review that, if you would.

A I have read the document.

Q And what you report that you told Mr. Schwindt was that Monsanto would not voluntarily abandon this business without some protection by proper authorities regarding imports. Isn't that right?

A Yes.

Q Monsanto was going to continue to sell PCBs to its customers, would not voluntarily stop producing, as long as other companies who made PCBs were prepared to import it if Monsanto didn't sell it. Correct?

A All right. What this says is that if PCBs are permitted in the dielectric and heat transfer systems and someone is going to supply that need, Monsanto would be the supplier. If we terminate the sale of PCBs to those two principal and remaining uses, we would do so if no one else would supply that PCB. Because if somebody is going to supply it, we might as well supply it. The problem is not solved.

Q Isn't it true that one of the reasons Monsanto decided in December of 1975 to stop selling PCBs for dielectric uses is that it knew that the Mexic

Substances Control Act was going to pass, they could see the handwriting on the wall, and therefore finally it had come to pass that there was going to be a restriction on other companies selling PCBs in the United States and thus Monsanto was finally prepared to voluntarily abandon the market?

A I don't recall that our thought process was that sophisticated.

Q Well, isn't that exactly what you were suggesting right there? If Congress would pass a law banning the import of PCBs in 1971, then Monsanto might consider voluntarily ceasing production?

A Yes.

Q And the whole point of that was, Monsanto didn't want to give up the competitive position it had in the market voluntarily?

A That's true.

Q Let me show you a letter dated March 18th, 1975, written by you to a Dan Albert with Westinghouse which has attached to it certain questions that he asked, along with answers to them, and some reference material, Documents 16416 through 16423. Do you recall that letter?

A Yes, I do.

Q You had received from Mr. Albert a list of questions that dealt with the hazards to humans of PCBs. Correct?

A Correct.

Q And he on behalf of Westinghouse was asking for Monsanto's information with regard to the answer of those questions. Correct?

A Yes.

Q Did you provide the answers to the questions?

A I provided them to Mr. Albert. But I got the answers from Mr. Wheeler.

And did you supply verbatim to Westinghouse the answers to the questions drafted by Mr. Wheeler?

A Yes.

Q You didn't have any part in actually developing the answers, then?

A That is correct.

Q And that again was consistent with the policy of the company that questions about the adverse consequences of PCBs on human health were to be answered by the medical department?

A Correct.

Q Was there any thought on your part that it was inappropriate for Westinghouse to look to Monsanto as the manufacturer and seller of PCB-containing dielectric fluids for answers to questions like that?

A No. I didn't consider it inappropriate. This would be a step in the right direction, in my opinion.

Q Okay. And certainly some evidence of the fact that Westinghouse was looking to Monsanto for information on the hazards of PCBs?

A Well, certainly. But it would also indicate that their professionals would be playing a role in what eventually is done at Westinghouse.

Q So you viewed what Monsanto knew as a part of at least what Westinghouse would look to for their decisions on health effects of PCBs?

A Very definitely.

Q And that's typical for a customer of a chemical company to look to the chemical company for information on the products that the company supplied?

A Certainly.