jury a copy of one of the documents that was discuss at the close of the testimony yesterday, Plaintiffs' Exhibit 196. We have made copies of that document so that each juror and the Court may have a copy of that.

THE COURT: You may do so.

MR. LACEY: Okay. The offer begins now at Page 328, Line 14.

(Reading from video deposition)

Q Let me show you another document entitled "The Proper Handling of Aroclor and their mixtures in the Electrical Industry," Document 1967 through 2051.

A I'm very familiar with that.

Q Okay. How are you familiar with that?

A Has my name on it.

Q Okay. Did you write it?

A I wrote it.

Q And what date did you write it?

A 12-1-54.

Q December 1st, 1954?

A Correct.

(End of reading)

MR. LACEY: Going to Line 12.

(Reading from video deposition)

Q Now, what was the purpose of writing this document on the proper handling of Aroclors and their mixtures in the electrical industry?

A The purpose of this was to inform our customers of the specifications of all these -- call them 'PCBs'. And you will note in here all of the test procedures, as used at -- and documented at the American Standards -- the ASTM.

So, it gives all of that in great detail. For instance, here it gives great detail of the procedure that is used in our own laboratories. And it give detail of the procedures documented ASTM out in the industry. And it goes into detail, also, also on sampling methods. Then it goes into such things as unloading of tank cars. Now, I remember this: It was sort of embarrassing. A man could come in -- would come and buy his first tank car and it would be shipped. And he would have go to the effort of building an unloading dock to receive this thing, and he built this dock -- would have built it to

unload from the bottom where the tank cars usually do unload.

Q And wouldn't even know enough to know how to unload the car?

A Wouldn't know how to unload the car. Ours unload through the top. Things like this. They were intended, in detail, for our customers.

Q Okay. So --

A -- of which there weren't many.

Q Okay. So, you'd provide a document like that to General Electric and a document to Westinghouse and a document to Allis-Chalmers --

A Exactly.

Q -- and those sorts of people?

A Exactly.

Q Let me look at that document with you for a little bit just to go over the sorts of things that are in it. It's got in here an index or table of contents --

A Yes.

Q -- at the first, doesn't it?

A Uh-huh.

Q And there it details with a lot of things about what it's going to cover. For example, it has a chapter on unloading tank cars?

A Right. I saw that here somewhere, the tank car unloading. All right.

Q It has a chapter on storage tanks?

A Right. We disclose the kind of storage tanks we used.

Q Has a chapter on gas -- gasketing the pump packing?

A Packing. Right.

Q Has an entire chapter on how to do a sample?

A Right.

Q An entire chapter on how do laboratory analysis?

A Correct.

Q A chapter on the actual test procedures?

A Right.

Q A chapter on typical properties?

A Correct.

Q A chapter on earth treatment of Aroclor and their mixtures?

A Right.

Q A chapter on dermatology and toxicology?

A Yes, sir.

(End of reading)

MR. LACEY: Going to Line 18.

(Reading from video deposition)

Q The chapter on tank cars, for example --

A Uh-huh.

Q -- starts off and it's got some have specific directions on what to do, doesn't it?

A I would think so.

Q I mean, for example, it explains there are either two or three --

A Yes.

Q -- connections on the top of the car?

A Right.

Q And exactly what size they are?

A It's very detailed. Right.

Q Exactly what pressures to use?

A And that information was given to me from our plant.

Q Right. Even goes to the point of explaining that the car has got to be level and the brakes have got to be set before you can unload it?

A We know this.

Q Okay. So, it's very detailed with regard to that?

A It's very detailed.

Q All right. And that same sort of detail

follows through the whole chapter, basically a step-by-step how-to-do-it?

A Right. And that, I obtained from our plant.

Q Right. When we come to storage tanks --

A Same thing.

Q Same thing. Very detailed description of storage tanks, exactly how they should be built, exactly what materials to use and everything, correct?

A Right.

Q Talks -- even has drawings on how to do it and the exact sizes of the nozzles, doesn't it?

A It sure does.

Q Okay. When we get to the chapter on gasketing and pump packing, it describes --

A A specific.

Q -- specific types of connections. Gives the part number and the company you can get it from?

A That's the purpose of this.

Q Okay. The chapter on sampling methods, again, is very specific on how you do it, is it not?

A That's correct.

(End of reading)

MR. LACEY: Going to Page 335, Line 3.

(Reading from video deposition)

Q Then it talks about the actual test procedures. These are specific procedures to make sure that the electrical properties have been properly maintained?

(End of reading)

MR. MUSSLEWHITE: Excuse me. What page?

MR. LACEY: 335.

MR. MUSSLEWHITE: There's no Page 335 here, sir. I'm sorry. I can't read it. You will have to read it.

MR. LACEY: The answer is, "This is correct."

Going to Page 336 --

MR. MUSSLEWHITE: Okay.

MR. LACEY: Line 10?

MR. MUSSLEWHITE: Okay.

(Reading from video deposition)

Q In fact, in talking about the test procedures here on Page 47, Document No. 2017, it

expresses you should, quote, "Danger. Make sure check knob is in the check position; otherwise, painful shock will result," close quote.

A That's right.

(End of reading)

MR. LACEY: Going to Line 23.

(Reading from video deposition)

Q Talks at another poing on Page 48, No. 2018, another caution. Talks about the 500 volt D.C. charge and shock hazard that exists in handling the apparatus, correct?

A That's correct.

Q The next page it observes again, underlined, the possibility painful shock doesn't it?

A If you get a jolt of 500 volts --

Q You'll know it, won't you?

A You'll know it.

(End of reading)

MR. LACEY: Going to Page 338, Line 18.

(Reading from video deposition)

Q Then we come to the chapter on dermatology and toxicology. Now, did you write that chapter?

A Well, this was given to me from the medical department.

Q I see.

A I did not -- I don't know what you mean by "write it." Did I copy it down? Did I formulate this? Did I decide what to put there? No.

Q Okay.

A I received this from the medical department. I know exactly what is in here, and this is where it came from.

Q Okay. Well, let me stop --

A And -- oh, I'm sorry.

Q I'm sorry. Go ahead. You can tell me about the medical.

A Well --

Q I've got --

A Well, here again in this area, talk to our medical people.

Q Okay.

A I gave what I received.

Q Now, in the other chapters -- for example, how to unload a tank car, you got that from your plant people, correct?

A Yes, I did.

Q And it gave step-by-step what to do, just

the way your plant people did it, correct?

A This is correct.

Q And on the storage tanks you got the information there from your plant people and gave step-by-step just how to handle the storage tank, correct?

A This is right.

Q And on the section about laboratory procedures, that came step-by-step from --

A Well, we went through the whole thing.

Q Yes.

A We're right on the entire thing there --

Q Yes.

A -- that you're talking about.

Q Well, let me ask my question. Now, on the laboratory procedures you went step-by-step just the way Monsanto did it in the laboratory, correct?

A And as it was done by others in the field, industry, yes.

Q Okay. And the same thing with filtering the Aroclors through the earth -- step-by-step just like Monsanto did it, correct?

A Yes. We already said all of these things.

Q I want to make sure that each set of

directions were step-by-step just like Monsanto did it themselves, correct?

A Yes, yes.

Q Now --

A Okay.

Q -- my question to you is: On the dermatology and toxicology and safe handling, did you set out there step-by-step in detail exactly how PCBs were handled in Monsanto's plants?

A No. I went in accordance with what was given to me by the medical department.

Q So, that is the only portion of this book that doesn't give the step-by-step handling procedures the same way Monsanto did it in their plants; isn't that right?

A Oh, it doesn't do this. This -- I have to agree. I agree with you on this.

Q And every other portion of the book does give the step-by-steps, doesn't it?

A Yes.

Q And the reason you put that in there is because that is what the medical department gave you to put in there?

A That's where it came from.

(End of reading)

MR. LACEY: Going to Page 343, Line 1.

(Reading from video deposition)

Q And after you got that back and put the rest of the book together, it was finally done and then provided to customers, correct?

A This is correct."

(End of reading)

MR. LACEY: Going to Line 13.

(Reading from video deposition)

Q Mr. Benignus, let me show you Document 2052 through 2138 and ask you if this isn't an updated version of your work on the proper handling of Aroclors and their mixtures in electrical industry?

A That is.

Q And this work follows the format of the original in that it has all of the detailed information in each chapter on the specific Monsanto procedures for doing everything, with the exception of the -- not having the specific detailed procedures on exactly how Monsanto

handles PCBs in their plant units; is that correct?

A That's the way it reads.

Q Okay. And then let me show you -- by the way, what was the date of that update?

A '56.

Q Okay. And why did you produce an updated version in 1956?

A We ran out.

(End of reading)

MR. LACEY: Going to Line 13.

(Reading from video deposition)

Q Now, let me show you another Document, 2139 through 2252, and ask you if this is a 1960 update of your previous work, entitled "The Proper Handling of Aroclors and their Mixtures in the Electrical Industry"?

A Yes, it is.

Q And was that printed because the 1956 edition had run out?

A Sad to say, yes.

Q You had a popular work there?

A It dumb-founded me, really.

Q How many copies of this thing do you think you got distributed between 1952 and 1956 and 1960?

A I don't know.

Q Quite a few of them?

A Quite a few.

(End of reading)

MR. LACEY: Going to Page 350, Line 15.

(Reading from video deposition)

Q Now, and again, this 1960 version, like the previous two versions, had all the detailed information about exactly how Monsanto did each step in every chapter except dermatology and toxicology, correct?

A This is correct.

Q Okay. And in that chapter on dermatology and toxicology, what was supplied was the information the medical department gave to you to include in this work?

A That's the information that was available to me, correct.

(End of reading)

MR. LACEY: Going to Line 9.

(Reading from video deposition)

Q Let me ask you a couple of questions about some of the material in that section on dermatology and toxicology.

A All right.

Q I think that the language remains relatively constant through all three versions.

A It does.

(End of reading)

MR. LACEY: Going to Page 360, Line 13.

(Reading from video deposition)

Q Some of the transformer fluids had a mixture of PCBs and chlorinated benzene; is that correct?

A This is correct.

Q And that is why you referenced chlorinated benzene?

A This is correct.

(End of reading)

MR. LACEY: Going to Page 379, Line 9.

(Reading from video deposition)

Q Well, what about when you visited the LaSalle, Illinois, Electric Utilities capacitor plant? Did you go out into the area where capacitors were being made?

A I was there in area where capacitors were being made, yes. I've been there.

Q Did you observe anything that caused you any concern about the way they were handling PCBs?

A I felt that their ventilation may not have been all that it should be, but I wasn't there to call" -- "there to call their or anything else.

Q Did you see --

A I could smell more Aroclor there at that point in time than I would have expected to. You realize, don't you, that you can smell Aroclor? It's not without detectable odor.

Q What does Aroclor smell like?

A Aroclor has clean odor, is the best I can describe this to you -- a clean odor. It has no odor as perfumes or flowers or anything like that.

Q You wouldn't use it as perfume?

A No, doesn't it doesn't impart that kind of delicate odor. Aroclor doesn't smell bad. It

smells clean. May I say 'clean odor'?

Q This is new Aroclor?

A It's -- let me say it this way: The nearest I can say that might be familiar to you is if you go into the washroom in a public place and you smell the naphthalene, okay? In other words, the disinfectant. It's not an odor that upsets one. It's a clean odor. And it's not a strong odor at normal temperatures.

Q This is -- this is fresh Aroclor?

A Well, I don't know what you mean by 'fresh Aroclor.'

Q Unused.

A I'd say unused -- I'd say -- unused?

Q Yes?

A That's true of unused; and it's true of used, too.

Q So, even Aroclor in a failed transformer or a failed capacitor is going to have the same smell?

A Oh, now, wait a minute.

Q Well, that's what I'm trying to find out.

A Oh, well, now, 'failed,' you're probably talking about an arcing failure of a transformer or a case of a capacitor where the thing has

consumed itself.

Q What spell would Aroclor have there?

A In those situations -- remember, there's more than PCB inside a transformer. There are cellulosic materials, in the case of a transformer, pressboard, wood, and things like that. And if this thing has been subjected to the heat one generates where there is an arc-formed gas, you're going to get carbonization and odor and -- and so forth that is not at all normal at all. It's going to smell. You better believe it.

Q It's going to have an unpleasant smell?

A Oh, yes.

Q Okay.

A And you have hydrogen chloride, yes -- very pungent.

Q Okay. Now, this electric utilities plant in LaSalle, Illinois, you did not feel that they had the ventilation they should; is that correct?

A I said this as a general thing, yes.

Q Did you --

A Although I was not uncomfortable, but --

Q Did you express your concern to people there at the plant, that they were not handling it

well?

A No.

Q You just you kept your mouth shut and went on?

A I wasn't being asked. And after all, they have been working in there day in, day out, with no report of any health hazards and --

Q Did you ask them when you were there about health problems?

A No, I didn't.

Q You just -- back at Monsanto where you normally stayed, you never had heard anything about a health problem there at that plant?

A That's right. I hadn't heard of a health problem at any of these places.

Q But you had never gone to any of these places and attempted to determine whether they had any health problems?

A No, I didn't.

Q You haven't heard of them. You haven't -- you haven't inquired about any, either. It's just --

A This this is correct.

(End of reading)

MR. LACEY: Going to Page 388, Line 18.

(Reading from video deposition)

Q Did you ever visit the Monsanto plants where PCBs were actually produced?

A Yes.

Q Did you visit both the Anniston, Alabama, plant --

A Yes, both.

Q -- and the --

A I've been in both plants.

Q -- and the Krummrich plant?

A Correct.

(End of reading)

MR. LACEY: Going to Line 21.

(Reading from video deposition)

Q When were you first there, the first time you were describing for me -- about what period of time?

A I would probably put this sometime in the 1950's. In the 1950's, sometime around there. Because I should -- I would go to the laboratory at the Krummrich plant, and there is where I saw

Aroclor used, tested, and so on and so forth. In the laboratories, yes.

Q Did you also go out into the plant area where it was being manufactured?

A I said yes, I was out there.

Q Okay. Did you observe any special precautions being taken by any workmen to avoid contact with Aroclors or any precautions taken by Monsanto to keep the workmen from coming into contact with Aroclors?

A I did not. I observed hard hats. I wore a hard hat. I observed gloves being worn as one would wear going -- wear climbing onto a tank car or -- or going up iron stairs, et cetera, and an iron railing, and maybe rolling some drums. These gloves were not there for the purpose of covering the hand skin from the Aroclor. Neither did I have anything. I had goggles was -- this was standard practice. I had goggles. This is standard practice you go into the plant. They give you protective goggles.

Yes, sir. I had these and the safety goggles, for instance, are glasses that was a requirement when you went into a chemical plant.

At one point in time, whether you went to

the PCB area or not, they would give you a smock to wear, but you had that whether you went to Aroclor or not.

Q Anything else?

A They wear safety shoes but not because of the PCBs. They didn't want anything heavy to break their toes.

Q You are talking about steel-toed shoes?

A Steel-toed shoes, yes.

Q Anything else?

A No, I would say that is it.

Q Did you see any changes between the way the workmen were exposed or not exposed to PCBs when you went back to the Krummrich plant in the late '60's other than the fact it was cleaner and you couldn't smell it?

A No, I couldn't see any difference in their attire, no.

Q What about the Anniston, Alabama plant? When did you visit that plant?

A I visited the Anniston, Alabama, I would say first time 19 maybe 48 or 47, something like this.

Q What did you observe there about precautions provided by Monsanto for the workmen?

A Essentially the same as I have just said for the Krummrich.

Q You didn't notice any?

A There are no special protective. They didn't wear aprons and protective garments. They were attired in their khaki. The supervisor, he wore a white shirt, I don't know why, and khaki pants. He didn't, at times didn't wear hardhat either.

Q Were there special uniforms that Monsanto required all of its people to wear? You were supposed wear a khaki --

A Why.

Q -- uniform to work?

A Yes. This is a thing that whether you were in the laboratories or the plants, you had these uniforms to wear. It was no longer that you came there in your street clothes. Your wore these uniforms and they were laundered by the company and are furnished and laundered by the company and were changed once a week or twice a week, whatever. If needed, if there was spill, they would be changed at this time.

Q Okay. So, the workmen had special clothes when they came to work to change into?

A Yes. They didn't work in their street clothes, let me say, those days were over with, yes.

Q Okay. Any other precautions that were taken with regard to exposure to PCBs?

A Not that I know of, no, huh-uh.

Q The company laundered these clothes for the workmen?

A Yes.

Q You can't think of any other precautions that you observed being taken by Monsanto to protect its workmen from exposure to PCBs?

A No. I never saw anybody wear a mask or so forth.

Q I want to focus your attention now on the matters that took place after the problems of PCBs came to light in the 1960's. Do you knowwhat I'm --

A In other words, you're after certainly post 1960. You're up to 1968, would you say?

Q Yes. In the period of time where --

A All right. I'm with you.

Q Where there comes a --

A Enviromental concern.

Q Yes.

A Yes, all right.
Q Now, you were involved --
(End of reading)

MR. LACEY: I'm sorry, ending there -- skipping to Page 396, line 18.

(Reading from video deposition)
Q I have got a document here. It's numbered 508 through 511. And it's a letter that appears to be dated August 6, 1970, on Monsanto Company letterhead --
A Uh-huh.
Q -- and signed by you. For some reason, I don't have any addressee on the letter. I don't know who it was sent to.
(End of reading)

MR. LACEY: Go to line 4.

(Reading from video deposition)
Q Did you normally, when you had letters typed up, show on there where who you sent it to?
A This one went to you right now and we are talking about what we talked the other day, 1016.

This, I think, was left open so that people's names would be stamped on because this thing received wide circulation --

Q Uh-huh.

A -- ex-U.S. -- I mean ex-Monsanto.

Q Okay.

A This went as an information piece to our Aroclor 1242 customers. It compares 1016 with Aroclor 1242.

Q Now --

A -- which was an assignment I had.

Q Okay.

A All right. This is approximately when Aroclor 1016, I think we will find, was being introduced, 1970.

Q And you were involved in that, were you not?

A Yes, I was. I was the one really involved in covering this with our capacitors customers.

Q Were you involved in trying to get them to take on that product?

A I was -- yes. I was -- my duty was to show them the difference in it and that we say that there is essentially no difference; that if you peole are willing to accept this, it's a step in the right direction to help satisfy the

environmentalists; if you're willing to accept this, Monsanto is willing to make it and supply it in replacement for 1242 if you so approve of it. This is what it was.

I was giving them specifically -- there's a specification, isn't there, a comparison of those specifications?

Q Yes. There's attached a specification for --

A 1016?

Q -- 1016 and for 124 --

A 1242.

Q -- 1242.

A This is exactly what this thing is, yes.

Q Now, I've got another -- what appears to be another copy of that letter -- and I want you to compare it and let me know if it is -- Document 15504 through 15508, that apparently indicates a copy of that letter was sent to Mr. Robert E. Abbe, A B B E.

A "Abbe" at G.E.

Q "Abbe"? With G.E.?

A All right. It says here, "You requested this amount, and the" -- "the samples are being sent to you."

And Dr. Munch had analyzed -- or had tried this in our laboratory with experimental capacitors and found them satisfactory.

Q Okay. Dr. Munch was a scientist there that was --

A Yeah.

Q He was developing different dielectric fluids in response in --

A Yes, he was. And this was one --

Q This was not the only dielectric fluid?

A Oh, no. We were trying additional things to this. This is the same thing here.

Q Yeah. Appears to be the same letter, does it not?

A This is exactly the same thing, yes.

(End of reading)

MR. LACEY: Going to line 8 on Page 400.

(Reading from video deposition)

Q Let me show you another letter, Document 512 through 516, dated February 18th, 1971, and signed by you. Is that another one of your letters involving this 1016 --

A Yes, it is.

Q -- problem?

A Yes, it is.

Now, this gives more information. Our laboratory now, in '71, has completed life tests. It takes time, you know. This is our additional information. And, yes, this is all of this, the results of life tests --

Q Okay.

A -- giving these people the benefit of what we have observed.

Q And then I have what I believe is another copy of that letter, Document 15696 through 15701, indicating a copy of that letter was sent to General Electric at Hudson Falls, New York.

A That's Abbe again.

(End of reading)

MR. LACEY: Going to Line 8 on that page.

(Reading from video deposition)

Q On the second page of that letter, if you would turn --

A This one?

Q Yes, that letter.

In the fourth paragraph from the end, you say, "We have an extensive research program on materials for use in capacitor dielectric systems." Do you see that --

A Where do I see that? On the second page?

Q Yes. Right there.

A Oh. "We would be most pleased to have you visit" -- no.

Q No.

A Oh, all right. I'm sorry.

"We have an extensive research program on materials for use in capacitors die" -- yes. We -- at this point in time Munch had set up a laboratory facility to impregnate and life test experimental possible replacements for PCBs. And this was one of them.

Q When -- now, this actually was PCB product, though, wasn't it?

A Oh, yes. this is a PCB, and this is why it didn't fly. To --

Q When --

A Go ahead.

Q When did Dr. Munch first develop a non-PCB replacement fluid for capacitors?

A I don't know exactly when; but it is in this time frame when we are looking for replacements, whether M-16 or something else.

Q Did Monsanto seek to acquire patents on any of the replacement fluids developed by Dr. Munch?

A Yes. On -- on one, yes.

Q And that was one that you thought had great promise?

A I didn't.

Q You didn't?

A No.

Q Well, why go to the effort of seeking a patent on it, then?

A Well, don't ask me.

Q Okay.

A I don't mean to be -- okay.

Q Did Dr. Munch think it had some promise?

A Why don't you ask him?

Q Okay. You don't know anything about that?

A Sure, I know about it.

Q Well, tell me what you know about it.

A Well, you asked for one with a patent application; so, we'll talk about that one.

This was a hydrocarbon base. Now, early on, if I can remember, yesterday we talked about

dielectric constant, mineral oil, 2. This is 2. And we also saw PCB at 5.

Now, we have a hydrocarbon base that does not give the capacitance for the kind of capacitors that we're going to have to make, which are motor-runs and ballast.

Now, one way of increasing capacitance is to add what Munch has patented. You can read in the literature. It's a diphenyl sulfone, which has a high dielectric constant.

Now, there's two things about this. It's going to cost more than PCB. It is going to be a lossy-type fluid.

Q A what?

A Lossy, L O -- it's going to have dielectric losses higher --

Q Okay.

A -- than one wants to deal with.

Now, this was submitted to the General Electric Company and other people. And the response was along this line -- you are aware nothing is going to fly in this business unless G.E. adopts it. We can assume this.

Their reaction to this was: "We have enough trouble with lossy dielectrics that we are

already trying to find as replacement for PCB, and we object to this for that reason." They were not interested. It did not go commercial.

Now --

Q Could it have been used as an alternative capacitor fluid in capacitors that were then being filled with PCBs?

A Could it have been?

Q Yes.

A Dr. Munch, in his laboratory, made capacitors that he thought were all right.

Q They worked?

A It could -- they worked, granted.

Q The problem was that you couldn't get G.E. to buy --

A To use it.

Q -- to buy this fluid instead of PCBs?

A Yes. Or instead of other things, what they're using now.

(End of reading)

MR. LACEY: Going to line 15.

(Reading from video deposition)

Q G.E., as I understand what you're telling

me, basically said, "I'd rather buy your PCBs than this alternative that Dr. Munch has come up with."

A No, I'm not saying that at all.

Q Okay.

A What I said -- and their laboratories were closed doors at this point in time. They said, "We all" -- "are already working with lossy dielectrics as a possible replacement."

I know what they had in mind. They had in mind phthalate ester, specifically dioctyl phthalate, which they were working on. And they began the life test in 1972.

And I guess we're in that framework of time, somewhere around there.

Now, they had come to Monsanto and asked Monsanto to supply dioctyl phthalate. Prior to that and along at this point in time, Monsanto had sampled G.E. with Santisizer 711. Now, to make this simple, Santisizer 711 is a phthalate ester just like DOP is a phthalate ester.

You don't want the whole explanation, is that why you're smiling?

(End of reading)

MR. LACEY: Going to Page 407, line 1, the answer continuous --

(Reading from video deposition)

A All right. Monsanto had Santisizer 711, and and that's a phthalate ester with a -- one chain seven carbons and another chain of 11 carbons. Dioctyl phthalate has one chain of eight carbons and another chain of eight carbons. Both are phthalate esters. You can't -- they're like two peas in a pod.

We offered Santisizer 711 to G.E., which we made. We weren't making DOP. Later they would ask us to do so. We didn't.

But they did not accept Monsanto's 711. The reason: It was a tick worse on dielectric constant, not a great thing. It cost more. And that is important.

The other thing is they knew they could get DOP on -- on the market, like a commodity, rock and gravel. And this is what they were looking for. Both products had the same limitations of being an ester, subject to hydrolysis and oxidation. So, why should they go with what Monsanto offered?

They were looking at DOP, and this was in this time frame.

Q You were offering them alternatives in the 1971 time frame?

To PCB, yes. And this isn't the only alternative that was offered. Another alternative was another hydrocarbon, which was later adopted, that type thing, by Westinghouse, which they had researched probably prior to this time we had sampled.

You can say, "Well, why didn't they adopt that?" Well, our -- I'm talking about isopropyl biphenyl -- ours was more expensive than they felt their economics -- they adopted eventually -- my understanding, they now use something coming from this area, a hydrocarbon, quote, "isopropyl biphenyl." They call it that. It's an off-stream from a petroleum hydrocarbon.

And the point to all of this is -- and I want to make it -- the time that PCB manufacture terminated was the exact time when G.E. went to market with dioctyl phthalate. Monsanto always said as soon as anyone -- we, anyone -- on the outside has a substitute, out; because the company was ordered to shut down. The only

reason they were making it was because of the insistence and the plea of the electrical industry and the EPA.

Q When -- when had Monsanto decided that it would stop producing PCBs as soon as there was an alternative?

A As soon as there was an alternative and G.E. stopped buying PCB, that was the end of it.

Q Well, let me -- let me separate those two apart for just a second.

Are you telling me that by 1970 Monsanto was committed to stop selling PCBs as soon as there was an alternative product for use in capacitors and transformers?

If you know.

A You've asked the question. To my knowledge, this is it: The very top of Monsanto -- and this is in response to the YUSHO thing.

Q YUSHO, you're talking about the Japanese --

A Yes.

Q -- incident?

A When they shut down in Japan, that meant our plant shuts down in Japan, too, not only the Japanese.

Q When did that happen?

A It was around 1968 or somewhere in that period.

Q So, Monsanto's PCB plant in Japan was shut down in the late Sixties?

A Oh, yes.

Q Okay.

A I would say so.

Q Okay.

A It never really got going, because I was sent over there to try to market and had no success.

(End of reading)

MR. LACEY: And I think the answer continues on line 16.

(Reading from video deposition)

Q Now, let's get back here. The YUSHO thing is the thing of very pronounced influence on PCB. I'm not saying it was fully understood. It was a marked influence.

The directive, as I understand this -- Paul Benignus speaking -- we are making something that is not wanted. Simple to understand?

Q Yes.

A Get out.

Now, Monsanto proceeds to do this. It wasn't difficult in the nonelectrical because there were substitutes -- or substitutes could easily be provided.

In the electrical industry -- and the reason I'm telling you this -- I got a phone call from G.E. "Do not let Monsanto take precipitous action to shut us down as has been already done in nonelectrical."

My response to this is: "I know what it means. You don't have to tell me that it runs the risk -- if you can't get PCBs for capacitors and transformers, you're going to say it's going to run the risk of shutting down power supplies." And I believe it would have. It would have been a very serious thing to do.

They did not have a fire resistant replacement. We know this. We're talking here about efforts to find replacements. None of these were fire resistant. Now --

Q The replacements they ultimately used weren't fire resistant, either, were they?

A That's true, too.

Q Okay. Go ahead.

A That's true, too.

Q Okay. Go ahead.

A Now, they pleaded, 'Don't shut down. Don't shut us off.'

I said, quote, 'You're talking to the wrong guy. You better your very top people and come in to St. Louis and talk to the very top people at Monsanto,' end quote.

This actually happened. This, they did.

Q Who did they talk to?

A They're not speaking only for themselves. They're speaking for the industry. And because of this -- and the government, also -- I'm saying the EPA -- it's my understanding that the EPA also said, quote, 'Look. If this means shut down power supply in this country, you're going to have to find some way to proceed without doing that.'

Then comes this situation: Agreement by all concerned to proceed on the premise that capacitors and transformers are hermetically sealed. And they continued to supply, pending a replacement.

Now, Monsanto had these things. There were other things. None of them flew for us. And as

I say, when the shutdown really came was then G.E. announced and did go to market with DOP. And that's the end of it and the answer to it."

MR. LACEY: Going to Page 413, Line 8.

Q (Reading) "And the very products that were used in capacitors and transformers in lieu of PCBs were already available in 1970, weren't they?

A Yes, they were.

Q Okay.

A Yes, they were.

Q And had Monsanto stopped making PCBs in 1970, the transformer and capacitor people would have gone to the very products they eventually did go to in lieu of PCBs?

A This isn't exactly right. No, I don't agree with that.

Q What would they have gone to?

A They -- well, all right. You're thinking this through for yourself. I don't mean to get into a debate on this subject.

Q I just want to know your testimony.

A I agree DOP was available. I agree that

I say, when the shutdown really came was then G.E. announced and did go to market with DOP. And that's the end of it and the answer to it."

MR. LACEY: Going to Page 413, Line 8.

Q (Reading) "And the very products that were used in capacitors and transformers in lieu of PCBs were already available in 1970, weren't they?

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A This isn't exactly right. No, I don't agree with that.

Q What would they have gone to?

A They -- well, all right. You're thinking this through for yourself. I don't mean to get into a debate on this subject.

Q I just want to know your testimony.

A I agree DOP was available. I agree that

isopropyl biphenyl was available. I disagree with your thinking -- because there is a big void in what you're saying because these things were not tested and probed and proved out -- that it would be feasible, safe to go to market with DOP.

If you think it was an easy thing to determine this, I assure you, it was not. And after DO -- G.E. did go to market with DOP and Monsanto shut off, did stop producing PCBs, I can assure you there were some companies flat on their face because they were not able -- they no longer had the PCB. They had nothing. And that was a very difficult situation. We -- we were called things that weren't too nice.

Q I see. Isn't it a fact that the decision of Monsanto to keep manufacturing PCBs after it had alternative products and others had alternative products available, was influenced by the fact that Monsanto made a lot of monty selling PCBs?

A No, it was not. No, sir.

Q Had nothing to do with it?

A No, sir, it had nothing to do with it.

Q Okay.

A No, sir, it did not.

Q Let me ask you a question about your work

with the American National Standards Institute Committee C-107.

A Yes. This -- now, you're going up to 1970. Well, that was published in '72 or '73. There was" --

MR. LACEY: Going to Line 12.

Q You were chairman of the steering committee on the --

A This is what I was going to say.

Q Okay. Tell me about that."

MR. LACEY: And then going to the answer on the next page at Line 7.

MR. MUSSLEWHITE: Next page at Line 7.

A (Reading) "I was elected to be chairman. Now, as I already told you, I was on the shelf at this time.

Q Okay.

A Except I did know people. The transformer makers and capacitor makers, I knew those people through the years.

Q Were you an influential person with those

people?

A They didn't dislike me, let me say.

Q They knew --

A They knew me.

Q Okay. What you -- what you had to say --

A They knew me. And I was used to organized this thing. Al Salazar at ANSI had the government backing, the funds and support. But he didn't know who to invite. I knew this. And so, we drew up a list of people who should all be invited. And this was very broad representation.

Q And Mr. Salazar is with National Electrical Manufacturers Association, correct?

A But he was also secretary of -- he was also with ANSI," A-n-s-i.

Q "Okay.

A On this -- in this area and in some -- in some other areas.

Q Now, the National Electrical Manufacturers Association is a trade organization of people like Westinghouse, General Electric, Allis-Chalmers and Maloney and others?

A Yes. Whereas ANSI is really -- represents government, organizations, and everybody -- the FDA and the Bureau of Standards and the EPA and

the -- everybody.

Q Okay.

A -- industry, institutional, universities, and so on and so forth. Yes, this is correct.

Q Now, the -- this steering committee for the ANSI C-107 group, you actually chaired that committee, didn't you?

A This is what you're reading. So, yes.

Q I mean, is that accurate?

A They called me -- oh, no. I was chairman of the steering committee.

Q Yes.

A Excuse me. Yes. That, yes.

Q And what did that involve?

A As I already said, as chairman of the steering committee, I participated there in getting this thing organized and getting it together on behalf of Al Salazar, to get this thing going.

Q Now, the actual chairman of the committee as it finally wound up --

A Right.

Q -- was Mr. Papageorge, wasn't it?

A You're right.

Q So --

A Not me.

Q So, a Monsanto man chaired both the steering committee --

A You're right.

Q -- and the committee?

A But the guy -- okay. Let's get -- let's let the glory to the -- you're right.

Q What?

A You're right. But I told you that I was on the shelf, and Papageorge was put in there as chairman. He didn't do the active work, I assure you.

Q Who did the active work?

A Well, the composition of these are given in -- in those brochures there. There was a separate group for capacitors. Why? Because they were capacitor people and knew what they could do in the capacitor area.

There was a separate section. They were transformer people they knew. We didn't have carpenters or bricklayers or so forth. We asked the EPA and people like that to participate. They didn't know what to do but they were invited and they attended meetings, yes.

Q Now, you and Mr. Papageorge were on both the

transformer committee and the capacitor committee, weren't you?

A Oh, as -- as ex-officio, is it, there. You're right.

Q What does 'ex-officio' mean?

A I don't know; I don't know.

Q Did -- did you get to participate in those meetings?

A I walked around while these guys were working.

Q Let me show you --

A I went from one room to another.

Q Let me show you a Document 020021. And this has got the actual members on those committees --

A That is what I was talking about.

Q -- doesn't it?

A Yeah. Yes.

Q Now, were there any representatives of the EPA on those committees?

A This is what I already said. EPA was invited to participate. What would the EPA do? The EPA did attend the meetings. But when it comes down to working out the nitty-gritty, we couldn't get an EPA guy in there. We asked EPA to attend all of our meetings.

Q Uh-huh.

A And if you want to get into that, we'd meet in -- in Chicago with the EPA; and the next time, you'd meet in Cincinnati with a different EPA man. We met in Washington at Gathersberg and so on. It -- we asked these people.

Q My point is that these committees were really made up of two Monsanto people and -- with the exception of one representative from the Department of Army on the transformer group -- the transformer and capacitor manufacturers, weren't they?

A Excuse me for laughing. And you're going to say this is self-serving.

Q I'm just asking who -- what people were on the committees.

A As you see it right there. You're right.

Q Okay.

A This is correct. I've tried to say how come --

Q Well, how did it wind up like that, that --

A Well, I said the people on the capacitor group were people knowledgeable with capacitors; and the people on transformers, they were knowledgeable with transformers.

Q I mean, I note in reviewing this document that it appears that there were people from the EPA and --

A Yes.

Q -- the REA and the TVA and others that were on these committees, but they didn't get involved in the working groups.

A They didn't want to work. They didn't know what to do.

Q Okay.

A That's -- that's all. But they were on the committee.

Q Okay. Now, the National Electrical Manufacturing Association came out with their own standards --

A Yes, they did.

Q -- for the handling of PCBs in transformers, did they not?

A Yes, they did.

Q Now, did Monsanto have a role in being involved in the development of the National Electrical Manufacturers Association standards?

A From the standpoint that those NEMA people -- national association of manufacturers -- are the same people that I think you find

there on the ANSI thing, it's -- I -- it's difficult for me to separate these two. I get mixed up with it myself.

Q They are pretty closely related --

A Oh, absolutely.

Q -- the industry trade group and the ANSI?

A Absolutely.

Q Almost one in the same?

A Yes.

Q Okay. The" -- Line 22.

A "The one is dated '72, and I think the other one is dated '73 and --

Q I think it's '73 and '74.

A Excuse me. Okay.

Q It appears that -- let me show you the NEMA standards --

A Yes.

Q -- the National Electrical Manufacturers Association. It's document 764 through 816. It appears they came out in January of 1973.

A All right.

Q And then the ANSI standards, the C-107, apparently came out in January of 1974.

A Yeah.

Q And that's Document 728 through 763.

A Uh-huh, right.

Q Now, those standards, both the National Electrical Manufacturers Association standards and the Amerian National Standards Institute standards -- and both of those were prepared by these groups that basically were comprised of industry people and Monsanto --

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A Yes.

Q -- those standards were very similar to each other, were they not?

A Oh, they are.

Q Almost identical?

A They are.

Q Yeah. Those standards are consistently (sic) different than the standards that the EPA came out with on behalf of the Government, are they not?

A You're in an area now where I was out of the picture.

Q I see.

A I cannot answer this. I don't know.

Q Well, are you aware of the fact that when the government took action, its action was much -- more similar to that of Japan than to what these industry groups did?

A I didn't know that, no.
Q Okay. You aren't aware of the fact that the government banned the manufacture of PCBs?
A In Japan?
Q No. In the United States.
A In the United States, banned it, yes. That came a little later than '77. '79, as I remember. Is that right?
Q It was effective 1979 --
A Effective --
Q -- but the decision was made and legislation passed in 1976, wasn't it?
A I accept what you say."

MR. LACEY: Going to Page 425, Line 21.

Q (Reading) "What the industry recommended and what the government did were very different. Industry said, "Keep on using PCBs,' and the government said, 'stop.' What time frame are you talking about?
A Well, depending on what time frame you're talking about.
Q Well, the industry was saying from 1970 on, 'Keep on using them; we've got to have them.'

A Yes, until they find a substitute.

Q Do these documents say anything about looking for a substitute for PCBs?

A That wasn't the subject of these documents. The subject of these documents is to try and see how to prevent contamination of the environment with PCBs.

Q I see.

A That is what these documents are addressed to. The -- the purpose of these documents was not to find a substitute. The purpose of these documents is to try and specify standards as to how to prevent contaminating the environment, obviously, in the continuation of -- of PCBs. And this is why I agree with what you've said.

Q In fact, wasn't it Monsanto's position that it would be appropriate to continue to manufacture and use PCBs in the dielectric area because Monsanto was going to ensure that the product didn't get out into the environment from their plants and to refuse to sell PCBs to anybody who let PCBs get out into the environment from their plants -- if you know?

A I don't know, no, on that one.

Q I see.

A You ought to check with somebody else.
Q Well, let me show you again Document 20021 through 20039 and direct your attention to Page 20026 and '27.
A Okay.
Q That's the steering committee statement on PCBs, is it not?
A I would assume so, yes. That's what it says.
Q You were chairman of that steering committee?
A Yes.
Q Okay. And down here in Item No. 4, it says that, quote, 'Strict and effective steps have been taken to avoid introduction of PCBs into the environment at Monsanto' plants,' close quote --
A Yes.
Q -- "quote, and by the facilities used where Askeral type transformers and capacitors are made,' close quote.
A This is correct. This is what it says.
Q Okay. The position that was being taken by this group was that PCBs weren't going to be an environmental problem when used in the electric industry because the manufacturer, Monsanto, and

Monsanto's customers were going to enusre that they didn't get out into the environment; is that correct?

A I did not write this. I signed --

Q Who wrote it?

A My name is on here.

Q It was ghost-written for you?

A I did not write this.

Q Who wrote it?

A I don't know, but --

Q Well, why is your name on it?

A My name was used in many ways.

Q Well, did you approve the documents that used your name before they went out?

A In essence, I'd have to say yes.

Q Okay. So --

A Yes, in essence.

Q So, the position that the steering committee was taking was that PCBs weren't going to be an environmental problems in dielectric use because Monsanto as the manufacturer and the people to whom Monsanto sold, as the actual builders of capacitors and transformers, were going to take the necessary steps to keep them from getting out into the environment?

And isn't -- isn't tht what -- isn't that, in sum, exactly what you were stating?

A That's what it states in here, yes.

Q Now, do you know whether or not, in truth and in fact, all of the people to whom Monsanto sold PCBs actually handled them in such a way as to keep them from getting into the environment?

A No, I do not. I do not.

Q Would that make any difference to you as the chairman of the steering committee, signing a document like that?

A Effort was made, as it says here, to prevent spills into the environment. That was not fully achieved.

Q Okay. And would it make any difference to you, as the person signing that, that that wasn't actually achieved?

A Yes, in full conscience, yes.

Q Okay.

Q Did Monsanto take any steps as the manufacturer of PCBs to exercise whatever power it had to ensure that its customers didn't allow PCBs to be a problem?

A They did everything they could, yes.

Q What did they do with their customers who

weren't handling PCBs properly?

A I don't know. You would have to check with the marketing -- with the person -- the business director.

Q Well, then how can you say that they did everything in their power if you don't even know what they did?

A All right. Then I'll withdraw what I said and say check into this with the top of the business, which I was not.

Q Well, would you agree with me that Monsanto should have done everything in their power to try to ensure their customers didn't let PCBs get into the environment?

A I agree with that."

THE COURT: How much more of the deposition?

MR. LACEY: With the portion that the defendant has to offer, I would say probably another 45 minutes.

MR. MUSSLEWHITE: Your Honor, we've been reading the defendants', too.

THE COURT: Go ahead.

MR. LACEY: Going to Page 441, Line 15.

Q (Reading) "Do you recall at any time when Monsanto was having trouble selling its Aroclors because the quality of its product was not as good as that of its competitors?

A No. Who are its competitors?

Q Well, weren't there other people around the world who were making PCBs at some point in time?

A Oh, yes. No, I thought you were talking -- oh, you're -- you're into ex-U.S.

Q I'm asking whether or not you recall a period of time when Monsanto's production of PCBs was not as good a quality as that of the Japanese and the Germans, for example?

A No, no. Absolutely not.

Q It was always superior?

A I don't say it was superior. It was equivalent. I -- I say their quality, as far as I know, was and could have been equivalent. This comes back to setting these international standards that I worked on. That was the purpose for it, to have uniformity of quality.

Q And you don't -- you don't recall at any point in time United States plants or Monsanto in the United States being concerned that its PCBs

were not as good a quality --

A No, no. Not at all.

Q Okay.

A No.

Q If that happened, that would be surprising to you?

A Oh, it would."

MR. LACEY: Going to Page 445, Line 3.

Q (Reading) "The primary source of literature to people about any toxicological or dermatological problems with PCBs and Askeral as dielectric fluids was the literature that we've already looked at, was it not?

A Yes.

Q Are you aware of any other literature provided to customers about toxicology or hazards, other than what we've already looked at?

A No.

Q So, as far as you know, as the person designated by Monsanto to speak to advertising on dieletrics, marketing on dielectrics, and technical data on dielectrics, that's the sole source of information supplied to customers?

A As far as I know, yes."

MR. LACEY: And then the witness changed his answer after the deposition to add, "By Monsanto. But others also supplied literature."

Then going to Volume III, Page 6, Line 8.

Q (Reading) "I think at the point that we stopped your deposition last time, you were starting to talk about the problem of contamination in dielectric fluids. And I wanted to ask you some further questions about that.

If I understood your testimony correctly, it was quite important that dielectric fluids not have very much by way of contaminants in them; is that correct?

A That's correct.

Q And the reason for that is that if dielectric fluids have contaminants in them it will have an effect on their electrical properties, which is the point of making them, correct?

A If it's outside contaminants, yeah, such as

moisture.

Q Right. Now, with regard to PCB-containing dielectric fluids, of course, there was a problem that existed in the 1960s with regard to the quality of the PCB dielectric fluids made by Monsanto; isn't that correct?

A I never heard of it.

Q I see. Let me show you a memorandum dated April 26th, 1967, written by you to Mr. Vince Haupt at Anniston and ask you if you recognize this Document No. 9875 through 9876.

A Yeah, I recognize this without reading it.

MR. LACEY: Your Honor, I have a copy of this document I would like to make available to the jury so they can look at it.

THE COURT: You can collect the ones that the jury has already seen, if you would.

(Reading from video deposition)

BY MR. LACEY:

Q Did you write it?

A Sure, I wrote it.

Q One of your concerns here was the problem of being able to control the quality of the PCB products that Monsanto made and in particular, with regard to their ability to meet specifics; isn't that correct?

A It says, quote, "Overseas Shipments," end quote.

Q Uh-huh.

A Now, I'll answer your questions down the line. But I know what this is about. I wrote it. It has absolutely nothing to do with the quality of the product. It has to do -- well, you ask the question.

Q Well -- let me see if I can understand --

A I know what you're reading. That's a -- that's a humorous thing that I wrote there, and I'm sure you're misled by this. I appreciate this.

Q This was a joke?

A This is a joke.

Q I see.

A Now, if you want me to explain it, I will. I know how -- I understand your quandary.

Q It's just a joke?

A It is a joke. It has -- well, if you wish

to question about it, I'll answer anything you want to question. It is not a -- it has nothing to do with the quality of the fluid.

Q I see.

A It has to do with oversears shipments, and I'm addressing that they should look into the kind of drum we're using. I imagine we get into discussing this somewhere. I didn't read it all.

Q Well, let me see if I can understand the background for this document.

A Fine.

Q Monsanto made PCBs in the United States, correct?

A This is correct.

Q And within the United States, Monsanto supplied almost all of the PCBs that were used in the United States.

A This is correct.

Q Monsanto also sold part of the PCBs that it made in the United States, overseas -- correct?

A Correct.

Q Within the United States, there was very little competition supplied by foreign manufactures for --

A This is correct.

Q -- the PCBs products, correct?

A Correct.

Q And the reason for that was that the cost of transportation from a manufacturer overseas into the U.S. made it very difficult for overseas manufacturers to compete with Monsanto on price, correct?

A This is correct, yes.

Q Now, Monsanto did try to tell its U.S. production in competition with others outside the United States, did it not?

A This is correct.

Q There were other companies that made PCBs in Japan and in Europe, correct?

A This is correct.

Q Within the United States, because there was virtually no competition for Monsanto, as long as the product met the minimum qualifications it would be an acceptable product to the customer, correct?

A It had to meet the specifications, which were standardized worldwide.

Q Now, outside the United States, where you were selling in competition with other companies overseas, a customer might decide between buying

a Monsanto PCB product and a non-Monsanto PCB product, depending upon which was the better product, correct?

A That's not not correct. They were synonymous. They were the same.

Q I see.

A You're getting into a comparison of the inherent characteristics and quality of the product. And that is not what this address -- what this is addressed to.

Q I see.

A It is -- you're correct. It does deal with shipping product overseas. Now, I'd like to have -- this -- as I told you, this is a -- this doesn't give any of the physical constants or anything else. I know what this is about. I wrote it.

Q Well, let's see --

A It has to do with the package, the package going overseas. This is the subject matter.

Q Well, you --

A Now --

Q You talk about in this memo, do you not, that overseas business is hard to get because other people can buy from your competitors

easily; is that correct?

A Oh, I would certainly agree with that.

Q And you say in particular, quote, "It's not like our domestic affairs where we don't have to meet competitive quality," close quote -- correct?

A That's what it says, yes. I told you, in essence, this is a -- a joke here.

Q A joke?

A Now, if you want to get into the technology of this, this is something quite -- if you wish to discuss that, okay.

Q Well, this memo deals with Aroclor electrical quality --

A Yes, it does.

Q -- of overseas shipments, does it not?

A Yes, it does.

Q And it was talking about a problem that you really had back in 1967, wasn't it?

A No. I don't call this a problem in quality of the -- of the dielectric fluids, no.

Q You said --

A Let's -- let's face it. The quality of our material, the intrinsic quality of our material, is synonymous with the French, the -- that made

in Britain, in Germany, and what have you.

Q Why don't you just read for me Points 1 through 6 into the record so we'll have them, what you said.

A Well, I told you: This is a joke.

Q Well, why don't you read them to me?

A Well, all right. Quote, "We have high electrical specifications on overseas shipments set" --

(End of reading)

THE COURT: I don't think it's necessary to read this --

MR. MUSSLEWHITE: All right.

THE COURT: -- in view of the fact that the jury has it and you've offered it in evidence.

MR. LACEY: All right. Let me skip over that.

Going to Page 13, Line 9.

(Reading from video deposition)

Q You say Point No. 5, were you -- you were telling the truth? Those were the facts?

(End of reading)

THE COURT: What page, Counsel?

MR. LACEY: Page 13, line 19.

THE COURT: Page 13?

MR. LACEY: Page 13.

THE COURT: I thought we were on 445?

MR. LACEY: We have moved to a separate-numbered volume. They weren't number consecutively.

THE COURT: All right. We've got several joined together. All right.

MR. LACEY: Page 13, line 9 -- 19.

(Reading from video deposition)

Q You say Point No. 5, you were -- you were telling the truth? Those were the true facts?

A Absolutely?

Q Is Point No. 6 true?

A I can't speak Portuguese and Spanish. And to converse overseas with people in a foreign language is difficult; it's cumbersome. And we're talking about a will-o'-the-wisp here, an -- almost a myth. Specifically, David, we're talking about volume resistivity and power factor.

Q Is Point No. 4 in the memo true?

A All right. We don't know what contaminants and handling environments are the offensive factors. David, we're talking -- this is what I was looking for. It gives the subject; here it doesn't give the subject.

Q It does up at the top, doesn't it? "Aroclor --

A Quote, "'Electrical Quality," end quote.

Q -- electrical quality.

A All right. Let's give it a subject. The subject now is going to be the power factor or dissipation factor and the volume resistivity. Now, to begin with, there's no official specification on the power factor because it is too much a -- almost a myth, thse high power factors that we expect the material to have.

It's so critical, so sensitive, the very undefinable, minute traces of contaminants, that we can't even manage to have a power factor specification. David, if we had the product in here and you stuck your finger in it, that would ruin the power factor.

Now, here we're talking about shipping overseas. There is -- I wish I had the

specification. You will find a volume resistivity specification. We're talking about a volume resistivity, something on the order of 10 to the 9th times power ohm centimeter. Now, that is a tremendous amount of resistivity. Now, what was happening here is that when we --

Q I don't want to interrupt you; but we're not going to finish today if you don't answer the question and --

A I don't -- I know you're not, David. Will you accept this as --

(End of reading)

MR. LACEY: Skip down to line 22.

(Reading from video deposition)

A David --

Q Yeah.

A This has to do with putting the stuff into a drum of extremely highly refined quality, in an -- a -- what did I use -- will-o'-the'wisp thing? We can't even have a power factor specification. All right.

We've refined this exceptionally high quality, as made. The material must respond to

this when the user refines it. That's what is important in his plant. Now, what I encountered here, David, is that I suspected the competitors -- particularly the French, and maybe also the German -- that they're overseas. It's a long way from here to Australia. This speaks about Australia.

This isn't the first time this subject came up. I spoke to our people about that in the past. I felt that our package for overseas shipment may -- should have been of possibly a better construction. I felt that our package -- maybe it would be the particular seal used on the bone or the liners; that that may be somewhat of a contaminating influence affecting these very, very touchy critical electrical properties such as, David, when freshly made and refined.

If we had it here and you put your finger -- I'm not comparing your finger to mine -- if I put my finger in it, it would ruin it and it would affect this reading. This is a facetious way of getting attention to our plant people that I'm not being as ornery as a junkyard dog, yet I do understand the situation. I'm asking them, Will you look into our drum for these long over --

this -- seas shipments?

I don't speak Portuguese and Spanish, as I said here. It's hard for me to explain this to the people. And I'm having difficulty talking about it right now, David. I'd like to -- I want to answer your questions. It is a facetious way of approaching this subject: "Will you please look into our drum package? I think our drum may not be as good a drum package as the competitors."

And as the result of it, I must have gotten some feedback from a customer if -- I think it mentions Australia, that the material arrived -- this is going back many years. I know it wasn't power factor. Nobody can handle a power factor specification. We didn't have any. It's so touchy, so critical. But volume resistivity, yes.

(End of reading)

MR. MUSSLEWHITE: Want me to keep going?

MR. LACEY: Yes. This has all been designated by Monsanto. They want us to read it.

MR. MUSSLEWHITE: Okay.

(Reading from video deposition)

A But volume resistivity, yes. So, let's say the spec on this was -- the specification was 500 times 10 to the 9th ohm centimeter. Maybe they read something like 800 or a thousand times. When you put 10 times 10 to the 9th, you get an awful lot of zeroes out here.

All I'm telling you, is this is a facetious, humorous way, without acking like a junkyard dog or raising hell with our plant: Quote, "Will you please give some -- or at least look at our package to see if that should be looked into," end quote.

Yeah. Well, every sentence -- you can tell that that is a --

Q I'm going to --

A I'm sorry, but --

Q -- object to the responsiveness of the answer.

When you said in here, "We have a quality control program but no control of quality," was that a joke or is that a real --

A That's a --

Q -- statement?

A -- joke, yes.

Q I see. When you said, "We have official electrical" --

A We had a very -- before I go farther, we had a very efficient quality control problem.

Q When you say, quote, "We have official electrical test procedures but get all kinds of answers on the same production batch," close quote, was that true or was that a joke?

A We had very strict specifications. And on something like a power factor measurement, it is easy to get differenct answers. And this is why in this very strict specification, as strict as it is, there is no finite limit on power factor.

Q Okay. When you you said, quote, "We know a lot about the idiosyncracies of the electrical characteristics of Aroclor, but we don't know what contaminants in our production and handling environments are the offensive -- are the offensive factors," was that true or a joke?

A This is also -- it's both ways. Let me tell you this: I don't know what the sales are in your skin, as different from mine, David. I don't. And we're talking about infinitesimal

traces of contaminants. It's -- it's a will-o'-the-wisp subject we're dealing with here.

Q When you said, "On occasion we hit the competitive quality specs, but we don't have anything to put our material in capable of holding these values," is that true or a joke?

A From the standpoint, if you will -- I was not confident that the drum package -- not the quality of the product -- the drum package -- that we were doing ourselves justice, from the standpoint I had reason to believe that the competition may have had -- I wasn't sure -- may have had somewhat of a superior container to put it in that would to a greater degree control, handle, maintain this will-o'-the-wisp electrical characteristic that we're talking about, David. It had nothing to do with the intrinsic character of the product. I appreciate your quandary, and I didn't know it was going to be -- come out this way.

Q Let me show you another document. It's a research and development report from the Anniston plant dated May 5th, 1967, by Mr. G.W. Miller, Document 9839 through 9874.

In that document, Mr. Miller -- in the

summary of the document, he's just got a summary of the document right there that's in two paragraphs. Would you read that, please.

A Quote, "Bayer Cloaphen A-50 is quite superior to Anniston and WGK Aroclor 1254 in electrical properties. This material as received exhibit a resistivity of 150,000 times 10 to the 9th and thermal chemical chloride stability of .27 parts per million."

(End of reading)

THE COURT: Let me have a copy of that.

If you've offered it in evidence, can't we --

MR. LACEY: I'll skip over the summary piece.

MR. MUSSLEWHITE: Do you want me to read that or not?

MR. LACEY: Yeah. You should have an extra copy.

MR. MUSSLEWHITE: Do you want me to finish that answer?

THE COURT: Go ahead and finish the answer.

MR. POHL: They've got one for you

here, Judge.

MR. LACEY: Going to line 12.

MR. MUSSLEWHITE: Do you want me to finish the answer or not?

MR. LACEY: No. You can just skip over that. They have it.

MR. MUSSLEWHITE: It's just quoting from the documents?

MR. LACEY: Right. Line 12.

(Reading from video deposition)

BY MR. LACEY:

Q Now --

A This is signed by the -- Miller.

Q Who is Mr. Miller?

A He's the chief analytical chemist.

Q He another joker?

A Is he what?

Q Is this another big joke about the fact that the Japanese and German products are better than Monsanto's products?

A This is not a joke. But you do understand the difference between 9,600 times 10 to the 9th ohm centimeter resistivity versus 150,000 times 10 to the 9th ohm centimeter,

David?

Q My question to you is: Is it true or false that the Japanese and German made PCBs with better electrical properties than Monsanto?

(End of reading)

MR. LACEY: Going to line 11 for the answer.

BY MR. MUSSLEWHITE:

A To a mini-mini-mini degree, yes, David. He is pointing out, yes -- it has no practical use, significance, I assure you. And if we want to get into the technology of this, I can.

Q Okay. Well, let's --

A But he is saying this: He is the chief chemist. And he is saying that he found, no doubt, by comparative analysis, that here -- it was Germans -- 150,000 times 10 to the 9th ohm centimeter. This is saying that the Germany quality is very high. Now, I'll make a comparison that is understandable. Our resistivity of 9,600 times 10 to the 9th ohm centimeter, David, that would have to be rated -- and this is sensibletrying to be informative -- I

would have to rate that A-plus. Okay.

Now, on this scale, David, I'd have to say the German stuff is A-plus. And we'll have to put another plus on there. When we get out to there, it is not of any great consequence.

Q The Japanese --

A But he is serious here.

Q Yeah. The Japanese go an A-plus-plus on theirs, too, didn't they?

A The Japanese?

Q The second paragraph. He talks about Japanese Canochlor is superior.

A Oh, all right. I would rate that -- well, that wasn't as high as as the German. Let's put that as A-plus.

Q So --

A Now, wait a minute. Before we go on with this -- our material often has these same values, David.

Q Well, let's get -- let's get down to serious business.

A This is very high quality for someone shipping it across the seas to us.

Q Let's --

A Yes, it is.

Q Let's get down to serious business. Mr. Miller was serious in saying that the German PCBs were superior to Monsanto's in electrical properties; isn't that correct?

A In terms of volume resistivity, yes.

Q Okay.

A That is -- oh, excuse me.

Q I -- really -- without trying to go into all the technical details, I just want to know whether he is saying that German -- he's serious in saying that the German product was better in its electrical properties than the Monsanto product.

A No, this not correct.

Q Not saying that.

A He is saying this in terms of ohm centimeters, that he finds this tick superiority, let's call it, in terms of ohm centimeters. Now, this does not encompass the electrical quality, overall electrical quality.

Q Well, I guess --

A This is merely one feature of it.

Q Well --

A He is saying that is very good quality. I agree.

Q What he actually says is, "Bayer Chloaphen A-50 is quite superior to Anniston and WKG Aroclor 1254 in electrical properties." Those are exact -- his exact words, aren't they?

A I agree to this.

Q It is true --

A He is not an expert in the electrical properties of a capacitor dielectric.

Q I see.

A Mr. Miller is not.

Q I see. He's just an -- a --

A He's an analytical chemistry -- analytical chemist. He has run a volume resistivity. He finds that the quality of the Japanese and the German is very fine. I agree with that.

Q Not just very fine. Superior to Monsanto's.

A Well, I won't go with that, no.

Q Okay.

A I will say that it is good quality material. I must also say Monsanto's is good quality.

Q Okay. But as between the two, the German and Japanese were better quality, weren't they?

A No, they were not.

Q I see. And isn't it a fact --

A They were not.

Q Isn't it a fact that it was the difference in quality that prompted the writing of your memo of April 26th, 1967, that we've previously looked at, Document 9865 and 9876?

A All right. Now we are coming down to this: Here is evidence that the Japanese and the Germans have indeed produced quality similar to ours. They have indeed transported that quality and laid it down in his laboratory at Anniston in a high order of volume resistivity, as he reports there.

Now we get down to what I was really driving at, David. Our package -- I am not sure, in terms of this very high volume resistivity -- that's all we're addressing here -- that we were able to put down in Australia this unusually high volume resistivity reading -- not that this has any definite significance or import, as far as using the material is concerned.

Q That fact of the matter is --

A I wanted our people to see, with this as an example, can they put it into a drum and ship it to Australia and not lose this very high quality that we made when we put it into the drum. But some unknown infinitesimal ionic contaminate, no

doubt, caused our volume resistivity value to drop -- not out of specification, because it's still times 10 to the 9th ohm centimeters, which is the important thing.

I am addressing our package. I'm using this to get the attention of our people: "Look at our drum, and let's see do we need to do anything to improve it."

(End of reading)

MR. LACEY: Going to Page 28, line 16.

(Reading from video deposition)

Q So, what we know from that then, is the product, the electrical properties of the Japanese and German products, as it came out of their plant, was superior to the Monsanto products that Mr. Miller tested; is that correct?

A No. In those terms that he's talking about -- and I'm sorry, David. I don't think you have the insight into what the significance of this term is --

Q Well, I'm trying to --

A -- and this is unfortunate.

Q I'm trying to get an insight into the fact

that the Japanese and the Germans were making better products. And that's what these documents say. And I'm having a hard time --

A I appreciate --

Q -- with --

A -- why you would have a hard time with this thing, and --

Q I --

A Now, wait a minute. Wait a minute. Here -- ours is this: This is a very high -- this specification is 500. We're way over it. This is over it. This is way over it (indicating). This is over it. These are all excellent quality. Now, if we're nitpicking hairs here, which is a waste of time -- but if that's what we're doing -- yes, this is higher than these. But you don't -- this is at 100 degrees at a -- a a kilocycle. It's 10 times to the 9th power, which isn't showing up here. You add these -- 10 to the 9th to all of these, and you have very high order. These are all excellent.

Q Let me ask a question. You say they're all excellent, correct?

A They're all excellent. Yes, they are.

Q And within the degree of excellence, the

German product and the Japanese product are somewhat better, correct?

A Within that excellent, on one item, which is this volume resistivity, yes.

(End of reading)

THE COURT: Let's don't keeping going over this same thing, Mr. Lacey. You've offered the exhibit, and it's obvious from the exhibit that that's --

MR. LACEY: That's fine, Your Honor. Most of what I've been reading is the Monsanto offering. We're reading their offer for them.

THE COURT: Yes, but there's no need to keep on arguing with him. He's obviously he's not going to answer the question any way except what he wants to answer it.

MR. LACEY: Let me to go the next document.

MR. MUSSLEWHITE: Your Honor, do we have permission to skip -- that's some of their tender. Can we skip that --

MR. LACEY: They've gotten all theirs in at this point.

MS. OLESEN: Actually, Your Honor, he's reading Monsanto -- he's reading plaintiffs' offer, not Monsanto's offer. He's been reading parts of their offer with ours.

THE COURT: It doesn't make any difference who is asking the question: They've got an obstinate witness, and there's no need of demonstrating it anymore than you've already demonstrated it.

MR. LACEY: Thank you, Your Honor.

THE COURT: How much more of this deposition do you have?

MR. LACEY: We've got about 60 more pages, some of which is offered and some of which is not.

Would you like for us to break here and complete it in the morning?

THE COURT: Yes, I think maybe we'd better.

Ladies and gentlemen of the jury, I appreciate keeping you overtime. I hope it hasn't been too much of an imposition. But to make it up, we will -- make it up to you, we will not require you to be here until 9:30 in the morning. So, you may be excused

until 9:30. Please remember the instructions that the Court has given you about reading anything about this case in the paper or listening to it on the TV, if there is anything. I presume, after being here all day, you won't want to listen to it or won't want to read about it either.

But those are the instructions. And if for any reason you are affected by anything that happens outside of this trial, anything you might read or might hear or anyone might talk to you, I will instruct you not to let that happen. But if it should, then you must report it to the Court and let the Court know of the circumstances so that we can take whatever action might be needed to take.

All right. We'll stand recessed until 9:30 tomorrow morning.

(WHEREUPON AT 5:30 P.M. COURT WAS IN RECESS UNTIL AUGUST 27, 1987, AT 9:30 A.M., AT WHICH TIME THE FOLLOWING PROCEEDINGS WERE HAD AND DONE.)