

In The Matter Of:

*Tennessee Gas Pipeline Company v.
Monsanto Company*

*Paul G. Benignus
September 14, 1995*

*Gore & Perry Reporting Company
100 North Broadway
Suite 1175
St. Louis, MO 63102
(314) 241-6750 or (314) 621-4790*

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[1] Tennessee Gas Pipeline Company [2] vs. [3]
Monsanto Company
[14] Deposition of Paul G. Benignus [15] September
14, 1995

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COMMONWEALTH OF KENTUCKY
ROWAN CIRCUIT COURT
CIVIL BRANCH
TENNESSEE GAS PIPELINE COMPANY,
Plaintiff,
VS. NO. 94-CI90145
MONSANTO COMPANY,
Defendant.
DEPOSITION OF PAUL G. BENIGNUS, taken on
behalf of the Plaintiff, at the Fischer Hotel, 2100
West Main, in the City of Belleville, State of
Illinois, on the 14th day of September, 1995 before
Jacqueline A. Schniers, Certified Shorthand Reporter,
Registered Professional Reporter, and Notary Public.

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APPEARANCES OF COUNSEL:
FOR THE PLAINTIFF:
Hedlund, Hanley & John
Mr. Steven J. Roeder
Sears Tower, Suite 5700
Chicago, IL 60606
FOR THE DEFENDANT:
Smith, Helms, Mulliss & Moore
Mr. Rolly L. Chambers
227 North Tryon Street
Charlotte, NC 28202

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[1] PAUL G. BENIGNUS
[2] of lawful age, having been first duly sworn to
[3] testify the truth, the whole truth, and nothing
but [4] the truth in the case aforesaid, deposes and
says in [5] reply to oral interrogatories pro-
pounded as follows, [6] to-wit:
[7] EXAMINATION
[8] QUESTIONS BY MR. ROEDER:
[9] Q: Can you state your name for the record [10]
please, sir?
[11] A: Paul G. Benignus, B-E-N-I-G-N-U-S.
[12] Q: Mr. Benignus, where do you reside?
[13] A: 47 Metcalf, Belleville, Illinois. 62223.

Lawyer's Notes

[14] Q: Sir, you have had your deposition taken [15]
before, have you not?
[16] A: Yes.
[17] Q: Have you testified at any trial?
[18] A: No.
[19] Q: You have only testified in a proceeding
like [20] this?
[21] A: Like this, yes.
[22] Q: Where the court reporter will take down
your [23] answers?
[24] A: Right.
[25] Q: Just so the record's real clear, sir, you

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[1] know I'll ask you a series of questions, and it
at [2] any time you don't understand my question,
please [3] feel free to let me know. I'll attempt to
rephrase [4] it as best I can, fair enough?
[5] A: Good.
[6] Q: If you need to take a break, let me know. [7]
I'll try to accommodate you as best I can.
[8] A: All right.
[9] Q: If you don't tell me you don't understand
[10] the question, I'll assume you do.
[11] A: Okay.
[12] Q: You are retired now, sir?
[13] A: Yes.
[14] Q: And you had spent, is it fair to say, your [15]
entire professional career with the Monsanto
Company?
[16] A: Yes.
[17] Q: Can you, sir, tell me a little bit about [18]
your educational background after high school?
[19] A: I graduated with a B.A. major in chemistry
[20] and minor in physics, 1933, Illinois College,
[21] Jacksonville, Illinois.
[22] Q: Where did you go after that, sir? Did you
[23] take any postgraduate education?
[24] A: Went to Washington U, St. Louis, got an M.S.
[25] in organic chemistry. My research work was
in drugs

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[1] and medicinal synthesis.
[2] Q: Drugs and medicinal synthesis?
[3] A: Yes.
[4] Q: When did you get your degree from Wash-
ington [5] University?
[6] A: '34.
[7] Q: Then promptly after that point you were [8]
employed by the Monsanto Corporation?
[9] A: Right.
[10] Q: What is the difference, sir, between, if you
[11] can explain to a layman like me, between
organic [12] chemistry and inorganic chemistry?
[13] A: Organic chemistry is based on carbon and
[14] hydrogen, and it may be aromatic, meaning
the benzene [15] ring structure, or it can be ali-
phatic.
[16] Q: Can you spell that for the court reporter?

[17] A: A-L-I-P-H-A-T-I-C. Now, that would be a [18] straight change of carbon atoms to which hydrogen is [19] attached.

[20] Q: That's if it's aliphatic form?

[21] A: If it's aliphatic.

[22] Q: How would an aromatic differ from aliphatic [23] form?

[24] A: As I said, the aromatic is a carbon — [25] six-member, carbon ring structure. Should I draw a

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[1] picture?

[2] Q: Yes, if you could just so I understand. It [3] always helps —

[4] A: I'll draw it for you then.

[5] Q: For the record, I handed the witness a piece [6] of legal pad which is blank.

[7] A: I don't know how much detail you want to go [8] into, but the carbon ring structure is six carbon [9] atoms. That is a carbon — or the benzene ring. [10] That is a diagram for benzene. Now, attached to this [11] carbon, each carbon is a hydrogen then there are [12] double bonds here that's a closed ring structure.

[13] Q: So this would be — this would be aromatic?

[14] A: That's aromatic.

[15] Q: For the record I'm writing aromatic next [16] to —

[17] A: Aliphatic is just a chain of carbons.

[18] Q: That would be C -, C -

[19] A: C -

[20] Q: — something like that?

[21] A: Right.

[22] Q: For a moment there the witness and I were [23] singing the same hymnal.

[24] A: Then, of course, you understand there is [25] hydrogens attached.

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[1] Q: Right, hydrogen on each side?

[2] A: Yes.

[3] Q: Something like that. That would be [4] aliphatic, A-L-I- —

[5] A: P-H-A-T-I-C, Aliphatic.

[6] Q: That helps.

[7] MR. CHAMBERS: Will we be marking that as an [8] exhibit?

[9] MR. ROEDER: I might just so — I'm not sure [10] we'd ever want to use it anymore than that, but just [11] so it's clear what it is the witness is referring to. [12] Let's go ahead and mark that. It will help us keep [13] track of that a little bit.

[14] MR. CHAMBERS: That was my thought exactly.

[15] (Plaintiff's Deposition Exhibit [16] No. 74 marked for identification)

[17] Q: (By Mr. Roeder) So when you started at [18] Monsanto in 1934, you just obtained your Master's [19] Degree in organic chemistry from Washington [20] University?

[21] A: Correct.

Lawyer's Notes

[22] Q: Did you join Monsanto in the research [23] department?

[24] A: No.

[25] Q: What department did you join, sir?

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[1] A: Well, we all started in the analytical lab [2] in those days.

[3] Q: What did you do in the analytical lab in [4] general in those days?

[5] A: Analyst for two years.

[6] Q: So you analyze chemicals, break them down, [7] figure how to make them?

[8] A: Assayed chemicals.

[9] Q: That's A-S-S-A-YE-D?

[10] A: Yes, assayed.

[11] Q: By doing that you'd be able to determine —

[12] A: Determine purity and things like that.

[13] Q: The purity you can determine because you'd [14] be able to see how close the actual chemical was to [15] what you'd expect theoretically based upon its [16] structure; is that correct?

[17] A: Right. Then I spent a year in advanced [18] analytical chem lab.

[19] Q: Also at Monsanto?

[20] A: I spent my life at Monsanto.

[21] Q: I mean, was the lab in Monsanto?

[22] A: It was all in St. Louis, Monsanto, [23] St. Louis.

[24] Q: So you went from analytical lab to the [25] advanced analytical lab?

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[1] A: Down the hall.

[2] Q: Down the hall, okay. How did the duties and [3] responsibilities of advanced analytical lab differ [4] from analytical lab?

[5] A: Not greatly.

[6] Q: Just more complicated?

[7] A: Yes, you might say that.

[8] Q: What did you do after that, sir?

[9] A: Two years in plant process control labs. [10] These were out in the plant closer to the process. [11] And the work was for controlling the manufacturing [12] process.

[13] Q: What happened after that?

[14] A: After that I — in '39 I believe I went to a [15] section of the research department, specifically [16] application research.

[17] Q: What was the charge of the application [18] research department?

[19] A: Pardon?

[20] Q: What did the application research department [21] do?

[22] A: Oh, we did application research on [23] plasticizers, great deal in polyvinyl chloride which [24] came along at that time, the vinyl plastics.

[25] Q: So is it fair to say that in the application

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[1] research department you would analyze new compounds [2] and chemicals and see how you could use them in [3] product?

[4] A: Not analyze it, apply them, use them.

[5] Q: Try them?

[6] A: Try them, okay. So the compound is already [7] formed, the question is what do you do with it?

[8] A: No, we were looking to see and judge the [9] usefulness of various chemical compounds, in this [10] case various types of plasticizers to see how useful [11] they may be in plasticizing. We did a lot of work on [12] polyvinyl chloride, but we also worked with other [13] resins.

[14] Q: So you attempt to see whether or not a use [15] of the product would work with that material?

[16] A: Correct.

[17] Q: How long were you in applications research?

[18] A: I was there two years. Another area I'd [19] like to note in passing we had a biolab, biological [20] lab, and I did a lot of work on pentachlorophenol. [21] This was a wood preserver, termite eradicator [22] repellent, and also a powerful fungicide. And the [23] application work was in the area of wood [24] preservation.

[25] Q: So pentachlorophenol?

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[1] A: Yes.

[2] Q: So in the research of pentachlorophenol [3] would be used to preserve the wood, also to kill — [4] potentially to kill plants?

[5] A: No, fungus.

[6] Q: Fungus, fungicide?

[7] A: Herbicide would be plants.

[8] Q: Herbicide would be plants. Fungicide is [9] fungus, okay.

[10] A: We're preserving wood, and that's [11] susceptible to be attacked by termites and also by [12] fungus.

[13] Q: Right.

[14] A: Green mold, black mold, so forth, mold is [15] another word you may use.

[16] Q: At any point, sir, as we have gone in your [17] history at Monsanto, did you get to the point thus [18] far where your people report to you in labs so you'd [19] be —

[20] A: No, I was technologist, and at this stage [21] nobody was reporting to me.

[22] Q: What did you do after the applications [23] research position?

[24] A: After that, and now we are up to 1941, I [25] believe, maybe the early part of '42, I was assigned

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[1] to the development department. Now, this is all of [2] the organic chemicals division at St. Louis.

[3] Q: What did the development department in the [4] organic chemicals division do?

Lawyer's Notes

[5] A: There were four sections to the development [6] department. I had charge of a laboratory there, and [7] I performed duties that were asked of me from the [8] managers of the following four disciplines or [9] sections of work. One was in the drug industry [10] aspirin was an example. Another was in a section of [11] the development of plasticizers for use in plastic [12] film of various types.

[13] Q: Yes, anything else, sir?

[14] A: Another section dealt with wood [15] preservation, and I developed various wood treating [16] formulations.

[17] Q: With all the treated wood I hope you [18] patented some of them?

[19] A: It was patented, yes.

[20] (Discussion held off the record)

[21] A: There was another section dealt with flavors [22] and condiments. Monsanto made vanillin and coumarin [23] in that area.

[24] Q: Can you spell that please for the record?

[25] A: What's that, V-A-N-I-L-L-I-N.

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[1] Q: From which you get vanilla?

[2] A: Sure, synthetic vanilla.

[3] Q: Synthetic vanilla, right.

[4] A: Coumarin, C-O-U-R — excuse me, [5] C-O-U-M-A-R-I-N. That is a condiment used to enhance [6] flavors.

[7] Q: Okay. So you were still in organic [8] department at this point, and then was there a switch [9] at some point where you were no longer in the organic [10] department?

[11] A: Yes.

[12] Q: How did that happen, sir?

[13] A: In 1947 I left the organic division but also [14] in the same building, I didn't leave the building, I [15] was invited to join the inorganic division.

[16] Q: Who invited you, sir?

[17] A: They did. I knew them very well from the [18] top man in town. They were close to me in the same.

[19] Q: How did your duties change?

[20] A: Okay. They invited me to work on Aroclor. [21] A-R-O-C-L-O-R, large family of compounds on which I [22] had done work previously while I was still in the [23] organic division. So I was acquainted with the [24] chlorinated biphenyl. B-I-P-H-E-N-Y-L, no "O," and [25] chlorinated polyphenyl, trichlorobenzene,

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[1] B-E-N-Z-E-N-E, compounds, called Aroclors. That was [2] Monsanto's trade name. These were manufactured in [3] Anniston, Alabama.

[4] Q: A-N-N-I-S-T-O-N, correct?

[5] A: Correct, and also at Monsanto, Illinois.

[6] Q: At this point, sir, had Aroclors been [7] produced and marketed by Monsanto?

[8] A: Oh, yes.

[9] MR. CHAMBERS: That's fine, he will take you [10] where you need to go next.

Lawyer's Notes

[11] Q: (By Mr. Roeder) And in joining the [12] inorganic department, what were the types of things [13] that you had done with the Aroclors? I mean what [14] types of areas of research were you asked to perform?

[15] A: It wasn't research, it was while I was still [16] in the laboratory and the development department of [17] the organic division. I'm going to confuse you now [18] because organic and inorganic.

[19] Maybe we ought to straighten this out so you [20] don't get confused. I was requested because the [21] research laboratories for the inorganic division [22] which made the Aroclors they were in Anniston, [23] Alabama, but the business group was in St. Louis, and [24] at times they wanted to have such things, mundane [25] things as fiscal constance determined, density,

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[1] specific gravity, boiling point, things like that, [2] and it was convenient for them to ask me to do it in [3] St. Louis rather than having to go through their own [4] research at Anniston.

[5] Now, so you get this picture straight. In [6] recent times at the end of the business, the word PCB [7] came along. Up until the environmentalists got [8] involved nobody ever heard of PCB, but I'll use that [9] term. But PCB, I mean the Aroclors, which was our [10] trade name or the trade name General Electric and [11] Westinghouse they all had their own trade names so [12] I'll call them PCB's for short.

[13] MR. CHAMBERS: Let me say for clarity you're [14] referring to the chlorinated biphenyl Aroclors rather [15] than to the entire family of Aroclors; is that right?

[16] A: No, I'm referring to the entire family.

[17] MR. CHAMBERS: Including the chlorinated [18] terphenyls?

[19] A: Yes, they were called Aroclors. The [20] chlorinated biphenyls were based on this ring [21] structure.

[22] Q: That's the aromatic ring structure you had [23] drawn earlier?

[24] A: Yes. Now, the chlorinated terphenyls — [25] excuse me, this is a benzene ring. That's one

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[1] benzene ring, the biphenyl is two of these hooked [2] together. That's what we have when we have [3] chlorinated biphenyl. When you have three benzene [4] rings, you have chlorinated terphenyl.

[5] Q: Can I to just modify if I could just put [6] another ring?

[7] A: Correct.

[8] Q: Which I'm doing in pen. That would be a [9] biphenyl?

[10] A: Biphenyl.

[11] Q: This should be six-sided ring, correct?

[12] A: Yes.

[13] Q: Then another one?

[14] A: Six-sided ring.

[15] Q: That would be a terphenyl?

[16] A: Terphenyl. There can be quarterphenyl too, [17] you know.

[18] Q: You just hook on another ring?

[19] A: Sure.

[20] Q: So the record's clear, I had modified [21] Plaintiff's Exhibit 74 in pen to add two more rings [22] to the left of the aromatic ring that the witness had [23] previously drawn out.

[24] So if I could understand part of the reason [25] that you joined the inorganic division is that in St.

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[1] Louis it was much more convenient so they could have [2] you close by to give the — to do the sign — I can't [3] get it right. Let me rephrase it. It was important [4] to have you close by because you could give the [5] analytical backgrounds that you needed for the [6] Anniston plant; is that fair to say?

[7] A: Really not that sophisticated. What I was [8] doing was very mundane. It's nothing of any [9] importance. Let's go back so we understand this [10] thing. Swan Chemical in Anniston, Alabama produced [11] biphenyl, these two rings.

[12] Q: Right.

[13] A: As an indirect heat transfer median to be [14] used in an oil refinery in Kentucky. They made two [15] Aroclor of Byphen which is solid. It was used for [16] the purpose but being solid at room temperature [17] wasn't very screen, all the plants froze at room [18] temperature. Now, that led later to you producing a [19] liquid blend of biphenyl and biphenyl oxide which is [20] well-known dowtherm, D-O-W-T-H-E-R-M, with well-known [21] dowtherm. However, Swan had a plant to make this [22] biphenyl and no market. It did something simple. [23] They chlorinated it, and now they get a terrific [24] family of compounds, and we have things that are [25] liquids like water to more viscous liquids, to things

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[1] that are thick as molasses, and things that get to be [2] solid like resins. Finally, the end point on the [3] biphenyl, if you put ten chlorines that's the end of [4] it. You have something as solid and hard as sand. [5] Well, this opens up a big spectrum of properties that [6] are useful.

[7] MR. CHAMBERS: Mr. Benignus, it may help if we [8] let Mr. Roeder kind of lead us on through. I don't [9] want to cut you off or intervene. I know this is all [10] background. It just may help us more along more [11] quickly if we restrict ourselves to Mr. Roeder's [12] questions.

[13] A: I don't mean to give a lecture here.

[14] Q: (By Mr. Roeder) It is very helpful, sir.

[15] A: I'm trying to get you to understand so you [16] can ask questions.

[17] Q: Sure. If I understand it correctly, what [18] the Swan chemical plant had done is found this [19] product, but in the form that they originally used it [20] it was hard at room temperature, correct?

[21] A: Yes.

[22] Q: By chlorinating the product they're able to [23] make it in various forms that could be

almost as thin [24] or viscous as water running the gamut depending upon [25] how many of these benzene rings you attach to the

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[1] product through the manufacturing process to make it [2] very hard and solid. And in the ring of those things [3] is how you could vary the product with different [4] properties; is that clear, is that fair?

[5] A: Yes.

[6] MR. CHAMBERS: Let me just add you stated that [7] your understanding was that the hardness of the [8] material depended on the number of benzene rings [9] attached, and I think Mr. Benignus' testimony was [10] that that depended upon the number of chlorine atoms [11] attached.

[12] Q: (By Mr. Roeder) Is that correct?

[13] A: That's correct.

[14] MR. ROEDER: Sounds like we got an attorney with [15] some chemical background here.

[16] MR. CHAMBERS: Limited, I can assure you.

[17] A: There is one thing to note here. These [18] benzene rings are noted for their high thermal [19] stability.

[20] Q: (By Mr. Roeder) Meaning they do not break [21] down as temperature increases?

[22] A: Right. These chain hydrocarbons are not [23] nearly as stable.

[24] Q: The aliphatic changes do break down as [25] temperature increases?

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[1] A: This is correct. These are much more stable [2] compounds which is important, but Monsanto now in [3] 1935 bought Swan Chemical. This is how Monsanto [4] acquired this business in Anniston, Alabama. And [5] then the management from Swan was moved to [6] St. Louis. Swan was an inorganic chemical company [7] primarily, but they got into this incidentally making [8] the biphenyl. Their business was inorganic chemicals [9] for baking powder, toothpaste, and things like that.

[10] Q: Okay. That's helpful, that's helpful. Now, [11] in the — as you got in the inorganic division and [12] you worked with Aroclors —

[13] A: Yes.

[14] Q: — how did the — you know, just in general, [15] how did the development of the Aroclors occur? Were [16] they new products that were introduced in the '40s [17] and '50s?

[18] A: Okay. Should I answer yes or give a whole [19] lecture?

[20] Q: You can answer yes.

[21] MR. CHAMBERS: Say yes, then wait for the next [22] question.

[23] Q: (By Mr. Roeder) Just answer the question, [24] then I'll ask a follow-up.

[25] A: Yes.

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[1] Q: In what additional product were you involved [2] with different formulations of Aroclors in the [3] Monsanto?

Lawyer's Notes

[4] A: My work was strictly entirely on the [5] Aroclors, nothing else at this time.

[6] Q: Now, the Aroclors had a number of different [7] uses; isn't that correct, sir?

[8] A: Right.

[9] Q: So they could be used in the dielectric [10] field?

[11] A: Yes.

[12] Q: And for the record, when they were used in [13] dielectric field for those uses, what do you mean by [14] that, what?

[15] A: Insulation for transformers and capacitors [16] and their saline feature. Briefly because — this is [17] a very technical subject, but briefly there was [18] interest because they did not support or sustain [19] combustion so it's a safety feature as a replacement [20] for mineral oil dielectric which was coarse burns.

[21] Q: Sir, if I — you could see a transformer, [22] for example, that might be on a power line up on a [23] pole, correct?

[24] A: Yes.

[25] Q: Would that be a transformer that could have

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[1] used a dielectric in the '50s, '60s, early '70s?

[2] A: Could have, but it didn't.

[3] Q: Which are the transformers which would have [4] those? Would they be little ones, big ones?

[5] A: The type of transformer that employed [6] askarel which cost more than mineral oil so it was [7] used at a premium to provide safety were judged [8] essential. So now we have transformers that would be [9] put into vaults in a building where there are people. [10] You asked on the top of a pole. Well, if the top of [11] the pole catches on fire nobody's — it's no great [12] problem, you don't have to spend the money for the [13] askarel. So askarel was strictly a specialty and at [14] a premium price to provide fire resistance. And the [15] greatest proponents were the fire underwriters who [16] liked to write insurance on something that didn't [17] burn to begin with.

[18] Q: So askarel was a trade name of one of the [19] Aroclors, correct?

[20] A: No, askarel is not a trade name. Askarel is [21] a generic name that requires chlorinated aromatic [22] ring structure hydrocarbons versus chlorinated [23] aliphatic compounds, which we already said a minute [24] ago were not as stable as these.

[25] Q: I think I actually got the last question

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[1] flipped the wrong way. Aroclors are askarels, [2] correct, because I think that's the first time you [3] used it in your testimony?

[4] A: Aroclor was Monsanto's trade name for [5] askarel because Aroclor met these requirements as [6] defined, stipulated, by the fire underwriters and by [7] the American Society for Testing and Materials where [8] the specifications and requirements were officially [9] documented. Now, askarel, therefore, spelled [10] A-S-K-A-R-E-L, that is a generic name that covers [11] Monsanto's trade name Aroclor, General Electric's [12] trade name,

Pyranol, P-Y-R-A-N-O-L, Westinghouse's [13] trade name, Inerteen, I-N-E-R-T, double "E," N. I [14] could list a dozen more trade names, but this is —

[15] Q: Right, that answers the question, sir. So [16] the transformers that askarels would be put in [17] transformers, for example, that would be in the [18] buildings, maybe in a basement of a building, for [19] example?

[20] A: Yes, in a populated area, in factories, for [21] example.

[22] Q: Then that transformer would generate a lot [23] of heat in the function of transforming the voltage [24] from the electrical lines so it could be used in the [25] building. I'm just trying to figure out why the need

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[1] to put these askarels in the transformer. Was it to [2] — why don't you tell me.

[3] A: Yes, it's a matter of heat transfer. When [4] the thing is energized, a good deal of heat is [5] generated, and you have to get the heat out of the [6] system. It is transferred through the liquid which [7] sometimes is circulated actually. The heat is [8] transferred out of the transformer by the liquid [9] through the metal wall of the transformer, and [10] sometimes to help cool it there will be fans directly [11] on this at times. So it's a matter of heat transfer. [12] It is an insulation heat transfer application.

[13] Q: So it was something that was put in the [14] transformers to help dissipate the heat that the [15] transformers generated when they function?

[16] A: Correct. And it is an insulator, it does [17] not pass the electric current.

[18] Q: Okay. So it's not like water that the [19] electricity could then — would then transfer [20] through?

[21] A: Exactly.

[22] Q: Other than in the dielectric field, were [23] Aroclors used in industrial uses?

[24] A: Yes.

[25] Q: And just in general were the properties that

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[1] made them suitable for the dielectric uses also the [2] same properties that made them suitable in some [3] industrial applications?

[4] A: Yes, their thermal stability, yes, heat [5] transfer ability.

[6] Q: So steel companies would use Aroclors?

[7] A: In transformers.

[8] Q: Would they use them in any presses, for [9] example, or in any equipment?

[10] MR. CHAMBERS: Just for clarification, we are [11] still talking about that 1947 time frame or —

[12] MR. ROEDER: That's correct, but we are just [13] talking general the different uses, I think, that [14] were made of the Aroclors.

[15] MR. CHAMBERS: I guess I'm just confused about [16] whether you're talking about through the whole life [17] of the product or if there's a particular period of [18] time you have in mind.

Lawyer's Notes

[19] Q: (By Mr. Roeder) Let me rephrase the [20] question, maybe make it more precise. We talked [21] about the dielectric uses and in general when [22] Aroclors were used, and I'm talking about the [23] Aroclors with the PCB's in them. And they were used [24] in industrial applications. Would they be used for [25] lubrication, for example?

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[1] A: There were applications of lubricants, yes.

[2] Q: So those would be gears or parts of machine [3] that would generate a lot of heat and because of the [4] thermal stability of the Aroclors it could actually [5] lubricate the parts that it needed to lubricate [6] without breaking down?

[7] A: That's the idea.

[8] Q: It couldn't catch fire?

[9] A: That's the idea.

[10] Q: So it was a safe thing to use in those [11] applications?

[12] A: They were used as an extreme EPL, extreme [13] pressure lubricant, for example.

[14] Q: So in uses where there would be a lot of [15] force inside a system where other product may not be [16] able to withstand the forces of the — withstand the [17] pressure, correct?

[18] A: Yes, because you're relying on greater [19] stability rather than this.

[20] Q: The greater stability of the additional [21] benzene rings, correct?

[22] A: Was the base material, yes. You realize the [23] halogen, the chlorine, is where the fire resistance [24] comes from. There's not many chemicals, organic [25] chemicals that are fire resistant. The halogenated,

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[1] chlorinated, or brominated are fire resistant. And [2] that pertains to their fire resistant, aliphatic, [3] organic materials, but other than the phosphates.

[4] Q: Yes.

[5] A: There are not very many — there are no [6] really other fire resistant organic chemical [7] compounds.

[8] Q: Okay. In the — let's take your experience [9] then, sir, in the '40s. Let's move into the '50s. [10] Did you continue in the same position in the organic [11] lab, or did your responsibilities change?

[12] A: It changed, but let's not go quite so fast. [13] From '47 to, as you say, the early '50s I was in the [14] inorganic division but handling the organic chemicals [15] that were made and handled by the inorganic division. [16] Now we got that straight. My assignment was strictly [17] working with the nonelectrical applications.

[18] Q: Okay, the hydraulic applications, for [19] example, that we talked about?

[20] A: Yes, what you called earlier you said [21] industrial applications. That was my field of [22] activity versus the electrical industry, which was [23] the largest part of the business. And the electrical [24] was handled by Dr. Jenkins, the director of research [25] at Anniston, 800 miles away. He handled this

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Lawyer's Notes

[1] directly with the inventor of askarel dielectrics at [2] General Electric, Mr. Frank M. Clark.
[3] Q: So how long did you have this application, [4] then, in the hydraulic or the duties with respect to [5] the hydraulic applications?
[6] A: Until your question which I'm clarifying, I [7] would say 1953.
[8] Q: What happened in 1953? Then how did your [9] job responsibilities change?
[10] A: Okay. In 1953 the Aroclors, PCB's, if you [11] want to call it that, were transferred from the [12] inorganic division into —
[13] Q: The organic division?
[14] A: The organic division.
[15] Q: Recognizing again that these compounds truly [16] are organic compounds?
[17] A: Right.
[18] Q: And did your personal duties change?
[19] A: Yes, I was asked to go along.
[20] Q: So in the organic division did you have a [21] change in job title?
[22] A: No, I have always been a technical person.
[23] Q: Did the development of new products that [24] used Aroclors accelerate in that time period? Were [25] there new products that were developed and

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[1] distributed by Monsanto?
[2] A: Monsanto did not develop any new uses. The [3] industry developed the uses. Monsanto pursued these [4] uses to understand them and to supply, manufacture, [5] and furnish the products, the PCB's, that were [6] wanted.
[7] Q: Let me see if I understand your testimony [8] then. Would it be the situation where an industry [9] that had a particular problem, for example, would [10] suggest that, perhaps, they could use an Aroclor in [11] this use?
[12] A: Exactly.
[13] Q: Would they then approach Monsanto and ask [14] whether or not based upon your understanding of the [15] properties of your product this use would work?
[16] A: Exactly.
[17] Q: Would you be involved in those discussions [18] then if there was a new application contemplated for [19] an Aroclor?
[20] A: If requested.
[21] Q: What additional uses do you recall Aroclors [22] being used for in this time frame? For example, we [23] got the dielectric was already being used at that [24] time, correct?
[25] A: May I go back to where we were before you

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[1] got into this?
[2] Q: Sure, if it helps you please do.
[3] A: All right. So here we are 1953. I believe [4] I said where the move was from the inorganic to the [5] organic division I went along.
[6] Q: Yes.

[7] A: Now, Dr. Jenkins, the director of research [8] at Anniston who handled the electrical use directly [9] with the inventor and the controller of the patents, [10] General Electric, he also was transferred out of the [11] inorganic division into the organic division.
[12] Q: Okay.
[13] A: Now, at this relative point in time [14] Dr. Jenkins no longer handled the electrical end of [15] the business.
[16] Q: To whom did that responsibility —
[17] A: To me.
[18] Q: It went to you, okay. So as of 1953 then?
[19] A: To the end.
[20] Q: You were then more focused on the dielectric [21] functions of the Aroclors?
[22] A: Now you have the picture, yes.
[23] Q: And was that consistent then through the [24] remainder of your tenure at Monsanto?
[25] A: Right. I was no longer in the

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[1] nonelectrical, and I was in the electrical end of the [2] business worldwide, from the standpoint of [3] technology.
[4] Q: So even though I take it from 1953 until — [5] you retired in 1974, correct?
[6] A: Yes.
[7] Q: During that time period your job titles [8] changed, but essentially the function was pretty [9] similar; is that correct?
[10] A: Yes, as a technical person.
[11] Q: Okay. Now, with respect, sir, to your [12] technical expertise in the dielectric field, would [13] you periodically also make yourself aware of [14] different uses of the Aroclors in other fields?
[15] A: No, my focus was electrical.
[16] Q: I understand that's your focus. I'm just [17] saying would you also try to keep aware just for your [18] own purposes to know what other applications the [19] Aroclors would be used for?
[20] A: I had no reason to, and I was trying to [21] answer your question here. I was aware of other [22] applications. I was copied on things, but I didn't [23] do anything. I did not function in the nonelectrical [24] — my duties were changed to the electrical period.
[25] Q: Well, as of the '50s and going into the

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[1] '60s, however, you had hoped and expected that even [2] though your functions were in the dielectric area [3] that Monsanto would be able to develop its uses in [4] other areas so that the business itself would expand; [5] isn't that correct?
[6] A: Why sure, wouldn't object to it.
[7] Q: Right. Who did you report to in this time [8] frame? You were in — let's just go to the time you [9] were in the organic division from '53 on?
[10] A: From '53 on.
[11] Q: Was there a manager or vice president or [12] boss of the division?

[13] A: Yes, okay. Of course there was a whole [14] organization chart, and I have been telling you my [15] function was as a technical person. And in the [16] organization chart this list of managers you go from [17] the general manager to the division on through the [18] line. Somewhere, I'm only trying to answer your [19] question, along the line I would be on a line out [20] here as a technical person regardless of who the [21] managers were. They changed a number of times, but I [22] still stayed and functioned as a technical person.

[23] Q: Well, that's correct, but let's go backward [24] from right before your retirement and then work our [25] way backward.

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[1] A: Okay.

[2] Q: There is Mr. Bergen?

[3] A: Yes.

[4] Q: Howard Bergen, B-E-R-G-E-N, for the record.
[5] What was Mr. Bergen's title?

[6] A: He was the manager of the business group in [7] which PCB's was under. So at that station, Bergen, [8] he was a manager of this business group that had the [9] PCB's for the electrical and nonelectrical and had [10] other things.

[11] Q: Right, so he would be the senior executive [12] with respect to Aroclors?

[13] A: Yes.

[14] Q: And did you report directly to Mr. Bergen, [15] or were there any levels in between?

[16] A: I reported to everybody that was interested.

[17] Q: Okay.

[18] A: Okay. You want to know who reported to [19] Bergen?

[20] Q: There was a Mr. Gossage, correct?

[21] A: Right.

[22] Q: What was Gossage's responsibility or his [23] duties with respect to Mr. Bergen? Was he next in [24] command?

[25] MR. CHAMBERS: Object to the extent you know

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[1] what somebody else's responsibility was.

[2] A: Assistant to Howard Bergen was really his [3] job, and Gossage was more directly connected with the [4] marketing people out in the districts, so on, so [5] forth, assisting Bergen with this.

[6] Q: (By Mr. Roeder) So he was more on the sales [7] and marketing side but not in the technical side?

[8] A: That's correct, correct.

[9] Q: Who else, sir, would you deal with on a [10] basis generally when you were involved toward the end [11] of your tenure there, Mr. Johnson, Norman Johnson?

[12] A: Norm Johnson was under Gossage. Norm [13] Johnson was directly over the district sales or [14] marketing managers out in the district, and they in [15] turn were in charge of the salesmen. So I knew Norm [16] Johnson, but he wasn't in the technical end of the [17] business.

Lawyer's Notes

[18] Q: Right. Who would be your superior who you [19] would report to on the technical side or —

[20] A: I answered it.

[21] Q: Besides, I understand, you know, reporting [22] in general, but, I mean, were you the senior person [23] on the technical side in the organic division toward [24] the end of your tenure of Monsanto?

[25] A: I think we answered that already too.

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[1] Dr. Jenkins, as we said back before, we are talking [2] now when he was in research, he handled the [3] electrical directly with Mr. Clark, inventor of the [4] dielectrics or General Electric.

[5] Q: Right?

[6] A: And the licensees were handled through this. [7] I took over Jenkins' activity.

[8] Q: So as to the dielectrics area were you — [9] you were the person who was the technical, had the [10] technical expertise?

[11] A: I'd have to say yes, you know, humbly, may [12] I. Yes, I was called Mr. Aroclor.

[13] Q: There you go. I'll refer to you as Mr. [14] Benignus, but there was a Dr. Richard, was there not?

[15] A: Yes.

[16] Q: What was his function?

[17] A: He was a director of research for this [18] product group under Bergen, Bill Richard. Yes, I was [19] close to him and Ralph Munch. They were in research.

[20] Q: Were you grouped together in the same group [21] with Munch and Richard?

[22] A: Well, they were under — they were in the [23] business group under Bergen, you see. I was in the [24] business group under Bergen off here to this side of [25] the marketing hierarchy, and they were off to this

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[1] side, if you will, and in the research.

[2] Q: So they were doing the pure research?

[3] A: Yes.

[4] Q: If I could describe it if I understand it [5] correctly, your focus was in the dielectric area and [6] hopefully finding different applications for the [7] dielectric —

[8] A: No.

[9] Q: What am I missing?

[10] A: Following what was done in the industry. I [11] already told you I don't know of anything Monsanto — [12] we didn't make capacitors and transformers.

[13] Q: So Westinghouse would talk to you and say we [14] think we might need a change in this area, how do you [15] think we can make the or get Aroclors that would help [16] us with respect to this use?

[17] A: Not likely. These things were well [18] established and a very important part as work. [19] Electrical industry was being active at the technical [20] organizations. The Americans Society for Testing and [21] Materials, this is where these

products were [22] documented, specified American Society for Testing [23] and Materials.
[24] Now, I was there from Monsanto's standpoint as a [25] manufacturer. We were the only producer. GE,

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[1] Westinghouse, and a lot of other people were in the [2] same technical committees as users of Monsanto's [3] product, all with a common interest of setting [4] specifications and anything that was needed. And [5] this, before I leave that, was expanded worldwide.

[6] And one time I was chairman of the dielectric — [7] synthetic dielectric section of the International [8] Electric Technical Commission that met on behalf of [9] interests in these dielectrics worldwide to [10] standardize and agree on characterizing, defining, [11] and ruling the requirements of these dielectric [12] materials.

[13] Q: From the period toward the end of your [14] tenure, sir?

[15] A: Yes.

[16] Q: From, say, '67 to '74, I think you have [17] answered already, but I'm trying to make sure I [18] understand it, how would you describe your function? [19] I mean, if someone were to say to you what did you do [20] for Monsanto in that time period?

[21] A: From '67 — well, let me change it a little [22] bit. I'll start in the little bit before '67, say, [23] the mid '60s, May '65.

[24] Q: Fair enough.

[25] A: What we were talking about here, about my

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[1] activity in committees there, I was very active [2] domestically and worldwide. Now, domestically [3] Monsanto was a civil producer worldwide. We had [4] competition. The French produced it. The Germans [5] produced it. The Russians produced it. There was [6] some produced in Spain, and a point in time in this [7] frame the Japanese produced it. So to answer your [8] question, my activities in this period of mid '60s [9] you said?

[10] Q: Until your retirement?

[11] A: Till retirement, all right. Much of it was [12] world-wide outside of the states looking after our [13] business interests around the world, that's why I [14] traveled so much. Both from the standpoint — mainly [15] from the standpoint of technology, that sort of [16] thing, not that I was out there trying to sell it.

[17] Q: You were a liaison to international [18] organizations with respect to standards for [19] dielectric, correct?

[20] A: Part of the organization.

[21] Q: And you were also interested in world-wide [22] sales of Aroclors by Monsanto —

[23] A: Yes.

[24] Q: — as well, correct?

[25] A: Because we had competition world-wide.

Lawyer's Notes

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[1] Q: Did any of the world — any of the [2] representatives or employees of Monsanto in other [3] countries report to you?

[4] A: No, they didn't report to me, but I [5] collaborated with them. They would take me around.

[6] Q: And I take it through much of the, you know, [7] late '60s, early '70s, you did a fair amount of [8] traveling?

[9] A: A good deal, yes.

[10] Q: Europe, Australia?

[11] A: Yes, Scandinavia, Europe, Australia, Japan, [12] Canada, Mexico, Argentina, Brazil, you know, wherever [13] they used these dielectrics in transformers and [14] capacitors.

[15] Q: Why was it important to have standardized [16] requirements for dielectrics? I mean, seems to have [17] taken up a large amount of your position at that [18] point in your career. I'm just curious as to why [19] this was important enough that you should devote so [20] much of your time?

[21] A: The — particularly in the manufacture of [22] capacitors this is a very critical technical [23] application. A capacitor, if you will, is a bomb. [24] Well, in the capacitor application there were three [25] main applications. One was in power line, on power

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[1] lines to correct power, correct power factor, to put [2] in phase — that portion of the power that was [3] generated to put it into a useful phase for operating [4] motors. Now, if you're going to use a power just to [5] energize a resistance like an iron, you know, or [6] meter, no problem.

[7] Q: Because it didn't matter what level of [8] voltage —

[9] A: Exactly.

[10] Q: — or the power of surge —

[11] A: It didn't matter. The other application [12] that is large is in air conditioning. By law every [13] air conditioner has to have a capacitor. If you [14] didn't have capacitors in the air conditioners, you'd [15] be blowing up the utility because of the strain on [16] the system everything is air conditioned. The other [17] big application was in fluorescent ballast. And when [18] you start having fluorescent lights go out around the [19] country, the country can go dark and you got a lot of [20] problems so these were critical applications.

[21] Q: But so Monsanto had determined, and I [22] presume you had determined, it was important to have [23] international standards with respect to dielectric [24] fluids so that these critical applications would be [25] standardized?

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[1] A: Would be standardize across the board in [2] accordance with our practices, if you will, here in [3] the United States. That was essentially it. These [4] other countries had the same common interests. And, [5] well, how you answer a question yes or no here, I'm [6] trying to figure this out.

[7] Q: I think you're doing fine. I'm just trying [8] to understand the need to do that. I take it there [9] also would — if the standardization were successful [10] then you would be able to sell your

products. You [11] would know what — you know what standards your [12] product had to meet, correct?

[13] A: Correct. And in effort to answer your [14] question a little more, if you're a capacitor maker, [15] the core in the coil winding, which is kraft tissue [16] paper made under very clean conditions with distilled [17] water not ordinarily paper mill stuff and very pure [18] aluminum foil, they're wound together on a machine. [19] The craft tissue is solid insulation. The aluminum [20] is a conductor. So that's wound up, and then it's [21] put into a metal can, aluminum can. That's your [22] capacitor. That's a capacitor.

[23] But as simple as this thing sounds, there is [24] great concern about contamination of the dielectric [25] material because if there is contamination, the thing

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[1] can feed on itself and be a bomb and explode. [2] Now, for this reason, this operation of winding [3] core and the coil is done in a clean room, ladies [4] wearing clean, white cotton gloves, they run the [5] machine and they have a hood over their hair. The [6] air is conditioned for temperature and humidity which [7] is important. And not only that, it's under positive [8] pressure to keep dirt and dust particles out. We are [9] talking about infinitesimal ionic impurities that you [10] can't isolate. You can't analyze it for them. You [11] can't pinpoint them. The only thing that you can [12] experience is adverse effect on power factor, and if [13] you'd like loss tangent, the electrical insulation [14] quality of the liquid. Now, you got this thing in a [15] metal container as we have already said as [16] transformers. The heat generated goes through the [17] fluid. That's why you got the fluid in there. It [18] goes into the wall, and it comes out here. If so [19] much heat is generated here that the geometry, the [20] design of this thing, can't take it out anymore, you [21] got a bomb.

[22] Q: Because the heat will get too intense, it [23] will cause the capacitor to rupture?

[24] A: It will cause the thing to explode so it's a [25] critical application. Purity of the material

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[1] maintaining that and assurance of that is what it's [2] all about. And that is where I directed my [3] attention, if you will, protecting PCB's from the [4] ravages of our environment, our normal environment as [5] we are here as versus later on you said in towards [6] the end of my time as service whether the [7] environmentalists came along and got upset about [8] wondering whether PCB's are contaminating the [9] environment. I wasn't in that area. I wasn't [10] concerned with that. I was concerned with keeping, [11] maintaining, purity of the askarel dielectrics. But [12] as you already alluded, I was there, and I got copies [13] of things in general. I pretty well knew what was [14] going on that they had found it in the sea eagle, et [15] cetera, you know, all this.

[16] Q: In fact, if I paraphrase it, then, of the — [17] you were making the world safer for PCB's instead of [18] making PCB's safe for the world?

[19] A: I think that's right. Okay.

Lawyer's Notes

[20] MR. CHAMBERS: I'll object to the form of that [21] but —

[22] (Recess)

[23] Q: (By Mr. Roeder) Mr. Benignus, you had [24] spoken earlier about the environmentalists and when [25] you became aware the term PCB's in that respect and

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[1] environmental concerns. You first became aware of [2] that in the late, I should say, '67, 1968 area time [3] frame, correct?

[4] A: Correct.

[5] Q: How did you become aware of that, those [6] concerns with respect to PCB's?

[7] A: I was copied in on a memo from David Wood [8] who was located in London in Britain. We [9] manufactured PCB's in Wales, which essentially is [10] Britain. That's where I heard it.

[11] Q: Did Mr. Wood report to you or report of a [12] memo —

[13] A: No.

[14] Q: — concerning the studies that had been done [15] in Sweden?

[16] A: He didn't report to me at all.

[17] Q: I didn't mean it to be in a reporting [18] relationship. I mean, did the memo you were copied [19] on in, in on, discuss the research that had been done [20] in Sweden?

[21] A: Yes.

[22] Q: I apologize, I didn't mean it to have — [23] that's improper.

[24] MR. CHAMBERS: Just to help, because I agree I [25] think it may help if we wait just a minute until you

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[1] have a full chance to ask the entire question you [2] want to ask.

[3] MR. ROEDER: Sure. Sometimes my questions come [4] out slow.

[5] MR. CHAMBERS: Mine do too, that's why I'm very [6] sympathetic with that.

[7] MR. ROEDER: We've got the next exhibit will be [8] 75.

[9] (Plaintiff's Deposition Exhibit No. 75 [10] marked for identification)

[11] Q: (By Mr. Roeder) I'm showing you what has [12] been marked as Plaintiff's Exhibit 75, and it is a [13] memo dated the 26th of January, 1967 bearing Bates [14] number TRAN-56621 through 5623, and it's authored, I [15] believe, by D. Wood. Is this the memorandum that you [16] discussed you were copied in on?

[17] A: Yes.

[18] Q: What was your response when you got this [19] memo, what did you think?

[20] A: I didn't have any.

[21] Q: Were you concerned about what effect, if [22] any, this could have on further uses of PCB's?

[23] A: No.

[24] Q: Did Mr. Wood report any concerns that were [25] being raised in your and specifically in Sweden

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[1] concerning the appearance of PCB's in — let me [2] strike that question. Let me go back and set a [3] further foundation. The research that Mr. Wood [4] reports in this memorandum relates to a Swedish [5] newspaper article referring to the identification and [6] nature of polychlorinated biphenyls, correct?

[7] A: Correct.

[8] Q: And the researcher who performed this [9] research was a chemist named Jensens, J-E-N-S-E-N-S?

[10] A: Correct.

[11] Q: And upon the publication of this newspaper [12] article relating to Dr. Jensens' research, was there [13] a concern that Mr. Wood shared with you and with [14] others concerning publicity that this research was [15] receiving?

[16] A: I read that.

[17] Q: The memorandum talks about it, correct?

[18] A: Correct.

[19] Q: Looking down the line, did you see or were [20] you concerned that this could effect business of [21] Monsanto in this area?

[22] A: Well, yes, because this implication here [23] that that might — it talks about toxicology, and was [24] a man qualified to assess this is what's being asked [25] or pointed out.

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[1] Q: The question whether or not that Dr. Jensens [2] was qualified to suggest that these things may be [3] toxic?

[4] A: Yes, and so publicized in the newspaper.

[5] Q: Well, the very least Mr. Wood seems to [6] suggest that Dr. Jensens did not have an "ax to [7] grind," isn't that correct?

[8] MR. CHAMBERS: Let me object to the form because [9] I don't see the phrase "ax to grind" anywhere here in [10] the document which says what it says.

[11] Q: (By Mr. Roeder) It does say what it says. [12] I was just trying to see if I could "cut to the heart [13] of it." Let me rephrase the question then. [14] Mr. Wood reports in his memorandum, "Jensens' only [15] aim in life as an analytical chemist was to identify [16] the substances found in his research work on the [17] occurrence of insecticides and nature." Do you see [18] that's on the first page?

[19] A: Yes.

[20] Q: Did you form an opinion based upon this [21] memorandum that Dr. Jensens wasn't out to get PCB's [22] as such, he was just trying to do research as pure [23] researcher?

[24] A: I didn't form any opinion at all, but, yes.

[25] Q: What did you do in this time frame in

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[1] response of this memorandum? Were there meetings [2] that were called to discuss it?

[3] A: I did nothing.

[4] Q: You were listed as a carbon copy recipient [5] along with Dr. Kelly and R.A. Steenrod, correct?

Lawyer's Notes

[6] A: Yes.

[7] Q: I understand that Dr. Kelly just died?

[8] A: Yes.

[9] Q: You were the only three in St. Louis who [10] were, in addition to Mr. Buchanan, who received [11] copies of this memorandum?

[12] A: Yes.

[13] Q: Who is Mr. Buchanan?

[14] A: Buchanan reported to — I'm trying to figure [15] the time frame. Well, Buchanan, '67 — Buchanan — [16] let me say that he was at the head of the fluids [17] group which is the group we are talking about.

[18] Q: Okay. So at that point he was — did he [19] take — did Mr. Bergen take his position later?

[20] A: This is what's got me hung up. Did he take [21] one way or another — let's just say at the moment [22] let's say he reported to Bergen, and I'm not [23] absolutely sure that that was — let's put it that [24] way. It's no great point.

[25] Q: In any event, he was someone that would

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[1] report to?

[2] A: Correct.

[3] Q: All right. Now, after this point, sir, this [4] is 26th of January, 1967, were there any visits that [5] you know of that were scheduled or made by Monsanto [6] individuals to Dr. Jensens?

[7] A: No, I was not in that.

[8] Q: You were not in it, but do you know if Dr. [9] Richard, for example, ever visited Dr. Jensens?

[10] A: I don't know.

[11] Q: This was the first of the "bad" publicity [12] pieces, as it were, with respect to PCB's, wasn't it, [13] the articles published in Sweden?

[14] A: I appreciate what you're saying, bad in [15] quotes. This was something nobody ever heard of [16] before so how bad is it. I don't think Iconco — I [17] believe I understand you.

[18] Q: Well, subsequent to the publication of [19] articles concerning Dr. Jensens' research in Sweden, [20] there were articles that were published in American [21] newspapers and periodicals regarding PCB's; isn't [22] that correct?

[23] A: Correct.

[24] Q: And, for example, there was an article that [25] was published regarding Dr. Riceborough's research in

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[1] San Francisco?

[2] A: Correct.

[3] Q: And Dr. Riceborough was a researcher from [4] University of California, correct?

[5] A: I think so.

[6] Q: What he found, if I understand it, tell me [7] if this is what you understood, is that there was — [8] is evidence of PCB's in fish that were caught?

[9] A: Yes.

[10] Q: What did this suggest to you as a chemist [11] concerning the existence of these PCB's? For [12] example, did it suggest that the PCB's did not

break [13] down easily in nature or certain PCB's formulations [14] did not break down easily in nature?

[15] **MR. CHAMBERS:** Let me object to the form just [16] for a second. I'm not trying to stop you from where [17] you're going. Maybe if we go one question at a time [18] instead of with a compound approach.

[19] **MR. ROEDER:** Sure, I agree with it. Let me [20] rephrase the question.

[21] **Q:** (By Mr. Roeder) Did the existence or the [22] reporting of PCB's in fish, for example, that Dr. [23] Riceborough reported, did that suggest to you that [24] the PCB's that were admitted in the environment were [25] not breaking down naturally?

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[1] **A:** That would suggest that, yes.

[2] **Q:** And at this point in 1967 the research as to [3] — how advanced did the research go on with respect [4] to the effect of PCB on environment?

[5] **A:** Would you repeat the question?

[6] **Q:** Sure. It's an inartfully phrased question. [7] Let me — I'll just go at it a different way.

[8] **MR. CHAMBERS:** Just before you do —

[9] **Q:** (By Mr. Roeder) I withdraw the question.

[10] **MR. CHAMBERS:** I'd just like to clarify that I [11] think Riceborough's work was with birds rather than [12] with fish. There may have been some other [13] researchers who worked with fish. But if you got [14] something that can clarify that part, maybe it may be [15] helpful.

[16] **MR. ROEDER:** We will. I think that's correct. [17] If it's not, we will correct it as we go through the [18] documents. I'm not trying to mislead the witness.

[19] **MR. CHAMBERS:** Fine.

[20] **Q:** (By Mr. Roeder) In 1967 — then in later in [21] 1968 there was a report of a Japanese incident with [22] PCB's, correct?

[23] **A:** Correct.

[24] **Q:** And what was involved in that if you [25] understood it?

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[1] **A:** You're referring to the Yoshu incident?

[2] **Q:** Spell that for the court reporter.

[3] **A:** Y-O-S-H-U, Yoshu Province. What's your [4] question?

[5] **Q:** What happened, what do you understand [6] happened there that caused publication?

[7] **A:** The Japanese manufactured we will call it [8] PCB's, and at this situation it was used in a heat [9] exchanger as a direct — indirect, indirect means for [10] heating rice oil in which the Japanese people would [11] cook fish. They're big consumers of fish. There was [12] difficulty with this heater, and there was leakage, [13] and the PCB's got into it. And I want to emphasize [14] this is not normal PCB, this is partially pyrolyzed [15] PCB, which is material that's more a toxic and people [16] got sick. This was the end of the Japanese PCB [17] manufacture.

[18] **Q:** When you say partially pyrolyzed, what [19] does that mean?

Lawyer's Notes

[20] **A:** It was injured, broken down, overheated.

[21] **Q:** I see. So even though —

[22] **A:** Damaged.

[23] **Q:** Even though it has great thermo stability, [24] it gotten hot enough so some of thermo stability was [25] lost?

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[1] **A:** Exactly, the temperature was exceeded. It [2] was in heat transfer, you know, is pretty well what [3] happened. It overheated in simple terms. This was [4] not normal PCB is my point.

[5] **Q:** Was it normal PCB's before it was heated?

[6] **A:** Correct.

[7] **Q:** And it got heated too hot?

[8] **A:** Correct.

[9] **Q:** Then as a result of that it became even more [10] toxic?

[11] **A:** Correct.

[12] (Plaintiff's Deposition Exhibit No. 76 [13] marked for identification)

[14] **Q:** (By Mr. Roeder) Sir, I'm showing you what's [15] been marked as Exhibit 76, and that is a document [16] dated December 4, 1968, bears Bates numbers [17] TRAN-57423. Take a moment to look at that for a [18] second.

[19] **A:** Okay.

[20] **Q:** Okay. There is a handwritten portion at the [21] bottom of this memorandum, isn't there?

[22] **A:** Yes.

[23] **Q:** Is that your handwriting?

[24] **A:** Yes.

[25] **Q:** Tell me if I read it correctly. It says,

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[1] "Why the stainless pipe? It is known that only a few [2] parts per million or —

[3] **A:** Less.

[4] **Q:** — less of chloride ions plus traces of —

[5] **A:** Moisture.

[6] **Q:** — moisture can —

[7] **A:** Cause.

[8] **Q:** — cause stress, corrosion (cracking) of [9] stainless steel —" maybe you should read it?

[10] **A:** "Of stainless steel under thermo and [11] mechanical strain." The three things, the chloride [12] ion in very small amount, but at high temperature and [13] moisture in stainless steel can correct stainless [14] steel piping, stress corrosion, that's what I'm [15] talking about. I was amazed the heat exchanger had [16] stainless steel pipe, that's what I'm saying here, [17] couldn't believe it.

[18] **Q:** What pipe should they have used?

[19] **A:** Iron.

[20] **Q:** Not stainless steel?

[21] **A:** Right.

[22] **Q:** Could you read the rest of your handwriting [23] here?

[24] **A:** "Special —

[25] **Q:** I think we are starting at "Any".

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[1] **MR. CHAMBERS:** I think the next sentence starts [2] at "Any".
[3] **A:** Okay. "Any Aroclor heating system will [4] provide the factors needed to have stress corrosion [5] in stainless steel."
[6] **Q:** This simply says what you just said, [7] correct?
[8] **A:** Right.
[9] **Q:** Could you please continue?
[10] **A:** "Special equipment is always required when [11] using stainless steel with Aroclor heating. [12] Experience as the above can be very harmful to our [13] Aroclor business."
[14] **Q:** So in this respect, now, you had formed an [15] opinion that this type of publicity and this type of [16] use could harm the business that you're hoping to [17] develop?
[18] **A:** Uh-huh.
[19] **Q:** Is that yes?
[20] **A:** Yes.
[21] **Q:** Now, did Monsanto suggest or have any sort [22] of instructions, labels, etc., at this time that [23] would insure that the users of the Aroclors not use [24] the Aroclors in stainless steel — let me rephrase [25] the question. Did Monsanto take any steps during

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[1] this time period to let users of its Aroclors know [2] that they should use stainless steel systems that [3] would be heated with respect to the Aroclors?
[4] **MR. CHAMBERS:** If you know.
[5] **A:** I wasn't in that end of the business. I [6] don't know.
[7] **Q:** Okay. Did you — strike that. At this time [8] you were involved as well in the international [9] business with respect to the Aroclors?
[10] **A:** Yes.
[11] **Q:** And so the publicity in Japan was [12] particularly important to you with respect to your [13] job, correct?
[14] **A:** You're right.
[15] **Q:** Who was MMK, and I'm referring to the very [16] first line of memorandum that says, "MMK has just [17] issued market plan for Santotherm in Japan"?
[18] **A:** Yes, MMK, Monsanto/Mitsubishi, I think [19] that's what that refers to.
[20] **Q:** That's agreement for venture between [21] Monsanto and Mitsubishi and Japan?
[22] **A:** Correct.
[23] **Q:** So it is fair to say that Monsanto and [24] Mitsubishi in Japan were going to market Santotherm [25] in Japan, which would be a product which had PCB's?

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[1] **A:** We had built a plant.
[2] **Q:** You already built a plant?
[3] **A:** Yes.
[4] **Q:** Ready to go?
[5] **A:** Right.

Lawyer's Notes

[6] **Q:** At this point the Japanese government then [7] put the caboché on the plant, as it were?
[8] **A:** Right.
[9] **Q:** So that was it, the Japanese government as a [10] result of this prohibited use of PCB's in all of [11] Japan, correct?
[12] **A:** That's right.
[13] **Q:** What did they do in Japan for dielectric [14] uses?
[15] **A:** Well, we are talking about capacitor. They [16] weren't using it in transformers as they did here, [17] but they did use it in capacitors, and that's [18] essential application. Now, they went to other [19] materials and no doubt combustible materials. I [20] doubt they went back to mineral oil. I didn't pursue [21] it anymore. It was over with in Japan.
[22] **Q:** So since the market was eliminated in Japan [23] it wasn't worth any more of your time to pursue [24] alternative —
[25] **A:** I did not pursue it.

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[1] **Q:** All right. Now, the memorandum of December [2] 4, 1968 from Mr. D. A. Olson to W.R. Richard also [3] refers to a meeting with Calandra. Do you see that [4] on the second, third paragraph in the memorandum?
[5] **A:** Yes.
[6] **Q:** Who's Calandra?
[7] **A:** I asked the same question, and I now know [8] just from yesterday. Calandra, I think, was a [9] testing laboratory in the biological end of things.
[10] **Q:** Is it Dr. Joe Calandra for bio-test?
[11] **A:** Yes.
[12] **Q:** So he was the guy that Monsanto hired to do [13] some of the PCB's tests?
[14] **A:** Yes.
[15] **MR. CHAMBERS:** It may help for me to clarify [16] here that we took — that Mr. Roeder sent a list of [17] documents to us a couple of days ago that he might [18] refer to or ask Mr. Benignus about. We spent some [19] time yesterday looking through those documents, and [20] it is in that context that Mr. Benignus saw Dr. [21] Calandra's name. That's what he refers to in his [22] testimony.
[23] **Q:** (By Mr. Roeder) That's fine. But you knew [24] didn't you, as well, sir, that Monsanto was then [25] conducting or considering conducting additional

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[1] research on the biological effects of PCB's?
[2] **A:** I accept your statement, yes. I didn't — I [3] wasn't active in that area at all, but I accept what [4] you're saying.
[5] **Q:** Okay. The next paragraph in this memorandum [6] says, "We should carefully evaluate whether there is [7] a significant risk in selling Therminol in food [8] applications and what guidelines should be used." Do [9] you see that?
[10] **A:** Yes.
[11] **Q:** Did you discuss any risks with respect to [12] selling Therminol in food applications?

Lawyer's Notes

[13] A: No.

[14] Q: And the term, "Therminol," is another trade [15] name for one of the Aroclors, correct?

[16] A: Yes.

[17] Q: But it would be Aroclor that had PCB's in [18] it, correct?

[19] A: Right, yes.

[20] Q: In this respect, sir — not in this respect.

[21] There was some discussion — strike that. Let me [22] rephrase the question. Had you ever suggested that [23] Aroclors should be used for other applications other [24] than in the dielectric field?

[25] A: We have already covered that. I spent from

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[1] 1947 to 1953 exclusively in the nonelectrical, but we [2] did not invent or instigate new applications at [3] Monsanto that I know of.

[4] (Plaintiff's Deposition Exhibit No. 77 [5] marked for identification)

[6] Q: (By Mr. Roeder) Here, sir, I'm showing you [7] what's been marked as Exhibit 77.

[8] A: Yes.

[9] Q: It's a memorandum to P.G. Benignus, which is [10] you, correct?

[11] A: Right.

[12] Q: From L.V. Sherwood dated August 30, 1957 and [13] bears Bates numbers TRAN-53674 to 53675, and it [14] relates to a P.G.B. sales information bulletin [15] regarding Aroclors as agriculture chemicals?

[16] A: Yes.

[17] Q: You want to take a moment to review that, [18] sir?

[19] A: Okay.

[20] Q: Okay. This is a memorandum that [21] Mr. Sherwood wrote to you concerning a recommended [22] use for Aroclor which had not been approved by the [23] USDA or FDA, correct?

[24] A: That's what it says.

[25] Q: And the proposal in sales bulletin was to

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[1] use Aroclor to increase the insecticidal life of the [2] lindane which is a pesticide, right?

[3] A: To call this a sales bulletin is a bit [4] strange. Sure, what I gather was a lawyer at [5] Monsanto. I didn't know him. It sounds as though he [6] is.

[7] Q: Do you know if it's — he is a lawyer or [8] not, sir?

[9] A: I don't know the man. I did know him, but I [10] can't place him now. But I assume he is in-house [11] lawyer. He is learned. He is correct. What he [12] needs to do is talk to the USDA, Food and Drug [13] Administration about this. We didn't devise this [14] brochure. That was the government thing.

[15] Q: Well, the reference is —

[16] A: And neither did we promote it, and neither [17] was it ever used.

[18] Q: Well, the reference on the memorandum is [19] "P.G.B.," which is you, correct?

[20] A: Yes.

[21] Q: "Sales information bulletin 8-27-57 OD 1149, [22] 'Aroclors as Agricultural Chemicals,'" correct?

[23] A: Yes, correct.

[24] Q: And Mr. Sherwood here is concerned that [25] you're recommending without restriction the use for

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[1] Aroclor which had not been approved by USDA or FDA, [2] correct?

[3] A: That's why I should say you should talk to [4] USDA and FDA. Now, sales information bulletin maybe [5] — see, I was in the sales. This is 1957.

[6] Q: I appreciate it. It's some time ago.

[7] A: I was in the sales — associated with the [8] sales department. What I was doing is notifying [9] people in our sales department of evidently whatever [10] this thing was, "Aroclor used to increase [11] insecticidal life of lindane," which was published by [12] the Department of Agriculture or something and making [13] them aware of it without knowing everything that Mr. [14] Sherwood refers to. And all I say about it is it was [15] never used, and his point's well taken.

[16] Q: Out of the reams of information that had [17] been exchanged between the parties, I don't think we [18] have got the P.G.B. sales information bulletin.

[19] MR. CHAMBERS: I'll look into that because we [20] would not have failed to provide that to you for any [21] particular reason.

[22] MR. ROEDER: The only reason, and perhaps we do [23] have it, I don't know, but I know the computer runs [24] and printouts it didn't show up.

[25] MR. CHAMBERS: I understand. We will try to

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[1] direct it to you if we already produced it.

[2] Q: (By Mr. Roeder) But let me just see if [3] there is some — Mr. Sherwood indicates, for example, [4] that — let me go back and rephrase the question. [5] Apparently the use here is to mix Aroclors with [6] lindanes so that they would last longer, correct?

[7] A: As a sticker, yes.

[8] Q: So it would stick on something it was [9] sprayed on?

[10] A: This is correct.

[11] Q: There is a postscript on the second page, [12] sir?

[13] A: Yes, I read that.

[14] Q: Which says, "We repeatedly find that users [15] of formulations prepared for a specific use will [16] apply the material for other uses." Do you agree [17] with that?

[18] A: It can be.

[19] Q: Okay. At least you don't recall disagreeing [20] with that statement in this memorandum?

[21] A: I can't refute this statement.

[22] Q: And it continues: "In other words, even [23] though Monsanto may encourage the use of Aroclor in [24] pesticide formulations for non-agriculture use, you [25] can rest assured that some of it will be used on

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[1] agriculture commodities"?
[2] A: Wait a minute, now, I don't know that I [3] agree with that philosophy. That almost leads you to [4] say it can be used for everything.
[5] Q: Or if it's not clearly marked as to what its [6] uses and limitations are, people will use it in ways [7] it will violate the intended uses of the product, [8] correct?
[9] A: I think that's what he is saying.
[10] Q: He continues, "For these reasons alone it is [11] strongly recommended that we state very specifically [12] and any Monsanto literature, including [13] correspondence, that Aroclors not be used on [14] agriculture commodities." Then he says, "I believe [15] our legal department will confirm that there is an [16] important legal aspect involved," that's what that [17] says, correct?
[18] A: That's why I think he is a lawyer at [19] Monsanto.
[20] Q: Well, would you think that if a lawyer, he [21] would say in my legal opinion we shouldn't do it. [22] Because it suggests, does it not, sir, that someone [23] should confirm with the legal department?
[24] A: I believe what you said is right. Nothing [25] came of it. It wasn't used, but that did come up.

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[1] Monsanto did not generate this thing, but I did pass [2] it along as an information bulletin so that our [3] people in the district, if it came to their [4] attention, they would have heard of it. That was my [5] purpose. And this man points out some valid points [6] regarding it. And PCB's, to my knowledge, were never [7] used on any agriculture application. So I agree with [8] him on that.
[9] (Plaintiff's Deposition Exhibit No. 78 [10] marked for identification)
[11] Q: (By Mr. Roeder) Sir, the court reporter has [12] marked as Plaintiff's Exhibit 78 a memorandum dated [13] December 9, 1968 from W.R. Richard to E. Wheeler, and [14] it has a number on the bottom, TRAN, T-R-A-N, 57342.
[15] (Discussion held off the record)
[16] Q: (By Mr. Roeder) Sir, Exhibit No. 78 is a [17] document that you were sent a copy of. You're listed [18] as recipient, all right?
[19] A: Okay.
[20] Q: If you note — if you compare Exhibit 78 to [21] 76, which was the memorandum regarding the Japanese [22] incident —
[23] A: Yes.
[24] Q: — they happen — they're dated very close [25] in time, if you could just confirm that, the exhibit

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[1] prior to that one, sir?
[2] A: Yes, okay.
[3] Q: So Exhibit 76 was dated December 4, 1968, [4] and that's the — when you have your handwritten [5] notations?
[6] A: Okay.

Lawyer's Notes

[7] Q: That's December 9, five days later. Do you [8] recall there being meetings concerning toxicity with [9] respect to these issues toward the end of 1968 that [10] you attended?
[11] A: Not that I attended.
[12] Q: Well, Mr. Richard, he was the Dr. Richard [13] that you referred to earlier?
[14] A: Yes, head of the research on the PCB's.
[15] Q: In fact, isn't he the inventor of some of [16] the equipment that was ultimately used to determine [17] that PCB's are actually found in concentrations that [18] were —
[19] A: You got it a little bit wrong. It was [20] Ralph, Dr. Munch that did this.
[21] Q: Oh, Dr. Munch did that?
[22] A: Yes. And he was the first to in a crude way [23] to apply vapor phase chromatology in a crude way. It [24] was not at all sophisticated enough to pursue what [25] they're getting into here, and you can see that it's

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[1] — this is calling for mass spectrograph in [2] combination with advanced designs of vapor phase, [3] chromatic graphic columns, etc., etc. But he was an [4] early observer of that vapor phase chromatology.
[5] Q: My question, next question, could you just [6] sort of break that down for the, what's the word I [7] want to use, the nontechnical people like me? When [8] they did these chromatography, what in laymen's terms [9] did they do to determine the PCB's were there?
[10] A: This is a very complex, analytical subject. [11] I'd like to answer it hopefully to your satisfaction [12] by saying highly sophisticated, analytical technology [13] and two different types of instrumentation used in [14] combination are now required to move on and see [15] whether people you were talking about like Jensens [16] and others, whether, in deed, they had PCB to begin [17] with. So this opened up some very sophisticated, [18] analytical technology that was beginning to come [19] along because of this. Is that okay?
[20] Q: That's good enough for me.
[21] A: Okay.
[22] Q: I went to law school because there was no [23] math.
[24] (Discussion held off the record)
[25] Q: (By Mr. Roeder) The memorandum from Mr.

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[1] Richard to Elmer Wheeler, Dr. Wheeler, talks about a [2] meeting of 12/6/68, and he suggests that the issue on [3] Aroclor toxicity are complicated, and he sets forth [4] written program objectives. Do you see that?
[5] A: Yes.
[6] Q: Did you ever suggest to Mr. Richard any [7] changes in the program objectives that he was [8] following?
[9] A: No.
[10] (Plaintiff's Deposition Exhibit No. 79 [11] marked for identification)

[12] Q: (By Mr. Roeder) I'm showing you Exhibit 79, [13] Plaintiff's 79, which is another memorandum from [14] Dr. Richard to Ralph Munch to you, J. Bryant, J. [15] Herber, J. Sullivan, Q. Thompson, and R. Weiss. And [16] for the record it bears number TRAN-57681 through [17] 57682.

[18] Q: Okay. All right. The title of the [19] memorandum is, "Defense of Aroclor." You received a [20] copy of this memorandum, correct?

[21] A: Yes.

[22] Q: Did you understand as of December 1968 that [23] there was potentially a defense Aroclor to be made?

[24] A: I wouldn't use the word "defense" to begin [25] with, but that's a word Bill Richard picked up. What

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[1] he is talking about that now there is evidence that [2] research has been befallen with various good deal of [3] things that nobody knew about to investigate and look [4] into, and this costs money and time.

[5] Q: I appreciate that.

[6] A: And Richard is trying, in my opinion, using [7] the word "defense" trying to impress people that this [8] is something that could be, I think it says, "We may [9] find that Aroclor is safe and has been misidentified [10] in the environment." Well, it didn't know if it was [11] safe or the complaints were valid, you know. Nobody [12] understood what was going on. But Bill saw there [13] would have to be investigative work done, and this [14] costs time and this costs money, and he used this [15] word "defense" maybe to emphasize this. In other [16] words, that's just that. I don't know why he said [17] "in defense." He's saying we got to look at this [18] stuff. We don't understand it. It's going to have [19] to be looked at. And maybe we will find no problem, [20] maybe they'll find there is a problem. This is tenor [21] of things. It really gets into all kinds of stuff. [22] I myself would not — you know, who knew lawyers were [23] going to look at this, you know.

[24] (Discussion held off the record)

[25] Q: But in any event, sir, back on the record,

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[1] you don't recall disputing the choice of that word [2] with Dr. Richard at the time, do you?

[3] A: I didn't do anything.

[4] Q: The toxicity defense which is referenced in [5] paragraph one says, "Toxicity defense, Callandra to [6] determine safe level of exposure on long-term basis [7] in ppm —" parts per million?

[8] A: Parts per million.

[9] Q: "— by feeding studies"?

[10] A: Correct.

[11] Q: That's Callandra we discussed a little while [12] ago, right?

[13] A: Yes.

[14] Q: Two, "Is chlorinated biphenyl identified in [15] environment? Do chicken work and compare with what [16] is being found and reported as

Lawyer's Notes

PCB's." Do you know [17] what he means by "chicken work"?

[18] A: With chickens.

[19] Q: See whether or not PCB's show up in chickens [20] and things like that?

[21] A: Yes.

[22] Q: There is something I certainly do not [23] understand, paragraph 6. Perhaps you can help me.

[24] "Seek replacement derivatives which are different, [25] less toxic, but which use our plants." Then there is

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[1] two zeros with lines drawn through them, and then [2] arrow 00-CLX. What is zeros that looks like knots, [3] as it were?

[4] A: I don't understand it any better than you do [5] but —

[6] Q: That's fine then. Now, the next page, sir, [7] part of the defense of Aroclor, Dr. Richard suggests [8] that you enter the business for solid insulation by [9] buying into capital?

[10] A: Now I do understand it.

[11] Q: Okay.

[12] A: But it's not important.

[13] Q: These are related benzene rings?

[14] A: Yes, that's what these things are as benzene [15] rings, and the "CL" is chlorine to "X" amount.

[16] Q: "X" being a variable?

[17] A: "BR," bromine and fluorine, I guess.

[18] Q: So these would be chemicals?

[19] A: And sulfur.

[20] Q: That's representations of how chemical [21] compounds would be constructed?

[22] A: Those are benzene rings, you answered it.

[23] Q: I'm guessing, wild guess.

[24] A: Well, you're right.

[25] (Plaintiff's Deposition Exhibit No. 80

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[1] marked for identification)

[2] Q: On paragraph 9 on page 2 for the defense of [3] Aroclors Dr. Richard suggests that we enter the [4] business for solid insulation by buying into capital [5] Polyethylen, Polypropylene, Polystyrene for film [6] production. What does that mean?

[7] MR. CHAMBERS: Let me object to the form to the [8] extent we are asking Mr. Benignus to speculate about [9] the meaning of words that somebody else used.

[10] Q: (By Mr. Roeder) Do you know what he meant?

[11] A: Yes.

[12] Q: What did he mean as you understood it?

[13] A: Talks about insulation so it's referring to [14] electrical insulation. Should we buy into a plant [15] making solid insulation versus liquid insulation and [16] one of the ultimate outlets that evolved as of the [17] day they don't use liquid insulation in the [18] applications of some of the

capacitors, they indeed [19] use solid insulation. So early on, and these are all [20] things dielectric — solid dielectric films, they're [21] insulators. Should we start making solid insulation, [22] well, that's way ahead where we were going to be or [23] doing anything, but people at this time were thinking [24] where do we go, what is this.

[25] Q: If we want to stay in the business, what do

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[1] we do?

[2] A: Yes, what do we do exactly. And it's way [3] ahead of everything, and we never did get into any of [4] this, but as of today there is, indeed, solid [5] insulation instead of liquid.

[6] Q: Exhibit 80, sir, for the record that's a [7] memorandum from Elmer Wheeler to D.A. Olson?

[8] A: Yes.

[9] Q: Bearing Bates number TRAN-6445 through 6447, [10] and you are shown as a carbon copy recipient, [11] correct?

[12] A: Yes.

[13] Q: This was a memorandum from Dr. Wheeler to [14] Mr. Olson also with respect to the Japanese incident, [15] right?

[16] A: Yes.

[17] Q: Now, in paragraph number 2 on page 1 it [18] indicates, "There are no regulations concerning the [19] Aroclors in applications where there might be oral [20] ingestion of these materials." That was correct as [21] of that time, correct?

[22] A: Yes, I assume so.

[23] Q: And they also indicate, "There have been no [24] applications in the pesticides field where the U.S. [25] Department of Agriculture would have to be

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[1] consulted?"

[2] A: Yes, correct.

[3] Q: Finally, "In the absence of prospective uses [4] which would require such governmental clearances, [5] there has been no incentive to undertake the [6] extensive animal toxicity studies which would provide [7] data necessary for establishing a human diet [8] tolerance," right?

[9] A: Right.

[10] Q: So as of this point, Dr. Wheeler is [11] supporting to you and to Mr. Olson that there just [12] hadn't been an incentive to determine how toxic this [13] could be, what the tolerance humans had with respect [14] to Aroclors; is that correct?

[15] A: People weren't suppose to eat it.

[16] Q: Right. Sir, it wasn't intended to be eaten?

[17] A: It wasn't intended to be eaten.

[18] Q: Was there any consideration — strike that. [19] Was this the first time, around this time when [20] consideration was being given to whether or not the [21] Aroclors would show up in the food chain even though [22] it wasn't intended for people to eat Aroclor?

[23] A: I don't know, but I can't say anything [24] opposite it brought up attention in Yoshu when

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it got [25] into the food. But as I told you, it wasn't normal

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[1] Aroclor, it wasn't normal PCB.

[2] Q: Right, but the Aroclors or PCB's that showed [3] up in the fish samples and in the birds, that could [4] result in the food chain as well; isn't that correct?

[5] A: Yes, yes.

[6] Q: That would be because the PCB's would [7] persist in the animal tissue and people would ingest [8] it when they ate the fish or birds or whatever, [9] correct?

[10] A: There would be parts per million or found [11] parts per billion, you know, in fish, and we have it [12] now in me, I know you too.

[13] (Plaintiff's Deposition Exhibit No. 81 [14] marked for identification)

[15] Q: For the record, Exhibit 81 is a memorandum [16] from C.J. Eby, E-B-Y, to H.S. Bergen, dated October [17] 23, 1961, and has the Bates number TRAN-12383, and [18] you're shown as recipient to this?

[19] A: Yes.

[20] Q: Up in the upper, right-hand corner this [21] memorandum discusses how Dr. William Horwitz of FDA [22] Food Division, "Hot on the trail of chlorinated [23] compound 'X' which is a causative factor in chick [24] edema, E-D-E-M-A." You see that, right?

[25] A: Yes.

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[1] Q: Who is C.J. Eby, do you know?

[2] A: Yes, he was in our Washington office. You [3] see this originated there, Washington D.C.

[4] Q: Exactly. So this was a request by someone [5] with the Food and Drug Administration. The [6] memorandum reflects a request for more information [7] concerning Aroclors. And reading from the second [8] paragraph "FDA might like to know all about our [9] Aroclor process of manufacture, our methods of [10] analysis including chromatographic, our toxicity [11] studies, and anything else related to the Aroclors." [12] Do you see that?

[13] A: Yes.

[14] Q: Now, Dr. Horwitz was calmed down by Mr. C.J. [15] here as he reports — down temporarily by [16] transmitting our latest Aroclor general sales [17] booklet." And you see that in there, correct?

[18] A: Yes.

[19] Q: But as of this date the FDA was concerned [20] that the use of Aroclors as "extenders" for [21] insecticides was resulting in something being [22] transmitted through chickens; isn't that correct?

[23] A: Let's see, where are you reading this?

[24] Q: Well, second paragraph. Let me rephrase the [25] question. Where Horwitz — the end of the first

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[1] paragraph, "Seemed to give our Aroclor a clean bill [2] of health." The second paragraph states.

does it [3] not, "Horowitz is now back on the trail"?

[4] A: Okay, I think I get what you're driving at.

[5] Q: He says, does he not, "Because of the use of [6] Aroclors as "extenders" for insecticides against [7] roaches, etc., in the poultry field, among others, he [8] feels the Aroclors line should be more fully checked [9] out."

[10] A: Okay.

[11] Q: In fact, Aroclors were being used as [12] extenders for insecticides; isn't that correct?

[13] A: All right. I'll try to answer your [14] question. To begin with, I wasn't in the area at [15] this time. Now, I'll try to go along and to the best [16] of my ability —

[17] Q: At least that's what it's suggesting in that [18] memorandum?

[19] A: Yes, one would conclude that, but I was not [20] active, and this is nonelectrical.

[21] Q: So certainly not dielectric area?

[22] A: Not dielectric, and I'm not concerned with [23] it for that reason except as you would be for [24] cursory. Here is compound "X." I wonder without [25] being absolutely certain what is meant by compound

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[1] "X." Now, there was "X" disease, you know, caused by [2] chlorinated Naphthalene. I don't know if that's a [3] reference here to compound "X" or not, which is a [4] cause in chicken edema. "X" compound, compound "X," [5] as I have heard it referred to years ago before this [6] was chlorinated naphthalene and that did cause [7] anthracnose edema in chickens and in cattle. I [8] didn't pursue this. I merely mention that. Now, but [9] it does say, "PCB's used as 'extenders' for [10] insecticides against roaches." I have never heard of [11] it, but that's what it says. I wasn't there. That's [12] what it says.

[13] Q: But in any event, Mr. Eby succeeded in [14] calming Horwitz down by getting him the sales [15] booklet, and as far as you know there is no further [16] inquiry by the FDA with respect to use of PCB as [17] extenders?

[18] A: This is correct, but you will see here that [19] Beltsville, Maryland, that's a government [20] organization, Beltsville, Department of Agriculture [21] in '59 indicated — indicated 1 to 2 percent of [22] Aroclors in insecticidal, such as lindane, for [23] noncrop use seemed to be quite effective. Well, [24] that's where this we looked at earlier, Aroclor's a [25] sticker for lindane, that's where it came from. It

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[1] came from Department of Agriculture. That's why I [2] told you you ought to talk to the Department of [3] Agriculture instead of us, and this merely brings [4] that up that that was a development by the government [5] not Monsanto. And it actually, to my knowledge, was [6] never used.

[7] Q: But in any event, this didn't cause any [8] greater investigation as to whether or not Aroclor [9] would persist if it were used as a sticker and [10] insecticide?

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[11] MR. CHAMBERS: Assume you're referring to any [12] investigation by Mr. Benignus?

[13] Q: (By Mr. Roeder) Benignus, or as far as you [14] know from Monsanto?

[15] A: Not to my knowledge, but I wasn't active in [16] that area.

[17] (Discussion held off the record) [18] (Plaintiff's Deposition Exhibit No. 82 [19] marked for identification)

[20] Q: (By Mr. Roeder) Sir, I'd like to show you [21] Plaintiff's Exhibit 82, which is organic chemicals [22] sales information bulletin dated August 9, 1957 from [23] P.G. Benignus, Bates number TNGS-19125. I'll ask you [24] is this the sales information bulletin that was [25] referred in the previous exhibit — referred to in

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[1] the previous exhibit that would be Exhibit No. 77?

[2] A: Yes, that's what it refers to.

[3] Q: These two exhibits 82 and 77, were they [4] traditional copies or additional?

[5] (Discussion held off the record)

[6] (Plaintiff's Deposition Exhibit [7] No. 83 marked for identification)

[8] Q: (By Mr. Roeder) Let's go back on the [9] record. I'm showing you what's been marked as [10] Plaintiff's Exhibit 83, which is a memorandum from [11] W.R. Richard to file showing carbon copies to you as [12] well, and Bates number is TRAN-5788 through 5790. [13] Did you get a copy of them?

[14] A: Yes.

[15] Q: Now, this document does identify Joe [16] Calandra as being the President, Chemist Ph.D and [17] M.D., and it shows him on the staff at Northwestern [18] University in pathology, right?

[19] A: Yes.

[20] Q: I think I actually — can I see that copy, [21] sir? This might be the one that I marked up. It is. [22] Now, we are — did you attend any meetings like this [23] where the Industrial Bio-Test Laboratory's tests were [24] discussed?

[25] A: No.

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[1] Q: Then I won't ask you questions on this, but [2] this would be a document you would have received in [3] the ordinary course?

[4] A: Right.

[5] Q: And it would be sent to you, would it not, [6] sir, to keep you advised of what was going on with [7] respect to research regarding Aroclors and PCB?

[8] A: Yes.

[9] (Plaintiff's Deposition Exhibit No. 84 [10] marked for identification)

[11] Q: (By Mr. Roeder) And Plaintiff's Exhibit 84 [12] is another memorandum from Dr. Richard, and you [13] received a copy of this, didn't you?

[14] A: Yes.

[15] Q: And it bears Bates number TRAN-86181 to [16] 86182. Now, this reflects, doesn't it, sir, a visit [17] to Professor Widmark by Dr. Richard?

[18] A: Yes.

[19] Q: Now, does this refresh your recollection [20] earlier when you said I think you testified you [21] weren't sure if Dr. Richard had gone to actually meet [22] with Professor Widmark?

[23] A: I don't know that I said that.

[24] Q: I think I asked you about Professor Jensens, [25] didn't I?

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[1] A: Jensens, yes. I don't think he went to [2] Jensens, but I think he went to Widmark.

[3] Q: So he had visited Professor Widmark, and [4] were you interested in the substance of this [5] conversation with Professor Widmark?

[6] A: Yes, I'm interested in it. It is [7] interesting.

[8] Q: Now, about the fourth par- — fifth [9] paragraph down on the first page, there is a [10] reference to he wanted Monsanto — and tell me if I [11] read it correctly in the record. "He, being [12] Professor Widmark, wanted Monsanto to restrict sale [13] to those closed system applications. He asked if the [14] economic value of PCB's was worth the bad publicity [15] which would come to Monsanto." Do you recall that [16] being a discussion, sir?

[17] A: No, I just take it as a statement.

[18] Q: But, I mean, that being an issue discussed [19] in Monsanto when the environmental problems with [20] respect to PCB's were beginning to come to light?

[21] A: I never heard it discussed.

[22] Q: And just so the record is clear, this would [23] be another document that would be sent to you to keep [24] you advised of continuing events in this area?

[25] A: That's what it did.

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[1] (Plaintiff's Deposition Exhibit No. 85 [2] marked for identification)

[3] Q: (By Mr. Roeder) For the record, Plaintiff's [4] Exhibit 85 is a document by D.V.N. Hardy, bears Bates [5] numbers TRAN-21762 to 21771, and there is a notation, [6] sir, in the right-hand corner in the front page. It [7] says, "circulate and P.G.B." That would be you, [8] correct?

[9] A: Right.

[10] Q: Is this a document that you would have [11] received pursuant to that direction?

[12] A: Yes.

[13] Q: Take a moment to look at the document.

[14] A: I assume so my name's not crossed off.

[15] Q: So in the ordinary course you would receive [16] the document?

[17] A: I would assume so.

[18] MR. CHAMBERS: Let me ask, since this is about [19] eight or nine-page document if there is a particular [20] page that you might want to direct the witness to?

[21] Q: (By Mr. Roeder) No, I'll tell you what, I [22] think I can go at it this way. Who is D.V.N. Hardy?

[23] A: He is a man with Monsanto in London, England [24] and Britain. He may have been at the

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plant and [25] laboratories in Raubon, which is synonymous, you

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[1] might say, with Britain. He was over in England [2] maybe in the office there, maybe in the research lab, [3] I don't know, but he was over there. D.V.N. Hardy [4] was from Monsanto, England. Raubon, R-A-U-B-O-N, [5] which is in Wales, which is where the plant was, [6] which is near London.

[7] Q: Now, the document is entitled, "Reports [8] summarizing present knowledge concerning [9] chlorine-containing residues in wildlife and visits [10] made to organization implicated therewith during the [11] period of April 28 to May 1, 1969." Sir, do you [12] recall ever — first of all, do you recall reviewing [13] this document?

[14] A: Really not.

[15] Q: Let me just ask the question relating to on [16] the second page. My discussions concerning this [17] document will then be brief, the examination [18] concerning it. The third paragraph of the second [19] page?

[20] A: Yes.

[21] Q: Discusses the work by Soren Jensen, a [22] research worker at the Institute for Analytical [23] Chemistry, University of Stockholm, under the [24] direction of Gunnar Widmark?"

[25] A: Yes.

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[1] Q: Then it says, "Using a combined gas [2] chromatograph mass spectrometer it was shown that the [3] peaks are due to polychlorinated biphenyls (PCB's). [4] And Mr. Hardy then says. The evidence and reasoning [5] are available and the conclusion can hardly be in [6] doubt"?

[7] A: Yes.

[8] Q: Do you disagree with that statement as of [9] this time?

[10] A: I agree with it. They were considerably [11] advanced from what our methodology was in this [12] country at that time. They were ahead of us with [13] this sophisticated analytical approach needed to [14] detect these very small amounts in fish or birds. We [15] were not that far advanced in our country.

[16] A: What's the date of this?

[17] Q: The date of this, sir, is —

[18] A: 1969.

[19] Q: Right, up in the right-hand corner it says [20] 6/5/69.

[21] A: Yes, we were not that far along in our [22] analytical capability at this time. We could not [23] have done this, but we didn't question it.

[24] (Plaintiff's Deposition Exhibit No. 86 [25] marked for identification)

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[1] Q: (By Mr. Roeder) Exhibit No. 86, for the [2] record, is a memorandum from R.H. Munch?

[3] A: Yes.

[4] Q: To W.R. Richard?

[5] A: Yes.

[6] Q: And dated December 5, 1969?

[7] A: Yes.

[8] Q: Bates number TRAN-58300 to 58301. Take a [9] moment to review this document, sir.

[10] A: Yes.

[11] Q: Now, the memorandum to — from Mr. Munch to [12] Dr. Richard —

[13] A: Dr. Munch.

[14] Q: Dr. Munch to Dr. Richard is carboned to you [15] as well, wasn't it?

[16] A: Yes.

[17] Q: This relates to the future posture in [18] dielectrics area, doesn't it?

[19] A: Yes.

[20] Q: So this is something you'd be directly [21] involved with?

[22] A: Yes, very much.

[23] Q: And memorandum also references, does it not, [24] discussions of pertinent parts with among others Paul [25] Benignus, which is you, right?

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[1] A: Right.

[2] Q: Now, the first sentence relates to Don Olson [3] who asks about how we should go about reaching our [4] objective. Who is Don Olson?

[5] A: Don Olson was under Bergen. Let me say is [6] assistant to Howard Bergen, and he had authority [7] relative to the marketing or sales people and to the [8] district managers, whereas I in contrast was purely [9] technical. He was in the business end of the [10] business on behalf of Bergen.

[11] Q: All right. The references made in the first [12] paragraph to Monsanto's objective of, "being the [13] world leader in the Aroclor business." Was that the [14] objective of Monsanto in 1969?

[15] A: It was Monsanto's posture. We were the [16] world leader by a good deal.

[17] Q: In total sales?

[18] A: In dielectrics, yes.

[19] Q: Then the memorandum continues, "Under [20] present conditions this question should probably be [21] changed to how should we go about achieving maximum [22] profit from dielectric fluids or dielectrics in [23] general?" Okay. Do you agree with that statement?

[24] A: Yes, for the next sentence I'd have to agree [25] with it.

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[1] Q: So was there a shift in the objective in [2] 1969 as to being — instead of being the world leader [3] in Aroclor business as to how to achieve maximum [4] profit from dielectric fluids or dielectrics in [5] general?

[6] A: Well, this whole thing was highly [7] disruptive. It came precipitously, and Ralph Munch [8] is thinking ahead. Where we headed for, and here's [9] environmental pollution which it never come up [10] before, and what's that going to do to our posture? [11] What else in the dielectric fluid area should we be [12] looking at, and what

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should we be looking at relative [13] to the present situation and use of PCB's?

[14] Q: Well, I think you have answered it, and [15] the — but when you said this whole thing, you were [16] referring to the PCB issues that came to light in the [17] late —

[18] A: Environmental.

[19] Q: Right.

[20] A: Which was new in 1969. This was December of [21] '69.

[22] Q: So Dr. Munch then says, "There are two [23] reasons for changing the question. One is the [24] environmental pollution problem," and you agree with [25] that, correct?

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[1] A: Yes.

[2] Q: "And the other is that technological needs [3] in the dielectrics area are changing with ever [4] increasing rapidity;" you agree with that also?

[5] A: Well, I can.

[6] Q: The memorandum continues, sir, to suggest [7] that you needed a more detailed understanding of [8] capacitor technology to go about with the new [9] objectives of the dielectrics industry. Did you take [10] anything, sir, or did you do anything with respect to [11] the desire to get a more detailed understanding of [12] capacitor technology relating Aroclors?

[13] A: Yes.

[14] Q: What did you do?

[15] A: As I said before, Monsanto never made [16] capacitors and because of the posture of the [17] environmental thing had changed it was foreseen that [18] now Monsanto, and this is what Munch is driving at, [19] really needs to set up laboratory facilities to wind [20] experimental capacitors and test capacitors in our [21] own laboratory to break some of these things which in [22] the past there was no need for exam and we didn't do. [23] We just up to this point we were called on merely to [24] manufacture at the high quality of purity required [25] and the quantity required of PCB dielectrics. This

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[1] throws a different light onto it. "What's coming [2] down the plank here," they're looking forward. And [3] up to this point they never made a capacitor, [4] experimental capacitor, at Monsanto at all. We had [5] no facilities for doing it. This means set up life [6] test apparatus, past our winding apparatus, which we [7] never did do because we got our winding supplied by [8] one of our customers. We let them do that. And then [9] any change or experimental fluid we wanted to look [10] at, why we had had the winding supplied from the [11] outside in instead of us winding it, but we did set [12] up testing equipment needed to have accelerated life [13] testing of our own because what is coming up here now [14] or what is being anticipated is that in the industry [15] the — our customers or capacitor makers, competitors [16] will be looking at these things. Whereas, up to this [17] point it was just par for the course. You use [18] Aroclor 1242, period.

[19] Q: I think you said earlier, sir, that Monsanto [20] was the only manufacturer of Aroclor in the United [21] States, correct?

[22] A: Right.

[23] Q: Why was that?

[24] A: Because nobody else would.

[25] Q: No one else wanted to or no one else could?

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[1] A: Plenty of people could, but they didn't want [2] to.

[3] Q: Do you have any explanation for why they [4] didn't?

[5] A: Yes.

[6] Q: What is that?

[7] A: There's two things, and I'm talking now [8] anybody could have manufactured because our [9] production patent had expired so anybody could come [10] in. There's several things. I'll try to answer your [11] question as simple as possible. One, was other [12] people didn't want to get involved with the [13] technology and to have to put up with the [14] requirements. I'm talking about capacitor Aroclor [15] going through all that we went through to provide [16] dependably pure material. It wasn't worth it to [17] them. Another thing to begin with, this is a good [18] business for one company, not for more than one [19] company.

[20] Q: Why is that?

[21] A: Economics. Now, you want something said?

[22] Q: Please, please, I didn't want to interrupt [23] you.

[24] A: Monsanto had the production patents from [25] 1929 to expire in 30 years later, well, whatever, 20

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[1] years later. Certainly by the early '50s. GE had [2] the use patents, and every one had a license under [3] GE. They had to pay a license to buy it. We merely [4] supplied it. We were told by GE who to supply to see [5] to their licensees. Economics. When GE discovered [6] the utility of PCB's as dielectrics, this was a big [7] break through. It's documented in the encyclopedia. [8] Chemical technology is one of the great discoveries [9] of the century.

[10] Now, what happened there was immediate interest [11] by GE and their licensees for this material. Now, GE [12] set the economics, and here it is. They gave by [13] contract understanding that Monsanto is entitled to [14] so and so many cents per pound to put the things [15] together to make the compound.

[16] Q: Beyond that, the cost of making is the cost [17] of raw materials which Monsanto had to buy, benzene [18] and chlorine, the only two materials?

[19] A: Only two raw materials. So what evolves [20] from GE telling Monsanto what the price of that or [21] the customer told us what the price shall be, bid on [22] you but this is how it was, there is nothing wrong [23] with it. Then Monsanto was allowed escalation in [24] accor-

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dance with the increase or decrease, could go [25] either way, and Monsanto's cost for benzene and

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[1] chlorine and nothing else. Well, this was pretty [2] tight economics that was adhered to religiously, and [3] cost of being in business over the years increased, [4] they always do. Labor increased; shipping costs [5] increased; the cost of containers increased; all [6] kinds of costs increased. They were never [7] incorporated into the market cost or price of PCB's. [8] Well, that's pretty tight economics and very sound [9] economics, and other people weren't interested in [10] being tied down that way. I'm not saying Monsanto [11] was hurting anyway because this is the life blood, [12] and I mean it. The life blood of the capacitor [13] operation at GE, Westinghouse, and capacitor age rage [14] if it wasn't right. they're in big trouble. So they [15] needed a dependable source of supply, and they were [16] going to see to it that Monsanto got enough money to [17] perform properly. It's as simple as that.

[18] Q: So if any other potential market capacitor [19] wanted to make it, they still have to deal with GE?

[20] A: Yes, and GE — further answer to your [21] question, GE didn't want another person in the act so [22] if anything at all, glitch turned up, they wouldn't [23] have to wonder, well, where did it start from, [24] Monsanto or this other place. And I'll carry it one [25] step further for you. During the war because this

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[1] stuff was very critical in the transformer stuff [2] also, it was used on all battle ships, cruise. or [3] what have you, submarine, and Navy docks. and etc. [4] It was allocated strictly to the military. The [5] government insisted on having another supplier. They [6] wanted to put somebody else in the business. [7] Monsanto's response was, well, we will set up a [8] second place, location of manufacture which occasions [9] why it was made now at Monsanto, Illinois as well as [10] Anniston, Alabama.

[11] Q: So there would be two manufacturing [12] facilities?

[13] A: That would be two places, but you asked the [14] question, you know.

[15] Q: No, I'm fine, I'm appreciating the answer.

[16] A: But GE wouldn't never buy from Monsanto, [17] Illinois. We don't want to approve Monsanto, [18] Illinois. I assure you it was just as good in [19] quality as it was at Anniston. There was no [20] difference. Monsanto, you're going to ship to us all [21] capacitors from Anniston and, of course, all their [22] licensees went along the same way. They didn't want [23] it from somewhere else, as I already told you. If [24] something went wrong, there was a glitch, they knew [25] where the stuff was. They didn't want to have to dig

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[1] around and mess around. It was from this place or [2] that place, and I think I have answered it.

[3] Q: At some point did GE use patents expire?

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[4] A: Yes, use.

[5] Q: When did they expire?

[6] A: Their patents expired about the same time [7] our manufacturing patents expired, which was the [8] early part of 1950.

[9] Q: So from 1950 on you had the right to [10] manufacture the Aroclors free of any license [11] obligations to GE?

[12] A: We never had any license obligation with GE. [13] There — excuse me, there are competitors [14] Westinghouse and Sangamo, other makers of capacitors [15] who competed in the market place with GE, they had to [16] pay a license to GE to be able to use it. We never [17] used it. We shipped it.

[18] Q: You made it for their direction — under [19] their direction so you would not have to pay a [20] license fee?

[21] A: That's right.

[22] Q: But when you would make it and presumably [23] earn a profit from selling to a competitor, all [24] right, you were making a profit from the sale of [25] something that would have been covered by their

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[1] patents had the patents not expired, correct?

[2] A: Yes, and then they would have to pay a [3] license fee, a royalty it was called. There was a [4] license fee to begin with. Then there was so and so [5] much upon royalty. We collected that royalty, and GE [6] would order Monsanto to ship, say, to Sangamo. And [7] when we billed Sangamo, we collected this I think was [8] half a cent upon royalty.

[9] Q: But so if I'm understanding your testimony, [10] from about 1950 on the license that GE had — or [11] excuse me, the patent GE had, had expired?

[12] A: Yes.

[13] Q: So then you were able to sell this to [14] whoever, and they would not owe GE license or royalty [15] fee, correct, because the patent itself had expired?

[16] A: Yes, this is correct.

[17] Q: So did that ease the pressure that Monsanto [18] got with respect to the margins it could make on that [19] dielectric fluid?

[20] A: No, we adhered to this contract arrangement. [21] It was never violated until this environmental [22] business came along and the posture of our business [23] we lost all the nonelectrical market, you know, in [24] 1970 we went out of business. All we had left was [25] the dielectric, as you know, and our cost shot up.

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[1] Prior to that it wasn't violated. In fact, every [2] time I had very close watch this was in mils for [3] pounds. I don't mean to belabor this thing, but it [4] was very tight economic set that was run. I want to [5] tell you without wanting to "yield the lily" there [6] was plenty of times we didn't charge as much as this [7] contract allowed us to charge.

[8] Q: I guess I'm still not clear on why after the [9] GE patent expired no one else wanted to get into the [10] business. Was it because in the dielec-

tric portion [11] of the business the industry followed GE lead, they [12] wanted to be sure that the grade of dielectric they [13] had gotten was equal or as good as the dielectric [14] produced by Anniston plant?

[15] A: I think you're head on the point. Their [16] competitors were comfortable knowing that they would [17] receive the very same stuff out of Anniston that GE [18] received. You have that exactly right.

[19] Q: So as a practical matter, well, with respect [20] to that market, Monsanto was the only game in town?

[21] A: Right.

[22] Q: And, in effect, you enjoyed unique position [23] because the customers wouldn't purchase from anyone [24] else?

[25] A: Well, there was nobody else for them to

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[1] purchase from, put it that way. They didn't want to [2] purchase from anybody else.

[3] Q: Was that different than the situation faced [4] in the nondielectric uses of the product, hydraulics, [5] heat transfer, for example?

[6] A: Monsanto is the only place that made PCB's [7] to answer your question. They weren't available [8] anywhere else.

[9] Q: But —

[10] A: No one else made them.

[11] Q: Sure, but in the other markets and hydraulic [12] market and heat transfer market, for example, were [13] there other markets, substitutes, for PCB Aroclors [14] that you make that did not contain PCB's?

[15] A: Let me put it this way. In the [16] nonelectrical applications when in 1970 Monsanto shut [17] down the nonelectrical, and this was done promptly, [18] as fast as the company could do it from 1969, you [19] know, the sea eagle from that time until 1970 — [20] well, let's go back to 1967, let's say, in 1970 it [21] isn't much of a time frame to explore what's going on [22] here. Monsanto as quickly as the executive committee [23] had to hear more and more about PCB's, and they had [24] other things to do. You know, very simply put we are [25] making something that some people are — seem

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[1] dissatisfied with. Why are we doing this? Very [2] simply, get out of this business. And Monsanto shut [3] it down. There was no more supply after 1970. Now, [4] one premise here and a very important premise. It [5] was felt, and it's quite understandable that a person [6] could think of other things than PCB's or [7] PCB-containing fluids that could be used as [8] replacements for PCB. Whereas, in the electrical [9] industry you couldn't think of a replacement and GE [10] in particular. But the electrical industry, let me [11] say quickly, came to Monsanto. In fact, came to me [12] saying, Do not let Monsanto precipitously cut us off [13] like you did for the nonelectrical because we have no [14] fire-resistant replacement, and it will take years to [15] find one. I said, You're talking about it to the [16] wrong guy. I hear you. You better talk to your [17] executive com-

mittees. And then because government [18] approved continued use of PCB's for the electrical [19] and closed systems why it carried on until 1977 and [20] then there was a complete shut-down.

[21] Q: So if I'm understanding the answer to the [22] question, in the nondielectric uses of the product [23] there were different formulations that people could [24] point to and use?

[25] A: I don't say they could point to, but that

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[1] could be explored and might be applicable, although, [2] they may not have the fire resistance you see. I [3] told you already that very few and phosphate esters [4] which weren't fire resistant, phosphate esters of [5] organic chemicals, they don't have the thermal [6] stability that PCB's have. But the only [7] fire-resistant materials were the phosphate esters or [8] the PCB's. So you're going to lose your fire [9] resistance. Whether that's important, I don't — [10] where it's important, you don't have it.

[11] Q: Or your thermal stability?

[12] A: Or thermal stability, yes.

[13] Q: So is it fair to say that when you realized [14] looking at the future posture of dielectric industry, [15] Plaintiff's Exhibit 86 —

[16] MR. CHAMBERS: Let me object to the form. It [17] just says future posture dielectrics as opposed to [18] dielectrics industry.

[19] Q: (By Mr. Roeder) Fair enough. Is it fair to [20] say that as Plaintiff's Exhibit 86 refers to the [21] future posture in dielectrics that you weren't sure [22] how long you could be in that industry, you thought [23] it was important to keep the ability to surface that [24] industry alive much more so than the other uses of [25] the product where you didn't feel that need?

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[1] A: Yes, you could file out plasticizers, no [2] doubt.

[3] Q: But just so I'm clear, it still was a [4] profitable product to make in the dielectric [5] industry, wasn't it? The dielectrics product were [6] profitable for Monsanto to make, weren't they?

[7] A: The economic posture changed drastically [8] because we lose — lost half of our divisor, I'm [9] talking about after 1970. half the business is gone. [10] So our costs went up marketably. Now to answer your [11] question, we did not lose money because we raised the [12] prices then out of necessity because our costs went [13] up and that's when the costs of PCB's began to [14] escalate. This formula, I'm talking about, went out [15] the window.

[16] (Discussion held off the record)

[17] Q: (By Mr. Roeder) I'm showing you, sir, part [18] of Plaintiff's Exhibit, I think it's 5, isn't it?

[19] A: Yes.

[20] Q: And the reference there to this is 198- — [21] excuse me, 1970 functional fluids total marketing [22] plan, right?

[23] A: Yes.

Lawyer's Notes

[24] Q: And you're showed as one of the parties on [25] the second page you had received a copy of this?

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[1] A: Yes.

[2] Q: But it lists as well, sir, I'll draw your [3] attention to it, what the revenues for —

[4] MR. CHAMBERS: Is that page 22?

[5] MR. ROEDER: I think that's right.

[6] A: Yes, page 22.

[7] Q: (By Mr. Roeder) The revenues for dielectric [8] fluids portion of it was. And for 1969 you're [9] showing a gross profit of 40.6 percent on sales, and [10] that's your estimate there, correct?

[11] A: Not my estimate.

[12] Q: The company's estimate?

[13] A: Yes.

[14] Q: And it showed the company made 43.6 percent [15] profit on sales in 1968?

[16] A: Yes.

[17] Q: That's a good profit, isn't it?

[18] A: Yes.

[19] Q: And you're estimating in '70 budget make it [20] 40.3 percent profit on sales going forward: isn't [21] that correct?

[22] A: This is what the numbers show. I'm just [23] reading them.

[24] Q: Right, this is a document you would have [25] gotten and reviewed in your capacity as person

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[1] interested in the dielectric fluids products at [2] Monsanto, correct?

[3] A: Yes, I did. Yesterday we looked at this and [4] first I didn't recognize it and then I recognized it [5] as functional fluids, and I may have seen this thing [6] from a distance. I have never read this thing.

[7] Q: But that's more than a modest profit, [8] though, isn't it, 40 percent out of gross basis?

[9] A: I can't address that. I wasn't in the [10] commercial end of it. There is no point in my [11] commenting on it. I can give you my views, but [12] what's the purpose?

[13] Q: I'm just saying — well, let me ask the [14] question this way. One of the things that you tried [15] to do is to maximize, if at all possible, the return [16] that Monsanto would obtain through manufacturing and [17] selling its products, correct?

[18] A: Yes.

[19] Q: That would be part of your duties as [20] employee, correct?

[21] A: Yes.

[22] Q: And in the memorandum we just looked at from [23] Dr. Munch to Dr. Richard he suggests that the [24] objective for being the world leader in the Aroclor [25] business should probably be changed to how should we

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[1] go about achieving maximum profit from dielectric [2] fluids for dielectrics in general?

Lawyer's Notes

[3] A: Yes.
[4] Q: And the idea of maintaining the sales of [5] dielectrics would be consistent with that goal, [6] wouldn't it?
[7] A: Yes, do you see what happened after 1970?
[8] Q: This is going forward; isn't that correct, [9] sir, so this didn't show what happened after 1970?
[10] A: This is going forward?
[11] Q: Right.
[12] A: Well, they couldn't predict and project [13] what's going to happen in the future. Anybody that [14] would have gone into this business in 1970 should [15] have had their head examined. Most of it was gone.
[16] Q: Except for the Monsanto portion with the [17] dielectric industry, correct?
[18] A: Right. And as I told you, the economics of [19] that has changed, our cost went skyrocketed because [20] of the problems with this environmental thing, and it [21] wasn't long we were out of business altogether. But [22] I also told you as this came forward and went along [23] in my opinion will tell you that Monsanto charged [24] enough that we really did not lose a great deal of [25] money. Now, I'm talking about an area that I

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[1] shouldn't be talking about. I wasn't in that [2] particular area, but that's my view of it. And our [3] prices per pound increased, and our profit went down, [4] and finally the whole thing was wiped out.
[5] Q: But you didn't know at the time this budget [6] was prepared or at the time Dr. Munch's memorandum [7] that that was going to be the case, did you?
[8] A: No.
[9] Q: Now, who are the customers you dealt with on [10] a continuing basis, it was Mr. Edward Raab, correct?
[11] A: Yes.
[12] Q: He was General Electric's person who is [13] responsible for coordinating aspects of PCB problem?
[14] A: On behalf of GE certainly.
[15] (Discussion held off the record)
[16] Q: (By Mr. Roeder) Now, Mr. Raab, then, you [17] had communicated, I presume, on a continuing basis [18] concerning this problem?
[19] A: Yes. I'm going to change that a bit. For [20] years Raab and I and now till the time I retired had [21] a continuing close relationship on what I have been [22] telling you. I was in technology. Now, if you're [23] asking did he have a continuing communication with me [24] on the environmental thing, the answer is no.
[25] Q: But he was your — was he your counterpart

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[1] at GE with respect to dielectrics?
[2] A: As far as technology of the fluid itself, [3] yes. He worked with the committee. He was Chairman [4] at one time.
[5] Q: Which committee are you referring to, sir?

[6] A: American Society of Testing and Materials, [7] which is the committee. His boss, Frank Clark, the [8] inventor, told me I need to join and work on. [9] Obviously Raab reported to Frank Clark in the [10] transformer area, and the other man who reported to [11] Frank Clark was Ralph Rousetta in the capacitor [12] business. There were these two significantly [13] different applications, transformers and capacitors.
[14] (Plaintiff's Deposition Exhibit No. 87 [15] marked for identification)
[16] Q: (By Mr. Roeder) While you're looking at [17] that, sir, I'll identify for the record Exhibit 87 is [18] a document entitled, "PCB Pollution Problem, January [19] 21 and 22, 1970, St. Louis Meeting with General [20] Electric Company." The numbers are TRAN-22030 to [21] 22039, and it has the notation on the last page P.G. [22] Benignus, January 26, 1970. Have you seen this [23] document recently, sir?
[24] A: Yes, I saw it yesterday.
[25] Q: And this is a document you have prepared

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[1] regarding a meeting that would be had — strike that. [2] This is a document you prepared regarding meeting [3] with Mr. Raab and General Electric in St. Louis in [4] 1970?
[5] A: Yes.
[6] Q: Is Dr. K. Murphy the Dr. Murphy you were [7] just talking about?
[8] A: I don't think I talked about it.
[9] MR. CHAMBERS: I was going to say I object to [10] the form. That name hadn't come up.
[11] Q: (By Mr. Roeder) Perhaps, let me rephrase. [12] Who's Dr. K. Murphy?
[13] A: As it says, he was General Electric that was [14] connected either central research environmental [15] pollution control, and I had no contact with Dr. [16] Murphy.
[17] Q: All right.
[18] A: Nor with Mr. Gerade, GE toxicological [19] consultant. My contacts in relationship here was [20] with Ed Raab.
[21] Q: Well, primarily, sir, I mean, what do you [22] recall about this meeting? Was it held at Monsanto's [23] headquarters?
[24] A: Yes, as it says, they wanted to come to [25] Monsanto, St. Louis.

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[1] Q: But, sir, you were involved in setting up [2] this meeting?
[3] A: Exactly. I arranged setting up the meeting [4] and there you might say, period. Raab phoned me and [5] said he wants to have such a meeting with Monsanto, [6] and then he and I set up who from GE would [7] participate and who from Monsanto would participate [8] and set it up. That's about all I did.
[9] Q: Well, there is a discussion on the location [10] of as control transformers on the second page of this [11] document?
[12] A: Oh, yes.
[13] Q: And it talks about a table that you and Mr. [14] Raab formulated to portray the use and loca-

tions of [15] askarel transformers throughout the industry. Do you [16] see that?

[17] A: Yes.

[18] Q: What was the purpose that you had in [19] preparing such a table?

[20] A: Merely to characterize it and say what it [21] is, location, where are askarel transformers located? [22] What kind of a location would they be used at? Would [23] they be used in this building, for example, which is [24] motel? Well, the answer is yes. Would they be used [25] as you asked earlier on top of the pole, no. Would

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[1] they be used as a power transformer with the utility, [2] no. We tried to bring out where is it that askarel [3] transformers are installed, where are they used. And [4] the point being here that is the point of interest is [5] they're fire resistance. The performance is the same [6] as if they had mineral oil, but askarel didn't burn, [7] mineral oil did. Other than that, let's say they're [8] the same. So you can place askarel transformers in [9] populated area, where you can't mineral oil.

[10] Q: Well, there's a statement that's made on the [11] second page of where you're discussing the askarel [12] transformer applications?

[13] A: Yes.

[14] Q: Where it says, "Mr. Raab was most impelling [15] and forceful about the nonreplaceability of [16] transformer askarel fluid and the critical or [17] essential use and need for askarel transformers." So [18] that's what Mr. Raab told you at this meeting?

[19] A: Exactly.

[20] MR. CHAMBERS: That sentence goes on to read [21] completely, "Which have safety from fire as their [22] outstanding virtue, period."

[23] MR. ROEDER: They do and I think — didn't think [24] that was vital for my question, but thank you for [25] clearing that up.

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[1] Q: (By Mr. Roeder) Mr. Raab further [2] represented to this meeting, did he not, his opinion [3] that without the availability of the askarel [4] transformers at large cities like New York would be [5] shut down with no power?

[6] A: Yes, I read that.

[7] Q: Did you think that was true?

[8] A: Could be. It's rather pronounced. An awful [9] lot of askarel transformers underground in New York [10] City. The point being, the focal point being, there [11] was no replacement, no fire-resistant replacement, [12] for the askarel. That's the point to all of this.

[13] Q: Well —

[14] A: You contact mineral oil and stick it into [15] the buildings at New York, you may burn them all [16] down.

[17] Q: Well, at this point in light of the [18] statement that Mr. Raab made certainly an emotion — [19] sound like emotional state?

[20] A: It is.

Lawyer's Notes

[21] Q: Did anyone question or attempt to determine [22] what Japan was doing now since they had eliminated [23] askarels?

[24] A: Fair enough. They never used askarel in [25] their transformers to begin with.

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[1] Q: Well, at this point, 1970, Tokyo is pretty [2] big city too, wasn't it?

[3] A: Oh, you're right. How did Tokyo stay lit [4] when New York would have been shut down with no power [5] even though Tokyo had no askarels?

[6] (Discussion held off the record)

[7] A: It was the insurance underwriters who were [8] great proponents of askarel transformers because it [9] didn't support combustion. Now, obviously along your [10] line they had mineral oil which does support [11] combustion. What I'm now going to say to you is that [12] the incident of failure of an askarel transformer [13] which would not involve spreading a fire was very [14] rare. And I'll go on to answer your question to say [15] the incident of failure of a mineral oil transformer [16] was also quite low and rare. This isn't to say that [17] there weren't transformer failures, there were. But [18] this is pretty reliable, dependable apparatus whether [19] it's got mineral oil or whether it's got askarel in [20] it. Did I answer?

[21] Q: I think so. But let's be sure I understand [22] your answer. If I get it correctly, sir, mineral oil [23] would have worked, it just would have had a slightly [24] greater risk of fire?

[25] A: Yes, surely.

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[1] Q: So in Tokyo when they demanded that [2] everything — strike that. When Japan demanded that [3] no askarel be put in generators —

[4] A: Transformers.

[5] Q: Transformers — strike that. Let me try it [6] again so I have a complete sentence. When Japan [7] eliminated the possibility that askarel could be put [8] in transformers by banning it, there is no [9] appreciable change in the risk that the people of [10] Tokyo faced as opposed to people of New York?

[11] A: Japan never had askarel in transformers to [12] begin with.

[13] Q: Right.

[14] A: Okay.

[15] Q: So did it ever come to your attention that [16] the people of Japan were in much greater danger and [17] would be shut down and with no power simply because [18] they did not have askarel transformers?

[19] A: They never had them to begin with.

[20] Q: And for all we know their electrical [21] generation capacity and their transforming capacity [22] was equal to that of the United States, correct?

[23] A: Yes, okay, it was large, but they didn't use [24] askarel.

[25] Q: The next statement, page 3, it says,

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[1] "Frankly, no one could think of a suitable [2] replacement for transformer askarel fluid." Again, [3] no one suggested mineral oil, or was mineral oil just [4] eliminated as a possibility?

[5] A: A word is missing from this sentence, but it [6] is implied, but the word is missing to make it clear [7] for you, fire resistant. Frankly, no one could think [8] of a suitable fire resistant replacement for [9] transformer askarel. This is what we were talking [10] about. It is implied. The word isn't in the [11] sentence.

[12] Q: All right. So the implied word would be [13] between suitable and replacement on the first line?

[14] A: Yes, fire resistant, there was none.

[15] Q: What do they use in transformers now?

[16] A: Well, there are other — there are [17] alternates, there weren't then. And one of the [18] alternates, in fact, the competitor is the dry type [19] transformer.

[20] Q: Which is now being more prevalent?

[21] A: I assume so. However, a dry type [22] transformer you can't very well put that into a flour [23] mill or a textile mill where there is a lot of dust [24] and so forth. It can't be put where there is [25] exposure to water flooding because it's open, it's

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[1] dry and it's open. Askarel is hermetically sealed so [2] if there is a flooding in Florida, you know, and [3] flows over, no problem.

[4] Q: Because it's solid inside the water can't [5] get in?

[6] A: It's inside, it's hermetically sealed. [7] These considerations come in. Now, there was also [8] gas transformer, fluoride gas. These are not [9] hazardous. They go out like a light bulb, you know. [10] It's dielectric gas that resists the electric sulfur [11] hexafluoride, S-U-L-F-U-R, H-E-X-A-F-L-U-O-R-I-D-E, [12] gas. That's known as gas transformer. Now, there is [13] such a thing as economics and —

[14] Q: What were the economics involved in this [15] issue, and how did they inform the discussion?

[16] A: Well, gas type transformers cost a lot more [17] than askarel. The askarel cost about the same as a [18] dry type, and the cheapest thing, of course, was [19] mineral oil.

[20] Q: Which are the ones up on the poles?

[21] A: Which are the ones on the pole because you [22] don't need fire resistance there. And which are the [23] ones, the big power transformers that the utilities [24] which are installed out in the open somewhere, they [25] are all mineral oil but rather than askarel. But in

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[1] the special, I told you askarel is a specialty item [2] selected where someone makes the judgment that we can [3] afford for various reasons to pay a premium to [4] install the askarel transformer.

[5] (Recess) [6] (Plaintiff's Deposition Exhibit No. 88 [7] marked for identification)

Lawyer's Notes

[8] Q: (By Mr. Roeder) For the record, what you [9] have been handed, sir, is Plaintiff's Exhibit 88, [10] which is a document entitled, "PCB Pollution Problem [11] Summary of January 21 and 22, 1970, St. Louis Meeting [12] with General Electric Company," and the numbers are [13] TRAN-22028 to 22029. This is your summary of the [14] meeting with GE in 1970, correct?

[15] A: Yes.

[16] Q: And is this a fair statement of the [17] conclusions that were reached at that meeting?

[18] A: Yes.

[19] Q: Were you surprised by any of these [20] statements or conclusions?

[21] A: No.

[22] Q: Now, I'm interested, sir, in paragraph Roman [23] numeral VII. Before we do that let's — yes, Roman [24] numeral VII. "As no suitable replacement for GE's [25] transformer Pyranol blends are foreseen, GE seeks

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[1] that Monsanto take no precipitous reaction to the PCB [2] problem that would result in withdrawing supply of [3] Aroclor 1254 or 1260 to GE?"

[4] A: Right.

[5] Q: Who made that statement at the meeting, do [6] you recall?

[7] A: Raab.

[8] Q: Is the reason that Mr. Raab made that [9] statement contained in Roman numeral IX at the bottom [10] that is, "GE strongly seeks to continue manufacture [11] of askarel type transformers because in many [12] applications this apparatus cannot be replaced with [13] mineral oil types nor with open or sealed dry types"?

[14] A: Yes, as we just discussed.

[15] Q: Right. Is that because GE didn't want to [16] have a liability itself in case any of these [17] transformers would fail?

[18] MR. CHAMBERS: I'll object to the form just to [19] note this witness may not be in a position to know [20] what somebody else, GE or whoever —

[21] Q: (By Mr. Roeder) Whatever they communicated [22] to them?

[23] A: I think the question is answered here. That [24] they were concerned about that. I thought I read it.

[25] Q: That's in Roman numeral VI, correct?

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[1] A: Well, whatever. I read it.

[2] Q: "Due to combustibility of arc-formed gas, GE [3] will not use Aroclor 1242, nor any blend with less [4] than near a one-to-one ratio of chlorine to hydrogen, [5] for transformers. This judgment is based on GE legal [6] people citations of precedent court actions assigning [7] liability against GE for transformer accidents"?

[8] A: Exactly.

[9] Q: So GE didn't want you to get out of the [10] business because they're afraid if you were out of [11] the business, they could be liable in case any of [12] transformers blew up or caused a fire?

[13] A: Yes, because it didn't have suitable [14] replacement.

[15] Q: Were you surprised — before I do that [16] question, Roman numeral VIII states, "In reply to [17] Monsanto's legal question whether with continued use [18] of Aroclor 1254 and 1260, GE would assume sole and [19] complete liability. Their spokesman answered, no, [20] with an exclamation point." That's what you wrote, [21] correct?

[22] A: Yes.

[23] Q: Was that spokesman Mr. Raab?

[24] A: I assume so. I don't see a list of the [25] people who were here. Did they have a legal man?

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[1] Q: Well, sir, if you compare it with Exhibit 87 [2] which summarizes the GE representatives there —

[3] A: I don't see a legal man there so it must [4] have been Raab's statement.

[5] Q: All right. So Raab's the guy that told you [6] that, no, they would not assume sole and complete [7] liability with respect to continued use of Aroclor?

[8] A: Yes.

[9] Q: And you also note, "He cited legal case [10] examples to substantiate his response," that happened [11] as well, correct?

[12] A: Yes.

[13] Q: Did this surprise you that would be the [14] position GE would take?

[15] A: No.

[16] Q: Did you think it fair that GE would ask you [17] to continue to produce a product that carried risk [18] and they would not assume the responsibility for that [19] risk?

[20] A: Let me hear it again.

[21] (The requested portion of the [22] record read by the reporter)

[23] A: That was their position.

[24] Q: (By Mr. Roeder) Well, it was your position, [25] wasn't it, sir, that if you were going to assume this

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[1] risk at their request that they remove the risk that [2] you insured or faced because you had done what they [3] had asked, isn't that why you asked — that's an [4] awful question. Let me rephrase it. Monsanto wanted [5] to know at this meeting that if they continued to [6] make Aroclor where GE would assume the [7] responsibility, right?

[8] A: If that's what it says.

[9] Q: Well, is that?

[10] A: Wait a minute. Cross that out. I still [11] don't get your — Monsanto had no reason to assume [12] any responsibility is the answer to whatever the [13] question is.

[14] Q: Let me try this one again. Maybe I can [15] phrase it a little differently. Somebody at the [16] meeting on behalf of Monsanto said to GE [17] representatives, If we continued to make the

Lawyer's Notes

Aroclors [18] or you continue to use it, are you going to assume [19] sole and complete liability with respect to that use? [20] Isn't that what happened?

[21] A: Meaning you as who?

[22] Q: General Electric.

[23] A: Well, I think we are belaboring the point [24] because I can tell you that to continue to supply it [25] was done on a hold harmless basis by Monsanto, that

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[1] was the requirement. Monsanto was in no position to [2] take any responsibility. And we wouldn't supply it. [3] And we would supply only to two manufacturers of [4] transformers or capacitors no longer to users. If a [5] user of GE's or Westinghouse equipment wanted [6] make-up fluid, they couldn't get it from us. They [7] now would have to go back to GE or Westinghouse or [8] whoever made the transformer, whereas in the past it [9] could come to us. Not now — I don't know what the [10] date is here, but now or shortly after, and they [11] would get it only if they signed the hold harmless [12] agreement. So I think that answers the whole thing.

[13] Q: There was a decision to require that further [14] shipments would be made on hold harmless basis, [15] correct —

[16] A: Where is that?

[17] Q: — at some point?

[18] A: At some point, yes.

[19] Q: We don't know if it was made at this point. [20] but somewhere down the road GE couldn't buy anything, [21] could not buy any of the Pyranols unless they agreed [22] to indemnify Monsanto for any of the risk?

[23] A: The day of this is January 1970. That's [24] when the nonelectrical shut down. And in order to [25] continue to supply the electrical, what we are

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[1] talking about this hold harmless arrangement was part [2] of the arrangement exactly.

[3] Q: Did you disagree with any of the statements?

[4] A: No.

[5] Q: So you hoped to continue the dielectric [6] business with respect for GE and for its capacitor [7] industry, correct?

[8] A: As far as I was concerned, yes.

[9] Q: Now, is the dielectric portion of the [10] business different than the functional fluids?

[11] A: Yes.

[12] (Plaintiff's Deposition Exhibit No. 89 [13] marked for identification)

[14] Q: (By Mr. Roeder) For the record, Exhibit 89 [15] is a, I believe, a multi-page document starting with [16] Bates number 8493 to 8497 with the prefix TNGS, and [17] you're listed, sir, are you not, as carbon copy [18] recipient on the second page?

[19] A: Yes.

[20] Q: Who is FJ. Camargo? One of the authors of [21] the letters?

[22] A: Camargo had been in Mexico, the assistant
[23] officer, office manager, in Mexico City. And he
had [24] moved to St. Louis by this time.

[25] Q: By this time, sir, meaning October 1, 1971,

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[1] the date on the second page of this memorandum.
Had [2] the public concern over the environmental
pollution [3] regarding PCB's become even greater
than it had [4] previously?

[5] A: I'd have to say, yes, because it continued [6]
to be publicized more and more as time went on.

[7] Q: Did you receive a copy of this document,
[8] sir, or would you have received it in the
ordinary [9] course of the business?

[10] A: Yes, I got a copy of it.

[11] Q: That's all I have for this document at this
[12] point. This is already Plaintiff's Exhibit 60. It's
[13] already been marked. Exhibit 60, sir, is a [14]
memorandum from Norm Johnson to a number of
people [15] regarding a pollution letter. It's dated
February [16] 16, 1970?

[17] A: Yes.

[18] Q: It's Bates number TNGS-8683, and you [19]
received a copy of this document, didn't you?

[20] A: Yes.

[21] Q: Did you review this document on or about
the [22] time it was distributed?

[23] A: Really not.

[24] Q: If you didn't review it, that's okay, I'll [25]
move on.

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[1] Q: Other than General Electric, who were the
[2] bigger users of the dielectric fluids?

[3] A: There were, let's say, ten significant users
[4] of askarel dielectric for capacitors and maybe
six or [5] eight users. By users I mean —

[6] Q: Manufacturers?

[7] A: — manufacturers of askarel transformers.

[8] Q: Was P.R. Mallory Company one of them?

[9] A: Yes.

[10] Q: Where did they fit in on the scale?

[11] A: They use it — oh, on the scale. They [12]
manufactured capacitors. To put perspective on
the [13] scale whether transformers or capacitors
there were a [14] few, maybe three, maybe two
large manufacturers. [15] Then a drop down to
rapidly to small manufacturers.

[16] Q: Where was Mallory on that scale?

[17] A: In that scale Mallory was on down the line,
[18] maybe around the middle.

[19] Q: Not the biggest but not the smallest?

[20] A: Oh, right, right.

[21] (Plaintiff's Deposition Exhibit No. 90 [22]
marked for identification)

[23] Q: (By Mr. Roeder) Sir, Exhibit No. 90 is a [24]
letter dated July 7, 1970 to Mr. Gene Lewis at P.R.
[25] Mallory Company in Waynesboro, Tennessee,
and this

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[1] copy is from W.B. Papageorge, the manager of
[2] environmental control, and you're shown as

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carbon [3] copy recipient on the first page, correct,
up in the [4] right-hand corner?

[5] A: Oh, yes.

[6] Q: This is the first time Mr. Papageorge's name
[7] come up in this deposition. Who was he?

[8] A: Bill Papageorge has been plant manager at
[9] Anniston, Alabama until 1970, when — that's
the [10] approximate time when he was moved to
St. Louis to [11] pursue the things that were coming
along on this [12] environmental stuff. There was
so much of it that it [13] warranted having
somebody assigned to just keeping up [14] with
what — with this.

[15] Q: Because he was plant manager of Anniston,
he [16] had a lot of background information he
would have [17] needed to step into this job,
correct?

[18] A: Oh, yes.

[19] Q: Mr. Papageorge, I believe, indicates in this
[20] letter that he had apparently conducted a
plant tour [21] of Mallory Company's plant in
Waynesboro, Tennessee?

[22] A: Yes.

[23] Q: Was that unusual that Mr. Papageorge
would [24] conduct a tour of a client's facility?

[25] A: I just got through telling you he was a

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[1] plant manager at Anniston so this is new.

[2] Q: I understand that, but let me rephrase the
[3] question a little differently. Did Mr. Papageorge
to [4] your knowledge visit other plants of
customers?

[5] A: This isn't the only place he went, but this
[6] was not a routine function of Papageorge by
any [7] means.

[8] Q: Certainly you had a number of customers
of [9] the PCB products —

[10] A: Right.

[11] Q: — that Mr. Papageorge would not have [12]
visited, correct?

[13] A: Oh, he didn't call on most of them. He did
[14] not visit most of them. He did visit a few when
[15] somebody asked for this as evidently Mallory
did. [16] Then we would respond. He was available
to anybody [17] to answer your question. But
when people would ask, [18] we would certainly
respond. And we always did [19] respond when
they asked.

[20] Q: This seems to me reading this letter, and
[21] tell me if you share a different view, that Mr.
[22] Papageorge is critical of the manner in which
the [23] Mallory Company has been controlling its
use of [24] Aroclors. Would that be a fair
assessment?

[25] A: I have nothing to challenge in this thing.

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[1] I wasn't there. Papageorge was. He reports it,
and [2] I'm sure it's as he reported it.

[3] Q: Why were you copied on it, sir, do you
know?

[4] A: Well, I told you since 1953 I spent 100 [5]
percent of my time in the dielectric industry.

[6] Q: I understood that, but it just seemed [7]
curious that — or let's strike that. Let me [8]

rephrase the question. What I'm wondering is, was [9] there any other reason that he carboned you on this [10] letter other than you were involved in dielectrics?

[11] A: To inform me that this transpired is the [12] answer.

[13] Q: Did you have customer contacts at Mallory [14] Company?

[15] A: Not at this plant but at the other locations [16] of Mallory. I was very close to the whole — all the [17] people and all the customers so happens I was not at [18] Waynesboro, Tennessee ever, but I knew people at [19] Mallory from way back as I did elsewhere. He is [20] sending this to me to keep me informed that this [21] occurred and was done, not that I was suppose to do [22] anything about it.

[23] Q: D.A. Olson is also listed. Mr. Olson was [24] whom? At that time what was his position?

[25] A: Well —

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[1] MR. CHAMBERS: Let me object to the form because [2] I think that's been asked and answered.

[3] A: Yes, we did cover it, but let's do it again.

[4] Q: (By Mr. Roeder) I'm sorry, assistant to [5] Mr. Bergen at that point?

[6] A: Right.

[7] Q: So he was higher up on the scale?

[8] A: In the business end of it. And as you know [9] by now I was a technical person.

[10] Q: Right. And it shows carbon copies to H.B. [11] Vaught, V-A-U-G-H-T?

[12] A: Yes.

[13] Q: Cecil Narrod, N-A-R-R-O-D?

[14] A: Well, I knew Vaught. I didn't know Narrod [15] and Graham were our salesmen.

[16] Q: Was this a sensitive thing to criticize a [17] customer's use of the product?

[18] A: No, it's a factual thing.

[19] Q: But, I mean, political was it a sensitive [20] thing?

[21] A: There was no politics in this. We are being [22] factual. We are trying to be helpful, and they asked [23] us to help or —

[24] Q: Or do you know if they asked?

[25] A: Well, why would Papageorge go there if they

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[1] didn't ask? No doubt they asked through Randy [2] Graham, the salesman. That's usually how this [3] happens.

[4] Q: Or could Mr. Graham have asked Mr. [5] Papageorge to go there because he was concerned about [6] practice he saw there?

[7] A: That's essentially what I'm saying.

[8] Q: Well, I just see a distinction between a [9] customer saying come help me out and evaluate my uses [10] of Aroclor as opposed to a salesman of Monsanto [11] saying these guys may not know what they're doing. [12] They're pretty sloppy. You should go look and tell [13] them what they're

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doing wrong. Do you see a [14] difference between those two alternatives?

[15] A: Really not. They add up in my book, they're [16] the same thing. And if you're asking me how is this [17] initiated, I really don't know. It didn't matter. [18] It was done. It was a proper thing to do.

[19] Q: I'm not questioning that, sir. I'm just [20] curious how it was initiated, and that's something [21] that you don't know?

[22] A: I don't know.

[23] Q: Okay.

[24] (Plaintiff's Deposition Exhibit No. 91 [25] marked for identification)

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[1] (Discussion held off the record)

[2] MR. CHAMBERS: Let me just note for the record [3] only an objection with respect to this document, that [4] is that it is not included among the list of possible [5] exhibits for Mr. Papageorge's deposition or for Mr. [6] Benignus's deposition that was furnished couple days [7] ago by Mr. Roeder. But subject to that, I'm prepared [8] to move ahead.

[9] MR. ROEDER: Sure. And if there is any [10] prejudice, let me know. I had understood this was [11] included in the list.

[12] MR. CHAMBERS: Fair enough.

[13] MR. ROEDER: In fact, I don't even have to ask [14] the question. I didn't need to use the document. [15] The witness is looking at it, but I won't ask [16] questions regarding the document at this point.

[17] Q: (By Mr. Roeder) Mr. Benignus, at some point [18] Monsanto began developing a non-PCB related product [19] to be used in transformers didn't it?

[20] A: No.

[21] Q: Well, did they reformulate Aroclor 1242 to [22] eliminate or reduce the poly- — the chlorinated [23] compounds that had been in it?

[24] A: Aroclor 1216 — I wrote this, right?

[25] Q: MCS 1016?

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[1] A: MCS 1016. This was — how can I answer [2] this?

[3] MR. CHAMBERS: Go ahead. I don't think you can. [4] Not shortly. You can answer it but not shortly. The [5] question again, please.

[6] (The requested portion of the [7] record read by the reporter)

[8] A: Aroclor 1242 was "altered," is the word I [9] would use. As we already discussed, Aroclors are [10] very complex mixture of things, and no one single [11] thing is the premise here is that from what we — by [12] this time 1970 had observed of analysis from the [13] environment, anywhere from the environment, the more [14] highly chlorinated isomers were the ones that seemed [15] to persist the most. That didn't mean that the lower [16] chlorinated ones biodegraded entirely. But we were [17] finding in the environment somewhat of a different [18] composition in what we made to begin with. So some [19] went on.

some of the lower chlorinated isomers, [20] diminished somewhat. Now, since the premise the EPA [21] was of the persistence I'll say the stability of [22] PCB's we reached into this complex mix which is [23] Aroclor 1242 we extracted 7 percent. 7 percent isn't [24] a whole lot, but we were able to extract that with [25] out altering the electrical characteristics to such

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[1] an extent that the user would have to redesign his [2] capacitors and have a major problem on his hands. [3] And there would still have acceptable fire resistance [4] to be called an askarel. We had to look at different [5] things. In essence and in summary we took out, I [6] believe, it was 7 percent of the more highly [7] chlorinated isomers to help satisfy the environmental [8] problem that was being talked about. Well, I was [9] asked to introduce this. I knew the users, the [10] capacitor users, for many, many years. They were [11] confident in what I would tell them. When I said, [12] No, you don't have to redesign your capacitors, they [13] believed it. We couldn't take two years to run [14] experimental life tests on this stuff. And they [15] picked on me to call on every capacitor user with [16] this information, and this is what it is.

[17] Q: Okay.

[18] A: You can use this as a replacement be [19] assured, but — and that we have — here we get back [20] to this life testing stuff that we talked about that [21] Monsanto had set up with Dr. Munch at Monsanto. We [22] had life tested this to the extent we could go and I [23] gave them that data and then gave him the electrical [24] parameters on this and assured them that the power [25] factors involving resistance would be handled very

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[1] well. That's what this is and these are the people [2] that I contacted. That's what it is.

[3] Q: Okay.

[4] (Plaintiff's Deposition Exhibit No. 92 [5] marked for identification)

[6] Q: (By Mr. Roeder) Plaintiff's Exhibit 92 is a [7] document or letter, copy of letter, dated October 1, [8] 1970 to Mr. F.R. Viland, V-I-L-A-N-D, senior buyer, [9] purchasing department, transformer division at [10] Westinghouse Corporation. It's also signed by Mr. [11] Papageorge and has Bates numbers NEV-3895 and 3896. [12] There is your — also shows you as carbon copy [13] recipient?

[14] A: Yes.

[15] Q: Now, have you had an opportunity to look at [16] this?

[17] A: Yes.

[18] Q: I'm interested in a few things in this [19] letter, sir. Mr. Papageorge relates a conversation [20] he had with Dr. Loughry, L-O-U-G-H-R-Y, who is [21] apparently somebody in Pennsylvania. But he is [22] waiting for lab tests relating to his study Monsanto [23] made in Gainesville, Florida area in 1938. Do you [24] see that statement?

[25] A: Yes, all right.

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[1] Q: He writes, "The laboratory information I was [2] waiting for relates to a study made by Monsanto in [3] the Gainesville, Florida area in 1938. Aroclor 1242 [4] was one of several materials applied to soil in holes [5] 15 inches in diameter and 16 inches deep. The walls [6] are sprayed with a solution of Aroclor 1242 and the [7] soil was replaced with each layer sprayed with [8] additional Aroclor 1242." And it goes on to say [9] that, "When the hole was completely filled, the [10] remaining solution was poured on top." Now, Mr. [11] Papageorge indicates after 30 years, on the next [12] page, the data would indicate that the Aroclor has [13] not migrated to any significant degree. Was this [14] information important to you to allow the soil [15] migration of the Aroclor 1242?

[16] A: I would say, yes, that is significant.

[17] Q: Why would that be significant?

[18] A: Because it stays put where you put it.

[19] Q: Even though it didn't disappear it stays [20] there?

[21] A: Yes.

[22] Q: Did you have any discussions with any of [23] your customers regarding the ability or the [24] characteristics of PCB's to stay there?

[25] A: No.

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[1] Q: Is this issue that was of interest to any [2] other customers you know other than Westinghouse?

[3] A: This is the only instance that I know of [4] that it ever came up.

[5] Q: Did you ever see a copy of the study of [6] Gainesville other than as reflected in this letter?

[7] A: Pardon?

[8] Q: Other than as reflected in this letter, did [9] you ever see a copy of that study?

[10] A: I know when the hole was dug.

[11] Q: You weren't there, were you?

[12] A: Well, we talked about 1939 to '41 when I was [13] in application research. You will remember —

[14] Q: Right.

[15] A: — a fellow I worked with was Ira Hatfield. [16] He was the one in charge of the wood treating thing [17] we talked of. And he was in Gainesville. Also it's [18] not mentioned here in Mississippi. I shouldn't talk [19] — he dug a hole there too, and he tried Aroclor 1242 [20] is what he did. And he dug a hole, then he mixed [21] 1242 with the ground. He then put an untreated [22] two-by-four in the center of the hole, and he put the [23] ground back to see if the treatment with 1242 would [24] keep the termites away. That's what this was. And [25] he did that in 1938. And then 1939, from there to

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[1] '41 I was with Hatfield every day, and this was the [2] work — he worked on this. But 1242 experiment was a [3] thing he looked into among other things, and it was [4] never used. And the interest at Monsanto was use [5] pentachlorophe-

nal. They weren't interested in this, [6] and it never went commercial. They never — it was [7] never used commercially. But I knew of the hole [8] being dug. I didn't know that many years later, [9] whenever it was '69, they dug up the hole and [10] analyzed this until I saw it.

[11] Q: Well, did you tell Mr. Papageorge about this [12] experiment?

[13] A: No, I think he ran across it somewhere. I [14] sure didn't tell Papageorge.

[15] Q: Oh, okay. But you heard about the [16] experiment as basically as the experiment was being [17] conducted?

[18] A: It wasn't conducted for this purpose. The [19] hole was dug and Hatfield followed it, and Hatfield [20] wasn't with Monsanto anymore at this time. But the [21] hole was there, and they ran across it somehow, and, [22] well, let's dig this up and see, you know, does it [23] migrate, or did it, and to what extent.

[24] Q: This is information that was shared with [25] Westinghouse in Mr. Papageorge's letter to F.R.

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[1] Viland? Did I say that correctly?

[2] A: Yes, I guess.

[3] Q: Do you recall this information being shared [4] with any other users of PCB products from Monsanto?

[5] MR. CHAMBERS: You mean by Mr. Benignus?

[6] Q: (By Mr. Roeder) Or anyone?

[7] A: No, nothing was ever used, nothing came of [8] it. But somehow or other they ran across this, and [9] they kept records, I guess, a lot of —

[10] Q: Was Westinghouse a large purchaser of [11] dielectrics?

[12] A: Oh, yes.

[13] Q: Were they number two after General Electric?

[14] A: Yes.

[15] Q: So if we were to examine the records, would [16] it be fair to say that out of all of the PCB-related [17] fluids General Electric was the largest consumer, [18] correct?

[19] A: Yes, yes, dielectric.

[20] Q: And Westinghouse was second?

[21] A: Yes.

[22] Q: Now, we've seen a couple letters from Mr. [23] Papageorge to dielectric customers specifically. [24] It's clear, isn't it, sir, that you didn't have a [25] meeting like you did with General Electric with every

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[1] customer?

[2] A: That's correct, we couldn't.

[3] Q: Right.

[4] A: But before we leave it, anyone was welcome [5] if they had requested it.

[6] Q: Well —

[7] A: We wouldn't preclude anybody from meeting [8] with us.

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[9] Q: Well, in earlier testimony I think you had [10] described it as with respect to the GE meeting that [11] "you can't call on everyone and their dog," you know?

[12] A: I said that?

[13] Q: You said that in your testimony in the [14] Transwestern case.

[15] A: But if they wanted to come with a dog, we'd [16] say bring it.

[17] Q: Okay. So any dog could show up?

[18] A: Any dog.

[19] Q: Okay. With respect to any other dogs, we'll [20] attend to them as they bark.

[21] A: Okay.

[22] (Plaintiff's Deposition Exhibit No. 93 [23] marked for identification)

[24] Q: (By Mr. Roeder) For the record, Plaintiff's [25] Exhibit 93 is a letter from you to Mr. P.J.A. Marsh

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[1] dated January 25, 1971. It's Bates numbers [2] TRAN-37340 to 37341. This is a letter you wrote to [3] Peter Marsh, isn't it?

[4] A: Yes.

[5] Q: And, I guess, what I'm interested in, sir, [6] is the context of this letter or memorandum arises [7] out of a claim that Monsanto had PCB's produced by [8] Monsanto had caused pollution problem in Europe?

[9] A: Sweden.

[10] Q: Right, Sweden is in Europe, correct?

[11] A: Whatever extent — whatever you mean by [12] problem.

[13] Q: All right. On the second page of your [14] letter you write, "Given 10 years or 20 or 30 years, [15] most all of the capacitors produced will have failed [16] or become obsolete and in any event returned to [17] mother earth. This is what the pollution problem is [18] all about, not just one year's operation —" and you [19] described the plant there.

[20] MR. CHAMBERS: It's Liljeholmen is the way [21] that's pronounced.

[22] Q: (By Mr. Roeder) That's a statement that you [23] wrote, correct?

[24] A: Yes.

[25] Q: That was true, wasn't it, that the pollution

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[1] problem is all about not just one year's operation [2] but operational over time, a cumulative effect of use [3] of these products, isn't that correct?

[4] A: Yes, that's the essence of this. In 1971 [5] nobody understood it really. But what's going to [6] come up in the future, in future years, 30 years from [7] now —

[8] Q: But so with respect to the —

[9] A: Right now there is no pollution problem.

[10] Q: Well, here with respect to the capacitors [11] specifically you knew that they will all fail at some [12] point or will be taken out of service at some point?

[13] A: And discarded.
[14] Q: And whatever is inside will return to mother [15] earth as you —
[16] A: That's what I said.
[17] Q: — as you say in your memorandum. That's [18] true of all uses that were made of the PCB related [19] materials that Monsanto produced, isn't it?
[20] A: I would say that that's true to most [21] everything, isn't it?
[22] Q: Without getting philosophical, I think [23] that's probably correct.
[24] A: Including us.
[25] Q: It's not Ash Wednesday either, but the point

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[1] is that you believe that it was an accumulation over [2] years that would really cause the problem to occur; [3] isn't that correct?
[4] A: It would put more and more, not less and [5] less, it would tend to put more and more and more PCB [6] into the environment, yes. It would continue to be [7] used and made.
[8] Q: And if not stopped and if not remediated, [9] the problem would continue, correct?
[10] A: Whatever the problem, if any, would continue [11] relative to what I just said.
[12] (Recess) [13] (Plaintiff's Deposition Exhibit No. 94 [14] marked for identification)
[15] Q: (By Mr. Roeder) Sir, have you had a chance [16] to look at Exhibit No. 94?
[17] A: Yes.
[18] Q: For the record, that is memorandum from [19] Cumming Paton. Is that how you pronounce the name?
[20] A: Yes.
[21] Q: To number of individuals, and you're shown [22] as receiving a copy?
[23] A: Yes.
[24] Q: Is this a document that you received in the [25] ordinary course?

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[1] A: Yes.
[2] Q: It bears Bates number TNGS-8480 to 8483, and [3] it relates to a PCB presentation from Mr. Paton to [4] the individuals addressed in this memorandum. Did [5] you attend a presentation or discussion with Cumming [6] Paton on or about October 14, 1971?
[7] A: No, because I wasn't up until what was it —
[8] Q: For all midnight after 17-hour day?
[9] A: Yes, I wasn't there.
[10] Q: Good for you. Under the dielectrics, [11] though, under number 2, "Customers" there is a [12] statement that says, "Effective October 4, dielectric [13] fluids must be approved prior to order entry by P.G. [14] Benignus or C. Paton and W.P. Papageorge or T.L. [15] Gossage." Do you see that?
[16] A: Yes.

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[17] Q: Was that, in fact, what happened that no new [18] orders could be approved for the dielectric area?
[19] A: Well, I never did that function, but that [20] was done. This is 1971 and we were supplying on a [21] hold harmless arrangement by then, I would think.
[22] Q: Then later on down on this document talks [23] about customer notification and domestic?
[24] A: Yes.
[25] Q: And it says, "A letter on the pollution

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[1] aspects of PCB's will be sent to customers. This is [2] being cleared with the legal department." Did I read [3] that correctly?
[4] A: Yes.
[5] Q: Do you recall, sir, examining any of these [6] letters that were cleared by the legal department [7] prior to the time they were sent off?
[8] A: No.
[9] Q: Just beneath that under the entry "ANSI," [10] A-N-S-I, it states, "An S.I.B. has been written on the [11] formation of committee C107 of ANSI. This committee [12] will address itself to the problems PCB's pose for [13] the dielectric industry?
[14] A: Yes.
[15] Q: What's "S.I.B."?
[16] A: I would assume it's sales information [17] bulletin.
[18] Q: All right. But you are familiar, are you [19] not, with the formation of committee of ANSI that [20] would address itself to the problems PCB has posed [21] the dielectric industry; isn't that correct?
[22] A: I was chairman of the steering committees.
[23] Q: How long were you chairman of that steering [24] committee?
[25] A: Honorary, I didn't do anything.

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[1] Q: You were honorary chairman?
[2] A: Honorary.
[3] Q: Did you attend any meetings of that [4] committee?
[5] A: Oh, yes.
[6] Q: And —
[7] A: All of them.
[8] Q: All of them. Okay. How long did that [9] committee exist?
[10] A: Well, for several years, for several years. [11] See, this is being written in 1971, and it was [12] finally shut down in 1977. And in this period [13] Monsanto was supplying under hold harmless [14] arrangement, and these restrictions, very tight [15] restrictions, but with government approval. Now, [16] ANSI-C107, that was a — the purpose was to decide [17] what can be done, what should be done on this [18] problem. And my function as chairman of the steering [19] committee was to nominate people who were qualified [20] to work on this and handle this, in one aspect for [21]

transformer industry and other aspect for the [22] capacitor industry, working together because they did [23] have somewhat different problems, and we formulated [24] the committee. Every one in the industry was [25] welcome, and it all started with American Society of

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[1] Testing Materials, that's where it originated was [2] working. Then it went up through the transformer [3] committee and the capacitor committee. It went up to [4] Newman National Electrical Manufacturers Association. [5] And then the next step was to formulate at American [6] National Standards Institute Committee, C-107 [7] specifically to do this. Now, after committee C-107, [8] comes Congress, the Federal Register. That's where [9] it was going to go to the government, if you get [10] this.

[11] Q: I'm not sure I understand it. You were [12] hoping by having the committee what would happen?

[13] A: Not hoping, it was supported and sponsored, [14] paid for by the government, by Congress. And what [15] would evolve from the work at ANSI-C107 would be the [16] directives, you might say, the information, what can [17] be done and what could be done, what should be done [18] on behalf of the law of our land.

[19] Q: So if I understand your testimony, the [20] expectation was that after ANSI-C107 that there would [21] be laws that would be introduced that would allow for [22] the proper use of dielectric fluids in a continuation [23] of those?

[24] A: Yes, that's what one would say. In other [25] words, when you get to ANSI — what I'm trying to say

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[1] to you is when you get to ANSI-C107 you're at the [2] end. The next thing comes the law of the land and [3] what is proposed and if it's accepted at ANSI, if [4] it's feasible, if it's reasonable, that, then, is the [5] law of the land.

[6] Q: So the idea in forming this committee was to [7] ultimately secure legal ability to continue to use [8] dielectric fluids under requirements that would be [9] set in place for its proper use?

[10] A: Yes, because at this time the materials were [11] being supplied to the electrical industry. No one [12] knew at this time would that be able to continue or [13] wouldn't it. This was done certainly with the hope [14] that it could be continued, but it wasn't successful.

[15] Q: Right, it was formed with the hope there [16] would be legal protection that would allow you to [17] continue?

[18] A: Well, that it would be proper to continue.

[19] Q: Well, what went wrong, sir? How come —

[20] A: What went wrong?

[21] Q: In that respect?

[22] A: Simple, EPA — and I'm not going to say EPA [23] was right at all, most of the time in my book they [24] were altogether off crack. EPA, to answer your [25] question, stated that byphen, which you have a

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[1] drawing of, was as little as one chlorine and not [2] acceptable to EPA. Well, it's the end of it. You're [3] done.

[4] Q: That's the same conclusion that the Japanese [5] had reached, isn't it?

[6] A: Not for the same reason.

[7] Q: But it is the same conclusion, isn't it?

[8] A: It's the same conclusion.

[9] Q: And it was not —

[10] A: But for a different reason.

[11] Q: Well, did you undertake any attempts to [12] speak on behalf of the continued use of PCB's and [13] dielectric fluids to represent as a congressman?

[14] A: Yes.

[15] Q: Who did you speak with?

[16] A: I was at a meeting when we tried to explain [17] things to Congressman Siberling.

[18] Q: Could you spell that for the record, or do [19] you know?

[20] A: Siberling tires. You spell it [21] S-I-B-E-R-L-I-N-G.

[22] (Discussion held off the record)

[23] Q: So you had discussion with Congressman [24] Siberling of Ohio?

[25] A: Yes.

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[1] Q: Your view that continued uses of PCB related [2] dielectrics ought to be allowed?

[3] A: Pardon?

[4] Q: That the continued use of PCB dielectrics [5] ought to be allowed?

[6] A: Essentially, yes.

[7] Q: Were you alone in meeting him, or did you [8] meet him with a group of people?

[9] A: No, I didn't initiate this. This was [10] initiated by Stanley Myers, a brilliant fellow, who [11] was in the cleaning business of transformer fluid and [12] had trucks that went where transformers were in use [13] and the fluid was to be upgraded or disposed of, and [14] we tried to get through to the congressman how many [15] trillions of dollars which was the debt of the [16] country would have to be spent to do what was being [17] asked to be done. And, of course, this is [18] preposterous. But the congressman, I assure you, and [19] this was serious, took it all down, and he was a [20] chairman of the committee and congress on this I [21] guess, quote, pollution activity, EPA business, he [22] was chairman of that committee. and we appraised him [23] of the commercial situation if they're going to do [24] what some people think is going to be done.

[25] Q: Well, you and this other individual Stanley

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[1] who?

[2] A: Stanley S. Myers, M-Y-E-R-S, who was in [3] Cuyahoga Springs, which is suburb of Akron.

[4] Q: Cuyahoga?

[5] A: Cuyahoga River, which runs through [6] Cleveland, I believe, in the Akron area, right.

[7] Q: This was his business, and he was qualified [8] to talk about it, and he had his people there. I [9] wasn't the only one from Monsanto. I don't know who [10] else, but — and I'm merely answering your question. [11] It didn't do anything. The EPA didn't change [12] anything, and it went to a halt.

[13] Q: Well —

[14] A: Congress said you can produce this stuff [15] until 1977, then that's the end of it.

[16] Q: Well, so, if I understand correctly, you [17] went to see the congressman prior to the time you [18] retired from Monsanto. Were you still employee at [19] that time?

[20] A: I retired in '74, and then I continued for [21] six months as a consultant. Shortly before it.

[22] Q: So on or about the time in '74 that you [23] retired that you went to visit the congressman?

[24] A: That's fair. I don't know the exact time.

[25] Q: But it certainly wasn't after you retired

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[1] and stopped your consultancy, correct?

[2] A: Yes, that's correct.

[3] Q: So you lobbied the congressman with someone [4] else from Monsanto that you can't recall, Mr. Myers. [5] And do you recall anyone else who's any [6] representatives of the capacitor industry or the [7] transformer industry?

[8] A: No, not that I remember.

[9] Q: Did you speak with anyone else other than [10] the congressman? Were there more congress?

[11] A: No, he was alone.

[12] Q: He was the chairman of the committee?

[13] A: Yes, he was.

[14] Q: Something like the house environmental [15] committee?

[16] A: Yes.

[17] Q: The committee had oversight over the [18] Environmental Protection Agency?

[19] A: Yes.

[20] Q: Did Monsanto authorize you to speak out — [21] speak to Congressman Siberling concerning this [22] effort?

[23] A: It isn't really clear to me. This is right [24] when I was in the process of retiring.

[25] Q: But in any event —

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[1] A: It could be I was retired at this point.

[2] Q: But in any event, people at Monsanto knew [3] that this was not a secret you were going to go see [4] the congressman?

[5] A: No.

[6] Q: Was this effort with respect to Congressman [7] Siberling, was it something that the ANSI Committee [8] itself voted on?

[9] A: No, but he knew of the — I assume he would [10] have known of the work of ANSI.

[11] Q: Did you discuss these attempts or [12] discussions with Mr. Raab of General Electric?

[13] A: I really — I don't know. There is no [14] reason why I wouldn't. But whether I did, I really [15] don't know.

Lawyer's Notes

[16] Q: Well, at some point, sir — well, we are [17] getting ahead of ourselves.

[18] (Plaintiff's Deposition Exhibit No. 95 [19] marked for identification)

[20] Q: (By Mr. Roeder) Sir, I have shown you [21] Plaintiff's Exhibit 95, which is a memorandum you [22] wrote to H.R. Ford dated October 22, 1971. It's [23] Bates number 88347 through 88349, and the prefix is [24] TRAN, T-R-A-N. That's a memorandum you wrote to Mr. [25] Ford in 1991, isn't it?

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[1] A: Yes.

[2] Q: Now, what was the purpose of your memorandum [3] to Mr. Ford?

[4] A: Well, Ford was district manager at Atlanta, [5] Ray Ford was. And this has to do with dielectric [6] fluid, about proper disposal of scrap. And I can't [7] do it other than what the member employee says.

[8] Q: Let me ask the question this way, sir. At [9] this point, about October 1971, you got an [10] incinerator at the W.G., is it Krummrich —

[11] A: Krummrich.

[12] Q: — Plant in Sauget, Illinois?

[13] A: Yes, that's East St. Louis.

[14] Q: Right, just across the river from St. Louis, [15] right?

[16] A: Right down here, yes.

[17] Q: And that was the plant to which customers, [18] if they wanted, could send used PCB-related fluids [19] and that plant would then incinerate them, correct?

[20] A: For \$.03 a pound.

[21] Q: And that's what it so indicates, right? It [22] says send scrap fluid to us at Sauget, Illinois for [23] incineration at \$.03 a pound?

[24] A: Yes.

[25] Q: This was a message that you attempted to

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[1] communicate to all of your customers, isn't it?

[2] A: Yes.

[3] Q: We got it here, send it here, it was [4] economical price to incinerate the stuff?

[5] A: Are you kidding?

[6] Q: Was it, was it expensive to incinerate, or [7] was it economical?

[8] (Discussion held off the record)

[9] A: It didn't — it didn't work properly.

[10] Q: The answer is the incineration didn't work [11] properly?

[12] A: This is property Monsanto built an [13] incinerator. Now, the incineration to decompose this [14] thermally stable stuff we talked about, you need [15] 2,000 degrees Fahrenheit. The refractory brick [16] wouldn't take it. This sort of thing didn't work [17] properly, and we did get stuff back, drums, to the [18] extent that the plant got upset. We had drums all [19] over the place there. But the incinerator wasn't [20] working. It took years to set up incineration that [21] would work, and it wasn't at Monsanto, it was [22] elsewhere. There were several places.

[23] Q: So if I understood your answer is that the [24] temperature required to really incinerate the stuff [25] was so hot that the brick that was used at Krummrich

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[1] would itself crumble before the Aroclors would be [2] incinerated?

[3] A: You got it.

[4] Q: Stable stuff?

[5] A: It is.

[6] Q: But one thing that interests me about the [7] letter here, sir, your memorandum is that the point I [8] thought you're trying to make, and tell me if I have [9] misunderstood it, is that you wanted to let your [10] customers know that incineration was available to [11] them and Monsanto would handle it, correct?

[12] A: Right.

[13] Q: And you would have taken steps to let the [14] customers know that incineration was available, [15] right?

[16] A: Yes.

[17] Q: But you state, "However, notwithstanding all [18] our efforts I suppose that communication remains the [19] world's number one problem." That's what you wrote, [20] isn't it?

[21] A: Yes, that's what I said here for some [22] reason.

[23] Q: Okay. Well, when you wrote it you thought [24] it was true?

[25] A: Yes.

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[1] Q: Do you think it's not true now?

[2] MR. CHAMBERS: Let me object to the form. You [3] mean just a general principle or you mean in terms [4] of —

[5] MR. ROEDER: Either way.

[6] MR. CHAMBERS: — this memo?

[7] Q: (By Mr. Roeder) Either way.

[8] A: Well, I'm reading. "Therefore, if indeed [9] John Fredrickson is encountering our own customers [10] not fully informed please write to them or carry this [11] message to them, and do inform them that they can [12] send it back for incineration."

[13] Q: Sure, but the question I asked you, sir, is [14] that you had written in your memorandum that [15] notwithstanding your efforts to tell people to [16] communicate with them that you thought that [17] communication remains the world's number one problem. [18] And didn't you mean it's difficult to get the point [19] across, sir, unless you really sit someone down and [20] explain it to them fully; isn't that correct?

[21] A: That's the vein it was said in. It's [22] difficult to reach all the people. It's difficult, [23] number one, to reach them, and probably somewhat [24] difficult to get the new thing across to them both. [25] But it's not easy to reach all the customers with

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[1] something they never heard of before.

Lawyer's Notes

[2] Q: And to get a point like this across, for [3] example, with J.G. Fredrickson —

[4] A: Yes.

[5] Q: — you need to not only write to them again [6] but, perhaps, carry the message to them directly, [7] correct?

[8] A: Correct.

[9] Q: You need to make special efforts to [10] communicate the information to the people who are in [11] the best position to solve it or to process [12] information, correct?

[13] A: Yes, and I don't know who he was talking [14] about. It mentions Kuhlman. They were a [15] manufacturer of transformers, a small manufacturer of [16] transformers.

[17] Q: So they're one of the transformer customers; [18] is that correct?

[19] A: Excuse me, let's explore this a bit. "As we [20] cannot cover this thing for Kuhlman's customers and [21] the endless number of others out in the field, please [22] advise Kuhlman." Now, the point here is Kuhlman [23] makes transformers. They buy askarel from Monsanto, [24] put it in their equipment. We don't know where that [25] equipment goes. Those are Kuhlman's customers.

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[1] Kuhlman should know where they sold transformers too, [2] we don't know. And I think one thing being said here [3] is how do you get the message to these users if they [4] have need to send fluid back. You see how [5] complicated this gets?

[6] Q: I do. I do. But when you know who the end [7] user is —

[8] A: Yes.

[9] Q: — you could take steps to insure that end [10] user knew the gravity of the problem, correct?

[11] A: We wouldn't know who the end user is.

[12] Q: I understand, but my point is, sir, with [13] respect to Kuhlman Electric you know the people you [14] sell to —

[15] A: Kuhlman.

[16] Q: — is Kuhlman?

[17] A: We appraise them, and that's essentially [18] what we're saying here.

[19] Q: And you have to rely upon Kuhlman to tell [20] the people you don't know about?

[21] A: Correct.

[22] Q: But if you know the purchasers of Kuhlman's [23] product, then you could take the steps necessary to [24] overcome the world's number one problem of [25] communicating directly and clearly to those

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[1] individuals if you know who they are, right?

[2] A: Chances are we would never know.

[3] Q: Right. But if you did?

[4] A: We would appraise them of it. But Kuhlman [5] should, they ought to know who they sold it to. It's [6] that kind of a thing.

[7] Q: No one else, as you can recall, disputed any [8] of the statements in this memorandum, did they?
[9] A: No.
[10] Q: Even Mr. Fredrickson?
[11] A: I gather he was a salesman it sounds to me.
[12] Q: But you certainly knew Cumming Paton, right? [13] He is listed as a recipient?
[14] A: Yes. Well, I wrote the thing.
[15] Q: Right, and Mr. Johnson?
[16] A: Yes.
[17] (Plaintiff's Deposition Exhibit No. 96 [18] marked for identification)
[19] Q: (By Mr. Roeder) Exhibit No. 96 is a call [20] report, organic division, and you're listed as [21] recipient of this report, aren't you?
[22] MR. CHAMBERS: Let me object to the form because [23] I don't see Mr. Benignus listed as recipient of the [24] call report.
[25] Q: (By Mr. Roeder) Sure. Well if you look

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[1] there is a square, isn't there, sir? It's a stamp, [2] and it has P.G.B. there?
[3] A: Yes.
[4] MR. CHAMBERS: That's a routing block as opposed [5] to the call report being addressed to — directly to [6] him. That was the point I needed to point.
[7] MR. ROEDER: The tenor of your objection is a [8] formal one?
[9] MR. CHAMBERS: Right.
[10] Q: (By Mr. Roeder) But that's a routing block, [11] that would indicate it went to you, right, sir?
[12] A: I don't know if it's a block saying it went [13] to me or I was crossed off. My name is — my [14] initials are crossed off. I'm confused by that, but [15] okay.
[16] Q: Okay. But P.G.B. is you, correct?
[17] A: Is me.
[18] Q: Would you receive call reports in the [19] ordinary course?
[20] A: No, really not.
[21] Q: Well, this routing block is something which [22] has been pressed on this document after it's typed [23] up, right?
[24] A: Yes.
[25] Q: So there wouldn't be any utility, would

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[1] there, sir, to put a routing block on after the [2] document is typed up just to cross one off, would [3] there?
[4] A: That's the point, no, there wouldn't. And [5] this went to Paton. I guess his secretary stamped [6] this with — I don't recall this thing, but and U.S. [7] Steel — I don't even know who the application is [8] about.
[9] Q: Well, this is the issue I'm interested, sir, [10] and it's a modest one. The discussion here is of a [11] conversation with someone that U.S. Steel in Baytown, [12] Texas, date of call, 6/16/72. And they're talking to [13] Mr. Bob Peterson of U.S. Steel; isn't that correct?

Lawyer's Notes

[14] A: That's what it says, yes.
[15] Q: It says, does it not, "We discussed the [16] entire PCB situation with Peterson and Rowland, and [17] now I feel they have a reasonably good understanding [18] of the problem." But the problem is — let me go a [19] sentence prior to that, "Peterson is of the opinion [20] that Rorrance has already changed their system with [21] the assistance of Monsanto from PCB to non-PCB fluids [22] and has flushed the system to remove all residual [23] PCB's." Do you see that statement?
[24] A: I see it.
[25] Q: It also says, does it not, sir, "Peterson

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[1] recognizes he will not get to zero PCB's even if he [2] drains and flushes his system. We did provide him [3] with the name of the labs which we would be willing [4] to recommend for analytical work on PCB's." Do you [5] see that, sir?
[6] A: Yes.
[7] Q: Do you agree with that statement that —
[8] A: Yes.
[9] Q: — simply by flushing and draining doesn't [10] eliminate all the PCB's?
[11] A: Yes, zero, that's difficult to do. Zero is [12] zero, you know.
[13] Q: My client appreciates that, sir. But the [14] point is that as of 1972 another customer, this time [15] in Baytown, Texas, thought that all you had to do to [16] get rid of PCB's in a system would be to drain it and [17] flush it and put in the non-PCB related fluid, [18] correct?
[19] MR. CHAMBERS: Let me object to the form to the [20] extent you're characterizing what some other customer [21] knew or did not know. Certainly whatever is stated [22] in this memo as you read it is what it states, but [23] beyond that —
[24] Q: (By Mr. Roeder) All right. You want the [25] question read back?

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[1] A: I don't know what you want.
[2] Q: All right, let me rephrase the question. In [3] this memorandum one of your salesmen is reporting [4] that as of this time, June 1972, at least one of his [5] customers thought that to get rid of the PCB problem [6] all you needed to do was to drain the PCB fluids, [7] flush the system, and then add non-PCB fluids, [8] correct?
[9] A: That's what it says.
[10] MR. CHAMBERS: Let me object to the form. I [11] think it says that Peterson recognizes he will not [12] get it to zero PCB's even if he drains and flushes [13] his system.
[14] Q: (By Mr. Roeder) Right, that's what it says [15] later, sir. But prior to this meeting didn't this [16] reflect an understanding as reported by one of the [17] salesmen at Monsanto that a customer believed all he [18] had to do was drain, flush, and add new non-PCB [19] related fluids to remedy the situation?
[20] A: First of all, I'm not in this area, that's [21] number one. Secondly, to me it reads a bit fuzzy.
[22] One way I'd say yes, and one way I'd say no,

and [23] that's the way PCB's removal was handled was to first [24] drain, then flush until down to a certain acceptable [25] level. It will never get to zero, but it gets to

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[1] some acceptable level. Now, what is the acceptable [2] level? Well, somebody, I guess a salesman, we did [3] provide him with a name of the labs which would be [4] willing to recommend for analytical work on PCB's to [5] find out where does he get. So nobody at this stage [6] knows what he can accomplish. And yet earlier it [7] says that Torrence — U.S. Steel at Torrence had [8] drained out the PCB, flushed it, and it says system [9] to remove all residual PCB's.

[10] Q: It says, "That Torrence is in trouble as a [11] result of polychlorinated biphenyl pollution," [12] correct?

[13] A: Let's see, Peterson had received a call from [14] his counter-part in the Torrence, California [15] operation of U.S. Steel, indicating that Torrence was [16] in trouble as a result of polychlorinated biphenyl [17] pollution." Well, I don't know how that pollution [18] came about, you know, what happened here, I don't [19] know.

[20] Q: Let me ask the question differently, sir. [21] In any of the letters that were sent out to customers [22] that you saw, any warning letters, was there any [23] discussion that you can recall as you sit here today [24] of advising the customer that changing the fluid, [25] flushing it may not be enough, and that you'd also

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[1] need to require the services of the lab to do [2] analytical work to determine whether the PCB problem [3] had been remediated?

[4] A: I'm not conversant with that at all.

[5] Q: But that's something you understood, isn't [6] it, sir, at the time you were at Monsanto as simply [7] draining it, flushing it, and putting PCB's in a [8] system might not be enough to remediate the problem?

[9] A: It may not and it may be enough. How do I [10] know. After all, when transformers were changed out, [11] when P — this isn't dielectrics to begin with.

[12] Q: Right.

[13] A: But when, say, a transformer with PCB [14] dielectric fluids say Pyranol that's the way the [15] things was done, it would be flushed out, then they [16] — excuse me, drained, and you can't drain it all the [17] way out. It can't get it all out. Now, the next [18] thing is to flush it with solvent and do so until in [19] one way or another it's determined or estimated that [20] it's within tolerable limits. You didn't have to get [21] all of it out, you know. There were limits set and [22] allowed. See, I don't know what the limits are here [23] or what they're doing. It is not enough for me to [24] judge this thing. It was not in my area.

[25] Q: All right. In any event, assuming you

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[1] received this, you wouldn't follow up because this [2] would be in the — under the domain of Mr. Gossage?

Lawyer's Notes

[3] A: Well —

[4] Q: Or Mr. Johnson?

[5] A: Let's see, who — well, this was 1972. [6] Well, first Norm Johnson, the sales manager over the [7] district, the overseer of the district and their [8] problems and needs, he'd be the first one, I would [9] think, that you'd initiate something. I can't even [10] tell from the initials who some of these other people [11] are. Gossage wouldn't have gotten into this. I sure [12] wouldn't get into it. F.H.L., that's Frank [13] Langenfeld. He was a manager in the area. I don't [14] know, C.P. that's Cumming Paten. I just don't know.

[15] Q: Okay.

[16] A: But it didn't go unattended is what I'm [17] wanting to say.

[18] Q: There would be somebody to who on a [19] technical side of this matter should have been [20] addressed to?

[21] A: Well, not addressed to exactly, but I'm sure [22] it didn't just leave hanging is what I'm saying.

[23] Q: All right, okay.

[24] A: But I am pointing out where he says to zero, [25] not necessarily to zero. That didn't make sense.

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[1] Q: But you thought, did you not, sir, based [2] upon your knowledge of PCB —

[3] A: Yes.

[4] Q: — in the late '60s and early '70s that even [5] if the fluid were drained from the system that there [6] is still would be PCB's existing in that system?

[7] A: Certainly in transformers you don't get it [8] all out of the core.

[9] Q: And in fact —

[10] A: You say this one transformer, I gather. I [11] don't know who it was.

[12] Q: Based upon your knowledge as reflected in [13] your notes about the Japanese incident, there could [14] be PCB's that would be emitted if stainless steel [15] piping were used?

[16] MR. CHAMBERS: Object to the form. That really [17] mischaracterizes the earlier testimony.

[18] Q: (By Mr. Roeder) I don't think so, but let me just rephrase the question so it's clear. Your [20] testimony earlier, sir, was with respect to systems [21] that involved stainless steel and PCB's?

[22] A: Yes.

[23] Q: If there's any thermal strain on the system. [24] any heat or excessive heat, then it was well known [25] that PCB's could also be emitted through cracks in

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[1] the stainless steel?

[2] A: If there were stainless steel stress [3] corrosion, yes.

[4] Q: So that could happen as well, and those [5] PCB's would then be emitted in that area?

[6] A: And the OSHA thing, yes. But I don't know [7] what this thing is here.

[8] Q: That would be — then we would know, would [9] we not, as well that based upon the information out [10] of the 1938 study in Gainesville, Florida that if it [11] went into the ground it's more likely not to stay [12] right there?

[13] A: No, the opposite.

[14] Q: More likely than not to stay right there?

[15] MR. CHAMBERS: I thought your initial question [16] was that they were more likely than not not to stay [17] there.

[18] Q: That's what I said. And you also knew from [19] the Gainesville study results Mr. Papageorge reported [20] in this letter to Westinghouse that if any PCB were [21] emitted from a system and the land on the ground [22] surrounding whatever system they were in, they more [23] likely than not would stay right where they were [24] emitted?

[25] A: In essence, yes, they were more likely to

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[1] stay.

[2] (Discussion held off the record) [3] (Plaintiff's Deposition Exhibit No. 97 [4] marked for identification)

[5] Q: (By Mr. Roeder) Exhibit 97, sir, is a [6] memorandum dated January 20, 1972 to Mr. Papageorge [7] regarding askarel dielectrics. It has Bates number [8] TRAN-21185 to 21186. Is this the document you [9] prepared?

[10] A: Yes.

[11] Q: What was the purpose of this memorandum, [12] sir?

[13] A: Well, look at the table on the first page, [14] prime product, and the product the first one is [15] Aroclor 1254. In 1254 it's suppose to be [16] predominantly five chlorine atoms, which means 54 [17] percent by weight. That's what that 54 means. That [18] reflects the compound as five chlorine atoms. Then [19] the next approximate higher PCB content five chlorine [20] and higher. Well, 76 percent of it is five chlorine [21] or higher. Well, the product 1254 it's prime use [22] period was until about 1952 then, in the electrical [23] industry I'm talking about, it wasn't used anymore. [24] There was a conversion to 1242. Now, with 1242 [25] there, which is 42 percent chlorine by weight,

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[1] meaning three chlorine atoms. That's a lot less [2] chlorine. The higher chlorine content, five chlorine [3] and higher in 1242, is only 7 percent. That's a big [4] reduction from 76 percent is the point of this. Now, [5] it's area of popularity was 1952 to 1970 time frame. [6] The third product is Aroclor 1016. Remember we spoke [7] how we reached in there and pulled out essentially 7 [8] percent of the higher chlorinated?

[9] Q: Yes.

[10] A: Okay, that left 3/10ths of a percent. [11] That's a lot lower than 7 percent and great deal [12] lower than 76 percent. It's period prime products [13] started in 1971 until the end of the thing. What [14] this is reflecting is the marked decrease in the [15] amount of higher chlorinated biphenyl isomers that [16] entered the picture and

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would have entered the [17] environment or whatever this is what this is all [18] about.

[19] Q: So this was a memorandum that you had sent [20] to Mr. Papageorge to indicate how —

[21] A: Yes.

[22] Q: — market niches, as it were, of your [23] product had changed over time?

[24] A: Yes, how the higher chlorine isomers reduced [25] over a period of time.

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[1] (Plaintiff's Deposition Exhibit No. 98 [2] marked for identification)

[3] Q: (By Mr. Roeder) For the record, Exhibit 98, [4] memorandum from David Wood at St. Louis to you, Mr. [5] Gossage, Mr. Papageorge, Mr. Paton, and Mr. Richard. [6] It's dated July 18, 1974, and it bears Bates numbers [7] TRAN-28069 to 28071. By this time, sir, had Mr. Wood [8] moved from Britain to St. Louis?

[9] A: Correct.

[10] Q: And it references a program that was going [11] to be planned to discuss a number of things relating [12] to environmental problems relating to PCB's. Do you [13] see that?

[14] A: Yes.

[15] Q: Did you participate in that program?

[16] A: Yes.

[17] Q: When did you retire?

[18] A: I retired, I think it was October '74, and [19] this is July 18, August, September and —

[20] Q: So this is one of last things you — one of [21] your last official acts?

[22] A: The last hurrah.

[23] Q: What was the purpose of this meeting, sir, [24] this program?

[25] A: Well, this — by this time, 1974, a great

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[1] deal more information had come to light than was [2] known about in, say, 1969 or 1970. A great deal of [3] work, just a tremendous amount of work had been done. [4] So people had much more insight and understanding. [5] Now, I'm not saying that the EPA ordered the PCB as [6] being an extremely hazardous, pointless, dangerous, [7] cancer causing substance is correct, it isn't. Even [8] along that line much better understanding had come [9] about, but that's besides the point here. We are not [10] — I'm putting that in myself. Now, by this time [11] there was much more understanding about the [12] environmental situation and how — what steps might [13] be taken to clean up. And I see Scott Tucker [14] mentioned. He had done migration of PCB in the soil, [15] you were asking about. That's the last paragraph. [16] He had set up columns to test PCB migration in the [17] soil. So information was available that need — [18] should be. And was through this disseminated to our [19] customers to interested — anyone interested, and [20] this is a proposed meeting where various people at [21] Monsanto would speak and also people from the [22] industry. Jim Kinney and G.E. Rome was going to [23] cover research relative to fire-resistant transformer [24] dielectrics. And then Dr. Richard was

going to [25] speak. And others were going to speak. Mr.

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[1] Sheppard, who I knew very well at Westinghouse, he [2] would speak. Al Vodden, who was from England, he was [3] going to speak. Papageorge was going to speak. Al [4] Vodden, V-O-D-D-E-N, I gather he was going to speak.

[5] Q: Did they speak?

[6] A: Pardon?

[7] Q: Did they speak?

[8] A: Everybody spoke but me. I didn't have to [9] stay — I was an employee. What did I say?

[10] Q: This was near the end of your tenure, [11] correct?

[12] A: You got it.

[13] Q: Where did this committee meet? Where was [14] the meeting held?

[15] A: At — well, to be specific, I think this was [16] my retirement party, that's what I think it was. And [17] many of my friends, some from other countries, came [18] to attend. I'm saying this with humbleness. It is a [19] retirement party. I had a lot of friends.

[20] Q: I can see why.

[21] A: Well, they came to listen. What is known [22] now from all of this — where are we here in 1974? [23] What has been developed as a replacement, if [24] anything, or may we be headed, what may come in the [25] future, and what is the posture at this time, and

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[1] what is foreseen, those are the things that were [2] discussed. As I just got through telling you, [3] studies that went on that contributed more [4] information in this whole ball of wax that was the [5] purpose of the gathering and the people came. And [6] you asked where in St. Louis, West Port Plaza. Gees, [7] they did it up in great fashion. It wasn't just [8] Monsanto's office. I think that's what this meeting [9] was. And it was telling everybody we could about [10] where we were.

[11] Q: All right. Was the program's conclusion [12] consistent with the sequence that was set forth here? [13] For example, one, a definition of environmental [14] problems surrounding PCB's; two, an in-depth review [15] of the defense of PCB continued use; and the [16] conclusion that use of PCB can be continued, [17] reflected on the first page?

[18] A: Oh, where are you reading?

[19] Q: Column one. Let me rephrase the question so [20] it's clear. The memorandum from Mr. Wood says that [21] the program should follow a sequence, and the [22] sequence is; one, a definition of the environmental [23] problems surrounding PCB's; two, an in-depth review [24] of the defense of PCB's continued; and, three, a [25] conclusion that use of PCB's can be continued. Was

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[1] that, in fact, the conclusion that was reached at [2] that meeting?

[3] A: Well, it was stated evidently as I listen to [4] what you said I gather that was stated. Let me say

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[5] at this point, now, Wood was overseas in Britain. [6] The French manufactured PCB's. They thought the damn [7] thing was crazy. They didn't have any — they [8] thought everything that was going on here was nuts. [9] They weren't going out on the business. And after we [10] shut down we came and supplied people. They stayed [11] in the business. Ultimately by now I guess they shut [12] down.

[13] Q: So by now it's your — to the best of your [14] understanding France no longer allows PCB-related [15] materials?

[16] A: Well, by now I put it different —

[17] Q: My question is —

[18] A: And I don't know since you asked earlier. [19] well, since PCB is no longer using critical [20] application, for instance, solid capacitors, well, [21] we're already allowed the use of solid insulation in [22] there. And I assume that France probably have [23] adopted solid capacitors instead of capacitors with [24] liquid, this kind of a thing. And my guess is that [25] — certainly my assumption is that in France, and I

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[1] know in England, and definitely in Germany. PCB's [2] weren't made and weren't used in transformers. I [3] don't know what the Russians are doing. And we have [4] covered Japan.

[5] Q: It was your belief as of this point in any [6] event that continued use of PCB's ought to be [7] allowed, that was your thought and continues to be [8] your belief today, correct?

[9] A: Well, no, really not. And this is 1974, the [10] bottom line is in 1977 this was the end of it.

[11] Q: Now, at this meeting in '74, was — do you [12] recall if this took place before or after the meeting [13] with the congressman?

[14] A: No, I don't. And now that you're talking [15] about that, Stan Myers actually called me over there. [16] I think I was retired. I think I was retired. yes. [17] Monsanto didn't send me over there.

[18] Q: If you look at page 3 of the memorandum. [19] under number 7, Mr. Wood relates, "Economic influence [20] of askarel use on U.S. economy. Here we seek a [21] presentation by Ed Raab of General Electric of the [22] economic data presented in Washington. We hope to [23] set a positive note with this presentation to support [24] continued use of PCB's?"

[25] A: That's what it says.

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[1] Q: Okay. Was Mr. Wood referring to continued [2] attempts to insure that congress would allow PCB use [3] to continue?

[4] A: That somehow it would continue to be used, [5] that's what it says.

[6] Q: Let me ask you a couple different questions, [7] sir, not with respect to that document. You're [8] aware, are you not, that certain letters or [9] memorandum regarding letters sent out to customers. [10] Did you have any personal involvement in drafting [11] those letters?

[12] A: No.

[13] Q: So you had no personal involvement as well [14] in determining which customers those letters would be [15] sent to?

[16] A: No.

[17] Q: And you have no personal knowledge as well [18] concerning whether or not registered letter, tickets, [19] or certified letter of tickets were maintained, [20] correct?

[21] A: I don't know about what you mean by [22] maintained. They were sent out. Business was done [23] under that. Yes, it was certified, sent out.

[24] Q: But you never seen them, right?

[25] A: I can't say I never saw it, I never had

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[1] anything to do with it.

[2] Q: That's what I mean, you can't testify that [3] they were or weren't sent out because you didn't see [4] them get sent out?

[5] A: No, I probably saw the form and I heard [6] that, that's about all I know about it. I wasn't in [7] that.

[8] Q: All right. Did you ever have any personal [9] conversations with anybody at Tennessee Gas with [10] respect to the use of PCB's?

[11] A: No.

[12] Q: How about with respect to Tenneco?

[13] A: I don't know one from the other.

[14] Q: All right, so the answer is the same, then, [15] correct?

[16] A: I'd say, yes.

[17] Q: Do you own stock in Monsanto?

[18] A: Sure, why not.

[19] Q: Just wondering.

[20] A: Why do you wonder?

[21] Q: Just curious.

[22] A: Why are you curious?

[23] Q: Because it's just a question.

[24] (Discussion held off the record)

[25] Q: Do you have a pension from Monsanto?

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[1] A: Yes.

[2] MR. ROEDER: I think that's all the questions I [3] have.

[4] (Signature not waived, by agreement of [5] counsel and witness.)

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WITNESS SIGNATURE PAGE
COMES NOW THE WITNESS, PAUL G. BENIGNUS, and
having read the foregoing transcript of the
deposition taken on the 14th day of September, 1995,
acknowledges by signature hereto that it is a true
and accurate transcript of the testimony given on the
date hereinabove mentioned.

PAUL G. BENIGNUS
Subscribed and sworn to me before this _ day of
_____, 1995.

My Commission expires: _____
Notary Public

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STATE OF ILLINOIS

SS.

COUNTY OF MADISON

I, Jacqueline A. Schniers, a Notary Public in
and for the State of Illinois, duly commissioned,
qualified and authorized to administer oaths and to
certify to depositions, do hereby certify that

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pursuant to Notice in the civil cause now pending and
undetermined in the Commonwealth of Kentucky, Rowan
Circuit Court, Civil Branch, to be used in the trial
of said cause in said court, I was attended at the
Fischer Restaurant, in the City of Belleville, State
of Illinois, by the aforesaid witness; and by the
aforesaid attorneys; on the 14th day of September,
1995.

The said witness, being of sound mind and
being by me first carefully examined and duly
cautioned and sworn to testify the truth, the whole
truth, and nothing but the truth in the case
aforesaid, thereupon testified as is shown in the
foregoing transcript, said testimony being by me
reported in shorthand and caused to be transcribed
into typewriting, and that the foregoing pages
correctly set forth the testimony of the
aforementioned witness, together with the questions

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[1] propounded by counsel and remarks and ob-
jections of [2] counsel thereto, and is in all re-
spects a full, true, [3] correct and complete tran-
script of the questions [4] propounded to and the
answers given by said witness; [5] that signature
of the deponent was not waived by [6] agreement
of counsel.

[7] I further certify that I am not of counsel or [8]
attorney for either of the parties to said suit, not
[9] related to nor interested in any of the parties
or [10] their attorneys.

[11] Witness my hand and notarial seal this 14th
[12] day of September, 1995.

[13] My Commission expires August 13, 1996.

[16] Notary Public in and for the [17] State of Illinois

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