

UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

NEVADA POWER COMPANY, a :
Nevada corporation, :
Plaintiff, :
VS. : CV-S-89-555-LDG-LRL
MONSANTO COMPANY, a :
foreign corporation; :
GENERAL ELECTRIC COMPANY, :
a foreign corporation; :
WESTINGHOUSE ELECTRIC :
CORPORATION; a foreign :
corporation; and DOES I :
XXV, inclusive, :
Defendants. :

**READING
COPY**

DEPOSITION OF ROBERT EMMET KELLY, M.D.
VOLUME III
TAKEN ON FEBRUARY 17, 1994

**MARTIN & ASSOCIATES
CERTIFIED COURT REPORTERS**

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I N D E X

THE WITNESS: ROBERT EMMET KELLY, M.D.
 VOLUME III

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"Report of Dr. Frederick B. Flinn
of Patch Tests Made on Material
Received from Swann Research, Inc.,"
Dated May 25, 1954

Exhibit No. 39 375
"Medical Research Project No.
MR-46, The Toxicity and Potential
Dangers of Inerteen," Submitted by
W. F. von Oettingen, M.D., Ph.D.

Exhibit No. 40	378
"The Toxicology of Inerteen and Related Substances Including a Method of Analysis for Halogenated Hydrocarbons in the Air," by A. J. Fleming, M.D.	

Exhibit No. 41	378
"The Effect of Inerteen and Several Related Substances Upon the White Rat," W. T. Read, Jr., M.D.	

Exhibit No. 42 433
Letter Dated February 14, 1950,
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R. Emmet Kelly, M.D.

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1 A P P E A R A N C E S:

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25 THE VIDEOGRAPHER:

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 Houston, Texas 77007

 ALSO PRESENT:

 Ms. Lynette Weldon

 Martin & Associates
 (409) 762-2222

1 The oral videotaped deposition of
2 ROBERT EMMET KELLY, M.D., was continued on
3 February 17, 1994, beginning at 9:11 a.m., in
4 the offices of Husch & Eppenberger,
5 100 N. Broadway, Suite 1300, St. Louis,
6 Missouri, before Irma L. Reyes, a Certified
7 Court Reporter and Notary Public in and for
8 the State of Texas, pursuant to Notice and
9 Agreement, the Federal Rules of Civil
10 Procedure, and the following stipulation and
11 waiver of counsel:

12 IT WAS STIPULATED AND/OR AGREED
13 that the deposition is to be signed by the
14 witness before any Notary Public or officer
15 authorized to administer oaths.

16 IT WAS FURTHER STIPULATED AND/OR
17 AGREED that the court reporter could swear
18 the witness with the same force and effect as
19 if she were a notary public in and for the
20 State of Missouri.

21

22 - - - - -

23

24 THE VIDEOGRAPHER: Today is the
25 17th of February, 1994. It's 11 minutes

Martin & Associates
(409) 762-2222

1 after 9:00 o'clock. We're on the record.

2 MR. KIM: Before we start,
3 Dr. Kelly, do you mind if we sing happy
4 birthday to Lynette Weldon?

5 THE WITNESS: Not in the least.

6 MR. KIM: It is her birthday
7 today.

8 THE WITNESS: Go right ahead.

9 MR. KIM: On "3."

10

11 (Attendees sing "Happy Birthday" to
12 Ms. Weldon.)

13

14 MR. KIM: Can you pull our No. 2?

15 MS. WELDON: Uh-huh.

16

17 ROBERT EMMET KELLY, M.D.,
18 was called as a witness and, having been
19 previously duly sworn, testified as follows:

20

21 EXAMINATION (Continued)

22 BY MR. KIM:

23 Q. Dr. Kelly, when we left off yesterday, we
24 were talking about medical literature that
25 you had seen or reviewed in the 1930's.

1 A. Yes, sir.

2 Q. Did you have occasion at the time that you
3 started work at Monsanto Chemical Company to
4 review any work that had been done on behalf
5 of Swann Research prior to the Monsanto
6 purchase?

7 A. The work at Flinn -- Dr. Flinn of Columbia,
8 he did some patch testing, as I understand
9 it.

10 Q. Let me show you what we will mark as your
11 Deposition Exhibit No. --

12 MS. WELDON: I believe 38.

13 MR. KIM: 38?

14 MS. WELDON: Yeah. 38.

15 MR. KIM: Do you mind if I cover up
16 this exhibit number?

17 MR. BAUER: No.

18

19 (An instrument was marked Kelly
20 Exhibit No. 38 for identification.)

21

22 Q. (By Mr. Kim) -- and ask if you recognize
23 this, sir.

24 A. Yes, I do.

25 Q. This is the work that Dr. Flinn did with

1 respect to some patch tests on material
2 received from Swann?

3 A. Yes, sir.

4 Q. The material that was received from Swann
5 were Aroclor products. Is that your
6 understanding?

7 A. I don't know how they -- if they labeled them
8 "Aroclor" or not. They were PCB products.

9 Q. Okay. Doctor, if we can look at the very
10 bottom of the first page, it seems to
11 indicate Aroclor 1262?

12 A. Yes, it does.

13 Q. Aroclor 1268?

14 A. Yes.

15 Q. Would -- and at the top of the next page,
16 Aroclor Special and Aroclor 1248?

17 A. Yes, sir. He called them Aroclors. So --

18 Q. Were those chlorinated diphenyls, or PCBs?

19 A. Yes, they were.

20 Q. If you will turn with me to the top of the
21 second page where it says "Aroclor 1248," the
22 second --

23 A. Yes, sir.

24 Q. -- category?

25 A. Yes, sir.

1 Q. And as I understand the explanation you gave
2 in your testimony to Mr. Bauer, the "48"
3 means that on average, the product had 48
4 percent chlorination?

5 A. That's correct.

6 Q. Underneath that Dr. Flinn noted that all
7 tests gave a positive reaction. The
8 intradermal test was also positive. The
9 reaction was mild?

10 A. Yes, sir.

11 Q. Do you know what type of reaction he was
12 describing in that instance?

13 MR. BAUER: Object to the form.

14 A. Well, let's see what it says. He was doing a
15 patch test. And I don't know what -- how he
16 interpreted as "patch." The patch test is
17 you put something on the skin, cover it with
18 an impervious dressing, and look at it in 24
19 hours or 48 hours. You do not test systemic
20 reactions. You are testing the local action
21 in the skin.

22 So I don't know what I -- what he
23 called a positive reaction, but the usual
24 individual would call a redness a positive
25 reaction. Sometimes swelling would be

1 present, but it would not be a mild
2 reaction.

3 Q. (By Mr. Kim) Would a reaction with that
4 Aroclor product at the 48 percent
5 chlorination level have caused -- did it
6 cause you a concern, as the medical director
7 of Monsanto, when you reviewed this test?

8 A. No, sir. It was a mild reaction. We knew
9 that if you got Aroclor on your skin, you'd
10 get reddening. If you kept on doing it,
11 you'd get chapping of the skin. We're
12 talking about local reactions. All he did
13 was test the local reaction on the skin.

14 Q. At the time that you reviewed this test, did
15 your department, the medical department, or
16 Monsanto Chemical Company seek to do other
17 testing that would determine whether
18 absorption through the skin of Aroclor
19 products would lead to any systemic
20 poisoning?

21 A. At what time?

22 Q. In the -- at the time that you reviewed
23 Dr. Flinn's report.

24 A. No. He was not testing for absorption of the
25 skin, through the skin. He was just testing

1 the local reaction of the skin.

2 Q. Did --

3 A. So it had no relationship to absorption.

4 Q. Did Monsanto Chemical Company or the medical
5 department under your direction do any
6 further testing to test the concerns --
7 strike that.

8 -- the observations made by
9 Dr. Flinn in this test?

10 A. Well, there's no relevancy of a skin patch
11 test to any toxicological relationship.

12 Q. On the last page, under the category of
13 "Comments," Dr. Flinn in his first sentence
14 notes that: "One is impressed with the fact
15 that each of the Aroclors giving a positive
16 reaction were of a fluid nature."

17 A. Yes, sir.

18 Q. Is that correct?

19 And again, it's -- as I understood
20 your testimony, that it caused you and
21 Monsanto no toxicological concerns because
22 redness from a patch test would not be
23 indicative of such?

24 A. That's correct.

25 Q. Did you place any significance upon the work

1 of Dr. Flinn since they were patch tests,
2 from a toxicological and health standpoint?

3 A. No, I did not.

4 Q. Does that mean that any patch test performed
5 you would not place much toxicological or
6 health significance to?

7 A. I won't go that far because I don't know
8 conceivably what might happen if you -- at
9 some particular patch test. In other words,
10 if you -- remember, a patch test is only to
11 see how the skin will react. Whether it will
12 react as a local irritant, such as paint
13 remover or turpentine, or whether it be a
14 sensitization reaction, like a poison ivy
15 oil. So that's what you're looking for.
16 You're not looking for -- that's a nonevent
17 as far as systemic toxicity is concerned.

18 Q. How about just acute toxicity? Is there a
19 significance to the patch test in that?

20 A. There may be acute toxicity as far as the
21 skin is concerned. If you put an acid
22 compound on a patch test, you will get a
23 local reaction which could be called toxic to
24 the skin at that time. But it has nothing to
25 do with an acute poisoning unless you are

1 hypersensitive to it, unless there's an
2 allergic component that exists in the
3 compound.

4 Q. Doctor, my curiosity in this emanates from
5 the fact that it just seems to me -- and
6 correct me if I'm wrong -- that if through a
7 patch test the skin reacts to it, whether it
8 turns red or you get a rash, that would, at
9 least from a medical and scientific
10 standpoint, be some indication of a human
11 reaction to the product being tested.

12 A. Well, it's a human reaction on the skin, yes,
13 certainly. That's what you're testing it
14 for. So you find out that it reacts in the
15 skin. But there's no relationship to whether
16 this is going to react -- be absorbed. It
17 has nothing to do with the general
18 toxicological investigation of the product.

19 Q. Would a local reaction by virtue of a patch
20 test cause a prudent scientist or medical
21 director to inquire further into the
22 toxicological properties of the product
23 tested?

24 A. Not per se. Not because of the redness, no.
25 You might inquire further for different

1 reasons; but you are testing a patch test, I
2 have to repeat, to see what it does to the
3 skin. And that's all you're interested in.
4 That's all you're doing it for.

5 Q. Did Monsanto Chemical Company or you, as the
6 medical director, ever order or request any
7 patch tests to be done with its products,
8 with its PCB products?

9 A. Yes, we did. At the Barnard Skin and Cancer
10 Hospital -- I don't know the time frame -- we
11 tested -- when we started using the material
12 as a plasticizer, selling it as a
13 plasticizer, we tested the vinyl film that
14 had this material in it. We also tested the
15 material neat; that is, just by itself. But
16 I -- it's been quite awhile since I've seen
17 that report. We did not get positive
18 reactions in the vinyl film; and to the best
19 of my recollection, at the dilution we used,
20 we did not get any positive reactions with
21 the 1240. I don't know which one it was with
22 the -- with the PCBs.

23 Q. What was the purpose of ordering those patch
24 tests?

25 A. Well, we were making a vinyl film. This was

1 going to be on -- could be on auto seat
2 covers. You're putting somebody in shorts
3 sitting on the sheets, and you wanted to find
4 out whether or not it would be an irritant or
5 a sensitizer.

6 Q. The product that you used as a plasticizer,
7 aside from the patch test, were other tests
8 done?

9 A. For different reasons, yes. But not -- not
10 for its use as the plasticizer. We wanted to
11 see whether it had the property of being an
12 irritant or a skin sensitizer.

13 Q. Were other toxicological tests done?

14 A. Yes. We've done toxicological tests, not at
15 the same time, but all along during the
16 manufacture of our PCBs.

17 Q. In particular, Doctor, I'm asking about the
18 plasticizers that you indicated earlier that
19 you had ordered patch tests for.

20 A. Well, we had done them before. We did have
21 toxicological information on it.

22 Q. You would agree with me that from a
23 manufacturing standpoint and a sales
24 standpoint, it is important that the product
25 you place on the market had been tested to

1 the extent possible for its toxicological
2 properties, as well as its reactions through
3 patch tests, whatever -- the acute reactions?

4 MR. BAUER: Object to the form.

5 Vague as to what you mean by --

6 A. Well, that is a little --

7 THE WITNESS: Oh, sorry.

8 MR. BAUER: Vague as to what you
9 mean by "to the extent possible."

10 You can answer, Doctor.

11 A. No. I think you test a product, define --
12 before you market it, define its
13 toxicological properties. You do enough so
14 that you're able to evaluate how it could be
15 used safely in the markets for which it's
16 intended.

17 Q. (By Mr. Kim) Doctor, we can agree that --
18 that all industrial chemicals at some point
19 are toxic?

20 A. Yes.

21 Q. We can also agree that to the extent that you
22 cannot eliminate the toxicity of such
23 chemicals, that we should try at the very
24 least to warn the users about the toxic
25 properties?

1 MR. BAUER: Objection. Asked and
2 answered.

3 A. We warn the users how to protect themselves
4 from any possible effects of the product we
5 sell.

6 Q. (By Mr. Kim) Is that your personal
7 philosophy, or are you speaking as to what
8 Monsanto's policy was when you were medical
9 director?

10 A. It's both.

11 Q. You place no importance on telling the user,
12 by virtue of a label or warning, what the
13 effect of misuse would be?

14 A. We do. Yes, we do. We have every letter I
15 have ever written to -- there's bundles of
16 these in the exhibits. I have explained what
17 the possibilities were and what is liable to
18 happen. There are letters here that show
19 that I talked and I wrote about the fact that
20 in acute episodes you can get a chemical
21 hepatitis. I've written about chloracne
22 could occur. I've written about liver
23 problems could occur from excessive
24 overexposure. We have sent out to customers
25 bulletins, safety data sheets, and brochures

1 or reports from the American Industrial
2 Hygiene Association that describe all the
3 details of the PCBs.

4 So I don't agree with you that we
5 didn't warn them.

6 Q. Did you ever --

7 A. To talk -- that we did not mention the
8 possibilities -- where the possibilities of
9 ill effect might be.

10 Q. Did you ever warn, through a label or warning
11 label, of the liver being the target organ?

12 A. No, I did not. If you're at a filling
13 station, they say, "Do not smoke while you're
14 putting gasoline in your car." They don't
15 say, "Do not smoke because you're liable to
16 be blown into the next block." You tell them
17 how to avoid any trouble.

18 Q. You've never seen -- and I'm not going to
19 quarrel with you. But would you agree with
20 me that at the filling station, the label
21 that says, "Flammable," or, "Highly
22 flammable. Do not smoke while filling your
23 car," would be another effective than one
24 that just says, "Do not smoke while filling
25 your car"?

1 MR. BAUER: Object to the form of
2 the question. It calls for speculation and
3 is obviously outside Dr. Kelly's area.

4 MR. KIM: Absolutely not,
5 Mr. Bauer. Dr. Kelly in your direct
6 testified to the fact that he reviewed every
7 label and warning and correspondence with
8 respect to warnings about PCB products that
9 went out of Monsanto. To that extent, he is
10 entirely capable of testifying about this
11 unless he wants to recant that line of
12 questioning.

13 Q. (By Mr. Kim) You can answer now.

14 A. Will you give me the question so I know what
15 I am answering?

16 Q. Sure. You have given us a hypothetical in
17 dealing with a -- filling your gas tank and
18 where you said the warning which was totally
19 effective was, "Don't smoke while filling
20 your car"; is that correct?

21 A. Yes.

22 Q. And my question to you is: As the medical
23 director, a person who reviewed and was in
24 charge of writing labels, correspondence, and
25 warnings while at Monsanto from 1936 to 1974,

1 do you feel that there is a difference
2 between a warning such as you described and
3 one that might say, "Highly flammable. Do
4 not smoke while filling your car"?

5 A. Well, I think that's -- no. I think "highly
6 flammable" is talking about a product -- a
7 property of the gasoline. But maybe gasoline
8 is a poor example, maybe. But that's
9 something that the gasoline people would have
10 to make a decision on. But --

11 Q. Yes, sir.

12 A. -- take iron pills. They don't say, "Iron
13 pills call" -- "Iron pills, if they are used
14 to an excessive extent, will cause this
15 particular illness." They'll say it will be
16 harmful and may be harmful.

17 Q. How about sugar? Sugar substitutes?

18 MR. BAUER: Object to the form.

19 A. Beg pardon?

20 MR. KIM: You can have a running
21 objection to every question.

22 Q. (By Mr. Kim) How about sugar substitutes?
23 Does Monsanto market and sell a product call
24 Sweet'n Low?

25 A. Yes.

1 Q. Did you do, during the time period you were
2 medical director at Monsanto, any
3 toxicological testing with respect to that
4 product?

5 A. Sir, the Searle Company had been
6 manufacturing the sweetener. That was a
7 freestanding company. It was a freestanding
8 division. They had their own medical
9 department. Monsanto as the parent company
10 did not have anything to do with Searle.

11 Q. Monsanto --

12 A. From the medical -- from my medical
13 department point of view.

14 Q. You've never reviewed any of that work, then?

15 A. No, I have not.

16 Q. Do you feel that it's prudent for a
17 manufacturer to warn about the possible
18 effects of ingestion or misuse of such
19 products, any product?

20 A. The possible -- say that over. I want to be
21 exactly sure what you're saying.

22 Q. Sure. You have talked, with respect to PCBs,
23 that you felt it was prudent to only warn or
24 direct people as to how to avoid exposure?

25 A. That's correct.

1 Q. You did not feel -- and you felt if you did
2 that, it was not necessary to put the effects
3 of such exposure on that warning or label?

4 A. That's correct.

5 Q. Is that a philosophy that Monsanto follows?

6 A. On --

7 Q. On labeling.

8 A. Are you talking about the Monsanto Company,
9 or are you talking about some of their
10 subsidiaries?

11 Q. Monsanto Company.

12 A. You brought in Searle. I want to be sure --

13 Q. Absolutely.

14 A. -- that you know that I -- that Searle was a
15 company that manufactured Equal before
16 Monsanto took it over. Their toxicological
17 work had extended over four or five years
18 before Monsanto took it over. The medical
19 department had nothing to do with Searle's
20 labels or toxicological work. Medical
21 department of Monsanto.

22 Q. Monsanto sells the product now, though?

23 A. Yes, they do.

24 MR. BAUER: Object to the form.

25 Lacks foundation as to him knowing what

1 Monsanto sells today.

2 MR. KIM: He just answered it.

3 A. Well, Searle, a division of Monsanto, sells
4 it, yes.

5 Q. (By Mr. Kim) Would you agree with me, as the
6 corporate parent of Searle, that Monsanto
7 would have an interest in the type of
8 warnings and directives that Searle's
9 products would have?

10 A. Yes.

11 MR. BAUER: Object to the form.

12 A. Yes, they do.

13 Q. (By Mr. Kim) Okay. As the corporate parent
14 and based upon your experience as the medical
15 director between Nineteen Thirty --

16 A. -- six.

17 Q. Excuse me. Nineteen --

18 A. 1946.

19 Q. -- 1946 to 1974, do you have an opinion as to
20 whether subsidiaries of Monsanto, such as
21 Searle, should warn as to the effects of
22 misuse of a product?

23 MR. BAUER: Object to the form.

24 Assumes that there were subsidiaries during
25 that time period.

1 A. Should warn as to any possible ill effects?

2 Q. (By Mr. Kim) Yes.

3 A. Well, now, warning as to ill effects, I think
4 I'll need a definition of that. If you want
5 to be specific about which ill effects are
6 liable to happen, I don't believe that is
7 important. I think it's important to say,
8 "You will get problems. You'll get medical
9 problems that could be harmful to your health
10 if you do" -- "if you use this product in a
11 manner which it is not intended," yes.

12 Q. You don't think it's important for that label
13 or warning to say, "You may develop liver
14 problems. You may develop stomach problems.
15 You may develop cancer. You may develop
16 brain cancer"?

17 MR. BAUER: Object --

18 A. On your label?

19 MR. BAUER: Object --

20 Q. (By Mr. Kim) Yeah.

21 MR. BAUER: Object to the form.

22 It's completely hypothetical and calls for
23 speculation.

24 A. No. I think that information is published by
25 Monsanto, by a company, in other forms of the

1 label. The label is not intended to have a
2 bibliography of case reports on it. I think
3 you defeat the purpose. A label is put on to
4 pro -- to tell the individual that comes in
5 contact with that product how he can avoid
6 any ill effects. I do not see the necessity
7 for saying, "You are liable to get diabetes.
8 You're liable to get this. You're liable to
9 get that."

10 Q. (By Mr. Kim) Should it indicate on the label
11 in its warnings what the laboratory studies
12 with animals have shown possible effects to
13 be?

14 MR. BAUER: Object to the form.

15 A. No, I don't think that should be on the
16 label.

17 Q. (By Mr. Kim) Is that not prudent action?

18 MR. BAUER: Object to the form.
19 Indefinite as to time.

20 Q. (By Mr. Kim) At any time.

21 A. I don't think it's necessary. I don't
22 exactly know what you mean by "prudent" on
23 it.

24 Q. Is it more wise or less wise to put such
25 information in a warning?

1 A. It's not needed. I don't think the "wise"
2 enters into it. The labels that we put on
3 our products -- if we're talking about PCBs
4 now -- were perfectly adequate because the
5 workers who used it, our customers' workers
6 and their work -- customers -- their
7 customers' customers, a second generation,
8 were not harmed by the material. There
9 were -- and I can quote the Government
10 epidemiologist Dr. Kimbrough, who stated with
11 the exception of chloracne -- I don't know if
12 she mentioned -- whether she used the term
13 "rare" or -- well, chloracne. Let's say
14 "chloracne." There were no other ill --
15 reports, definite reports, of illness to
16 workers from PCBs.

17 So the labels, in my opinion, were
18 adequate. Perfectly adequate.

19 Q. Doctor -- and I understand that in previous
20 testimony you have complimented the work of
21 the Government scientists.

22 A. Sometimes. And sometimes I've dis -- I was
23 uncomplimentary.

24 Q. Is it -- did you rely upon the work of
25 Dr. Kimbrough while you were the medical

1 director of Monsanto Chemical Company?

2 A. No. I disagreed with her in her -- on her
3 pathologist's interpretation of her rabbit
4 slide -- of her rat slides.

5 Q. And we're going -- did you ever personally
6 review those slides?

7 A. No. I'm not a pathologist.

8 Q. And we'll talk about those later. But I want
9 to get back to warnings and the labeling that
10 you, as the medical director, were
11 responsible for at least drafting or looking
12 at prior to their dissemination to customers
13 and ask, with respect to the corporate
14 philosophy while you were the medical
15 director from 1946 to 1974, if there was a
16 philosophy that indicated that it was not
17 necessary to put down laboratory findings of
18 the toxic effects that had been observed on
19 that label.

20 MR. BAUER: Object to the form.
21 Specifically on a warning label.

22 MR. ROTH: Can you repeat that
23 question, please?

24 MR. BAUER: Yeah. Yeah.

25 THE WITNESS: Yes. I'd like it,

1 too.

2 MR. KIM: I'll just restate it.

3 Q. (By Mr. Kim) During the time period of 1946
4 to 1974, when you were the medical director
5 and in charge of warnings at Monsanto
6 Chemical Company, do you have an opinion as
7 to what Monsanto's corporate philosophy was
8 with respect to identifying those toxic
9 results from animal tests?

10 MR. BAUER: Objection. Vague.

11 Q. (By Mr. Kim) On PCBs.

12 A. Of identifying them?

13 Q. (Nods head.)

14 A. Explain that to me.

15 Q. Okay. Let's say that -- whether we dispute
16 some of the earlier studies or not, Doctor,
17 I'm curious because some of the studies seem
18 to indicate that the liver was the target
19 organ. Can we agree to that?

20 A. Yes, certainly.

21 Q. And some of the studies indicated that
22 chloracne could develop?

23 A. Yes.

24 Q. Some of the animal studies indicated that
25 there could be possible systemic effects

1 through lassitude, loss of appetite, loss of
2 libido. Can we agree with that?

3 A. Some of the studies? Some of the case
4 reports on it?

5 Q. Yes.

6 A. I believe that was studies.

7 Q. Case reports. My question to you, Doctor, is
8 if you felt that it was necessary or if
9 Monsanto, while you were the medical director
10 and in charge of warnings, had a philosophy
11 of whether that -- of whether making workers
12 aware of that information was necessary on
13 the warnings or labels that accompanied the
14 product.

15 MR. BAUER: Objection. Vague as to
16 what you mean by "warnings or labels."

17 A. Well, there is a difference. There are
18 really two questions. On the labels -- we
19 were talking about labels?

20 Q. (By Mr. Kim) I'm talking about things that
21 would be on the drums or the product itself
22 that the everyday worker would see.

23 A. If the worker saw on a label -- my philosophy
24 was if the worker saw on a label information
25 that would prevent him from getting any ill

1 effects from the use of the product, that was
2 certainly adequate and sufficient. If I put
3 on the label, "You are liable to get
4 diabetes. You are liable to get brain
5 tumors. You are liable to get weakness. You
6 are liable to feel tired after you use it," I
7 don't believe the worker would sooner or
8 later pay any attention to that type of
9 information. It was not necessary on a
10 label.

11 Q. You think it would have been ineffective in
12 the end?

13 A. It certainly wasn't necessary, and I -- I
14 think it would be counterproductive, yes.

15 Q. Was that your opinion or Monsanto's company
16 position while you were the medical director
17 between 1946 and 1974?

18 A. Well, I can't speak for the company; but
19 that's what they put on the labels.

20 Q. Was there anyone else besides you who had
21 input and final say-so in the information
22 contained in the warnings and labels that
23 accompanied the product that the everyday
24 worker would see while you were the medical
25 director between 1946 and 1974?

1 A. Yes. We had legal people in the company who
2 might very well object to that. I presume if
3 the lawyer said, "We don't believe you have
4 enough on here," we would have -- may have --
5 if we could convince him that it would be --
6 that was unwise, we'd -- the company may have
7 done something different. But they didn't,
8 and the labels had enough information. I
9 come back to the point: They've fulfilled
10 their purpose, which was to keep workers from
11 getting any harmful effects, regardless of
12 the fact that these harmless effects were not
13 mentioned on the label.

14 Q. If you know, has that philosophy or reasoning
15 with respect to labels and warnings that are
16 placed on the product changed since the time
17 you have left Monsanto?

18 A. I don't know if it has.

19 Q. Let me show you what is a Sweet'n Low package
20 that I believe is marketed by one of the
21 Monsanto subsidiaries; is that correct?

22 A. No, I don't think it is.

23 Q. Is it a Monsanto product?

24 A. I don't believe -- I'm sorry to say I don't
25 have reading glasses here. But would you

1 read what's in it? This is not a -- I have
2 never heard that Sweet'n Low was a Monsanto
3 product.

4 Q. Okay. Let me show you what we'll mark as
5 your Deposition Exhibit No. 39 --

6

7 (An instrument was marked Kelly
8 Exhibit No. 39 for identification.)

9

10 MR. BAUER: Do you have an extra
11 one?

12 MS. WELDON: No.

13 Q. (By Mr. Kim) -- which I believe you reviewed
14 yesterday.

15 A. I didn't review it. I saw it.

16 Q. You saw it yesterday. I believe you also
17 testified that you have reviewed that
18 document in other litigation?

19 A. Yes.

20 Q. Did you know Dr. von Oettingen?

21 A. Yes, I did.

22 Q. I believe you've previously testified that he
23 was a premier scientist?

24 A. Yes.

25 Q. You had no criticisms of him as a scientist

1 during this time period?

2 A. That's correct.

3 Q. During the time that you were the -- do you
4 recall when the first time you would have had
5 occasion to review this document that we have
6 marked as your Deposition Exhibit No. 39?

7 MR. BAUER: Objection. Asked and
8 answered.

9 A. It certainly was after 1974; but my
10 supposition was I just saw it about six or
11 eight years ago, which would be sometime in
12 the Eighties.

13 Q. (By Mr. Kim) Do you have a recollection of
14 what your thoughts were when you first
15 reviewed this? And if you want, we can take
16 some time so that you can read and review
17 this.

18 A. Yeah. Oh, you mean what my thoughts --

19 Q. Did you dispute his findings, or did --

20 A. Beg pardon?

21 Q. Did you dispute the findings that he found?

22 A. That's a different question.

23 Q. Pick either one.

24 A. Let me go through it.

25 MR. BAUER: Object to the form.

1 A. Maybe I thought was, where'd this come from?

2 Q. (By Mr. Kim) What were you thoughts? Let's
3 start with: What were your thoughts when you
4 reviewed this?

5 A. That was my thought.

6 MR. BAUER: His thoughts in the
7 1980's when he read this article in the
8 context of other litigation?

9 MR. KIM: Well, I think my question
10 was, "What were your thoughts when you
11 reviewed it?" If that's unclear --

12 MR. FEATHERSTONE: John offered
13 Dr. Kelly the opportunity to look through the
14 document. I presume go off the record and do
15 that?

16 MR. KIM: Sure.

17 MR. FEATHERSTONE: So let's decide
18 whether that's necessary.

19 THE WITNESS: Whether what's
20 necessary? I've got to review this --

21 Q. (By Mr. Kim) Doctor, would you like to take
22 some time to review this?

23 A. Yes, I -- if I'm going to be asked questions
24 on it.

25 Q. You bet. Let's go off the record for just a

1 few minutes.

2 THE VIDEOGRAPHER: We're going off
3 the record. It's 43 minutes after 9:00
4 o'clock.

5

6 (A recess was taken.)

7

8 (Instruments were marked Kelly
9 Exhibit Nos. 40 through 41 for
10 identification.)

11

12 THE VIDEOGRAPHER: It's two minutes
13 after 10:00 o'clock. We're back on the
14 record.

15 MR. KIM: Mr. Bauer?

16 MR. BAUER: I'll wait till you get
17 to one.

18 MR. KIM: Okay.

19 Q. (By Mr. Kim) Doctor, you've had an
20 opportunity now to review what has been
21 marked as your Deposition Exhibit 39; is that
22 correct?

23 A. Yes, sir.

24 Q. And I believe that is a report about the
25 toxic and potential danger -- toxicity and

1 potential dangers of Inerteen?

2 A. Yes, sir.

3 Q. What is your understanding of what Inerteen
4 is?

5 A. Inerteen is a dielectric compound used by
6 Westinghouse Electric. There may be other
7 people who use it. It is a product that was
8 made for Inerteen -- for Westinghouse to
9 their specifications.

10 Q. Do you have any scientific or medical
11 criticisms of Dr. von Oettingen's work, as
12 you see before you in Exhibit 39?

13 MR. BAUER: Objection. I object to
14 that question on the grounds that it's
15 eliciting an expert opinion; and Dr. Kelly,
16 as a fact witness in this case, has not been
17 designated as an expert. And Mr. Kim, if you
18 want to give me a standing objection to that,
19 on that base -- just that basis to this line
20 of questioning, then I won't have to repeat
21 that.

22 MR. KIM: Done.

23 A. Do I answer it?

24 Q. (By Mr. Kim) Yes, you can answer now.

25 A. What was it? What was the question now? I'm

1 getting sidetracked on these --

2 Q. I don't recall.

3 A. -- ad libs.

4 Q. Oh. Did you have any scientific or medical
5 criticisms of Dr. von Oettingen's work, as we
6 see in your Deposition Exhibit No. 39?

7 A. No. I've had the opportunity to look this
8 over for ten minutes, and I've come to no
9 conclusion as to an opinion on it.

10 Q. You have reviewed this document in
11 preparation of testimony in other litigation,
12 have you not?

13 A. I don't know if I reviewed it beforehand or
14 they handed it to me at the time of the
15 deposition, like today I was handed one --
16 this.

17 Q. As we sit here today for this jury, you have
18 no opinion with respect to the conclusions
19 that Dr. von Oettingen reached?

20 A. Well, I respect him as a scientist.

21 Q. If you will turn to the second page, where at
22 the bottom of it talks about the "Effect of
23 Oral Administration."

24 A. Yes, sir.

25 Q. Is that correct?

1 If you will then turn to the next
2 page.

3 A. Yes, sir.

4 Q. The second paragraph, it says he noted that
5 with respect to the lungs, there was edema
6 and hemorrhaging; is that correct? The first
7 sentence.

8 A. Yes, sir.

9 Q. Okay. And those that died spontaneously
10 showed congestion of the lungs?

11 A. Yes, sir.

12 Q. What is "edema"?

13 A. Swelling. Fluid in the tissues.

14 Q. And what is the layman's description of
15 "hemorrhage"?

16 A. You bleed.

17 Q. Okay. Those would be significant medical or
18 scientific findings, would they not be?

19 MR. BAUER: Object to the form.

20 MR. CAILTEUX: Join.

21 A. In -- Mr. Kim, in -- if you are giving an --
22 running a toxicological experiment on animals
23 and they die as these did, rather rapidly,
24 these are findings you get in all deaths.
25 These are preagonal conditions.

1 Q. (By Mr. Kim) These findings would not have
2 caused you any concern as the medical
3 director of Monsanto if they had been noted
4 during a Monsanto test?

5 MR. BAUER: Object to the form.

6 A. No. Because if they died, they die of
7 something. This is what they die from. They
8 die from swelling of the organs of the body.

9 Q. (By Mr. Kim) Did Monsanto -- I believe
10 you've told me, and I've forgotten -- ever
11 order or request any testing to be done that
12 would determine the mechanism of chemical
13 reactions in the human body?

14 A. No, sir, we did not.

15 Q. How about animal tests?

16 A. At the time of the Bio-Test experiment --
17 toxicological work, there was some
18 radioactive work carried out as far as the
19 distribution of material in the tissues. And
20 to the best of my knowledge, there was some
21 work done on the biochemical alterations of
22 the product in the body. But those were not
23 in the reports that I saw, and I do not know
24 if they were submitted after I left.

25 Q. Would congestion of the lungs combined with

1 edema and hemorrhaging have caused you
2 concern, as the medical director of Monsanto,
3 with respect to the mechanism of the chemical
4 reaction in a human or an animal?

5 A. No. It is -- this is a nonspecific situation
6 condition. Occurs with -- whenever you give
7 an animal enough product to kill him, kill
8 the animal, this occurs.

9 Q. In the next sentence Dr. von Oettingen
10 notices, with respect to the liver, that the
11 color changed or had modeled to a gray or
12 yellow; is that correct?

13 A. He said -- yes. In three they were pale.

14 Q. "Diffuse pallor with moderate yellowness"?

15 A. Yes.

16 Q. In the next sentence he indicates that five
17 of the six animals studied microscopically,
18 the liver was -- had extensive hyaline
19 necrosis?

20 A. Yes, sir.

21 Q. What is "necrosis"?

22 A. Death of tissue.

23 Q. Would that cause you some concern, as a
24 scientist or medical director at Monsanto, if
25 that was the result of one of your tests?

1 MR. BAUER: Object to the form.

2 A. Well, it was of interest. But here the man
3 gave a material to kill the animal. It also
4 showed that the liver was quite markedly
5 involved in this particular experiment. And
6 we knew -- of course, I never saw this while
7 I was at Monsanto. But we knew that the
8 liver was a target organ. And if you could
9 give enough of the material, you can damage
10 the liver.

11 Q. (By Mr. Kim) Would it have caused you some
12 concern as to the chemical mechanism that
13 produced these results in the human body
14 while you were at Monsanto between 1946 and
15 1974?

16 MR. BAUER: Object to the form.
17 Calls for speculation.

18 A. Did you say in the human body? Would you
19 repeat that again? I don't know -- exactly
20 know how you've brought in the human body
21 into this experiment.

22 MR. KIM: Can you read that back?
23 Because I don't know what I said.

24

25 (The pending question was read

1 by the court reporter.)

2

3 A. These were rats, remember. They had nothing
4 to do with -- I had no concern. There's
5 nothing -- they did not extend to the human
6 body. There was no experiment or no one
7 showed any effects like this in the human
8 body as a result of this experimentation.

9 We did know that the liver was the
10 target organ in the animals. And that was
11 not news to us. We knew that.

12 Q. (By Mr. Kim) Would results in animal studies
13 have caused you to inquire as to what the
14 human response would be to the same chemical?

15 MR. BAUER: Object to the form.
16 Calls for speculation and incomplete
17 hypothetical.

18 A. Well, it is -- it may be a very simple jump
19 from animals to humans. It may be a pretty
20 large jump from toxicological work on animals
21 to humans. We did know that there were a few
22 isolated cases in a heat transfer mechanism
23 that caused a chemical hepatitis. So we knew
24 that if you got too much of the stuff from
25 breathing, you would get ill effects; and we

1 knew that that was probably the liver. So
2 that's why we warned against breathing the
3 material or having it absorbed from the skin.

4 Q. (By Mr. Kim) During the time that you were
5 the medical director at Monsanto between 1946
6 and 1974, did you ever order or request any
7 epidemiological studies be done on behalf of
8 Monsanto concerning polychlorinated
9 biphenyls?

10 A. No, sir. You asked me that two days ago.
11 The answer is the same.

12 Q. Doctor, I'm sorry I'm being so laborious.

13 A. That's all right.

14 Q. But two days ago, I believe, the questions
15 were being directed by Mr. Bauer.

16 A. Well, you asked me, though. One day ago,
17 then.

18 Q. If you'll turn to Page 3 of the Dr. von
19 Oettingen story -- excuse me -- study. At
20 the very top, the first complete sentence, he
21 notices that: "Microscopically the stomach
22 of two animals presented typical hemorrhagic
23 erosions of the mucosa" -- or micososa. What
24 does that mean?

25 A. It means that the lining of the stomach

1 showed bleeding and erosions, which are small
2 ulcers.

3 Q. Would the combination of the observations in
4 the lungs, liver, and stomach give rise to
5 considerations of systemic poisoning?

6 A. No. These are all local. The lungs,
7 remember I said, were due to the death -- the
8 conditions that existed, the death that
9 caused the swell -- the congestion in the
10 lungs. Certainly the situation in the
11 stomach was local. If you take paper remover
12 and swallow it in your stomach and it stays
13 in your stomach, you will get typical
14 hemorrhagic erosions. That's a local
15 action. It's not systemic.

16 Q. How about the liver and the stomach?

17 A. The liver was not local, no. The liver is
18 systemic. But you said "liver and stomach"?

19 Q. Yes.

20 A. Stomach is still local.

21 Q. Okay. If you will turn to -- at the top it
22 will be Page 5. There you go.

23 Doctor, I believe you told me that
24 it was your understanding that Inerteen
25 and -- what's the GE trade name? -- Pyranol

1 were composed of approximately 70 percent
2 PCBs and 30 percent trichlorobenzene.

3 MR. BAUER: Object to the form. I
4 think you said one of them was. But --

5 A. I'm not sure. Yes. I know that both
6 Inerteen and Pyranol contained Monsanto's
7 PCBs and somebody's trichlorobenzene. I do
8 not know the exact ratio of the two
9 components.

10 Q. (By Mr. Kim) Certainly during the time
11 period that Inerteen and Pyranol was marketed
12 by Westinghouse and General Electric,
13 respectively, Monsanto knew that its PCB
14 product was being combined with
15 trichlorobenzene. Is that a fair --

16 A. It's a supposition; but I would imagine that
17 it probably did, yes.

18 Q. Did you know that while you were the medical
19 director of Monsanto?

20 A. Yes, I did. At some time. I don't know
21 when.

22 Q. Did you -- excuse me. Did the medical
23 department under your direction between the
24 years 1946 and 1974 ever request or order any
25 testing to be done with respect to the

1 relationship between polychlorinated
2 biphenyls and trichlorobenzene?

3 MR. BAUER: Objection. Vague as to
4 what you mean by "the relationship."

5 A. I don't know what you mean by it, either.
6 But --

7 Q. (By Mr. Kim) How about the chemical
8 relationship between the two chemicals that
9 were being used concomitantly in the
10 dielectric fluids?

11 A. I don't know about Monsanto. I did -- that
12 would not be in the medical department's
13 purview.

14 Q. Did Monsanto's medical department under your
15 direction in the same time frame ever order
16 or request any testing be done with respect
17 to the toxicological properties of
18 trichlorobenzene?

19 A. Not trichlorobenzene per se. We ordered some
20 work done both on Inerteen which contained
21 trichlorobenzene and Pyranol which contained
22 trichlorobenzene.

23 Q. Did Monsanto Chemical Company during the time
24 that you were the medical director ever
25 explore scientifically through testing the

1 synergistic possibilities of combining
2 trichlorobenzene and polychlorinated
3 biphenyls, that you're aware of?

4 A. Well, I think, as I said, if you test the
5 material toxicologically, if you test it,
6 it's got the same two component synergy
7 testing. If there's any synergism in there,
8 you're testing it.

9 Q. Did Monsanto Chemical Company under your
10 direction between 1946 and 1974 ever test or
11 order testing done with respect to how
12 trichlorobenzene would metabolize within the
13 human body?

14 A. No, sir, they did not. There was information
15 about the toxicological effects of
16 trichlorobenzene, and I don't know if there
17 was information about the metabolism of it.

18 Q. What information were you aware of during the
19 time period that you were medical director of
20 Monsanto with respect to the toxicological
21 properties of trichlorobenzene?

22 A. Well, I knew the oral toxicity of the
23 material; and I knew that the material could
24 be absorbed through the skin. It could be
25 absorbed by breathing the vapors.

1 Q. Did it have a half-life?

2 A. I don't know.

3 Q. Do you know what --

4 A. I'm --

5 Q. Excuse me.

6 A. Do I know what?

7 Q. Do you know what the half-life is of
8 polychlorinated biphenyls?

9 MR. BAUER: Objection.

10 A. Half-life where? In an animal? In a body?
11 In a bucket?

12 Q. (By Mr. Kim) In a human.

13 A. No, I do not.

14 Q. On Page 5, at the bottom, of Dr. von
15 Oettingen's report, he talked about path --
16 the very last paragraph --

17 A. Yes, sir.

18 Q. -- where he talks about pathological
19 examination: "...animals were treated with
20 trichlorobenzene and which died spontaneously
21 showed 4 passive congestion of the lungs and
22 the liver; the stomachs were distended with
23 food; in four some blood was present in the
24 gastric contents and in one instance there
25 was a hemorrhagic erosion of the mucosa." Is

1 that correct?

2 A. You're reading it correctly, yes, sir.

3 Q. In the next sentence, at the top of Page 6,
4 he indicates that: "In two of the rats the
5 liver showed irregular mottling."

6 A. Yes, sir.

7 Q. Again, can we agree that the concern of the
8 liver would be one indication that might
9 cause one to suspect systemic poisoning with
10 respect to trichlorobenzene?

11 A. From this experiment?

12 Q. Yes, sir.

13 A. No. If this was an acute -- I have to go
14 back to see how long it took these animals to
15 die after he gave them the material.

16 Q. I believe spontaneously. I think it was
17 acute, Doctor.

18 A. Beg pardon?

19 Q. I believe it was acute.

20 A. Well, yes. I was thinking of how acute.
21 From this it's hard to say whether or not --
22 well, if they showed necrosis of the liver
23 cells, that is very probably a systemic
24 effect.

25 Q. And in the very next sentence, indeed,

1 Dr. von Oettingen indicated that: "Liver
2 sections of all animals showed necrosis of
3 the liver cells around the central veins and
4 those in the outer parts showed vascular
5 [sic] degeneration."

6 A. Yes.

7 Q. That would indicate the possibility, at
8 least, of systemic poisoning?

9 A. That's correct.

10 Q. At the bottom of Page 6, in the last
11 paragraph, it says: "It appears, therefore,
12 that Inerteen is considerably less toxic than
13 trichlorobenzene."

14 A. That's what it says, yes, sir.

15 Q. Do you agree with that statement, based upon
16 the knowledge that you have accumulated from
17 1936 to present?

18 A. He's talking now about experiments in
19 animals. It certainly is somewhat more
20 toxic -- Inerteen is -- trichlorobenzene is
21 somewhat more toxic than Inerteen. Inerteen
22 has an LD₅₀ of 3 cc's per kilo, whereas the
23 trichlorobenzene was two point one or
24 something like that. Whether it's more toxic
25 in actual use is not determined by this

1 particular --

2 Q. Did Monsanto --

3 A. -- compound --

4 Q. Oh, I'm sorry.

5 A. -- report.

6 Q. Did Monsanto Chemical Company under your
7 direction as medical director between the
8 years of 1946 and 1974 order any LD₅₀ tests
9 or toxic -- LD₅₀ tests to determine the LD₅₀
10 of polychlorinated biphenyls when used in
11 combination with trichlorobenzene?

12 A. Yes.

13 Q. Who did those studies?

14 A. Younger Laboratories.

15 Q. And those are the Younger studies that you
16 discussed with Mr. Bauer --

17 A. Yes, sir.

18 Q. -- on Tuesday?

19 On Page 7 Dr. von Oettingen next
20 talks about, in the middle, the "Effect of
21 Application to the Skin"; is that correct?

22 A. Yes, sir.

23 Q. And at the very bottom of that page, it
24 says: "Upon pathological examination the
25 liver of all animals was found to be dark

1 gray brown in color with mottling on the
2 surface. In those rats" -- at the top of
3 Page 8 -- "which died spontaneously there was
4 fatty degeneration of the liver cells with
5 necrosis of those around the central veins";
6 is that correct?

7 A. Yes, sir.

8 Q. Would that be indication to you of the
9 possibility of systemic poisoning?

10 A. Yes, sir.

11 Q. The very last paragraph, underlined, states:
12 "It appears, therefore" -- of that section.
13 I'm sorry.

14 A. Oh, okay.

15 Q. On Page 8, just before the "Effect of
16 Inhalation."

17 A. Uh-huh. Yes.

18 Q. "It appears, therefore, that the contact of
19 Inerteen with the skin does not only cause
20 local reaction such as dryness, thickening,
21 and scaling of the skin, but also systemic
22 effects as indicated by the injurious effect
23 on the liver."

24 A. Yes, sir.

25 Q. Did Monsanto have this knowledge -- when did

1 Monsanto acquire this knowledge?

2 MR. BAUER: Object to --

3 Q. (By Mr. Kim) If you know.

4 MR. BAUER: Object to the form as
5 to what you mean by "this knowledge."

6 A. Well, that's what I mean. This knowledge
7 from this experiment or whether -- first time
8 we knew that it could be absorbed through the
9 skin?

10 Q. (By Mr. Kim) Fair enough. When did it first
11 learn that absorption through the skin may
12 lead to systemic effects, as indicated by
13 injuries on the liver in animal studies?

14 A. Well, we didn't know that it -- absorption
15 through the skin in humans had caused any
16 liver damage in humans. I was convinced in
17 my own mind that there was a possibility that
18 the material can be absorbed through the skin
19 and if absorbed through the skin, can cause
20 liver damage. But I did not see any of -- I
21 did not have any definitive information about
22 that.

23 Q. And you are talking about --

24 A. -- humans.

25 Q. -- to humans?

1 A. Uh-huh.

2 Q. There was a question in your mind as to
3 whether the liver would be affected through
4 absorption in the skin -- through the skin?

5 A. I was fairly sure it would. That's why we
6 warned against it, against continuous or
7 repeated skin application.

8 Q. But your warning never told them what would
9 happen, did it?

10 MR. BAUER: Objection. Asked and
11 answered.

12 A. No. It did not give the specifics.

13 Q. (By Mr. Kim) The very next section on
14 Page 8, Doctor, is "Effects of Inhalation of
15 Vapors."

16 A. Yes, sir.

17 Q. And again, we're talking about Inerteen; is
18 that correct?

19 A. Well, let's see what he says. Yes. From
20 Inerteen, right.

21 Q. And I don't have anything highlighted on my
22 copy. So let's go to Page 10.

23 A. We're going to 10?

24 Q. Yes, sir.

25 A. Yes, sir.

1 Q. Actually, I lied again. Let's go to

2 Page 12 --

3 A. We're really moving.

4 Q. Uh-huh.

5 -- where at the end, under the

6 title of "Resume," middle of that

7 paragraph --

8 A. Yes, sir.

9 Q. -- he notes -- Dr. von Oettingen notes that:

10 "Fatal doses will cause passive congestion

11 of all viscera" -- "viscera" --

12 A. Well, wait. I'm a little confused on the

13 pages because --

14 Q. Oh, I'm sorry.

15 MR. FEATHERSTONE: What was the

16 page, John?

17 A. Because.

18 MR. KIM: It may be 13 or 12.

19 MR. FEATHERSTONE: Well, can you

20 read the number at the bottom? Our page

21 numbers are cut off.

22 MR. KIM: Yeah. GBRN003105.

23 A. Yeah. Okay.

24 Q. (By Mr. Kim) There we go. The middle of the

25 paragraph, under the heading "Resume" --

1 A. Yes, sir.

2 Q. -- towards the bottom, Dr. von Oettingen
3 notes: "Fatal doses will cause passive
4 congestion of all viscera, extensive
5 degeneration of the liver, and ulceration of
6 the gastric mucosa."

7 A. Yes, sir.

8 Q. And at the top of the next page --

9 A. Yes, sir.

10 Q. -- he notes that: "Continued application of
11 Inerteen to the skin of rats and humans
12 causes dryness of the skin, thickening and
13 scaling; and the observation made in rats
14 indicate that sufficient quantities may be
15 absorbed through the skin to produce
16 injurious effects on the liver."

17 A. Yes.

18 Q. Does that knowledge, if it had been acquired
19 during the time period that you were medical
20 director of Monsanto, cause you any concern
21 from a medical or toxicological standpoint?

22 A. Well, I think --

23 MR. BAUER: Objection. Calls for
24 speculation.

25 A. I think it reinforced what my opinion was.

1 The material could be absorbed through the
2 skin. It could cause systemic illness.

3 Q. (By Mr. Kim) Dr. von Oettingen made some
4 recommendations with respect to the use of
5 Inerteen, did he not? Or do you recall from
6 your cursory review of the document?

7 A. Beg pardon?

8 Q. Do you recall?

9 A. Well, I could read it.

10 Q. Well, let's read it together, the second to
11 the last page, at the very bottom, last
12 paragraph, where Dr. von Oettingen notes:
13 "In view of the hepatotoxic action of this
14 compound, individuals suffering from injuries
15 of the liver, syphilis, and hearing
16 diseases" -- at the top of the next page --
17 "should be excluded from operations in which
18 Inerteen is handled." Did I read that
19 correctly?

20 A. Yes. That's what he says.

21 Q. Based upon the knowledge that you have
22 accumulated up until today, do you dispute
23 that finding by Dr. von Oettingen, or
24 recommendation?

25 A. Well, Dr. von Oettingen is writing about all

1 sorts of exposures. What Monsanto's
2 situation was and the -- and the material we
3 furnished our customers when we manufactured
4 Inerteen for Westinghouse was that we told
5 them how to prevent illnesses. And even if a
6 person did have syphilis, if he didn't get
7 any -- a lot of exposure, it were not going
8 to bother him.

9 Q. Do you know if Monsanto in its hiring
10 practice -- and you may not know -- screened
11 its employees that would be exposed to
12 polychlorinated biphenyls for preexisting
13 liver, syphilis, or hearing diseases?

14 A. In the early days, we screened -- we ran
15 Wassermann tests on all preemployment
16 individuals. Later that became an invasion
17 of privacy, and I believe we had to
18 discontinue it.

19 Q. When it was discontinued -- approximately
20 when was that, if you have a recollection --
21 recollection?

22 A. Oh, gosh. I think it was a time when
23 syphilis fell off a great deal. There was
24 not much around. Now, of course, it's up
25 again.

1 Q. Did you tell prospective applicants that they
2 would be working around polychlorinated
3 biphenyls and that if they had a preexisting
4 liver, syphilis, or hearing disease, it may
5 not be beneficial to work in that
6 environment?

7 A. No, we did not.

8 Q. Doctor --

9 A. I saw no reason for that because they weren't
10 going to get harmed by working in our
11 environment.

12 Q. You also had an opportunity to review two
13 other documents that we have marked as your
14 Deposition Exhibits No. 40 and 41; is that
15 correct?

16 A. Yes, sir.

17 Q. Did you have an opportunity to review those
18 documents while you were employed at
19 Monsanto?

20 A. No, sir, I did not.

21 Q. Have you ever reviewed those documents prior
22 to today?

23 A. I've seen them. I don't really -- didn't go
24 over them with a fine-toothed comb. But
25 I've -- I read the resumes and the summary.

1 Q. Do you know either Dr. Fleming or Dr. Read?

2 A. I know Fleming. He was assistant at Haskell,
3 and he eventually became medical director of
4 DuPont.

5 MR. CAILTEUX: John, can we have
6 Exhibits 40 and 41 identified for the record
7 since we don't have copies?

8 MR. KIM: Sure. 40 is, I believe,
9 an article titled, "The Toxicology of
10 Inerteen and Related Substances Including a
11 Method of Analysis for Halogenated
12 Hydrocarbons in the Air," by A. J. Fleming,
13 M.D.

14 41 is "The Effect of Inerteen and
15 Several Related Substances Upon the White
16 Rat." Oh, excuse me. By Dr. W. T. Read,
17 R-e-a-d, Jr.

18 Q. (By Mr. Kim) Dr. Kelly, I think we can both
19 agree -- or we may not be able to agree --
20 that both these doctors indicated effects
21 upon the liver; is that correct?

22 A. Well, let's be sure.

23 Q. With respect to the Fleming study, turn to
24 the page that is Bates stamped No. 300024.

25 A. I have it.

1 Q. At the very top, first full sentence,
2 Dr. Fleming indicates that: "Weakness and
3 stupor generally supervened within a few
4 hours until the animals could no longer rise
5 for food and water."

6 That is an indication of fatigue or
7 weakness, is it not?

8 A. No. It's -- the animal is being
9 anesthetized, it looks like.

10 Q. With -- excuse me. On the previous page he
11 talks about the procedure. It was the oral
12 administration of Inerteen.

13 A. Yes, sir.

14 Q. Is it your testimony that your interpretation
15 of this is that the rats were being
16 anesthetized with Inerteen?

17 A. There were -- well, it was the action of an
18 anesthetic. They became stuporous, and they
19 couldn't eat or couldn't get up.

20 Q. Okay. The next sentence indicated that:
21 "Liquids were taken, however, if
22 administered and for a few minutes following
23 administration the animals perked up a bit.
24 The improvement was only temporary and the
25 outcome, when they had thus far progressed,

1 was invariably fatal."

2 A. Yes, sir.

3 Q. And that's through the repeated doses of
4 Inerteen, as you understand based upon your
5 review of this document?

6 A. Well, they were to -- they were really given
7 the doses -- "Two died after the second
8 treatment." So that wasn't a lot of
9 repeated -- "5 were killed for autopsy...24
10 hours after the last treatment." And another
11 set of them, one died after one treatment,
12 three after two, and four after the third.
13 So that's pretty acute doses.

14 Q. Not that repetitive, then?

15 A. Beg pardon?

16 Q. The doses were not that repetitive?

17 A. Well, they were repetitive. They had four of
18 them, obviously. But that's in a -- it
19 doesn't say how long it took him to give
20 those doses, whether he gave it once a -- I
21 can't see here how fast they gave the doses.
22 But that's -- that's a pretty acute study
23 anyway, no matter how you cut it.
24 Q. The effect of repeated doses, would that have
25 given rise to questions when you were the

1 medical director of Monsanto as to the
2 chronic effects of chronic exposure to
3 polychlorinated biphenyls?

4 A. No, sir, not in this --

5 Q. The next --

6 A. -- case.

7 Q. -- study, which is -- or report, which has
8 been labeled as your Deposition Exhibit
9 No. 41, on the Page No. 4 --

10 A. Yes, sir. I have it.

11 Q. -- it indicates that: "The pathology
12 resulting from oral ingestion of Inerteen
13 (was) fairly consistent and obvious.

14 "Large doses which (were) lethal in
15 one or two days cause a terminal passive
16 congestion of the viscera, extensive
17 degeneration of the liver with necrosis about
18 the central veins and locally ulcerations of
19 the gastric mucosa."

20 A. Yes, sir. You've read that correctly.

21 Q. Would that be an indication to you of
22 possible systemic poisoning, based upon your
23 experiences that you have developed over the
24 years?

25 A. What you -- I didn't hear the middle of your

1 question.

2 Q. Based upon the experience and knowledge that
3 you have gained over the years, would this be
4 an indication to you of possible systemic
5 poisoning?

6 MR. BAUER: Object to the form.
7 Calls for speculation.

8 A. No. This was really an acute dose and --
9 that killed the animals from this dose. So
10 certainly if you kill an animal, it's
11 systemic. So in that sense it shows that you
12 could kill an animal if you give enough
13 Inerteen to it.

14 Q. (By Mr. Kim) Doctor, I believe you testified
15 earlier that you had requested some patch
16 testing to be done by the Barnard Free
17 Scanning Cancer Hospital.

18 A. Yes, sir.

19 Q. Is that correct?

20 A. Yes, sir.

21 Q. Do you have a recollection of approximately
22 when that was? Late 1940's?

23 A. I can't -- I just would be guessing.

24 Q. Did Monsanto pay for that study?

25 A. Yes, they did.

1 Q. Did Monsanto provide the Aroclors that were
2 to be tested?

3 A. Yes.

4 Q. Did Monsanto provide the Aroclors to be
5 tested in the Younger studies?

6 A. Yes.

7 Q. The Scientific Laboratory studies?

8 A. Scientific Associates, yes.

9 Q. The Industrial Bio-Test studies?

10 A. Yes.

11 Q. Monsanto also provided the chlorinated
12 diphenyls in the Drinker studies, the second
13 Drinker study?

14 A. Yes.

15 Q. Do you know if Monsanto in its manufacture of
16 PCBs produced or prepared PCBs of higher
17 purity than the commercial grade supplied in
18 the bulk -- in bulk to its industrial
19 customers?

20 A. Say that over.

21 Q. Did Monsanto prepare different grades in
22 terms of purification of PCBs?

23 A. There may have been research samples of --
24 that they tried to do some purification, yes.

25 Q. Were microscope immersion oils especially

1 purified?

2 A. Were what?

3 Q. Microscope -- microscopic immersion oils that
4 comprised a part of the polychlorinated
5 biphenyls specially prepared?

6 MR. BAUER: Objection.

7 A. Microscopic immersion oil?

8 Q. (By Mr. Kim) If you don't understand or you
9 don't know, just tell me.

10 A. I don't know.

11 Q. Who selected the samples for research
12 purposes?

13 A. I don't know that. The research people did.

14 Q. Who would be responsible for sending the
15 samples from Monsanto to the various testing
16 facilities?

17 MR. BAUER: You're talking about
18 toxicological testing?

19 MR. KIM: Yes. The tests we've
20 discussed: Drinker, Younger, Scientific,
21 Barnard Free Scan, Industrial Bio-Test.

22 A. I would call the Anniston plant and say,
23 "Send me" -- "send this particular
24 laboratory X-amount of your product." I
25 would not call the research department.

- 1 Q. (By Mr. Kim) They would spend -- send you a
2 small sample that you could send on to the
3 testing facilities?
- 4 A. They would either send it directly to Drinker
5 or they would send me a quart of the stuff
6 and I'd send it on. I don't know how it
7 went.
- 8 Q. Was there any control procedure which would
9 identify whether it was a commercial grade
10 PCB or a PCB that had been somewhat purified
11 for research purposes?
- 12 A. Well, I know it was run-of-the-mill
13 production grade because that's what I told
14 them to send. I didn't talk to the research
15 people to send it. I talked to the
16 production people to send it.
- 17 Q. Did you ever verify that it was sent, the --
- 18 A. Well, they got it.
- 19 Q. -- the commercial grade?
- 20 A. Beg pardon?
- 21 Q. Did you ever yourself verify what grade of
22 PCB was actually sent to the testing
23 facility?
- 24 A. No, sir, I did not. And I --
- 25 Q. Do you know if anyone ever did?

1 A. Beg pardon?

2 Q. Do you know if anyone at Monsanto did?

3 A. I'm sure the man that sent it knew it.

4 Q. Was there --

5 A. Verified it.

6 Q. Excuse me, Doctor. Was there ever a record
7 kept at Monsanto Chemical Company of the
8 particular grade of polychlorinated biphenyl
9 sent to the research laboratories?

10 MR. BAUER: Objection. Compound.

11 A. Now, we're back on the research. We're not
12 back on the -- what are we talking about?

13 Whose research laboratories? The
14 toxicological researchers -- research
15 laboratories or Monsanto research
16 laboratories?

17 Q. (By Mr. Kim) Well, as I understand, Monsanto
18 didn't have any research laboratories until
19 sometime after 1974.

20 A. Yes. But we're talking all along here about
21 research. We've got other kinds of research
22 besides toxicological research.

23 Q. Fair enough. I'm talking in particular about
24 the samples sent to the various contractors
25 that you hired to do the studies for you,

1 such as the Younger Brothers, the Scientific
2 Laboratories, Industrial Bio-Test, Drinker,
3 Barnard Free Scan and Cancer Hospital. Would
4 there have been a record kept as to the grade
5 or purity of the PCB fluid sent to these
6 facilities?

7 MR. BAUER: Object to the form.

8 A. The person who sent the material from our
9 manufacturing installation would have a
10 record of what particular lot number it was.
11 What was done as far as the specifications on
12 that particular lot number, I don't know.
13 But we certainly had specifications on all
14 our production runs, and we picked this out
15 of the middle of a production run. So we had
16 the specification. Where that record was
17 kept, I don't know.

18 Q. (By Mr. Kim) Do you know --

19 A. I didn't have it.

20 Q. -- if a record was kept?

21 A. What?

22 Q. Do you know if a record was kept or if they
23 would just pull it and send it?

24 A. Well, if they're pulling it out of a
25 particular run, they had a record on the

1 run. They obviously had a record on what
2 they pulled out of it.

3 Q. Do you know who would have sent the samples
4 to Industrial Bio-Test?

5 A. Somebody at the Anniston plant. I don't know
6 the name.

7 Q. How about --

8 A. The manufacturer's superintendent would be
9 the one.

10 Q. Do you have a recollection of who that was?

11 A. No, I don't.

12 Q. Okay. Do you have a recollection of who
13 would have sent the samples to Dr. Kimbrough?

14 MR. BAUER: Object to the form.

15 A. I don't know if that came out of St. Louis or
16 direct to -- from the plant. I don't -- I
17 don't know the answer to that.

18 Q. (By Mr. Kim) We've talked about various
19 people; but Monsanto did send some PCB fluids
20 to Dr. Kimbrough, as well?

21 A. Oh, yes.

22 Q. Who would have known about the existence of
23 the purified PCBs?

24 MR. BAUER: Object to the -- object
25 to the form. All he said was there might

1 have been some efforts in the research
2 department.

3 Q. (By Mr. Kim) Well, let's back up, then.

4 Were there some forms of purified
5 PCBs for research purposes while you were the
6 medical director of Monsanto?

7 A. There may have been. I did not see them.

8 Q. Do you know if they had been done who would
9 have prepared them?

10 MR. BAUER: Object to the form.

11 Q. (By Mr. Kim) What department?

12 A. Presumably the research department of the
13 organic division of the Monsanto Company.

14 Q. Was Aroclor 1016 ever purified?

15 A. I don't know. And I don't know what you mean
16 by "purified."

17 Q. You don't understand the mechanism that
18 Monsanto might have employed if it purified
19 its PCBs for research purposes?

20 MR. BAUER: Objection. Vague as to
21 what you mean by "purified."

22 A. You are jumping back and forth between a
23 research product and 1016. 1016 was a sales
24 item late in the -- in the Seventies.

25 Q. (By Mr. Kim) Was Aroclor 1016 ever altered

1 in terms --

2 A. Ever which?

3 Q. Altered in terms of its commercial grade?

4 A. Altered by whom and altered in what way?

5 Q. By Monsanto chemically.

6 A. In its commercial -- well, I think they were
7 always striving to improve it.

8 Q. What department would be responsible for that
9 effort?

10 A. Still the manufacturing department of organic
11 division.

12 Q. You told me yesterday that it was your
13 opinion that you learned about the existence
14 of polychlorinated dibenzofurans for the
15 first time in the late Sixties or early
16 Seventies.

17 A. Certainly, yes.

18 Q. Do you know if Monsanto as a company had any
19 prior knowledge of the existence of furans as
20 a contaminant in its PCB products?

21 A. Prior to when?

22 Q. To 1968.

23 A. To my knowledge --

24 Q. Late Sixties, Seventies.

25 A. -- I never knew that they did.

1 Q. We can agree that furans are more toxic than
2 PCBs?

3 A. Yes. No question about it.

4 Q. I think we used salt as an example
5 yesterday. If we put salt at one end of the
6 spectrum and furans at the other end of the
7 spectrum, PCBs would fall somewhere in
8 between?

9 MR. BAUER: Object to the form.
10 Vague as to whether you mean acute basis,
11 chronic basis, what you're talking about.

12 A. Well, certainly salt is a household
13 condiment. Furans and PCBs are not.

14 Q. (By Mr. Kim) Well, you can --

15 A. But they are -- I would say that PCBs are
16 closer to furans than they are to salt. I
17 don't know how much closer.

18 Q. Sure. Let's continue to use these three
19 examples.

20 If you boil salt in the preparation
21 of foods, the vapors from that are not toxic
22 in an acute --

23 A. That's correct.

24 Q. Do you have the same opinion if PCBs are
25 brought to a boiling temperature?

1 A. No.

2 MR. BAUER: Object to the form.

3 What's the dose?

4 A. If PCBs are brought to a boiling temperature
5 and you inhale the vapors, that can -- could
6 be harmful because the vapors can be toxic --

7 Q. (By Mr. Kim) A table --

8 A. -- at elevated temperatures.

9 Q. If you -- if you bring a tablespoon of PCBs
10 to boiling temperature, the vapors could be
11 harmful?

12 A. No, they couldn't. That's not enough to -- a
13 tablespoonful? No, I don't think so.

14 Q. How about a tablespoon of furans?

15 A. Yes, I think so.

16 Q. If someone told you that PCBs and table salt
17 were equivalent in terms of toxicity in human
18 health effects, would you dispute that
19 statement?

20 MR. BAUER: Object -- object --

21 A. I'd laugh at them.

22 MR. BAUER: Object to the form.

23 Are we talking about acute toxicity, LD₅₀; or
24 are we talking about chronic toxicity?

25 Q. (By Mr. Kim) You can answer.

1 A. What was the question again?

2 Q. If someone represented to you that PCBs and
3 table salt posed the same toxicity and health
4 concerns, how would you respond?

5 MR. BAUER: Same objections.

6 A. I would say that PCBs -- I would have more
7 concern over a person being exposed to PCBs
8 than exposed to salt. I would also say that
9 if they were exposed to a sufficient amount
10 of salt, the salt could be harmful.

11 Q. (By Mr. Kim) If -- would you make such a
12 statement based upon the knowledge that you
13 have acquired over the years concerning PCBs?

14 A. What's the statement?

15 Q. That PCBs and table salt are of equal toxic
16 values.

17 A. No, I would not. And I don't think anybody
18 from Monsanto ever did, either.

19 Q. If someone from Monsanto did, it would be a
20 gross misrepresentation, wouldn't it?

21 MR. BAUER: Object. Objection.

22 It's argumentative. And you're talking about
23 an acute basis or chronic basis? You're not
24 providing him with -- well, strike that.

25 Q. (By Mr. Kim) You can answer my question.

1 A. If someone made a statement saying that PCBs
2 and salt were equivalent in toxicity, the
3 statement made by somebody from Monsanto?

4 Q. That would be a misrepresentation?

5 A. It wouldn't be a misrepresentation. It would
6 be an error on his part -- his or her part.

7 Q. It would be false?

8 A. Beg pardon?

9 Q. They would be wrong?

10 A. Yes. Wrong in the sense it would not be
11 scientifically correct or medically correct.

12 Q. And if they had the same type of knowledge
13 that you had had as the medical director of
14 Monsanto Chemical Company from 1946 to 1974
15 and made that statement, it would be a lie?

16 MR. BAUER: Object to the form.

17 It's argumentative. And the statement is now
18 is -- is --

19 A. I can't answer that.

20 MR. BAUER: -- concerns?

21 A. If somebody knew as much as I did -- why
22 don't you say if I made that statement, it
23 would be a -- it would be wrong, it would be
24 lying. I wouldn't do it in the first place.

25 Q. (By Mr. Kim) But if you did, it would be a

1 lie?

2 MR. BAUER: Object to the form.

3 A. It certainly -- I don't like the term "a lie"
4 because I don't know in what circumstances
5 somebody may make that statement. If
6 somebody would say, "Does PCBs have
7 toxicity? Does salt have toxicity," even
8 with all my knowledge from being a medical
9 director from 1937 to 1974 --

10 Q. (By Mr. Kim) How about -- I'm sorry,
11 Doctor.

12 A. -- I would say they both have toxicities.
13 But we do not equate the toxicity of salt. I
14 would never equate the toxicity of salt with
15 the toxicity of PCBs.

16 Q. You certainly never would have done so in a
17 press release?

18 A. I don't know what I would have done in a
19 press release, but I would -- I don't believe
20 I would, no. I know I wouldn't.

21 Q. Because it would be a misrepresentation?

22 MR. BAUER: Objection.

23 Argumentative.

24 Q. (By Mr. Kim) Based upon your knowledge.

25 A. I don't --

1 MR. KIM: Put the camera on Scott
2 for a while, too.

3 A. I don't know exactly what you mean by "a
4 misrepresentation." Does that mean that you
5 think I'm trying to deceive somebody? Maybe
6 I had temporary insanity at that time, why I
7 would have done it. I don't know what the
8 reason would -- might be, but I cannot
9 conceive of a reason of me doing it. And I
10 also cannot see myself misrepresenting
11 anything.

12 Q. If a corporate --

13 A. So I --

14 Q. I'm sorry.

15 A. So I find it hard to answer your question.

16 Q. I understand. Assume with me that Monsanto
17 makes this representation that PCBs are no
18 more harmful than a tablespoon of table
19 salt.

20 MR. BAUER: No more harmful on any
21 basis?

22 MR. KIM: Okay.

23 MR. BAUER: Is that --

24 Q. (By Mr. Kim) Do you understand what I'm
25 saying, Doctor?

1 A. Well, there are a lot of parameters that you
2 have not explained.

3 Q. Any basis. Acute through vaporization
4 through heating --

5 A. Through injection --

6 Q. -- and through chronic exposure.

7 A. Through injection into your vein?

8 Q. Sure. Injection into your vein.

9 A. Concentrated salt solution?

10 Q. Table salt.

11 A. Yeah. If they did what, now?

12 Q. Are you -- let's start with injections. If
13 you inject salt and you inject PCBs, which is
14 more toxic?

15 A. PCBs.

16 Q. Okay.

17 A. In equal amounts.

18 Q. In equal amounts. Is there any situation
19 that you have just described in which you
20 would say table salt in equal amounts is more
21 toxic than PCBs?

22 A. No, sir.

23

24 (Discussion off the record.)

25

1 THE VIDEOGRAPHER: We're going off
2 the record. It's 55 minutes after 10:00.
3 This is the end of Tape No. 6.

4
5 (A recess was taken.)

6
7 THE VIDEOGRAPHER: It's 11 minutes
8 after 11:00 o'clock. This is the beginning
9 of Tape No. 7. We're back on the record.
10 Q. (By Mr. Kim) Doctor, when we last left, we
11 were talking about comparisons between PCBs
12 and table salt.
13 A. Yes, sir.
14 Q. If I were to say to you that PCBs are
15 considered only mildly toxic on an acute
16 basis when ingested by humans, about on the
17 same order as common table salt, how would --
18 what would your reaction to that statement
19 be?

20 MR. BAUER: Object to the form.
21 A. It all depends on the -- on the rest of your
22 statement. It all depends on if you have any
23 qualifying -- qualifications in that.
24 Q. (By Mr. Kim) What if I qualified it by
25 saying that in my opinion, PCBs are not human

1 cancer causing agents and they are not deadly
2 toxins and then I made that statement?

3 MR. BAUER: Object to the form.

4 A. That's still -- I'll have to break that
5 down. Certainly, they are not human
6 carcinogens. They have not been proven to be
7 human carcinogens. I don't know -- I don't
8 know what whoever -- if you were making that
9 statement, what you were -- how you were
10 qualifying "deadly." If you were saying to
11 use in the gas chambers, it certainly isn't
12 deadly in that sense. I think you'd have to
13 qualify the "deadly."

14 Q. (By Mr. Kim) How about if we qualify the
15 exposure to that mode of ingestion in humans?

16 A. From an acute point of view? Or are we
17 comparing this now from an acute point of
18 view what is the LD₅₀ of salt and what is the
19 LD₅₀ of PCBs? Is that what we're comparing?

20 Q. Well, let's start there. Yes.

21 A. Yes. The LD₅₀ of salt is approximately four
22 point zero. The LD₅₀ of PCBs is
23 approximately three point one to three point
24 five. So from that particular point of view,
25 it is somewhat more toxic than salt. The

1 lower the number, obviously, the more toxic
2 it is.

3 Q. What if I made that representation, that PCBs
4 are considered only mildly toxic on an acute
5 basis when ingested by humans, about on the
6 same order as common table salt, without any
7 qualifications?

8 MR. BAUER: Object to the form.

9 A. You are saying in the first place, PCBs when
10 ingested by humans on an acute basis shows
11 the same --

12 MR. BAUER: Well, let him re --

13 THE WITNESS: Oh.

14 MR. BAUER: Let him restate the
15 question.

16 THE WITNESS: Well, I was trying
17 to.

18 Q. (By Mr. Kim) My statement is -- that I'm
19 asking you about is if the statement is made
20 without any qualifications that PCBs are
21 considered only mildly toxic on an acute
22 basis when ingested by humans, about on the
23 same order as common table salt, do you
24 believe that that is a full and accurate
25 description without any other qualifiers?

1 MR. BAUER: Object to the form.
2 Specifically vague as to what you mean by "on
3 the same order."

4 A. The last part of your sentence was, is that a
5 full -- without any qualifications, what was
6 the add -- I mean, I get confused when I get
7 in the byplay.

8 Would you repeat it?

9 MR. KIM: Yeah, would you? I'd
10 like to -- then you can have your objection.

11 MR. BAUER: Same objections.

12

13 (The pending question was read
14 by the court reporter.)

15

16 A. Well, it depends on what is in the rest of
17 the statement, if that is a statement, if
18 that's all there is. That's it? You're not
19 picking this out of a report or anything
20 else?

21 Q. (By Mr. Kim) If that's all there is.

22 A. Do I believe --

23 Q. -- that that is a fair and accurate
24 representation?

25 A. It's a fair and accurate representation of

1 the acute lethal dose. That's about all I
2 can say about it.

3 Q. As the medical director of Monsanto between
4 1946 and 1974, would you have made such a
5 representation nakedly to the public?

6 MR. BAUER: Objection. Calls for
7 speculation.

8 A. If I were asked to make such a represent --
9 statement, I would certainly have included
10 some more information.

11 Q. (By Mr. Kim) For instance, you can ingest
12 table salt over a longer period of time than
13 you could PCBs?

14 A. Over -- yes. But we're not talking about the
15 statement. We're talking about acute
16 episodes right now.

17 Q. Right. Absolutely. But those -- that would
18 be one thing that you would consider?

19 A. Yes.

20 Q. Would be the length of exposure?

21 A. Yes.

22 Q. The rate of exposure?

23 A. If I were making a statement about the
24 general toxicity of PCBs. But for some
25 reason, I was supposed to make a statement

1 about the acute toxicity of the material.
2 That's -- that was the statement you asked me
3 if I would make. And I said I would have to
4 make not qualifications, but there would be
5 other material that I would have added to
6 that statement.

7 Q. Doctor, with respect to your responsibilities
8 as the medical director of Monsanto, did you
9 review press releases that may have been sent
10 out by Monsanto containing the toxicological
11 effects of PCBs during your time period?

12 MR. BAUER: Objection. Assumes
13 that -- well, assumes facts not in evidence.

14 A. Frankly, I don't remember many press releases
15 being sent out while I was at Monsanto
16 regarding toxicological information.

17 Q. (By Mr. Kim) How about --

18 A. If you mean by a press release to --

19 Q. Like newspapers.

20 A. -- like, Associated Press?

21 Q. Yeah. How about notes to editors of
22 newspapers?

23 MR. BAUER: Is that a question?

24 A. By the company or by individuals of the
25 company? I mean, somebody --

1 Q. (By Mr. Kim) Let's start with the company
2 first.

3 A. I'm sure we're not --

4 MR. BAUER: Objection. Vague. I
5 don't know what the question is.

6 A. Did I review them?

7 Q. (By Mr. Kim) (Nods head.)

8 A. No, I didn't review them; but I would -- I
9 would -- it would be my impression that the
10 company would check with me if they were
11 talking about toxicological information.

12 Q. And if an individual in your department sent
13 such a letter to an editor, you would have
14 reviewed that, as well?

15 A. Yes.

16 Q. Or someone in your department would?

17 MR. BAUER: Object to the form.
18 Calls for speculation.

19 MR. KIM: Here you go, Scott.

20 THE WITNESS: Well, do I answer it?

21 MR. KIM: You don't need to throw
22 this at me.

23 THE WITNESS: Do I answer the
24 speculation?

25 MR. BAUER: John, I move to strike

1 the characterization --

2 MR. KIM: There's no -- there's no
3 speculative objection here now.

4 Q. (By Mr. Kim) My question, Dr. Kelly, is
5 simply if during the time period that you
6 were medical director, if an individual in
7 your department were to write a letter to
8 news editors concerning the health hazards
9 and toxicological properties of PCBs, would
10 that have come under your review?

11 MR. BAUER: Object to the form.
12 Calls for speculation.

13 A. It might, and it might not.

14 Q. (By Mr. Kim) In what instances would it not?

15 A. They could have written it, and I'd be in
16 Europe.

17 Q. It would still come under your direction,
18 though, whether you were in Europe, whether
19 you were in Timbuktu. As the director of the
20 medical department, it would have been your
21 responsibility ultimately?

22 MR. BAUER: Object to the form.
23 Calls for speculation.

24 A. Unless I were -- unless we had talked over
25 what the gist of the letter was going to be.

1 Q. (By Mr. Kim) We talked about earlier in
2 comparing the table salt to PCBs and furans.
3 My question now to you would be if you can
4 quantify in terms of magnitude, based upon
5 your education and experience, how much more
6 toxic furans are than PCBs.

7 A. I think the commonly accepted ratio is that
8 furans are probably 500 to 1,000 times more
9 toxic than PCBs. Some furans and some PCBs.
10 I mean, there are probably 125 different
11 furans or 100 different furans. There's
12 some -- there's a wide divergence of the
13 toxicity of some of them.

14 Q. I believe yesterday we talked about one furan
15 which was named chlorinated diphenylene
16 oxide?

17 A. Yes.

18 Q. Do you have an opinion as on an order of
19 magnitude how much more toxic chlorinated
20 diphenylene oxide is than polychlorinated
21 biphenyls?

22 A. Well, it depends on --

23 MR. BAUER: Go ahead, Dr. Kelly.

24 A. It depends on where the chlorines are. It
25 would vary depending on the structural

1 formulation of the chlorines.

2 Q. (By Mr. Kim) Can we agree, at least for
3 general purposes, that it would be more toxic
4 than PCBs?

5 A. Generally I would say "yes."

6 Q. Can we agree that if -- if a manufacturer
7 knew of the presence of furans as a
8 contaminant in its PCB product, it should
9 also warn about the presence of furans on the
10 labels and product literature?

11 A. No.

12 Q. So if Monsanto knew that its PCB dielectric
13 fluids may be contaminated with trace amounts
14 of furans in 1956, it is your testimony that
15 it would not be necessary to warn about the
16 presence of such on the warnings and labels?

17 A. Not if you knew the toxicity of the entire
18 product. We knew the entire toxicity of the
19 product. Our safe handling data and
20 cautionary statements reflected the toxicity
21 of the PCBs with whatever furans were in
22 there, if there were any at all in there. In
23 1956 we had no knowledge that there were
24 any. We couldn't look for them. We couldn't
25 look that low.

1 Q. Could you measure these furans to 1 part per
2 million?

3 A. No, sir.

4 Q. When did Mr. Elmer Wheeler come to Monsanto,
5 if you recall?

6 A. I think '47. Around that. '47, '48.

7 Q. Did you hire him?

8 A. Yes.

9 Q. And he worked under your direction --

10 A. Yes.

11 Q. -- in the medical department?

12 A. Yes, he did.

13 Q. Doctor, do you recall a Dr. Louis Spolyar?

14 A. Spolyar?

15 Q. Spolyar.

16 A. Yes.

17 Q. Of industrial -- at Indiana?

18 A. Yes.

19 MR. KIM: These are different.

20 MS. WELDON: 17 is what you want.

21 Sorry.

22 Q. (By Mr. Kim) Let me show you what we'll mark
23 as your Deposition Exhibit No. 42.

24

25 (An instrument was marked Kelly

1 Exhibit No. 42 for identification.)

2

3 MR. BAUER: May I see it first,
4 please?

5 MR. KIM: Sure.

6 A. Yes, sir.

7 Q. (By Mr. Kim) That is at least your name and
8 title at the bottom of the page?

9 A. Yes, this is my letter.

10 Q. You wrote it?

11 A. Yes. I recognize by the secretary's
12 initials, Rose Guio. She was my secretary at
13 that time.

14 Q. Is this a copy?

15 A. Beg pardon?

16 Q. Is this a copy of that letter, a file copy?

17 A. I don't know whether -- where it came from.
18 I mean, this appears to be the letter I
19 wrote.

20 Q. My question is: Would it have had Monsanto
21 letterhead when you sent it?

22 A. Oh, yes, when it went out.

23 Q. Yes.

24 A. Certainly it would be on Monsanto stationery.

25 Q. And I'm just curious as to the absence of any

1 designation of Monsanto Chemical Company in
2 the letterhead. Was there a practice where
3 the copies would not have such designation?

4 MR. BAUER: In the carbon copy
5 days, we're talking?

6 A. Yes. Carbon copy days, when we had carbon
7 copies.

8 Q. (By Mr. Kim) But there is no doubt in your
9 mind that this went out on Monsanto --

10 A. Oh, no question about it.

11 Q. -- letterhead?

12 A. I said it. It went out on Monsanto
13 stationery.

14 Q. Do you have a recollection of why you
15 responded -- or sent this letter to
16 Dr. Spolyar in February of 1950?

17 A. Yes.

18 Q. And what is that?

19 A. Somebody must have asked me to send him
20 information.

21 Q. You did not voluntarily just send him this
22 letter? It was in response to a request?

23 A. I don't believe I voluntarily, out of the
24 blue, sent him this letter, no.

25 Q. At that point in time, as noted by the last

1 sentence of the second paragraph, you
2 suspected the possibility existed that
3 Aroclor fumes might cause liver damage; is
4 that correct?

5 A. Not cause liver damage?

6 Q. Might have caused liver damage.

7 A. Oh, "might have." Yes, certainly.

8 Q. In what concentrations?

9 A. I don't think that was documented at that
10 time when we didn't know what concentration
11 it was, but at elevated temperatures.

12 Q. Over how long a period of time?

13 A. Depends on how elevated the concentration
14 was.

15 Q. You would believe that -- you would agree
16 with me that those are two considerations
17 that are important in determining the
18 toxicity of exposure to PCBs?

19 A. Or the hazard of it.

20 Q. Or the hazard of it.

21 A. Right.

22 Q. Did you in subsequent letters follow up with
23 Dr. Spolyar as you gained new information
24 about length of exposure and rate of
25 exposure?

- 1 A. He wrote it up in a journal, and I was never
2 able to -- I saw the reprint. It was, like,
3 in the Indiana State Medical Association
4 Journal; and I saw it. But he did not have
5 documented -- documentation as to how
6 elevated the concentration was. But I don't
7 have -- I don't ever know what happened to
8 that memorandum, and I was -- I mean, that
9 reprint. And I was never able to find it in
10 the Index Medicus. But it was -- I thought
11 it was a few days, but that's a supposition.
- 12 Q. Okay. In this case, did you have any
13 question as to whether the Brazil plant in
14 Indiana, which is what he's referencing to,
15 was actually using Aroclor products?
- 16 A. No, I don't think so. I thought it was; but
17 it was as a heat exchange, not as a -- we've
18 been talking about transformer fluids all
19 along.
- 20 Q. Sure.
- 21 A. This is no relationship. It's Pyranol rather
22 than Iner -- it's Thermanol, rather, than
23 Inerteen or Pyranol. But it's still a PCB.
- 24 Q. That was used at elevated temperatures?
- 25 A. Yes.

1 Q. Dr. Spolyar responded to you, did he not?

2 A. Yes. I don't have the -- I don't know if I
3 remember the correspondence. I may have seen
4 it.

5 Q. Let me show it to you.

6 A. I'm sure I've seen it, but -- but I don't
7 recall --

8 Q. Can you identify --

9 A. -- when I've seen it last.

10 Q. Can you identify what we'll mark as your
11 Deposition Exhibit No. 43?

12

13 (An instrument was marked Kelly
14 Exhibit No. 43 for identification.)

15

16 Q. (By Mr. Kim) Do you recall receiving that
17 letter?

18 A. Yes, I do.

19 Q. Can you identify it?

20 A. It's a letter from Dr. Louis Spolyar,
21 director of department of industrial hygiene
22 of the State of Indiana, sent to me at
23 Monsanto Company on February the 28th, 1950.

24 Q. In 1950 Dr. Spolyar indicated to you that
25 with respect to the Aroclor used at the

1 Brazil plant, "The chief complaints were
2 irritation of the upper respiratory tract
3 plus possible liver damage," did he not?

4 A. Yes.

5 Q. Did Monsanto reformulate its warnings and
6 labels to address such issues?

7 A. If they had followed the warnings that we
8 had -- cautionary statements we had on the
9 label, they would not have been having it.
10 Or in our bulletins we certainly warned about
11 leaks and hydraulic fluids, fluid
12 applications. Here they had most pipes were
13 leaking. We did not put on, "Don't use in
14 pipes that are leaking," if that's what you
15 mean.

16 Q. Monsanto did not indicate that, "If you fail
17 to follow our instructions, you may have
18 irritation of the upper respiratory tract
19 plus possible liver damage"?

20 MR. BAUER: Objection. Vague. Are
21 you talking about -- well, in what format are
22 you talking about?

23 MR. KIM: We've been talking
24 about --

25 A. On the labels we did not have that. We had

1 information on our sales bulletins and our
2 development bulletins about the possibilities
3 of problems that result from excessive
4 exposure.

5 Q. (By Mr. Kim) Doctor, we talked about a
6 series of tests that you ordered for Monsanto
7 while you were the medical director,
8 including those from Dr. Drinker?

9 A. Yes.

10 Q. And that was an acute test?

11 A. No. Drinker ran four months or something.

12 Q. It was not a chronic or lifetime test, was
13 it?

14 A. It was according to the lights of 1936. It
15 was a chronic test.

16 Q. Was it a lifetime test?

17 A. No, it was not. They were not doing -- this
18 is probably as long a test on industrial
19 chemicals as was done by anybody in 1936.

20 Q. The next series of tests that you ordered
21 were by whom?

22 A. Series? We --

23 Q. The next test you ordered.

24 A. Well, we did some acute work at Scientific
25 Associates. We did chronic inhalation work

1 at the Kettering Laboratory by Dr. Treon.

2 Q. When you say "chronic...by Dr. Treon," what
3 is your definition of what a "chronic test"
4 is during the time period that Dr. Treon did
5 his testing?

6 A. I would say that five months would be
7 considered chronic.

8 Q. That is not --

9 A. That's what he did.

10 Q. That is not a lifetime test?

11 A. No, it isn't.

12 Q. How about the Younger Laboratories?

13 A. They were all acute.

14 Q. What other tests did you order? Industrial
15 Bio-Test?

16 A. Yes.

17 Q. And the first set that you ordered from them
18 were acute tests?

19 MR. BAUER: Object to the form.

20 A. The first set -- I don't know the time
21 frame. The first sets were either 20-day
22 dermal application or three-generation rat
23 studies. But the whole package included
24 two-year testing in dogs and rats.

25 Q. (By Mr. Kim) Two-year testing in dogs and

1 rats during the time period that Industrial
2 Bio-Test did those tests would be considered
3 lifetime tests?

4 MR. BAUER: Object to the --

5 A. Well, no, not for dogs.

6 Q. (By Mr. Kim) How about for rats?

7 A. Pretty close to it.

8 Q. Were any monkey tests done?

9 A. Not before 1974.

10 Q. Did Monsanto ever, during the time period
11 that you were medical director, do any
12 primate testing on its own?

13 A. No.

14 Q. Afterwards? If you know.

15 A. I have not seen the reports, but anecdotally
16 I had heard that they had done some. I don't
17 know the details.

18 Q. Do you know if Monsanto ever published those
19 reports?

20 A. I don't know. I haven't seen any reports.

21 Q. How did you -- what was the anecdotal method
22 in which you heard of them?

23 A. Gosh, I don't remember.

24 Q. Did Monsanto ever publish any occupational
25 studies with respect to PCB exposure of

- 1 its -- to its workers?
- 2 A. You mean negative -- our negative
- 3 information?
- 4 Q. Sure.
- 5 A. No.
- 6 Q. Or positive information.
- 7 A. We didn't have positive information.
- 8 Q. Did a lady named Judith Zack work for
- 9 Monsanto Company during the time period that
- 10 you were medical director?
- 11 A. Yes. No. She did not. She came after I was
- 12 there.
- 13 Q. I believe Ms. Zack and -- was it Dr. Zack?
- 14 Was she a doctor?
- 15 A. Mr. -- Mrs. -- Miss -- Ms. You got it
- 16 right.
- 17 Q. Ms. Zack and Musch?
- 18 A. His name was on the report that I saw, but I
- 19 don't know where -- whether he worked for
- 20 Monsanto. I don't know anything about him,
- 21 Musch.
- 22 Q. You didn't hire either one of them?
- 23 A. No.
- 24 Q. They had not begun the work they ultimately
- 25 did for Monsanto during the time period that

1 you were medical director?

2 A. They did not.

3 MR. BAUER: Objection. Objection.

4 Assumes facts not in evidence.

5 A. Beg pardon?

6 Q. (By Mr. Kim) Are you --

7 A. Zack did not work for Monsanto up till --
8 during the time I was medical director. I
9 don't know anything about Musch, whether he
10 ever did work for Monsanto; but he never did
11 work up till I retired from Monsanto.

12 Q. You would agree that Zack and Musch did a
13 study for Monsanto that was not published --
14 well, are you aware of a study they performed
15 on Monsanto workers?

16 A. Yes. I've seen reports of it.

17 Q. Have you reviewed it in preparation for
18 testimony in other litigation?

19 A. Yes.

20 Q. Have you reviewed it for preparation of your
21 testimony in this particular case?

22 A. No, I haven't. But I can review it pretty
23 fast if you want to show it to me.

24 Q. I'm going to give it to you --

25 A. Fine.

1 Q. -- to review this evening so we can talk
2 about it a little bit tomorrow, if that's
3 okay --

4 A. It's okay with me.

5 Q. -- with your counsel.

6 MR. BAUER: Well, you can certainly
7 give it to him. How much he's -- homework
8 he's going to do over the night is --

9 Q. (By Mr. Kim) Well, if you want. I don't --
10 I don't care if you do it or not. I mean,
11 whatever you want to do, Doctor.

12 A. Give it to me, and I'll see it.

13 Q. Okay. How often were meetings held involving
14 you at Monsanto concerning the label and
15 warnings that would be placed upon the drums
16 or products containing PCBs?

17 A. How often?

18 Q. (Nods head.)

19 A. Gosh, I don't remember. They weren't every
20 week, I'll say that. But whenever new
21 information came up or whether they were
22 changing the type of label they were doing,
23 whether they were going to put -- use
24 something on a tank, in a tank car, I cannot
25 give you how many times it was.

1 Q. Can you tell me who Jack Garrett was?

2 A. Yes. He was an industrial hygienist that was
3 engaged by the medical department sometime, I
4 think, around the Fifties. In the Fifties.

5 Q. Would he participate in those meetings
6 concerning warnings and labels?

7 A. No, sir, not that I recall specifically. I
8 don't think he did.

9 Q. Did the acute testing done by Younger
10 Laboratories indicate possible exposure to
11 the liver?

12 A. Did the acute testing --

13 Q. -- implicate the liver?

14 A. Well, there obviously -- there were findings
15 in the liver. Whether these findings were
16 due to the process that caused death -- the
17 congestion, et cetera, in the liver -- I do
18 not believe he did microscopic studies of the
19 liver.

20 Q. And Monsanto ordered no further testing, as I
21 understand, as to the mechanism of death?

22 A. Well, the mechanism of death was that they
23 put a sufficient amount on the skin or
24 sufficient amount in their stomach to kill
25 them.

1 Q. I understand that.

2 A. That's what we wanted to find out.

3 Q. I understand that, Doctor. What I -- what I
4 was talking about was the chemical reaction
5 or mechanism that takes place in the body
6 that ultimately causes the death.

7 A. No, we did not.

8 Q. The same general results from Scientific
9 Associates?

10 A. Yes.

11 Q. Were Scientific Associates and the Younger
12 Laboratories related in any manner?

13 A. The people were related at first. Younger
14 worked for Scientific Associates and then
15 they split up and he started his own
16 laboratory.

17 Q. And you chose to use these two laboratories,
18 did you not?

19 A. Yes.

20 Q. Did you help in the designing of the protocol
21 of the studies performed by either of these
22 two labs?

23 A. Well, we told them what we wanted. The
24 protocols were pretty standard for acute
25 testing. We said we wanted to get an LD₅₀.

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1 Q. Did you ever tell them what result you
2 wanted?

3 A. Tell them what result? "Give me your
4 findings," yes. But we didn't tell them to
5 fake the results. Is that what you mean?

6 Q. (Nods head.)

7 A. No, we did not.

8 Q. Did anyone under your direction?

9 A. No, sir, they did not.

10 Q. Did -- why did you choose Younger Associates
11 and -- or Scientific Associates and Younger
12 Laboratories?

13 A. They were in St. Louis. It was easy to get
14 specimens down to them. They were adequate
15 enough for acute testing, and that's what we
16 used them for.

17 Q. What type of analysis did you use in choosing
18 these two laboratories?

19 MR. BAUER: Object to the form.

20 A. (A) Can they do a good job? (B) Are they
21 convenient? (C) --

22 Q. (By Mr. Kim) Cost?

23 A. Cost is always a factor in anything.

24 Q. Did you choose -- what's the name of it? --
25 Industrial Bio-Test?

1 A. Yes, I did.

2 Q. Did you help in the designing of the protocol
3 with respect to those tests?

4 MR. BAUER: Objection. Compound.
5 Which year are we talking about? Which
6 tests? Or are you talking about all the
7 tests?

8 MR. KIM: All the tests.

9 MR. BAUER: Objection. Compound.

10 A. I reviewed the protocol. These -- Industrial
11 Bio-Test had at least three people that were
12 toxicologists, and I relied on their
13 expertise. I was not a toxicologist. But I
14 knew what they were going to do, I told them
15 the types of information we needed, and they
16 provided a protocol to give us that
17 information.

18 Q. (By Mr. Kim) Up until the time period that
19 you ordered the Industrial Bio-Test studies,
20 the chronic or lifetime studies by Industrial
21 Bio-Test, was there any communications or
22 considerations within the medical department
23 while you were employed by Monsanto Chemical
24 Company as to what the possible health and
25 toxic effects of PCBs would be upon chronic

1 exposure?

2 MR. BAUER: Object to the form.

3 A. Was there any communication inside the
4 Monsanto Company?

5 Q. (By Mr. Kim) Yes.

6 A. Is that what you said?

7 Q. Yes, sir.

8 A. The only chronic exposure we considered
9 before we ordered the test was the
10 information -- the material could possibly be
11 in the food supply, in the food chain. And
12 that was around the late Sixties, '67, '68.
13 We did have communication as to whether or
14 not there could be chronic exposure to small
15 leaks, et cetera, in heat transfer and in
16 hydraulic fluid applications. That's when we
17 ran the Treon chronic inhalation
18 experiments. They were not lifetime; but
19 they were five months, 150 days, which was
20 certainly chronic for an inhalation exposure.

21 Q. When did Monsanto Chemical Company ever
22 determine how PCBs were excreted or passed
23 through the human body?

24 A. I can't answer that, when they did. I knew
25 they did it --

1 Q. Did they do it --

2 A. -- at the time of the Bio-Test experiments.

3 Q. Which Bio-Test experiment -- or what
4 information existed that told you how PCBs
5 passed through the human body?

6 A. Well, the radioactivity tests were carried
7 out; and I don't know that I received a
8 report on that or whether that report, if it
9 ever came in, came in after -- after my
10 departure from the company.

11 Q. Do you have a recollection if that report
12 that you read indicated how long it took for
13 the PCBs to pass through the human body?

14 A. I didn't say I read a report.

15 Q. Reviewed a report?

16 A. I didn't -- I didn't see the report. I said
17 I do not know when that report came, if it
18 came at all. I do know we -- they had
19 deep-freezes full of specimens that they were
20 waiting to analyze from the radioactivity
21 point of view.

22 Now, what was your question?

23 Q. Okay. My question, Dr. Kelly, is: When did
24 Monsanto Chemical Company determine the
25 mechanism by which PCBs were excreted from

1 the human body?

2 A. I don't know if they ever did.

3 Q. When did Monsanto Chemical Company determine
4 if PCBs were excreted from the human body at
5 all?

6 A. Well, I think they found out that studies
7 carried out by other people, it showed in the
8 literature that there was a falling off of
9 the PCB levels of blood after the cessation
10 of occupational exposure and that there was
11 not a same amount of accumulation in the
12 fat -- in the fat. So those -- Monsanto did
13 not carry out any of their own that I
14 recollect.

15 Q. Do you have a recollection of which studies
16 you referred to that Monsanto would have
17 known about that would have indicated --

18 A. I can't hear you. Would you repeat it?

19 Q. Sure. Excuse me.

20 Do you have a recollection of which
21 studies those were that you just referred to
22 that would indicate a diminution in the blood
23 levels?

24 A. After --

25 MR. BAUER: Object --

1 A. -- removal from --

2 MR. BAUER: Object -- object to the
3 form.

4 Go ahead and answer.

5 A. After removal -- after the person was removed
6 from occupation?

7 Q. (By Mr. Kim) Sure.

8 A. Yes. I think there were studies in some of
9 the transformer or capacitor workers. I
10 don't know the names of the people, but
11 they're in the literature.

12 Q. Do you have a recollection if any of those
13 studies included an analysis of those workers
14 who continued to be exposed to PCBs?

15 A. I don't recall.

16 Q. Do you have any knowledge while you were
17 employed by Monsanto Chemical Company of what
18 the quality control procedure was regarding
19 the manufacturing of PCBs?

20 A. Regarding the details of the quality control,
21 no, I do not.

22 Q. Do you know if there were batches that were
23 sometimes rejected?

24 A. I do not know. I know there were
25 specifications for the material, but I do not

1 know if any of the batches did not meet the
2 specifications.

3 Q. Do you know if there was any variances
4 allowed with respect to the specifications
5 that would have still enabled the product to
6 go out commercially?

7 A. I do not know that.

8 Q. Do you know if any preservatives were added
9 to PCBs destined to be used in electrical
10 equipment?

11 MR. BAUER: Objection. Vague.

12 A. Preservatives?

13 Q. (By Mr. Kim) Any preservatives. Any
14 chemical preservatives.

15 MR. BAUER: Objection. Vague.

16 A. I don't know what you mean by
17 "preservative." To keep it from spoiling or
18 to --

19 Q. (By Mr. Kim) To enhance them.

20 A. A scavenger? A scavenger to --

21 Q. Sure.

22 A. A preservative?

23 Q. We talked about scavengers earlier as -- I'm
24 sorry -- as a part of the PCB dielectric
25 fluid. Do you have an idea of what chemicals

1 or what compounds were used as scavengers?

2 A. No, I don't. They were used -- they were put
3 in -- if they were put in by Monsanto, they
4 were put in on specifications from the major
5 customers, GE or Westinghouse.

6 Q. I think I'm confused now, Doctor. I thought
7 yesterday -- and I may be wrong -- you told
8 me that with respect to Inerteen and --
9 what's GE's?

10 A. Pyranol.

11 Q. -- Pyranol -- with respect to Inerteen and
12 Pyranol, that they were a combination of 70
13 percent PCBs and 30 percent
14 trichlorobenzene.

15 A. Yes, sir.

16 Q. And was that mixture done at the Monsanto
17 plant, or was it done at the Westinghouse and
18 GE plants?

19 MR. BAUER: Objection. Lacks
20 foundation and indefinite as to time.

21 A. For some time -- I do not know how long, and
22 I do not know the time frame -- it was done
23 at Monsanto. Other times it was done
24 someplace else outside of Monsanto. I don't
25 know where it was.

1 Q. (By Mr. Kim) Monsanto certainly knew that
2 its PCB product was going to be used in
3 combination with trichlorobenzene, did it
4 not?

5 A. If it was used in a transformer, yes.

6 Q. That was foreseeable to Monsanto?

7 A. Yes. They knew it.

8 Q. Did Monsanto, during the time period that it
9 mixed the PCBs and trichlorobenzenes, utilize
10 scavengers, as well?

11 A. I don't know.

12 Q. Did Monsanto know -- when did Monsanto learn
13 that Westinghouse or General Electric may
14 have added scavenger chemicals to the
15 mixture?

16 MR. BAUER: Objection. Lacks
17 foundation.

18 A. I don't know.

19 Q. (By Mr. Kim) Do you know if they did?

20 A. I don't know anything about it.

21 Q. We can agree that at some point in time in
22 the 1970's, Monsanto learned that the
23 dielectric fluids containing -- called
24 Inerteen and Pyranol consisted of PCBs
25 manufactured by Monsanto; is that correct?

1 A. Yes.

2 Q. It also consisted of trichlorobenzene mixed
3 with the PCBs?

4 A. Yes.

5 Q. And also contained some scavenger chemicals,
6 as well?

7 A. Yes. I don't know what ones it was. I don't
8 know what Monsanto knew about it. I can't
9 speak for the -- for Monsanto in that point
10 of view. I don't know -- but I knew they
11 knew that other things were in there,
12 obviously. Not obviously, but they did.

13 Q. Monsanto foresaw that companies such as
14 Westinghouse and General Electric might
15 utilize scavengers when they mixed --

16 A. Yes.

17 Q. -- the compounds together?

18 Also during this time period in the
19 1970's, Monsanto learned that the dielectric
20 fluids might contain trace amounts of
21 polychlorinated dibenzofurans.

22 MR. BAUER: Can I hear the question
23 back, please?

24

25 (Discussion off the record.)

1 (The pending question was read
2 by the court reporter.)

3

4 MR. BAUER: Object to the form.

5 A. Well, I think you'll have to be more precise
6 about the years because in 1970 the
7 information that Monsanto had was by Dr. Vos,
8 who checked for dibenzofurans in Monsanto PCB
9 and in Monsanto -- and in French PCB and
10 German PCB and maybe Italian PCB. In other
11 words, two -- two European PCBs. And they
12 found PCB -- they found furans in the
13 European PCBs but not in the Monsanto PCBs.
14 So --

15 Q. (By Mr. Kim) I'm sorry, Doctor.

16 A. So whether or not Monsanto at some later date
17 arrived at the conclusion that there were
18 PCB -- or were furans in our PCBs, I can't
19 tell the date when they did.

20 Q. Vos was in 1969; is that correct, Doctor?

21 A. '70. I thought it was '70.

22 Q. Okay.

23 A. Or '69.

24 Q. In any event, did you review --

25 MR. FEATHERSTONE: February

1 of '70 is, I think, the publication date.

2 MR. BAUER: There is more than one
3 publication. So it --

4 MR. FEATHERSTONE: All right.

5 MR. BAUER: But they're in the
6 literature.

7 Q. (By Mr. Kim) Doctor, in any event, you
8 reviewed Dr. Vos' work while you were still
9 employed at Monsanto Chemical Company?

10 A. Yes.

11 Q. As a result of Dr. Vos' work, did you order
12 or institute any further testing to be done
13 to the Monsanto PCB product to see if there
14 were, indeed, trace amounts of
15 polychlorinated dibenzofurans into the PCB
16 product?

17 A. I don't think I had to because I believe the
18 analytical people ran it themselves. I was
19 not worried about the traces, whether it was
20 one trace or two traces, because we had
21 tested the Monsanto product, we had tested
22 the PCBs at intervals during the course of
23 the manufacturing. And if there were any
24 dibenzofurans in there, they contributed to
25 the toxicity. So we really tested the whole

1 ball of wax.

2 Q. I understand your answer, Doctor. But my
3 question was: After your review of the Vos
4 literature, did you specifically order any
5 further testing to be done to determine
6 whether the Monsanto PCB product contained
7 trace amounts of polychlorinated
8 dibenzofurans?

9 A. No, I did not.

10 Q. Did you request the analytical chemistry
11 department of Monsanto to look into this
12 issue?

13 A. No. But I knew they were.

14 Q. Have you ever seen any of the reports or
15 conclusions from the analytical chemistry
16 department with respect to this issue?

17 A. I saw no reports during my term at Monsanto
18 that showed that PCBs were present -- that
19 dibenzofurans were present in the PCBs. I
20 was told by analytical people at the time of
21 the '70 and '71 that, "We can't find the
22 stuff." Eventually -- I know also
23 anecdotally that after 1974 they did find
24 some trace amounts of the material.

25 Q. Had Monsanto -- strike that.

1 During your tenure as the medical
2 director of Monsanto, you were responsible
3 for the toxicological review of other
4 chemicals outside of PCBs, were you not?

5 A. Yes.

6 Q. And in your tenure at Monsanto Chemical as
7 the medical director, had you run across
8 other occasions where a Monsanto product may
9 have been contaminated with a furan?

10 A. May have been?

11 MR. BAUER: Yeah. Object to the
12 form, what "may have been" means.

13 Q. (By Mr. Kim) Was contaminated with a furan
14 in the absolutist of senses.

15 A. No, I don't believe I did.

16 Q. Did you ever do any review work at the Nitro
17 plant or --

18 A. Yes.

19 Q. -- in West Virginia?

20 A. Yes.

21 Q. Can we agree that -- well, okay.

22 MR. KIM: What time is it?

23 MS. WELDON: It's 12:00.

24 MR. KIM: Let's take a break.

25 THE VIDEOGRAPHER: We're going off

1 the record. It's 12:00 o'clock.

2

3 (A recess was taken.)

4

5 THE VIDEOGRAPHER: It's 15 minutes
6 after 12:00 o'clock, and we're back on the
7 record.

8 MR. KIM: Does anyone have any
9 birthday cake?

10 Q. (By Mr. Kim) Doctor, I want to turn your
11 attention now to when you first became aware
12 of the possible environmental concerns of
13 PCBs. Do you have a recollection of when
14 that first was?

15 A. Yes. That was either the end of 1966 or the
16 beginning of 1967.

17 MR. KIM: '79.

18 Q. (By Mr. Kim) What is your recollection of
19 how you learned about the possibility of
20 environmental contamination in '79?

21 A. There were two Swedish individuals. I do not
22 know their background, but they did
23 analytical work in -- off the coast of Sweden
24 or Norway or someplace in Scandinavia and
25 found that PCBs were present in the -- in the

1 environment in -- off the coast. They found
2 also that -- I don't know what time this was,
3 but they found that it was present in the
4 feathers of some birds.

5 Q. Did you believe that the product that they
6 had identified at that time was Aroclor?

7 A. I was not sure.

8 Q. You questioned it?

9 A. Yes.

10 Q. In what manner was the chlorinated phenol
11 being used, if you have a recollection, that
12 Jensen and Widmark found?

13 A. Chlorinated phenol?

14 Q. (Nods head.)

15 A. I don't know if he was --

16 MR. BAUER: You mean o-l or --

17 A. I don't know if he's talking about phenol.

18 Q. (By Mr. Kim) It is my understanding -- and
19 correct me if I'm wrong -- that the first
20 work, the Swedish study that you talked
21 about, was done by two gentlemen named Jensen
22 and Widmark?

23 A. Right.

24 Q. They reported in the literature that they had
25 found traces of chlorinated diphenyls or

1 polychlorinated biphenyls in the fish and
2 wildlife; is that correct?

3 A. Yes. I don't know about fish. I know
4 certainly in the wildlife.

5 Q. Did you have an idea of how that PCB exposure
6 could have occurred?

7 MR. BAUER: Object to the form.

8 A. You mean how it got in there?

9 Q. (By Mr. Kim) Sure.

10 A. No, I don't know. I did not have an idea at
11 that time. I wasn't even sure that it was
12 PCB because I thought he was also working --
13 looking for DDT.

14 Q. And we talked yesterday about the persistence
15 of both DDT and PCB?

16 A. Yes.

17 Q. Doctor, do you know what "trichlorophenol"
18 is?

19 A. Trichlorophenol?

20 Q. Phenol. n-o-l.

21 A. Yes.

22 Q. What is it?

23 A. It's a benzene radical with an OH making it a
24 phenol and with three chlorine atoms.

25 Q. Is that any way related to a chlorinated

1 diphenyl?

2 MR. BAUER: Objection. Vague as to
3 what you mean "in any way related."

4 A. Well, it's got chlorine. But that doesn't
5 make it a close relation.

6 Q. (By Mr. Kim) Is it a PCB?

7 A. No. Because it's not a biphenyl.

8 Q. Is it a chlorinated polyphenyl?

9 A. No. It's a mono phenol. Chlorinated --
10 trichlorophenol is one phenol rad --
11 molecule.

12 Q. Would a pentachlorophenol be a
13 polychlorinated phenol?

14 MR. BAUER: Now, wait a minute.
15 Let's -- can you spell these? Because
16 there's phenol, p-h-e-n-o-l, and phenyl,
17 p-h-e-n-y-l. And I can't even tell when
18 you're using -- the difference when you're
19 talking.

20 MR. KIM: I understand. Let me
21 make this easy and hand Dr. Kelly what we'll
22 mark as Deposition Exhibit No. 44.

23

24 (An instrument was marked Kelly
25 Exhibit No. 44 for identification.)

1 MR. KIM: -- which I believe is a
2 letter that Dr. Kelly wrote, Counsel.

3 Q. (By Mr. Kim) Doctor, do you have a
4 recollection of writing that letter?

5 A. Wait till I read it, please.

6 Q. You betcha.

7 MR. BAUER: What's the number,
8 Dr. Kelly? Exhibit number.

9 MS. WELDON: 44.

10 THE WITNESS: 44.

11 A. Yes, I have a recollection.

12 Q. (By Mr. Kim) It is dated December 12th,
13 1966?

14 A. That's correct.

15 Q. And it seems to have your name for signature
16 at the bottom?

17 A. Yes.

18 Q. Who is Mr. D. Wood, to whom this is
19 addressed?

20 A. He was somebody in our Brussels office. I
21 don't know if he was in research or
22 marketing.

23 Q. Do you have -- do you know why you were
24 writing him concerning -- what were you
25 writing him about in this letter?

1 A. Whether about Aroclor -- a period -- well, I
2 was writing him about the -- there must have
3 been a seminar talking about polychlorinated
4 biphenyls being discussed -- phenols being
5 discussed in Stockholm on November the 27th.
6 And I said we can't accept Aroclors as a
7 synonym for polychlorinated phenols because
8 it isn't.

9 Q. In essence, you were disputing whether the
10 chemical that Jensen and Widmark had
11 identified was, indeed, a polychlorinated
12 biphenyl?

13 A. No. Because I don't -- didn't mention Jensen
14 and Widmark in this at all. I don't know who
15 discussed what at the Wenner-Gren Centre in
16 Stockholm on November the 17th. But if I was
17 told -- or I must have seen someplace that
18 they were discussing polychlorinated
19 phenols. And I said, "Aroclor is not a
20 phenol."

21 Q. Let me --

22 MR. BAUER: That's with an o-l. Is
23 that right, Dr. Kelly?

24 MR. KIM: I think the letter that
25 he wrote have the spellings.

1 Q. (By Mr. Kim) Are there any spellings that
2 you want to change --

3 A. Are there any what?

4 Q. Are there any spellings of the chemical
5 compounds that you want to change in that
6 letter?

7 MR. BAUER: Well, let me just ask
8 the court reporter, when he says "phenol" and
9 "phenyl," are you being able to make sure --
10 are you picking up the distinction? And
11 obviously the tape will.

12 A. No, I don't see any changes.

13 Q. (By Mr. Kim) Okay. You mentioned that you
14 didn't know -- or you were unclear as to the
15 response or why you wrote that response. Let
16 me show you what we'll mark as Deposition
17 Exhibit No. 45 --

18

19 (An instrument was marked Kelly
20 Exhibit No. 45 for identification.)

21

22 Q. (By Mr. Kim) -- which, I believe, is a
23 letter that was directed to Mr. Buchanan,
24 George Buchanan, of Monsanto from Mr. Wood;
25 is that correct?

1 A. Wait till I -- please.

2 Q. You betcha.

3 A. Yes, it is a letter from Wood to Buchanan
4 with a -- I was copied in on it.

5 Q. Do you recall reading it?

6 A. I do now, after looking it over.

7 Q. And what concerns or considerations were
8 raised by Mr. Wood in his correspondence to
9 Mr. Buchanan on December 1st of 1966?

10 MR. BAUER: Object to the form.

11 A. The concerns were, it appeared to be in this
12 last paragraph, the method of disposal of the
13 material, are there any safe methods being
14 developed for the disposal of the waste
15 Aroclor.

16 Q. (By Mr. Kim) How about the -- well, did you
17 have any questions as a result of this letter
18 as to the proper identification of the
19 chemicals in the Jensen and Widmark work?

20 A. Well, no, I didn't, with the exception of the
21 postscript where he talked about the amount
22 of Aroclor being used compared to larger
23 amounts of pentachlorophenol and
24 pentachlorophenate. And he stated: "Is it
25 likely that the chlorinated phenols" --

1 that's o-l -- "above show similar
2 chromatographic traces to the chlorinated
3 bi-phenols?" Again, I don't -- if that isn't
4 an Aroclor letter, he's -- there's a typo
5 there. It should be chlorinated biphenyls.
6 So, yes, there was concern that what are they
7 talking about.

8 Q. And that was part of the concern that you
9 addressed in your response that we looked at
10 earlier as Deposition Exhibit No. 44?

11 A. Yes.

12 Q. Okay. Doctor, turning back to Deposition
13 Exhibit No. 45, there seems to be an
14 attachment to that letter, as well.

15 A. Yes.

16 Q. Do you have a recollection --

17 A. Yes, there is an attachment.

18 Q. Do you have a recollection of reviewing that
19 attachment in December of 1966?

20 A. I don't recall this -- I have no recollection
21 this being attached. I don't connect the
22 two. I'm not sure whether I ever saw this
23 before.

24 Q. You have no recollection of ever seeing this?

25 A. I may have, but I have no definite

1 recollection.

2 Q. In 1966, through any source, were you made
3 aware of the fact that Jensen and Widmark
4 indicated that they had found polychlorinated
5 biphenyls in salmon and in pike in Sweden?

6 A. I remember the feathers of eagles and I
7 remember something about finding it in fish,
8 but I -- salmon is new to me. I never
9 connected salmon with that in this report --

10 Q. Do you have a -- I'm sorry, Doctor.

11 A. -- whether this situation existed in Europe.

12 Q. Did anyone tell you or do you have a
13 recollection of learning in 1966 or '67 that
14 Jensen and Widmark thought that PCBs were
15 closely related to and equally poisonous as
16 DDT?

17 MR. BAUER: Object to the form.

18 A. I don't think Jensen ever said that, did he?
19 I didn't hear any -- I don't recall any
20 statement where Jensen equated toxicity of
21 PCB and DDT. This attachment is certainly
22 not from Jensen. It's from somebody at --
23 Henry Strand, whoever he is.

24 Q. (By Mr. Kim) Do you recall learning from any
25 source of information during 1966 whether it

1 was alleged that PCBs were broken down
2 considerably slower than DDT and gave rise to
3 damage of the liver and skin?

4 A. No, sir, I do not recall that.

5 Q. If you had learned of such information --
6 that being that polychlorinated biphenyls are
7 closely related to and equally poisonous as
8 DDT and that they are broken down
9 considerably slower than DDT, which may give
10 rise to damage of liver and skin -- would
11 that have caused you concern as the medical
12 director of Monsanto in 1966?

13 MR. BAUER: Object to the form.

14 A. If I had learned that this was positive?

15 Q. (By Mr. Kim) Yes.

16 A. If I knew this was positive in 1966, it would
17 have given me concern, yes.

18 Q. If you learned of such information but were
19 not sure as to whether it was positive or
20 not, would you have ordered or asked for
21 further testing to do a comparative analysis
22 between DDT and PCBs?

23 MR. BAUER: Object to the form.

24 A. I don't know which analysis -- which way?

25 Q. (By Mr. Kim) A chemical analysis.

1 Analytical chemistry analysis, to begin
2 with.

3 A. I didn't have to order it. I knew that our
4 people started looking for it at the -- when
5 they found out about this.

6 Q. Started looking for what when they found out
7 about what?

8 A. To see what the relationship between PCBs and
9 DDT was as far as Widmark and Jensen's work
10 was concerned.

11 Q. When you say "our people," to whom are you
12 referring?

13 A. The Monsanto people in the -- both in the
14 United Kingdom and in the United States.

15 Q. Did you ever review any of the results of
16 that work?

17 A. Well, I heard about it from talking to
18 people. We had people right in St. Louis.
19 They didn't send me reports. But I talked to
20 Bob Keller and Scott Tucker, and I knew they
21 were working on this. And they said, "We
22 haven't been able to find it." So they went
23 over to -- eventually went over to Widmark
24 and Jensen to find out -- to be sure for
25 themselves what -- "How's he doing this, and

1 is he really finding PCBs?" As I understand
2 it, Widmark was looking for PCBs first -- for
3 DDT first. And he found a confounding peak
4 in his chromatograph that he eventually
5 called PCBs.

6 Q. I understand, Doctor. But my question was:
7 Did Monsanto personnel do any comparative
8 analysis between PCBs and DDT?

9 MR. BAUER: Objection. Asked and
10 answered.

11 Q. (By Mr. Kim) To your knowledge.

12 A. I do not know if they did or not. That would
13 be in the analytical department's --

14 Q. So you have never reviewed --

15 A. -- purview.

16 Q. -- any such reports from the analytical
17 department?

18 A. No, sir, I have not.

19 Q. Are you aware if any such reports exist?

20 A. No, I don't know whether they exist or don't
21 exist.

22 Q. Your letter, Deposition Exhibit No. Forty --

23 A. My letter to Wood?

24 Q. Yes, sir.

25 A. 44? Yes, sir.

1 Q. The last sentence of the third paragraph:
2 "Our only problem is whether or not we want
3 to bring" up -- excuse me -- "we want to
4 bring these facts up and have our herbicide
5 program receive another black eye."

6 Did I read that correctly? Second
7 to the last sentence. Excuse me.

8 A. Yes, you're reading it. But --

9 Q. What other --

10 A. -- that's --

11 Q. Go ahead, Doctor.

12 A. That's what it says. But you're picking this
13 out of a paragraph without any reference to
14 what I said up above. I said: "There are
15 many chlorinated polyphenyls that can be
16 formed during the manufacture of 2,4,5-T" --
17 I don't know how accurate I was on that,
18 but -- "and probably pentachlorophenol, as
19 well." I don't know what I meant by saying:
20 "Our only problem is whether or not we want
21 to bring these facts up and have our
22 herbicide program receive another black eye.
23 This, I will have to leave to your judgment."

24 I don't know if we were selling
25 herbicides over in Europe or not.

1 Q. What other black eyes had the herbicide
2 program had?

3 A. There were -- there was chloracne occurring
4 in some instances of 2,4,5-T manufacture and
5 2,4,5-T use.

6 Q. Where was that manufactured? At the Nitro
7 plant?

8 A. Nitro.

9 Q. Were polychlorinated biphenyls used as
10 extenders in those herbicides?

11 A. No, sir. They were not used not by us. I
12 don't know if they ever were. In fact, I
13 don't think so because I think whatever minor
14 use of extenders was in household
15 applications for roaches and things like
16 that, not out in field crops.

17 Q. What other black eyes had Monsanto
18 experienced in its herbicide program?

19 A. I don't know of any other than that.
20 Probably "black eye" was not a very smart
21 statement to make. Because I don't recall
22 much publicity about it.

23 Q. In any event, you conclude in your last
24 sentence of the letter that, quote: "I admit
25 I am out of my depth here, but I think

1 another compound is indicated rather than
2 Aroclor," end quote. Is that correct?

3 A. That's right.

4 Q. Just as with Dr. Drinker's initial reports,
5 you questioned the initial identity of the
6 products found by Jensen and Widmark.

7 MR. BAUER: Object to the --

8 Q. (By Mr. Kim) Is that correct?

9 MR. BAUER: Object to the form.

10 A. Just as I don't think there was --

11 Q. (By Mr. Kim) Well, let me break this down
12 for you.

13 A. Yeah.

14 Q. In the --

15 A. You're making a comparison that I just don't
16 agree with.

17 Q. I'm going to ask you a couple simple
18 questions, then.

19 A. Fine.

20 Q. With respect to the Drinker study --

21 A. Yes.

22 Q. -- when it was initially reviewed by you, you
23 disputed whether, indeed, the chemical
24 identified as chlorinated diphenyl was
25 actually such?

1 A. That's correct. I did that.

2 Q. When the Jensen and Wood report was submitted
3 to you for your review in this case, again
4 you questioned whether the chemical or
5 product identified was, indeed, an Aroclor or
6 a polychlorinated biphenyl, did you not?

7 A. Yes, I did.

8 Q. In any event, we ultimately learned that
9 Jensen and Widmark were correct and it was
10 PCBs that they had identified?

11 A. Eventually also learned that I was right on
12 Drinker, too. You forgot that one.

13 Q. Absolutely. And eventually we also learned
14 that Monsanto sent him some Aroclor products,
15 paid for him to do a study, paid for him to
16 report it to Monsanto, and gave you a
17 favorable report, did he not?

18 A. That has no relationship. The report -- we
19 did not pay him to give us a favorable
20 report. We paid him -- we engaged him to run
21 the toxicity on a Monsanto
22 pentachlorinated -- polychloro --

23 Q. Take your time.

24 A. -- polychlorinated biphenyl. And we did not
25 pay him for a favorable report.

1 Q. Does Monsanto have in its possession the
2 underlying raw data that was generated by
3 Dr. Drinker in preparing his special report
4 to Monsanto?

5 A. We do not. And you do not get the raw data
6 from a recognized scientist or recognized
7 laboratory. You --

8 Q. How do we know if the data is accurate or
9 not?

10 MR. BAUER: Object to the form.

11 A. How do we know? You have to go by
12 reputation. You have to go by what you know
13 about the individual. You have to also know
14 whether it agrees with your clinical
15 observations of your workers. That's how we
16 know.

17 Q. (By Mr. Kim) It really doesn't matter as
18 long as you get the result you desire, does
19 it, Doctor?

20 MR. BAUER: Object to the form.

21 A. It isn't a question -- I wasn't --

22 MR. BAUER: Object to the -- let me
23 finish, Dr. Kelly.

24 THE WITNESS: Okay.

25 MR. BAUER: Object to the form.

1 Argumentative.

2 Now you can go ahead.

3 A. All I wanted to do was get the facts. I
4 didn't care whether it was favorable or not.
5 I wanted to get the facts. If the facts
6 turned out to be favorable, that's fine.

7 Q. (By Mr. Kim) Was the possibility of
8 environmental contamination one basis that
9 you ordered the chronicity studies to be done
10 by Industrial Bio-Test --

11 A. No.

12 Q. -- Laboratories?

13 A. It was one basis, but it was -- the main
14 basis was that the possibility of the PCBs
15 getting into the food chain, was the main
16 reason.

17 Q. Let me show you what we'll mark as your
18 Deposition Exhibit No. 46.

19

20 (An instrument was marked Kelly
21 Exhibit No. 46 for identification.)

22

23 Q. (By Mr. Kim) You can put those up. We're
24 through with them.

25 -- which, I believe, is a letter

1 from a Mr. Hardy to a number of people, one
2 of which was you; is that correct?

3 A. That is correct.

4 Q. Do you recall receiving this letter sometime
5 in January of 1967?

6 A. Yes, I do.

7 Q. Did you read it then?

8 A. Yes, I did.

9 Q. In the middle of the paragraph, he notes that
10 he -- that a Mr. Richardson of Shell
11 Chemicals had spoken with the Swedish press.
12 And in any event, the conclusion in the
13 sentence states, quote: "He had already
14 found that the chlorine-containing residue
15 contained substances more stable than DDT.
16 and just as Soren Jensen reports he has
17 obtained spectrographic evidence that these
18 are very similar if not identical with
19 Aroclors," end quote.

20 A. Yes, sir.

21 Q. Did that cause you concern about the
22 persistence of PCBs in the environment?

23 A. Well, we knew that they were persisting in
24 the environment. We knew -- we had thought
25 that the material was nonbiodegradable and if

1 it were discarded into a landfill, it would
2 stay there. If it was accidentally leaked
3 into a body of water, in a stream, it would
4 lie down on the bottom like a lump of coal or
5 a piece of gravel. We knew it was there.

6 Q. Okay. When did Monsanto first know it was
7 nonbiodegradable and persistent?

8 MR. BAUER: Object to the form.

9 A. I -- you've got two different questions
10 there.

11 Q. (By Mr. Kim) When did Monsanto first know
12 that it was nonbiodegradable?

13 A. I can't answer that. I don't know when.

14 Q. Well, was it before this letter?

15 A. I believe it was. I believe I believed it.
16 I don't know the reasons for my belief, but I
17 can't tell you the time frame exactly.

18 Q. Can you give me a ballpark? Was it five
19 years earlier, ten years earlier?

20 A. It wasn't ten years earlier. It was somewhat
21 earlier. I can't tell you any closer than
22 that.

23 Q. When did Monsanto Chemical Company first
24 learn that PCBs were environmentally
25 persistent?

1 A. That, I do not know.

2 Q. Was it prior to the Jensen and Widmark work
3 in 1966?

4 A. I do not know.

5 Q. The reason I'm asking these questions,
6 Dr. Kelly, is you just told me that, "We
7 already knew" -- meaning Monsanto -- "that it
8 was persistent."

9 MR. BAUER: Objection. That
10 mischaracterizes his testimony.

11 Q. (By Mr. Kim) If it does, you can correct me,
12 Doctor.

13 A. I forgot. What did you say?

14 MR. KIM: Can you read that back to
15 him?

16

17 (The pending question was read
18 by the court reporter.)

19

20 MR. BAUER: The same objection.

21 A. Yes. The impression I had was that people --
22 the people at Monsanto, as well as myself,
23 believed that the material was persistent,
24 was nonbiodegradable. That belief -- I
25 cannot tell you how long that belief existed,

1 but sometime in the Sixties we found out we
2 were wrong in that supposition. We had a
3 compound that was not soluble in water; and
4 we thought that if it went into a stream or
5 into a body of water, it would not be
6 absorbed by the water. So that was our --
7 the basis for our belief.

8 Q. (By Mr. Kim) And we're talking about
9 polychlorinated diphenyls?

10 A. That's correct.

11 Q. So when you initially had this knowledge, you
12 thought --

13 A. When I initially had what?

14 Q. When you initially -- or Monsanto initially
15 had this knowledge of stability, persistence,
16 nonbiodegradability, at that point in time --
17 initially, at least -- Monsanto did not think
18 it was an environmental problem?

19 A. That is correct.

20 Q. And as such, no such warnings were given?

21 A. That's correct.

22 MR. BAUER: Object to the form.

23 Q. (By Mr. Kim) No warnings were given with
24 respect to the possible environmental
25 contamination until sometime after the Jensen

1 and Widmark work?

2 A. That is correct.

3 Q. Until sometime after the Riseborough work?

4 A. Yes, sir.

5 Q. Was Mr. Papageorge employed as the head of
6 the environmental section at the time that
7 Monsanto had knowledge that PCBs may persist
8 or be nonbiodegradable?

9 MR. BAUER: Object to the form.

10 A. Yes.

11 MR. BAUER: Assumes facts not in
12 evidence.

13 Q. (By Mr. Kim) Was Mr. Papageorge responsible
14 for any analytical work with respect to
15 environmental concerns, or would that still
16 have fallen under your direction prior to
17 1966?

18 A. I --

19 MR. BAUER: Objection. Vague and
20 indefinite as to time.

21 A. Environmental concerns?

22 Q. (By Mr. Kim) Doctor, we've agreed, although
23 you can give me no time frame, that Monsanto
24 Chemical Company knew prior to 1966 that PCBs
25 were nonbiodegradable, stable, and had a

1 possibility of persisting in the
2 environment.

3 MR. BAUER: Objection. That --

4 A. Yes.

5 MR. BAUER: -- mischaracterizes --

6 A. Knew we believed that, yes.

7 Q. (By Mr. Kim) Okay. And my question is: If
8 further testing was to be done with respect
9 to that supposition, would that have been the
10 responsibility of you and the medical
11 department or of Mr. Papageorge?

12 A. Mr. Papageorge.

13 Q. Did Mr. Papageorge, to your knowledge, ever
14 direct that any environmental analytical
15 tests be run with respect to the persistence
16 of PCBs in the environment prior to the
17 Jensen and Widmark work?

18 A. Mr. Papageorge was not in that position prior
19 to the Jensen and Widmark work. He came to
20 work in 1970.

21 Q. Who was in that position that would have been
22 responsible?

23 A. There was --

24 MR. BAUER: Objection. Assumes
25 facts not in evidence.

1 A. There was nobody in charge of the
2 environmental work as one individual, as far
3 as I know.

4 Q. (By Mr. Kim) Under whose direction would
5 that department have fallen under?

6 MR. BAUER: Objection. What
7 department?

8 A. There wasn't any department.

9 Q. (By Mr. Kim) There was no environmental
10 department prior to 1966?

11 A. There was no definite environmental
12 department prior to 1966. There were people
13 in the marketing department and in the
14 development department that might have had
15 some input into the environment, but it was
16 not -- the problem was not considered to
17 be -- it was not considered to be a problem
18 until it showed up in that it was appearing
19 in wildlife and in some fish.

20 Q. And my question, Dr. Kelly, is: How did
21 Monsanto know that that persistence and
22 stability was not a problem environmentally?

23 A. I think they knew from the type of the
24 product, from the physical characteristics
25 and the solubility of the product, that the

1 material was not soluble in water, it was not
2 going to be a problem.

3 Q. Who ran those tests?

4 A. Somebody did because certainly at Monsanto --
5 somebody at Monsanto ran the solubility tests
6 because they were in our bulletin. They
7 showed what the solubility in water was, and
8 there were a bunch of zeros before a "1."

9 Q. Have you seen those tests?

10 A. I've seen the bulletins. I haven't seen the
11 tests.

12 Q. During that time period, who would have been
13 responsible for running or ordering those
14 solubility tests?

15 A. The manufacturing department of -- that
16 manufactured PCB.

17 Q. Do you have a recollection, in 1965, who is
18 the director of the manufacturing department?

19 A. No, I do not.

20 Q. From a medical standpoint it caused you no
21 concern that Monsanto did not know how PCBs
22 were excreted through the human body and
23 disposed of; is that correct?

24 MR. BAUER: Object to the form.

25 A. That it caused me no concern that PC -- that

1 we didn't know how PCBs were excreted or
2 absorbed through the body?

3 Q. (By Mr. Kim) Yes, sir.

4 A. Well, no, because we did not expect
5 individuals to get PCBs. PCB was an
6 industrial chemical that was not supposed to
7 enter into the human body. If you followed
8 the cautionary information we gave, it didn't
9 get in there. So we didn't worry about the
10 excretion.

11 Q. But you knew that workers and people could
12 accidentally be exposed to PCBs?

13 A. Yes.

14 Q. Okay.

15 MR. KIM: Do you want to stop now?

16 MR. FEATHERSTONE: (Nods head.)

17 Q. (By Mr. Kim) Why don't we stop for the day,
18 Doctor.

19 A. Whatever you say.

20 Q. Okay.

21 THE VIDEOGRAPHER: We're going off
22 the record. It's 48 minutes after 12:00
23 o'clock. This is the end of Tape No. 7.

24

25

(Whereupon the deposition of Robert Emmet Kelly, M.D., was recessed at 12:48 p.m. and is to be continued at 9:00 a.m. on February 18, 1994.)

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THE STATE OF Missouri :
COUNTY OF ST. LOUIS :

I, ROBERT EMMET KELLY, M.D., hereby certify that I have read the foregoing transcript of my testimony given in the foregoing numbered and styled case and that same is true and correct to the best of my knowledge and belief.

I further certify that any and all corrections have been made on a separate page and initialed by me.

This the 30th day of March, 1994.

Robert Emmet Kelly MD
ROBERT EMMET KELLY, M.D.

SUBSCRIBED AND SWORN TO BEFORE ME,
this the 30th day of March, 1994.

Josephine S. Riblock
Notary Public in and for
the State of Missouri

My Commission Expires _____

Job No. 94-513

JOSEPHINE S. RIBLOCK
NOTARY PUBLIC STATE OF MISSOURI
ST. LOUIS COUNTY
MY COMMISSION EXP. JAN. 15, 1995

Martin & Associates
(409) 762-2222

1 THE STATE OF TEXAS :

2 I, Irma L. Reyes, Certified
3 Shorthand Reporter in and for the State of
4 Texas, hereby certify that this deposition
5 transcript is a true record of the testimony
6 given by the witness named herein, after said
7 witness was duly sworn or affirmed by me.

8 I further certify that I am neither
9 attorney nor counsel for, related to, nor
10 employed by any of the parties to the action
11 in which this testimony was taken. Further,
12 I am not a relative or employee of any
13 attorney of record in this cause, nor do I
14 have a financial interest in the action.

15 Further certification requirements,
16 if any, pursuant to the Rules will be
17 certified to in the Supplemental Certificate
18 after they have occurred.

19 the 7th Subscribed and sworn to on this,
20 day of March, 1994.

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Irma L. Reyes, CSR
Certificate No. 4071
Expires December 31, 1994

My Notary Commission expires September 21,
1996

Martin & Associates
(409) 762-2222

LIST OF CHANGES OR CORRECTIONS

To the Deposition of James Kelly MD

If there are any changes or corrections, please list them below giving the page number, line number, and reason for the change.

The reasons for making changes are:

- (1) To clarify the record:
- (2) To conform to the facts:
- (3) To correct transcription errors:

Page No. 363 Line No. 13 Reason for Change mis-transcription

Changed Call To Cause

Page No. 363 Line No. 3425 Reason for Change Confusion + mistake on the part of the witness

Changed yes To no

Page No. 387 Line No. 11 Reason for Change mis-transcription

Changed paper To paint

Page No. 439 Line No. 1211 Reason for Change mis-transcription

Changed and To in

Page No. _____ Line No. _____ Reason for Change _____

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James Kelly MD
Witness