

WESTERN DISTRICT OF VIRGINIA  
DANVILLE DIVISION  
CAROLYN B. FISHER, Executrix  
of the Estate of Ralph L. Fisher,  
Deceased,

Plaintiff,

vs.

Cause No. 93037D

MONSANTO COMPANY, a Delaware  
Corporation,

Defendant.

VOLUME II  
VIDEO TAPE EVIDENTIARY DEPOSITION OF  
ROBERT EMMET KELLY, M.D.  
Taken on behalf of Defendant  
April 8, 1994  
WALLER REPORTING, INC.  
515 Olive Street, Suite 1506  
St. Louis, MO 63101  
(314) 621 2571

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VIDEO TAPED EVIDENTIARY DEPOSITION OF  
ROBERT EMMET KELLY, M.D., produced, sworn, and examined  
on behalf of the Defendant, April 8, 1994, between the  
hours of eight o'clock in the forenoon and six o'clock  
in the evening of that day, at the offices of Husch &  
Eppenberger, 100 North Broadway, St. Louis, Missouri,  
before FAITH A. OLLIGES, a Registered Professional  
Reporter and a Notary Public within and for the State of  
Missouri.

# A P P E A R A N C E S

Plaintiff was represented by Mr. David S. McCrea of  
the law firm of McCrea & McCrea, P.O. Box 1310,  
Bloomington, Indiana 47402.

Defendant was represented by Mr. Gerard H.  
Davidson, Jr. of the law firm of Smith, Helmes, Mulliss  
& Moore, L.L.P., 300 North Greene Street, Suite 1400,  
Greensboro, North Carolina 27420.

1           IT IS HEREBY STIPULATED AND AGREED by and  
2       between Counsel for the Plaintiff and Counsel for the  
3       Defendant, that this deposition may be taken in  
4       shorthand by FAITH A. OLLIGES, a Registered Professional  
5       Reporter and Notary Public, and afterwards transcribed  
6       into typewriting.

7                           o   O   o

8           ROBERT EMMET KELLY, M.D.,  
9       of lawful age, being produced, sworn, and examined on  
10      the part of the Defendant, deposes and says:

11                   CONTINUED CROSS EXAMINATION

12      QUESTIONS BY MR. McCREA:

13          Q     Dr. Kelly, can you locate Exhibits 19, 20, 21  
14      and 21 A?

15          A     I do not have a 21. I don't have a 20 I mean.  
16      I have a 21 and a 19 and a 21 A. Oh, and a 20.

17                  MR. DAVIDSON: This is 20.

18          A     Yes. We're in good shape.

19          Q     Dr. Kelly, directing your attention to Exhibit  
20      19.

21          A     Yes, sir.

22          Q     What is that?

23          A     This is a label for Aroclor 1254.

24          Q     Who prepared the label?

25          A     I do not know who prepared it. I know who put

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1 on the cautions, who is responsible for the caution  
2 statement. That was the medical department.

3 Q Did you prepare the caution statement that goes  
4 on that label?

5 A Yes.

6 Q Did others assist you in preparing the caution  
7 statement?

8 A I do not believe so.

9 Q Who had final approval of the language on  
10 Exhibit 19?

11 A It all depends what you mean by "the language".  
12 The medical department had final approval of the caution  
13 language. The marketing department or the manufacturing  
14 department had final approval of what else went on the  
15 label.

16 Q Did Monsanto Company have a legal department on  
17 the date Exhibit 19 was prepared?

18 A Yes, they did.

19 Q Did they have approval of any of the language  
20 that goes on the label?

21 A I do not know if they had any approval of  
22 anything besides the apart from the caution label.  
23 They had no approval of the caution label, of the  
24 caution material.

25 Q Dr. Kelly, do you know if there are any

1 documents that reflect the work effort of the medical  
2 department in preparing the language on this label?

3 A Would you explain the work effort, what you  
4 mean by work effort?

5 Q Do you have any documents which show what you  
6 considered in developing the language that went on this  
7 label?

8 A Well, it would be the sum total of all the  
9 documents that were involved, with the toxicological  
10 information that had been developed, with the material  
11 that was developed under clinical aspects of our  
12 workers, the absence of any illnesses from exposure to  
13 the Aroclor 1254. But I don't know what you mean, if  
14 there is a backup set of documents outside of my  
15 experience with those two phases of Aroclor,

16 Q Did you develop a file which included documents  
17 that you reviewed in preparing the label?

18 A Did I what?

19 Q Did you develop a file that included documents  
20 which you reviewed to prepare the label?

21 A Well, I had I certainly had a file of the  
22 toxicological properties of Aroclor. I had a file of  
23 the workers' experience with manufactured material.  
24 Whether I had to review these files or not after every  
25 for every individual label is probably not correct.

1 Q How long did it take you to prepare that label?

2 A It probably took me about ten years of  
3 experience and about ten minutes of writing it.

4 Q Dr. Kelly, will you refer, please, to Exhibit  
5 18?

6 A Yes, sir.

7 Q You identified Exhibit 18 on direct  
8 examination; is that correct?

9 A Yes, I did.

10 Q This document is dated October 11, 1937.

11 A Yes, sir.

12 Q This is a Monsanto document?

13 A Yes, sir.

14 Q This document was written by L. A. Watt; is  
15 that correct?

16 A Yes, sir.

17 Q In the first paragraph of the document, L. A.  
18 Watt refers to systemic toxic effects. Do you see that?

19 A Yes, sir.

20 Q What is a systemic toxic effect in language  
21 that a worker would understand?

22 A What it means is if you get this by inhaling it  
23 or taking it by mouth, repeated oral ingestion, you'll  
24 get sick.

25 Q What does systemic mean?

1           A     The general body apart from external     the  
2 external skin.

3           Q     What does toxic mean?

4           A     It means a lot of things to a lot of people,  
5 but my definition of toxic means harmful.

6           Q     So a systemic toxic effect would be a harmful  
7 effect to the general body?

8           A     Yes.

9           Q     Dr. Kelly, when Exhibit 19 was prepared, did  
10 you have the information on Exhibit 18?

11          A     Yes, I did.

12          Q     Did you consider putting on Exhibit 19 the  
13 information that is included on Exhibit 18, which states  
14 that exposure to Aroclor vapors evolved at high  
15 temperatures or by repeated oral ingestion will lead to  
16 systemic toxic effects?

17          A     Well, I considered it, but I decided it was not  
18 germane to a label.

19          Q     A person reading Exhibit 19 would not know that  
20 exposure to Aroclor vapors evolved at high temperatures  
21 or by repeated oral ingestion will lead to systemic  
22 toxic effects; is that correct?

23          A     I don't think it's correct. I think you  
24 underestimate the worker. If a worker sees a caution  
25 label that says "Avoid prolonged and repeated contact

1 with skin, avoid prolonged breathing of vapor or dust,"  
2 he knows that those are put on there for certain  
3 reasons, that if you do those things, you will it  
4 will be harmful to you. He knows that. I certainly  
5 don't think the worker thinks we put that on for no good  
6 reason.

7 Q You do not describe the harm?

8 A No, I did not.

9 Q A worker could interpret that as a skin rash?

10 A He could interpret it as a skin rash. He could  
11 interpret it as making him sick.

12 Q You provide him no assistance with regard to  
13 what the consequences would be?

14 A No, but I provide him with assistance as to how  
15 to avoid any consequences, systemic or skin.

16 Q Did anyone else participate in the decision not  
17 to include this information that exposure to Aroclor  
18 vapors evolved at high temperatures will lead to  
19 systemic toxic effects?

20 A No one else. It was my responsibility, and no  
21 one else participated in that decision.

22 Q Dr. Kelly, will you locate Exhibit 31?

23 A That's 32. Yes, sir. I have located it.

24 Q Will you turn to Bates page MONS 072693? The  
25 last three digits are 693.

1 A 6 what?

2 Q 693.

3 A Yes. But the first three digits were different  
4 than that. You start out with a

5 Q 072.

6 A 072693. I have it.

7 Q Dr. Kelly, this is a document that you  
8 identified on direct examination which consists of a  
9 proposed protocol for PCB toxicity studies from  
10 Industrial Bio Test; is that correct?

11 A Yes, it is.

12 Q And in that proposed protocol, did Industrial  
13 Bio Test list tissues and organs that would be examined  
14 grossly and tissues and organs that would be examined  
15 microscopically in animals that were administered PCBs?

16 A Yes, sir.

17 Q In 1937, when L. A. Watt issued his memorandum  
18 and stated that Aroclor vapors evolved at high  
19 temperatures prolonged exposure to Aroclor vapors  
20 evolved at high temperatures will lead to systemic toxic  
21 effects, did you know that the entire body could be  
22 affected?

23 A That the what?

24 Q Entire body could be affected.

25 A Well, yes, the body could be affected. Whether

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1 the entire body, whether the muscles, whether the nails,  
2 whether the heart could be affected, I didn't know the  
3 specific organs could be affected. I knew the body  
4 could be affected, yes.

5 Q And in 1937, did you know that the tissues and  
6 organs to be examined grossly and tissues and organs to  
7 be examined microscopically in this proposed study dated  
8 1968 could be at risk from systemic toxic effects of  
9 prolonged exposure to PCB vapors?

10 A No, sir, I didn't know that all of these would  
11 be, no. We never did find out that all these were  
12 either. There were some selective target organs of the  
13 body.

14 Q But did you know that these could be at risk?

15 A No, I didn't know they could be at risk. I  
16 mean, I don't know what you mean by at risk.

17 Q Could be adversely affected.

18 A I had no idea that the esophagus, for example,  
19 could be at risk from inhaling PCBs, no, sir, I did not.  
20 I did not have any idea that the eyes, for example, or  
21 the aorta or any number of these compounds any number  
22 of these organs could be at risk.

23 Q And when you say you had no idea that the  
24 tissues and organs could be at risk, are you stating  
25 that you had no evidence that they were adversely

1 affected or you had no reason to believe they could be  
2 adversely affected?

3 A I don't What date was the Watt memorandum  
4 again?

5 Q 1937.

6 A When? What date?

7 Q October 11, 1937.

8 A I think we had the Drinker information at that  
9 time.

10 Q Do you recall the question?

11 A No, I don't. I was a little confused.

12 Q All right. Just so we're clear, industrial  
13 Bio Test presented a protocol to test tissues and organs  
14 in animals that were administered PCBs; correct?

15 MR. DAVIDSON: I object. It simply says that  
16 those would be the organs examined in an experimental  
17 study of animals.

18 Q Administered PCBs; is that correct?

19 A No. Industrial Bio Test examined PCBs to find  
20 the toxicity of the material.

21 Q Dr. Kelly, you earlier defined systemic as body  
22 as the body as a whole.

23 A Yes.

24 Q Is that correct? You defined toxic as harmful?

25 A Yes, sir.

1           Q     And my question to you is, in 1937, did you as  
2     the medical director for Monsanto Company recognize that  
3     the tissues and organs described in the Industrial  
4     Bio Test Laboratory's proposed protocol could be at risk  
5     from systemic toxic effects of PCBs?

6           A     The information we had in October of 1937  
7     showed that the organs at risk were the liver and the  
8     skin.

9           Q     But in 1968, Dr. Kelly, you're doing a study to  
10    determine if all of these tissues and organs could be  
11    adversely affected; is that correct?

12          A     Well, yes. But, Mr. McCrea, we were doing  
13    that, but you have neglected to mention or do not  
14    appreciate that the science of toxicology has increased  
15    vastly from 1936 or 1937 to 1968, and that any good  
16    toxicological work includes examination of all organs.  
17    That was not part of toxicological thinking in 1936 or  
18    '37 when that memorandum was written.

19          Q     Any good toxicological work would involve the  
20    testing of all organs; is that your statement?

21          A     Yes. Microscopic testing of organs, yes.

22          Q     And that was true as of 1968?

23          A     Yes.

24          Q     But it was not true as of 1937?

25          A     I think that's correct.

1           Q     If you wanted to communicate to a worker the  
2 information from L. A. Watt, would you state as follows?

3           "Prolonged exposure to PCB vapors will lead to harmful  
4 effects on the body as a whole."

5           A     If I     You have no question there. If I  
6 wanted to do what?

7           Q     If you wanted to communicate to a worker the  
8 information described by L. A. Watt on October 11, 1937,  
9 in Kelly Exhibit 18, so that the worker understood what  
10 you were communicating, would you use the language  
11 "harmful to the body as a whole" rather than "systemic  
12 toxic effects"?

13           MR. DAVIDSON: I'll object. It's total  
14 speculation. I mean, he did what he did. You don't say  
15 for what purpose you're addressing the worker or whether  
16 it's by written letter or orally or label or brochure or  
17 what.

18           A     This is speculation. You are saying if I  
19 wanted to do this, how would I do it?

20           Q     So that the worker understood what Mr. Watt  
21 communicated in his memorandum.

22           A     I could probably affix a copy of the memorandum  
23 to it and say, "If you violate the caution statements,  
24 you'll get sick." I don't think a worker would  
25 appreciate the phrase "systemic toxic effects". But this

1 is speculation. I did not believe that should be put on  
2 a label.

3 Q And systemic toxic effects means harmful to the  
4 body as a whole?

5 A Yes, sir. I don't think you can It's  
6 harmful to the body if it's harmful to the heart. It's  
7 harmful to the body if it's harmful to the muscles. I  
8 do not think you could distinguish between toxicity to  
9 any part of the body and the body as a whole.

10 Q Dr. Kelly, referring to Exhibits 20, 21 and  
11 21 A, on any of those labels do you state that prolonged  
12 exposure to PCB vapors will lead to systemic toxic  
13 effects?

14 A No, sir, I've repeatedly told you that I did  
15 not put that on labels because I put material on the  
16 labels that I know they would read and I knew that it  
17 would avoid any harmful effects, and I believe I was  
18 proven right over 38 years because we didn't have any  
19 from our customers.

20 Q Dr. Kelly, would you refer to Exhibit 4?

21 A Four?

22 Q Yes, sir. Bates page number. . .

23 A These are really going to be messed up. Yes,  
24 sir. I have it.

25 Q Will you refer to Bates page number MONS

1 060027?

2 A Yes, sir.

3 Q Dr. Kelly, directing your attention to the  
4 third paragraph on page four.

5 A Yes, sir.

6 Q Beginning with the words "in considering the  
7 entire matter". Do you see that?

8 A Yes, sir.

9 Q Would you please read into the record that  
10 paragraph?

11 A "In considering the entire matter it seemed to  
12 us that the chlorinated hydrocarbons, if inhaled in  
13 sufficient concentration, might cause a slight degree of  
14 damage to the liver. This damage is resisted  
15 efficiently and causes no depression of health, but if  
16 the individual in question happens to suffer some  
17 ordinary disease of the liver the condition is  
18 superimposed upon a substratum of injury. In accordance  
19 with this hypothesis we determined that a dose of 0.75  
20 cc of carbon tetrachloride plus 0.75 cc of ethyl alcohol  
21 per kilogram of rat was entirely nontoxic to normal  
22 animals. However, when, this dose was given to animals  
23 which had inhaled chlorinated diphenyl as has been  
24 described in this experiment, the result was acute  
25 yellow atrophy of the liver. It would seem, therefore,

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1     that the inhalation of a concentration of chlorinated  
2     diphenyl in a manner in which I have described is  
3     capable of producing a condition which may be dangerous  
4     to the individual inhaling it, though of itself no  
5     visible harm will be done."

6           Q     Dr. Kelly, did you put on Exhibit 19, 20, 21 or  
7     21 A, which are labels for PCB products, the information  
8     that inhalation of a concentration of PCBs with carbon  
9     tetrachloride and alcohol could result in acute yellow  
10    atrophy of the liver?

11          A     No, sir.

12               MR. DAVIDSON: Object. That's a  
13    mischaracterization of the document.

14          A     I did not, and I did not put on how Drinker got  
15    this elevation of chlorinated biphenyl into the  
16    atmosphere. He heated it up. If you want to go through  
17    his experiment, he used an electric heater for  
18    maintaining a temperature. And I'm trying to see how  
19    high he got it. If I put that on, I'd have to put on  
20    all the details of the experiment, and I did not do it  
21    for the reasons I said before. On a label we would  
22    protect him from all those things if he followed the  
23    information on the label.

24          Q     Dr. Kelly, on Exhibit 19, 20, 21 and 21 A,  
25    which are the labels,

1           A     Yes, sir.

2           Q           did you include language that PCBs can be  
3 absorbed through the skin?

4           A     No, sir, I did not. I avoided     I included  
5 information to prevent absorption through the skin. I  
6 thought that was the more important thing.

7           Q     Dr. Kelly, will you locate Exhibit 29?

8           A     20 which?

9           Q     Exhibit 29. Dr. Kelly, you stated that you did  
10 not include a communication to the worker that PCBs can  
11 be absorbed through the skin because you felt it was  
12 more important to communicate that he should not get the  
13 PCBs on his skin; is that correct?

14          A     I said on the label. On the label. You left  
15 that phrase off. Yes, sir.

16          Q     All right. Will you read paragraph two of  
17 Kelly's Exhibit 29 into the record?

18          A     Yes, sir. "Repeated or prolonged skin exposure  
19 should be avoided since the askarel fluids act as  
20 solvents for fats and oils of the skin. Removal of  
21 these natural protective barriers could lead to drying  
22 and chapping such as occurs with exposure to paint  
23 thinner. More important, the fluid may be absorbed if  
24 it is allowed to remain on the unbroken skin. For these  
25 reasons, we recommend that the skin be washed with soap

1 and water if there is contact. A skin burn resulting  
2 from accidental contact with hot fluid should be treated  
3 in the normal manner as any thermal burn due to hot  
4 oils."

5 Q Dr. Kelly, you authored this document?

6 A Yes, I did.

7 Q In the first two sentences that you read, you  
8 described a solvent action of PCBs on the fats and oils  
9 of the skin.

10 A Yes, sir.

11 Q And drying and chapping of the skin.

12 A Yes, sir.

13 Q What do you mean by the next sentence, "More  
14 important, the fluid PCB may be absorbed if it is  
15 allowed to remain on the unbroken skin"?

16 A I mean just what it says. If the fluid is on  
17 the skin and stays there, it can be absorbed. It may be  
18 absorbed through the skin.

19 Q But what do you mean by more important? More  
20 important than what?

21 A More important than the local action on the  
22 skin, yes, sir.

23 Q And you knew on March 4, 1971 that it was more  
24 important to admonish or warn about PCBs going through  
25 the skin into the body than to caution about the PCB

1 fluids being solvents for fats and oils on the skin and  
2 causing drying and chapping; isn't that correct?

3 A Say that over. You lost me there. You got a  
4 little prolonged in the question.

5 Q When you authored this document in 1971, you  
6 knew it was more important to communicate that PCBs can  
7 be absorbed through the skin into the body as opposed to  
8 the effects of skin PCBs on the skin in causing  
9 drying, chapping, and having a solvent action for fats  
10 and oils?

11 A Yes.

12 Q Did you know when you prepared Exhibit 19 that  
13 from a toxicological standpoint the information about  
14 PCBs being absorbed through the skin into the body was  
15 more important than the effects on the skin?

16 A Yes, sir.

17 Q Dr. Kelly, earlier in the deposition you  
18 calculated what .5 milligrams per cubic meter of air  
19 means in parts per million. Do you recall that?

20 A Yes, sir.

21 Q And what was your calculation in parts per  
22 million?

23 A I don't remember now. It's whatever I said in  
24 the deposition.

25 Q Okay. If it was two parts per million, that

1 would mean that you would have two parts PCB to a  
2 million parts of air; is that

3 A No, not quite, because you were talking about  
4 milligrams, which is a weight basis, versus a cubic  
5 meter of air, which is a volume basis.

6 Q All right.

7 A And when you So you have to get into that  
8 equation what the air weighs and what the material  
9 itself weighs.

10 Q But isn't that how you arrive at a parts per  
11 million ratio? In other words, if it was a direct  
12 relationship between the milligrams and the cubic meter  
13 of air, it would still be .5 to one million?

14 A Well, that isn't parts per million. That is  
15 milligrams.

16 Q That's weight.

17 A Weight versus volume. That gets completely  
18 confusing.

19 Q All right. It's a different When comparing  
20 weight to volume, milligrams to a cubic meter of air is  
21 different than a parts per million ratio?

22 A Yes.

23 Q But to get to the parts per million ratio,  
24 which I believe you said was two parts per million or  
25 one part per million, I don't recall, you have to

1 calculate the weight of the air and the weight of the  
2 chemical?

3 A Yes. Which I didn't do, and I may very well be  
4 in error by a lot of figures in that.

5 Q All right. And I understand that. My question  
6 to you is this. You knew in 1955 that there was a  
7 there were Maximum Allowable Strike that. When did  
8 you know that there was a Maximum Allowable  
9 Concentration for Aroclor 1254, which is a PCB, of .5  
10 milligrams per cubic meter?

11 A Whenever it was adopted.

12 MR. DAVIDSON: Object to that.

13 A I don't know when it was adopted.

14 MR. DAVIDSON: I think the testimony was that  
15 was for one of them.

16 THE WITNESS: I beg your pardon?

17 MR. DAVIDSON: I object. I think that was the  
18 testimony The testimony was that was the measure for  
19 one of them, not all of them.

20 MR. McCREA: Counsel, I believe I said Aroclor  
21 1254.

22 THE WITNESS: He said 1254.

23 MR. DAVIDSON: You just said PCBs period.

24 MR. McCREA: Well, I don't think so, counsel.

25 Q (By Mr. McCrea) Dr. Kelly, when did you know

1 that the Maximum Allowable Concentration for Aroclor  
2 1254, which is a PC, was .5 milligrams per cubic meter?

3 A Either 1955 or 1956, around that.

4 Q Dr. Kelly, did you make a decision not to  
5 include on the label the Maximum Allowable Concentration  
6 of PCBs in air so that a workman could understand it?

7 A I did not make such a decision to include the  
8 Maximum Allowable Concentration of PCBs for an  
9 eight hour day because I did not believe the worker was  
10 going to be exposed to that, and I told the worker in  
11 very concise terms how to protect himself from any  
12 amount any injury. If he followed the directions, he  
13 would be much under the Maximum Allowable Concentration.  
14 And I did not believe that the worker who was looking at  
15 the label on a container has the equipment to measure  
16 the PCB in a cubic meter of air, so I think such a  
17 statement would be entirely irrelevant on a label.

18 (Reporter marked Plaintiff's Exhibit 4.)

19 Q Dr. Kelly, can you identify Plaintiff's Exhibit  
20 4?

21 A Yes, sir.

22 Q Did you author that document?

23 A Yes, I did.

24 Q Is that a true and accurate copy of the  
25 original?

1           A     Yes.

2           Q     Dr. Kelly, will you read into the record the  
3     last two paragraphs of the document, or let me state the  
4     last paragraph on page one and the first full paragraph  
5     on page two.

6           A     The last paragraph of page one and the first  
7     paragraph of page two?

8           Q     Yes.

9           A     "MCC's position," that's Monsanto Chemical  
10    Company, "can be summarized in this fashion. We know  
11    Aroclors are toxic, but the exact limit has not been  
12    precisely defined. It does not make too much  
13    difference, it seems to me, because our main worry is  
14    ...if an individual develops any type of liver disease  
15    and gives a history of Aroclor exposure. I am sure the  
16    juries would not pay a great deal of attention to  
17    MAC's."

18                   Second paragraph. "We, therefore, review  
19    every new Aroclor use from this point of view. If it is  
20    an industrial application where we can get air  
21    concentrations and have some reasonable expectation that  
22    the air concentrations will stay the same, we are much  
23    more liberal in the use of Aroclor. If, however, it is  
24    distributed to householders where it could be used in  
25    almost any shape or form and we are never able to know

1     how much of the concentration they are exposed to, we  
2     are much more strict. No amount of toxicity testing  
3     will obviate this last dilemma; and, therefore, I do not  
4     believe any more testing would be justified."

5           Q     Dr. Kelly, you state in the document, "We know  
6     Aroclors are toxic." By "Aroclor," you're referring to  
7     PCBs; correct?

8           A     Yes, sir.

9           Q     Did you put on any of the labels the  
10    information "PCBs are toxic"?

11          A     No, sir. All chemical     All industrial  
12    chemicals are toxic. It depends on the exposure. That  
13    would mean we'd put     that every industrial chemical in  
14    the United States made by every company would have the  
15    word "toxic" on it. It would immediately lose its  
16    warning capabilities.

17          Q     Did you put on the label that PCBs must only be  
18    used where air concentrations of PCBs can be obtained to  
19    assure a safe exposure?

20          A     No, sir. We arrived at a safe exposure by  
21    saying, "Do not breathe at elevated temperatures or in  
22    confined spaces," and we had no problems from our  
23    customers at all in 38 years in the electrical fluid  
24    business. What few exposures we had that were due to  
25    ignoring our     ignoring the caution labels were not in

1     electrical fluids, and they did cause systemic effect in  
2     those three or four cases that I mentioned.

3           Q     Dr. Kelly, you could have stated on the label  
4     what you calculated the maximum air concentration to be  
5     in parts per million; correct?

6           A     Yes, I could.

7           Q     You could have told the worker that this  
8     product is safe at whatever the calculation is, which I  
9     believe on direct examination you said two parts per  
10    million. You could have told them that?

11          A     Well, first of all

12          A     I'm not sure of that two parts per million  
13    because I did not equate at that time, yesterday or  
14    whenever it was, weight versus volume. So

15          Q     I understand that.

16                 MR. DAVIDSON: I object. You said on direct  
17    examination. I think it was on your earlier  
18    cross examination.

19          Q     All right. On cross examination I believe you  
20    stated that .5 milligrams per cubic meter was two parts  
21    per million?

22                 MR. DAVIDSON: Object.

23          Q     But I'd have to go back and read that.

24          A     Well, if I did say that, I do not believe I was  
25    correct in equating weight versus volume.

1           Q     All right. But whatever the figure calculated  
2     to be, whether it was one part per million, two parts  
3     per million or 20 parts per million, you could have put  
4     on the label that in the opinion of Monsanto Company  
5     this product is safe at 20 parts per million or one part  
6     per million, whatever it is, and dangerous above that  
7     level; correct?

8           A     Well, in the first place, I would have to put  
9     on     If I used that figure, I'd have to put on for an  
10    eight hour working day for a 40 year work experience.  
11    The worker would look at that. In my experience with  
12    the workers, he would ignore it. I protected him. If  
13    he followed the caution labels, caution material on the  
14    labels, he would be protected. In our other information  
15    that went out in bulletins, we did put the MAC on, which  
16    went to the scientists or the research people of the  
17    buying public.

18          Q     You knew what the safe level was in your  
19    opinion. You did not put that on the label. Fair  
20    statement?

21          A     Yes. I repeatedly said that the material to  
22    put on a label is what will prevent you from getting any  
23    harm. What we put on the label in our caution  
24    statements, it was short enough that the worker would  
25    read it, and he obviously went along with it because we

1 had no cases of reported illness from any of our  
2 customers in the electrical field.

3 Q That doesn't include to this day; does it?

4 MR. DAVIDSON: Object.

5 A With the exception of chloracne.

6 Q Have you had a recorded case of terminal brain  
7 cancer from exposure to PCBs?

8 MR. DAVIDSON: I object. It's irrelevant

9 A Have I?

10 Q Yes.

11 A I've seen it in the literature, yes. In  
12 isolated cases I've seen brain tumors.

13 Q Have you ever participated in a deposition  
14 where the complaint alleged that there was a brain  
15 cancer caused by exposure to PCBs?

16 A Well, I don't know whether the case was caused  
17 or associated with. The Archbishop of St. Louis just  
18 died of a brain cancer. Should we say that's due to the  
19 wine he used saying Mass? It's associated with it, so I  
20 do not believe that cause has been established.

21 Q Dr. Kelly, in your 1955 document, which is  
22 Plaintiff's Exhibit 4, you state, "If, however, it,"  
23 meaning PCBs, "is distributed to householders where it  
24 can be used in almost any shape and form, and we are  
25 never able to know how much of the concentration they

1 are exposed to, we are much more strict." Explain to  
2 the jury how you were much more strict with regard to  
3 householders using PCBs as opposed to workers in an  
4 industry setting.

5 A Certainly. We never did sell it for household  
6 use. I don't know what England was going to do with it  
7 over there. That was a European use for it, for PCBs,  
8 and we never I didn't know what they were going to do  
9 with it. They maybe were going to have something that  
10 would be in a household. We certainly would be much  
11 more strict; in fact, we wouldn't use it at all.

12 Q Well, Dr. Kelly, maybe I don't understand what  
13 you wrote.

14 A I'll be happy to explain it.

15 Q But this tells me that when you, as of 1955,  
16 distributed it, distributed PCBs to householders, where  
17 it can be used in almost any shape and form, and you,  
18 meaning Monsanto, are never able to know how much of the  
19 concentration they are exposed to, we are much more  
20 strict.

21 A May I see it? Because I do not believe I said  
22 that we distributed it to household use.

23 Q Start with the word "if".

24 A "If, however, it is distributed to householders  
25 where it can be used in almost any shape and form and we

1 are never able to know how much the concentration  
2 they're exposed to, we are much more strict." This does  
3 not say at all that we ever distributed it to  
4 householders. It said "if".

5 Q How are you much more strict?

6 A We didn't sell it for it. We wouldn't do it.

7 Q Why would you not sell it to a householder who  
8 could not obtain a Maximum Allowable Concentration?

9 A Because we didn't know It wasn't a question  
10 of a Maximum Allowable Concentration. We did not know  
11 what his exposure was going to be. We did not know how  
12 his exposure would be supervised. We knew what could  
13 happen in industry, but we didn't know what was going to  
14 happen in a thousand kitchens.

15 Q Did you sell PCBs to be used in swimming pool  
16 paint?

17 A Yes.

18 Q Did you sell PCBs and could that be used by a  
19 householder?

20 A Yes. It would be in the swimming pool.

21 Q And did you sell PCBs to be used in epoxies?

22 A I do not know.

23 Q Did you sell PCBs to be used in resins?

24 A I don't know that.

25 Q Did you sell PCBs to be used in paints?

1           A     Yes. But, remember, you are quoting uses where  
2     the PCB is incorporated in a material where its use  
3     would not be expected to be volatilized or its use would  
4     not be expected to be taken internally. It is true in  
5     some paints we found out afterwards that there was  
6     exposure to animals, and so we withdrew it from that.

7           Q     Did you sell PCBs to be used in insecticides to  
8     extend the kill life?

9           A     I don't know if we ever sold it. This was a  
10    use that the Department of Agriculture first started and  
11    they distributed it, and it was in one of our bulletins  
12    at one time quoting the Department of Agriculture. It  
13    was used by professional exterminators. We never did  
14    make a large sales effort on that material.

15          Q     Did you sell PCBs to be used on the inside of  
16    silos which contained silage fed to cattle and milk  
17    cows?

18          A     Used and incorporated in the paint, yes.

19          Q     Did you sell PCBs for nonindustrial use?

20          A     Did we?

21          Q     Yes.

22          A     It all depends what you mean by industrial use.  
23    If you mean swimming pool paint, and I frankly do not  
24    recall the formulation of a swimming pool paint.  
25    Certainly the paint in silos, the farmer didn't paint it

1       himself. It was painted by an industrial organization  
2       who painted the silos.

3           Q       Your testimony is, Dr. Kelly, that a farmer  
4       couldn't get a substance known as Cumar, which contained  
5       your polychlorinated biphenyls, and he himself paint the  
6       inside of his silo?

7           MR. DAVIDSON: I object. That's total  
8       speculation.

9           A       I don't know whether he could or not.

10          Q       Well, you just said that the farmer wouldn't  
11       paint the silo.

12          A       Well, I think that that's pretty true. Farmers  
13       are farmers; they are not painters.

14          Q       Are they electricians?

15          A       No. But they do electrical work.

16          Q       Are they carpenters?

17          A       Certainly.

18          Q       Are they fence builders?

19          A       Yes.

20          Q       So the way you were more strict in controlling  
21       PCBs for household use was you didn't sell it for  
22       household use?

23          A       We have never sold it for household use. Now,  
24       if painting a swimming pool comes under household use,  
25       that is a       we did sell it for that, yes. But again I

1 say I do not know the formulation of it, I do not know  
2 whether the PCBs could be released from that paint, and  
3 I know that most swimming pools are outside, and the  
4 chances of getting any significant exposure from that  
5 use was very minimal.

6 Q Were you concerned about lawsuits in 1955?

7 A Not as much as I am in 1994, but I think there  
8 I was speaking of I was a little outside my realm  
9 there.

10 Q Well, when you say in the letter, "I am sure  
11 the juries would not pay a great deal of attention to  
12 Maximum Allowable Concentrations," are you talking about  
13 a jury in a lawsuit involving injuries from PCBs?

14 A Well, I wasn't talking about any specific jury  
15 because at that particular time when this was in 1955  
16 we had no cases of any injury or any jury cases  
17 concerning the use of PCBs. I probably should have left  
18 that statement to our lawyers rather than getting  
19 outside my field.

20 Q Dr. Kelly, referring you to Exhibits 19, 20, 21  
21 and 21 A, do you make any reference on those exhibits  
22 that PCBs can be contaminated with chlorinated furans?

23 A No, sir, I do not.

24 Q Did you ever issue a communication to a user  
25 that PCBs could be contaminated with chlorinated furans

1 during the time period you were medical director at  
2 Monsanto?

3 A No, I did not. In the first place, the first  
4 time anyone even there was any literature referenced  
5 to the presence or absence of furans in PCBs was Vos'  
6 work at the Netherlands, I believe, where he did not  
7 find it in ours but found it in other European PCBs. By  
8 the time I left the company in 1974, I have no evidence  
9 of any PCBs being present any furans being present in  
10 our PCBs. I may have looked for it, but I do not recall

11 I am quite sure I saw no reports saying we found it.

12 Q Dr. Kelly, I hand you what you earlier what  
13 earlier was identified as Plaintiff's Exhibit 2, and I  
14 will ask you to read the last sentence of the first  
15 paragraph on page two or what is Bates stamped 105580  
16 into the record. It begins with "Oettel believes".

17 A Yes. To be completely I'm here to tell the  
18 whole truth. This is a memorandum about chloracne cases  
19 at Badische in Germany and Monsanto plant at Nitro, both  
20 of which have nothing to do with PCBs, and the only  
21 mention of PCB's in this three page memorandum is a  
22 statement quoted by Wheeler from Oettel. Now, here's  
23 the statement. "Oettel believes further that this  
24 impurity," I'm not sure which impurity he's talking  
25 about because he mentions one impurity by name and a

1 different impurity by diagram, "that this impurity can  
2 show up in the production of any chlorinated phenol and  
3 is probably responsible for any chloracne which is due  
4 allegedly to chlornapthalenes, pentachlorophenol,  
5 chlorinated biphenyl, et cetera." Is there a question?

6 Q Yes. That memo was authored by Elmer Wheeler  
7 in 1955; is that correct?

8 A Yes, sir.

9 Q And it was sent

10 MR. DAVIDSON: I believe it's '56.

11 Q What was the date of the memo?

12 A '56. June 12th, '56.

13 Q And it was sent to you?

14 A Yes, it was.

15 Q The statement you have just read makes  
16 reference to an impurity.

17 A Yes, sir.

18 Q I want you to tell us what you believe that  
19 impurity is from the document itself.

20 A From the document?

21 Q Yes.

22 A What I believe now or what I believed then?

23 Q No. What you believed then when you read the  
24 document.

25 A I didn't know what to make of it.

1 Q Could that impurity have been a chlorinated  
2 furan as diagrammed on page two?

3 A I don't know because even the diagram, he says  
4 "somewhat similar to it". I don't know what he was  
5 talking about.

6 Q Dr. Kelly

7 A He did not say it was a

8 Q Could that impurity have been what is  
9 diagrammed on that page?

10 A But that isn't what he said. It could have  
11 been, yes.

12 Q It could have been.

13 A But Oettel says it's somewhat similar. It's a  
14 compound somewhat similar to dibenzofuran.

15 Q Doesn't Dr. Oettel state it's somewhat similar  
16 to a chlorinated diphenyl?

17 A Oxide.

18 Q Oxide. Certainly a chlorinated diphenyl oxide  
19 is not a chlorinated furan; is it?

20 A No, but the diagram right next to it is a  
21 chlorinated dibenzofuran.

22 Q So what Dr. Oettel described to Wheeler and  
23 which he diagrammed

24 A Who's "he" now?

25 Q Wheeler.

1 A Wheeler, yes.

2 Q in sending this letter to you was what you  
3 knew then and know now to be a chlorinated furan?

4 A No, that isn't true. I know now it is, but I  
5 didn't know then. And, anyway, he did not say it was a  
6 chlorinated dibenzofuran. He said it's a compound  
7 somewhat similar to it.

8 Q So you did not know that what he diagrammed in  
9 that document was a chlorinated furan, Dr. Kelly?

10 A Sure, I know what he diagramed it. The diagram  
11 is a chlorinated dibenzofuran, but that isn't what  
12 Oettel said. He said that he believes

13 Q Read what he says.

14 A What?

15 Q Read what he says.

16 A Oettel believes that the most potent carcinogen  
17 is a compound somewhat similar to chlorinated diphenyl  
18 oxide, then he draws a furan, but probably with  
19 additional oxygen atoms and molecules, all of which  
20 certainly does not give me any positive information that  
21 there is

22 Q Dr. Kelly

23 A that there's a chlorinated dibenzofuran.

24 Q Dr. Kelly, for the record

25 A Especially since he's talking about an

1 agricultural chemical, 2,4,5 T.

2 Q Dr. Kelly, I believe you said carcinogen, and  
3 you meant chloracne.

4 A Yes. That's true. I'm sorry.

5 Q What did you mean to say instead of carcinogen?

6 A Chloracne.

7 Q Chloracne. Okay.

8 A Although his first statement was Oh,  
9 chloracnogen. That's the same thing.

10 Q And, Dr. Kelly, in conjunction with that  
11 document, you reviewed Plaintiff's Exhibit 3, which  
12 is which consists of notes from a meeting; correct?

13 A From a meeting sometime, yes.

14 Q And you said that meeting would have been in  
15 1960 or 1956; you're not sure which?

16 A I'm not sure which.

17 Q In that document, Dr. Kelly, toxicological  
18 testing was done for chlorinated furans; is that  
19 correct? Refer to the last page.

20 A By who? By Oettel?

21 Q Yes.

22 A Let's see if he says that.

23 Q Dr. Kelly, I don't have a copy in front of me,  
24 but I believe on the second to the last page there is a  
25 description of the toxicological testing that was done.

1           A     Yes, sir. He talks about testing diphenylene  
2     oxide, diphenylene dioxide, tetrachloronaphthalene and  
3     trichlorophenol, all agricultural chemicals or byproduct  
4     raw materials except the contaminants.

5           Q     Dr. Kelly, is tetrachlorodiphenylene oxide one  
6     and the same as chlorinated furan?

7           A     It's one of the chlorinated furans, yes, sir.

8           Q     And that document describes the acute toxicity  
9     of that chemical; correct?

10          A     Yes, sir.

11          Q     And its acute toxicity is described as what?

12          A     A tenth of a milligram per kilogram.

13               MR. DAVIDSON: I'm going to object to this  
14     entire line of questioning. We went over this in some  
15     detail in the prior day of examination, and we don't  
16     seem to be talking about anything different. I think  
17     he's testified to all of this stuff before, and I object  
18     to continuing.

19          Q     Dr. Kelly, I believe we earlier calculated that  
20     that would equal 100 parts per billion.

21               MR. DAVIDSON: I'll object.

22          A     As I said earlier today, I did not take into  
23     account the difference between     Well, here is by  
24     mouth. This has got nothing to do with     One tenth of  
25     a milligram     What did you say is what?

1 Q 100 parts per billion.

2 A Well, a milligram is a thousandth of a gram,  
3 and I don't exactly know how we go from there to say  
4 that's one part per million. If I said that in  
5 reference to air, I was wrong as far as calculating  
6 weight and volume.

7 Q Dr. Kelly, I believe you said that would be  
8 one tenth part per million.

9 A Per million what?

10 MR. DAVIDSON: I'm going to object again to  
11 the repetitiveness and the deportation of all of this,  
12 and if you will give me a continuing objection, unless  
13 it just gets to be too much.

14 Q All right. Dr. Kelly

15 MR. DAVIDSON: Do I have a continuing  
16 objection?

17 MR. McCREA: You do, yes.

18 Q Did you ever warn a user of PCB products about  
19 the acute lethal toxicity of chlorinated furans?

20 A No, sir, I did not because we had tested the  
21 complete PCBs that we sold the man, and it was a mild  
22 toxicity, mild to moderate toxicity, and the presence of  
23 trace amounts of parts per million in the complete PCBs  
24 was not relevant to the toxicity of the material as a  
25 whole.

1 MR. DAVIDSON: We've been going about an hour  
2 and 15 minutes or a little less now. You had initially  
3 said you had 30 more minutes. Are you close to winding  
4 up, or do we need to take a break?

5 MR. McCREA: Yes. Well, I think I said I  
6 don't recall exactly how long I anticipated this would  
7 take, but if Dr. Kelly would like to take a break  
8 Would you like to take a break, Dr. Kelly?

9 THE WITNESS: I think so.

10 MR. McCREA: All right.

11 (Reporter marked Plaintiff's Exhibit 5.)

12 Q Dr. Kelly, I hand you Plaintiff's Exhibit 5.

13 MR. DAVIDSON: May I see that?

14 Q Can you identify the exhibit?

15 A Yes. It's a letter from Mr. Papageorge of the  
16 Monsanto Company to Mr. Jenkins of the Sprague Electric  
17 Company.

18 Q Have you Did you see that document on or  
19 about the date it was authored, July 8, 1970? If you  
20 know.

21 A I don't know. I'll have to read it, but I'm  
22 not listed as a carbon.

23 Q All right.

24 A I doubt if I've seen it.

25 Q All right, sir. Excuse me for walking around

1 here, Dr. Kelly, but I just have one copy of this. I  
2 direct your attention to page two under the paragraph  
3 marked "Disposal," starting with the sixth sentence,  
4 which states "temperatures must exceed". Would you read  
5 that sentence and the next sentence into the record?

6 A Why don't I read the whole paragraph?

7 Q Well, if you

8 A All right. I'll just read your part.  
9 "Temperatures must exceed 1600 degrees F to assure that  
10 complete destruction is achieved. Lower temperatures  
11 would only vaporize the Aroclors and create atmospheric  
12 pollution or, worse yet, would form a partial oxidation,  
13 materials which could be highly toxic. That is, furans  
14 and dioxins."

15 Q Dr. Kelly, what is the date of that document?

16 A July the 7th July 8th, 1870.

17 Q During the time that you

18 MR. DAVIDSON: I think you said 1870.

19 THE WITNESS: 1970.

20 MR. DAVIDSON: Okay.

21 Q Dr. Kelly, during the time that you were  
22 medical director for Monsanto Company and responsible  
23 for the preparation of labels and communications to your  
24 customers, did you ever issue a communication that  
25 highly toxic chlorinated furans and chlorinated dioxins

1 could be formed by vaporizing PCBs?

2 A No, sir, I did not.

3 (Reporter marked Plaintiff's Exhibit 6.)

4 Q Dr. Kelly, during the time period that you were  
5 medical director for Monsanto Company, did you ever  
6 issue a communication to your customers and users of  
7 Monsanto's PCB products that high concentrations of PCB  
8 vapors can cause irritation of the eyes, nose, throat  
9 and upper respiratory tract?

10 A I think in some of our bulletins, and I know  
11 that I've written to individuals in these companies when  
12 they would ask for more information about PCBs.

13 Q Dr. Kelly, on Exhibits 19, 20, 21 and 21 A, do  
14 you include the language that high concentrations of  
15 vapors can cause irritation of the eyes, nose, throat  
16 and upper respiratory tract?

17 A Which ones are we talking about?

18 Q The labels, 19 through 21 A.

19 A Let's take them one at a time.

20 Q All right, sir.

21 A It is not on 19 on No. 21. It is not on  
22 21 A. It is not on 20. And I don't know what's  
23 happened to No. 19 unless we put it back here.

24 Q Dr. Kelly, this is the same as 19.

25 A No, sir, it is not on there. I put on these

1 all these labels information that would prevent  
2 irritation.

3 Q Dr. Kelly, during the time period that you were  
4 medical director for Monsanto Company, did you know that  
5 high concentrations of PCB vapors can cause irritation  
6 of the eyes, nose, throat and upper respiratory tract?

7 A Yes.

8 Q And, Dr. Kelly, what is meant by a high  
9 concentration?

10 A I would say probably one or two milligrams per  
11 cubic meter of air. That would be the concentration  
12 where the material was at an elevated temperature and in  
13 a confined space.

14 Q So the high concentration would exceed the  
15 Maximum Allowable Concentration for Aroclor 1254, which  
16 is .5 milligrams per cubic meter of air, and Aroclor  
17 1242, which is one milligram per cubic meter of air?

18 A Well, I'm not certain that would be Suppose  
19 That's a speculation on my part. I do not know what  
20 the irritating level of Aroclor 1254 is. I do know that  
21 it has to be elevated exposed to elevated  
22 temperatures. I do know that you can have a bucket of  
23 Aroclor 1254 in this room at ambient temperatures and  
24 nobody here would get any irritation of the eyes, nose  
25 or throat.

1 Q Dr. Kelly, isn't it a fact that you knew when  
2 workers experience irritation of the eyes, nose, throat  
3 and upper respiratory tract they, in fact, are being  
4 exposed to ambient levels of PCBs above Monsanto's  
5 Maximum Allowable Concentration?

6 A I knew?

7 Q Yes.

8 A First of all, you're saying Monsanto's Maximum  
9 Allowable Concentration. The Maximum Allowable  
10 Concentration or the TLV was one that was set not by  
11 Monsanto, but by the American Conference of Government  
12 Industrial Hygienists, and I do not know of anybody, any  
13 worker, getting an irritation of the eyes, nose and  
14 throat from ambient temperatures of PCB.

15 Q In the history of the use of PCBs at Monsanto  
16 Company, General Electric, Westinghouse and all other  
17 companies, you don't know of any instance in which a  
18 worker experienced irritation of his eyes, nose, throat  
19 and upper respiratory tract from exposure to ambient  
20 levels of PCBs; is that correct?

21 A That's correct.

22 (Reporter marked Plaintiff's Exhibit 7.)

23 Q Dr. Kelly, earlier we discussed an IBT  
24 protocol.

25 A Yes, sir.

1           Q     And that protocol was dated 1968, and I made  
2     specific reference to a page that is Bates numbered MONS  
3     072693. Do you recall that?

4           A     Yes.

5           Q     I hand you that page from the IBT exhibit.

6           MR. DAVIDSON: Has that been marked as an  
7     exhibit?

8           MR. McCREA: Yes.

9           THE WITNESS: Seven.

10          MR. McCREA: The original document was part of  
11     your part of your exhibit.

12          MR. DAVIDSON: I understand. We're skipping  
13     six?

14          MR. McCREA: Yes.

15          MR. DAVIDSON: Okay.

16          Q     (By Mr. McCrea) Dr. Kelly, is that the page  
17     that we referred to earlier?

18          A     Yes, sir.

19          Q     From IBT?

20          A     Yes, sir.

21          Q     Dated 1968. And in that study in 1968, IBT was  
22     going to do pathological examinations of all those  
23     tissues and organs?

24          A     Yes, sir.

25          Q     And who made the decision at Monsanto Company

Kelly, R. Emmet M.D. (frmr Mons Med Dir) in FISHER

1 that that study was necessary?

2 A I think I made the ultimate decision.

3 Q Before 1968, did you ever inform a customer or  
4 user of Monsanto's PCB products that there were no  
5 studies with respect to the toxicity of PCBs on these  
6 tissues and organs?

7 A No, sir. That's not really correct because  
8 there was some of the There was toxicity studies done  
9 by Drinker and pathological examination of some of these  
10 organs. There was chronic inhalation study by Treon and  
11 examination of some of these organs. But there was not  
12 a two year long term feeding test carried out because it  
13 was an industrial chemical and there was no necessity  
14 for doing it.

15 Q Dr. Kelly, during the time that you were  
16 medical director for Monsanto Company, did you ever  
17 focus attention on PCB's harmful effects in the  
18 environment?

19 A Yes. When it was found in the environment.

20 Q When were PCBs found in the environment?

21 A Late '66, I believe. '66 or '67.

22 (Reporter marked Plaintiff's Exhibits 8 and 9.)

23 Q Dr. Kelly, on August 29, 1960, what was the job  
24 of Jack T. Garrett at Monsanto Company?

25 A He was a member of the medical department. He

1 was in industrial hygiene.

2 Q Did you and Dr. Garrett as of 1960 ever discuss  
3 the potential adverse effects on the environment  
4 presented by your PCB chemical?

5 A I don't know if we ever did. I have no  
6 recollection of it. In when? 19 which?

7 Q 1960.

8 A I have no recollection of anything like that.

9 Q I'm going to hand you what is marked as  
10 Plaintiff's Exhibit 8, and I will first ask you if you  
11 can identify the document.

12 A Yes, sir. I've read it.

13 Q Can you identify the document?

14 A This is a letter of Mr. Garrett to a Mr. Pacini  
15 of the Chicago Pneumatic Tool Company talking about  
16 Pydraul fluids, which are not electrical applications.

17 Q Is that a PCB product?

18 A They may or may not. I don't know if all  
19 Pydrauls are PCBs.

20 Q Dr. Kelly, would you read the third sentence of  
21 paragraph two into the record?

22 A "If the material is discharged in large  
23 concentrations, it will adversely effect the organisms  
24 in the bottom of the receiving stream, which will effect  
25 the aquatic life of the stream."

1 Q Dr. Kelly, assuming that Jack Garrett is  
2 referring to PCBs, did you ever issue a warning that  
3 reflected that information?

4 A No, sir, I did not. I did not know how  
5 accurate Jack was on that.

6 Q To your knowledge, did Monsanto Company ever do  
7 any testing to determine the effects of its PCBs on  
8 fish?

9 A Yes, they did.

10 Q In what year did you first do the testing?

11 A I know It was either the late '60's or the  
12 early '70's. I don't know when.

13 Q Dr. Kelly, I hand you what is marked  
14 Plaintiff's Exhibit 9. Can you identify the exhibit?

15 A Yes. This is a letter from a David Wood to  
16 George Buchanan in St. Louis concerning Aroclors in  
17 Sweden together with a letter of a memorandum of  
18 somebody from Rising and Strausberg (sic.), I don't  
19 know, to Mr. Wood in our Brussels office.

20 Q Have you seen that document before today's  
21 date?

22 A Yes. I was given sent a copy of it. I'm on  
23 the If the attachment was with it then. Well, yes.  
24 I presume the attachment was there. I'm shown as  
25 receiving a copy, so I must have seen it then.

1 Q Dr. Kelly, by "then," you're referring to what  
2 date?

3 A December 1966.

4 Q Who is David Wood?

5 A I don't know what his position was. He was  
6 somebody in our Brussels office. I really don't know  
7 whether he was in the sales department, the development  
8 department or what. I just don't know.

9 Q Why did Monsanto have an office, or what was  
10 the function of the office in Brussels?

11 A To sell chemicals in Europe.

12 Q What chemicals were manufactured or what  
13 chemicals were sold in Europe?

14 A I don't know that. I mean, we manufactured  
15 chemicals in several places in Europe.

16 Q Did you sell polychlorinated biphenyls in  
17 Europe?

18 A Yes. We were Along with about five other  
19 European companies, we manufactured PCBs and sold them.  
20 I don't know We did not have the monopoly on the  
21 market that we had in the United States.

22 Q All right. Dr. Kelly, excuse me again for  
23 hanging over your shoulder here.

24 A No problem.

25 Q Would you read into the record the fourth full

1 paragraph on page two, which is Bates numbered STR  
2 excuse me 017392 with another Bates stamp 0  
3 S000197. The fourth paragraph, sir, beginning "Mr.  
4 Jensen".

5 A Yes. "Mr. Jensen has also examined the hair of  
6 his family and himself and has found PCBs on all  
7 samples. Most PCBs were found in the hair of his wife,  
8 but most sensational was that the girl aged five months  
9 had more PCB in her hair than her brothers and sisters  
10 of three and six years. Probably the girl had gotten  
11 poisoned via the mother's milk."

12 Q Dr. Kelly, describe what Monsanto Company did  
13 when it received the information in that paragraph.

14 MR. DAVIDSON: Well, it didn't just receive  
15 the information in the paragraph. It received all the  
16 information in the document.

17 A Well, this was information that they had  
18 received that Jensen had found it in the fish, and I  
19 believe they had information that was listed in this  
20 particular paragraph. I'll have to read some more about  
21 this. Also in this article they talk about the PCBs is  
22 not imported, so that presumably the use of PCBs was  
23 from European sources. What they did was They did a  
24 number of things.

25 Q When you say "they," you're referring to

1           A       Monsanto. Even though we were not sure that  
2       this was an Aroclor problem, it was a PCB problem, they  
3       did not       Monsanto did not know know where the PCB was  
4       coming from. Was this from an outflow of some of the  
5       manufacturing sites in Europe? We did not manufacture  
6       the material in Sweden. France was close to there.  
7       Germany was close to there. So they started looking  
8       around in the United States to see what the material  
9       where the material could be found. At that particular  
10      time we did not, as I remember, have the same expertise  
11      or the same equipment that Jensen had, but we did  
12      discuss this with the authorities in the United States  
13      Department of Agriculture. I'm not sure about the  
14      Department of Agriculture, the Department of Fish and  
15      Wildlife, and we started doing biodegradation studies.  
16      I don't know the exact date of that.

17          Q       Dr. Kelly, with regard to the paragraph that  
18      you read into the record, which states in part     well,  
19      states in total, "Mr. Jensen has also examined the hair  
20      of his family and himself and has found PCB on all  
21      samples. Most PCB was found in the hair of his wife,  
22      but most sensational was that the girl age five months  
23      had more PCB in her hair than her brothers and sisters  
24      of three and six years. Probably the girl had got the  
25      poison via the mother's milk." Did you at any time that

1 you were medical director for Monsanto Company following  
2 this communication on December 1, 1966, issue a  
3 communication that reflected this information?

4 A That what?

5 Q That reflected this information that a child  
6 could receive the PCB poison from her mother's milk.

7 A No, sir. Remember now, we are talking not  
8 about Monsanto's PCBs. We are talking about a European  
9 PCB, because it says in the course in the other parts  
10 of this letter that Sweden did not import any PCBs. We  
11 did not know at this time whether this was a  
12 particularly a problem particular in the European  
13 community, whether these What the exposure of  
14 Jensen's family was we did not know. We knew that it  
15 was being looked at by the government authorities over  
16 there. And we To answer your question, I did not  
17 take this particular statement of what happened in  
18 Europe and put it in our bulletins to the United States  
19 at that particular time. I don't think we ever put it  
20 in, but we did any number of things to cut down the  
21 exposure in the United States.

22 Q Dr. Kelly, when did you, and by "you" I mean  
23 you yourself, first learn that PCBs were in mother's  
24 milk in women in the United States?

25 A I don't know. I think sometime after 1970, but

1 I don't know exactly when.

2 Q Dr. Kelly, after this communication on December  
3 1, 1966, when did Monsanto Company first restrict its  
4 sale of PCBs?

5 A Late '69 probably or. . .

6 Q Dr. Kelly, when did you first learn about the  
7 concept of bio concentration of chemicals and  
8 specifically chlorinated hydrocarbons?

9 A Probably

10 MR. DAVIDSON: What do you mean by  
11 bio concentration?

12 Q Dr. Kelly, what is bio concentration of  
13 chlorinated hydrocarbons?

14 A Well, I don't know what you mean by it, but  
15 what I mean is If you mean by accumulation, that's  
16 one thing. If you mean the increase in concentration  
17 between one species and the other, depending on the food  
18 chain, that's something else. What do you mean?

19 Q I mean the increase of PCBs as it relates to  
20 the exposure to PCBs. In other words, if you have one  
21 level in the water, you have a bio concentrated level in  
22 the aquatic organisms or the fish.

23 A I would say sometime in late '69 or early '70.

24 Q Did you read the book Silent Spring by Rachelle  
25 Carson?

1           A     Yes, I did.

2           Q     And did that book talk about the  
3     bio concentration of chlorinated hydrocarbons?

4           A     I do not know whether it did or not.  It  
5     certainly didn't talk about PCBs.

6           Q     Did it talk about DDT?

7           A     Yes.

8           Q     Did it talk about chlorinated hydrocarbons

9           A     I don't recall.

10          Q       used as insecticides?

11          A     I don't recall.

12          Q     Dr. Kelly, when did you first learn that  
13     mother's milk bio concentrates PCBs in the

14                 MR. DAVIDSON:  I object again.

15          Q       in the human body?

16                 MR. DAVIDSON:  I object again to the use of  
17     the term "bio concentrate".

18          Q     Strike the question.  Do PCBs bio concentrate  
19     in mother's milk?

20          A     I don't know.

21                 MR. DAVIDSON:  Move to strike.

22          A     I still don't know what you mean by  
23     bio concentrate.

24          Q     Is the level of PCBs in the human body higher  
25     in fat than it is in the blood?

1 A Yes.

2 Q And you testified earlier that it was a  
3 thousand times higher in the fat than the blood?

4 A Yes.

5 Q And are levels And when did you know that?

6 A Probably, again, in the early '70's. '72 or  
7 '73.

8 Q Are PCBs higher in mother's milk? Is the  
9 concentration in PCBs higher in mother's milk than it is  
10 in the blood of the woman?

11 A I don't know. I'd be speculating.

12 (Reporter marked Plaintiff's Exhibit 10.)

13 Q Dr. Kelly, I hand you Plaintiff's Exhibit 10.  
14 Can you identify the exhibit?

15 A Yes, sir.

16 Q Did you author that?

17 A Yes, I did.

18 Q What is the date?

19 A March the 30th, 1970.

20 Q Dr. Kelly, earlier you described Plaintiff's  
21 Exhibit 4, which is a document that you also authored;  
22 is that correct?

23 A Yes, sir.

24 Q In document four, which is dated 1955, you  
25 state, "If, however, it," meaning PCBs, "is distributed

1 to householders, where it can be used in almost any  
2 shape and form, and we are never able to know how much  
3 of the concentration they are exposed to, we are much  
4 more strict."

5 A Yes, sir.

6 Q Is that correct?

7 A That's correct.

8 Q Dr. Kelly, Plaintiff's Exhibit No. 10 relates  
9 to a nonindustrial use of PCBs; does it not?

10 A I don't know if your term is correct. I don't  
11 know if painting a silo is nonindustrial. It all  
12 depends on what you mean by industrial.

13 Q When did Monsanto first sell PCBs to be used as  
14 a coating in silos which store silage which is fed to  
15 cattle and milk cows?

16 A I do not know.

17 Q The document, which you authored in 1970,  
18 reflects a problem of PCBs leaching or flaking from the  
19 coatings of silos and then contaminating silage which is  
20 eaten by milk cows and shows up in the milk; is that  
21 correct?

22 MR. DAVIDSON: I object to the factual basis  
23 for counsel testifying as to what all that means.

24 Q Is that a fair summary of the document?

25 A I lost my concentration. Do you mind going

1 back with it?

2 Q Yes. The exhibit you have in your hand, which  
3 is dated 1970, describes a situation where PCBs leached  
4 from the coatings of silos, contaminated silage eaten by  
5 milk cows, which then contaminated the milk.

6 A Yes, sir.

7 MR. DAVIDSON: I'll object again, and I will  
8 also add an objection as to the relevance of this  
9 document as to the claims of Mrs. Fisher.

10 Q Is that correct?

11 A Yes, sir.

12 Q Would you read the last paragraph of that  
13 document into the record?

14 A Yes, sir. "This brings us to a very serious  
15 point. Are we going to tell our customers not to use  
16 any Aroclor in any paint formulation that contacts food,  
17 feed or water for animals or humans? I think it's very  
18 important that this be done. It may be that some of the  
19 customers will assure themselves on the basis of  
20 nonextractability that a particular formulation might be  
21 safe, but I think we should make a blanket  
22 recommendation against these uses."

23 Q And, Dr. Kelly, that document is 15 years after  
24 Exhibit 4 in which you state, quote, excuse me, "If,  
25 however, PCB is distributed to householders, where it

1 can be used in almost any shape and form, and we are  
2 never able to know how much of the concentration they  
3 are exposed to, we are much more strict"?

4 A Yes, sir.

5 Q Dr. Kelly, when you state, "When are we going  
6 to tell our customers not to use any PCB in any paint  
7 formulation that contacts food, feed or water for  
8 animals or humans?" you're making reference to a  
9 statement in 1970; is that correct?

10 A Yes, sir.

11 Q And when did you inform your customers not to  
12 use the paint formulation?

13 A I talked to Bill Papageorge. He call me after  
14 he got this memorandum and said, "Emmet, we have  
15 you're out of the loop as far as we're communicating  
16 with you. We have sent letters out to all our customers  
17 not to use," just what you said in your last paragraph.  
18 He said, "It's already been done." So it was sometime  
19 between January the 1st, 1970 and March the 30th, 1970.

20 Q And, Dr. Kelly, how did you communicate to the  
21 farmers in the United States that there was a problem of  
22 PCBs leaching from the silos into the silage and getting  
23 into milk?

24 A I think it was done through the state  
25 agricultural departments. I myself did not do that.

1 Papageorge did.

2 Q You did not issue any communications to the  
3 farmers ever?

4 A I?

5 Q Yes.

6 A I did not.

7 Q And Monsanto Company never issued any  
8 communications to the farmers?

9 A I don't know if they did or not, but we  
10 certainly talked to the state people and they got the  
11 word out to the farmers.

12 Q Dr. Kelly, I hand you what is marked as  
13 Plaintiff's Exhibit 6. Can you identify

14 MR. DAVIDSON: May I see this, please?

15 MR. McCREA: Yes.

16 A Could I

17 Q Can you identify the exhibit, Dr. Kelly?

18 A This is a bulletin put out by the American  
19 National Standard, "Guidelines for the Handling and  
20 Disposal of Capacitor and Transformer Grade Askarels  
21 Containing Polychlorinated Biphenyls."

22 Q Dr. Kelly

23 MR. DAVIDSON: Do we have a date on that?

24 A Approved January 9th, 1974. But Yes, I  
25 presume that's when it was published. I don't know

1 It doesn't say when it was published, but that's when it  
2 was approved.

3 Q Have you seen that document before today?

4 A I may have. I don't know, frankly.

5 Q Dr. Kelly, when you treat a patient, do you  
6 develop medical records?

7 A Yes.

8 Q What types of medical records do you develop in  
9 the course of the treatment of a patient?

10 A The history, the physical, the laboratory  
11 results, x ray results, and how the person and the  
12 interval history of how he's getting along, whether he's  
13 seeing any particular physicians, what type of work he's  
14 done, what his ancestors have been, his recent family,  
15 and if they've had any particular illnesses running in  
16 the family.

17 Q Dr. Kelly, what is the usefulness of those  
18 medical records to you as a doctor in treating a  
19 patient?

20 A Well, it's useful because you find out what's  
21 the matter with the man, with a person. You can't treat  
22 the person unless you know what's wrong, if anything.

23 Q Dr. Kelly, on the document, there's a yellow  
24 sticker.

25 A Yes, sir.

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1 Q Do you see that?

2 A Yes.

3 Q Will you turn to the page where the sticker is  
4 applied?

5 A Yes.

6 Q On that page, Dr. Kelly, do you see a paragraph  
7 2.3 entitled "Risk"?

8 A Yes.

9 MR. DAVIDSON: Can I have the page number?

10 MR. McCREA: Page seven, Bates stamp K  
11 0006367.

12 A K0006367.

13 Q Dr. Kelly, would you read into the record that  
14 paragraph?

15 A Yes. "Risks. In the United States, medical  
16 records over a nearly 40 year period showed that the  
17 only adverse health effects experienced by U.S. workers  
18 exposed to askarels, either during the manufacture of  
19 these liquids or of electrical equipment containing  
20 these liquids, have been limited to occasional cases of  
21 nonchronic chloracne or other temporary skin lesions or  
22 irritations."

23 Q Dr. Kelly, where are Monsanto's medical records  
24 that are referenced in that paragraph?

25 A Where are what?

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1           Q     Where are Monsanto Company's medical records  
2     that are referenced in that paragraph?

3           A     He does not have a reference to anything other  
4     in that particular paragraph.

5           Q     Dr. Kelly, are you familiar with the study of  
6     medical records from Monsanto Company that support that  
7     statement?

8           A     Am I familiar with the records?

9           Q     With the study of the medical records from  
10    Monsanto Company which support that statement.

11           MR. DAVIDSON: I'll object to this. This  
12    doesn't say anything about these being Monsanto records  
13    or involving Monsanto at all. It's the American  
14    National Standards Institute, which was made up of a lot  
15    of different people, a lot of different representatives  
16    of government agencies and companies. There's no  
17    indication particularly that this is based on any study  
18    of Monsanto records.

19           MR. McCREA: Counsel, the document states  
20    medical records during the manufacture of these liquids.  
21    Monsanto Company was the only manufacturer of these  
22    liquids; therefore, the medical records must by  
23    definition include Monsanto Company in that it was the  
24    only manufacturer in the United States. I would agree  
25    with you if there were ten manufacturers of PCBs, but

1       there weren't. Dr. Kelly has stated that Monsanto  
2       Company was the sole manufacturer of PCBs since it  
3       purchased Swann Chemical in about 1935.

4               MR. DAVIDSON: You don't need to lecture me,  
5       Mr. McCrea. I know what you're talking about. I know  
6       what you're doing. I still say that that paragraph does  
7       not reference Monsanto workers except by your inference.

8               Q       Dr. Kelly, in paragraph 2.3, which describes  
9       risks, it makes reference to medical records over a  
10      nearly 40 year period show that the only adverse health  
11      effects experienced by U.S. workers exposed to askarels,  
12      either during the manufacture of these liquids or of  
13      electrical equipment containing these liquids, have been  
14      limited to occasional cases of nonchronic chloracne or  
15      other temporary skin lesions or irritations. My  
16      question to you, Dr. Kelly, is where are the medical  
17      records from Monsanto Company that were studied to  
18      support this statement?

19              A       I do not know when they studied them, I do not  
20      know whether the people who wrote this took  
21      Dr. Kimbrough's statement that she wrote twice in two  
22      different publications stating the same thing. I don't  
23      know if they took hers. But the Monsanto records were  
24      in the employee files of the Anniston plant, which  
25      showed that none of the Monsanto people developed any

1 illnesses, and they were examined at yearly or 24 month  
2 intervals.

3 Q Dr. Kelly, were you medical director at  
4 Monsanto Company on the date this document was printed?

5 A Yes. Yes.

6 Q And the date the document was printed is what?

7 A January I don't know when it's printed. It  
8 was approved January 9th of 1974.

9 Q And, Dr. Kelly, as medical director of Monsanto  
10 Company, do you have any knowledge of a study of  
11 Monsanto's medical records which support this statement?

12 A Well, it depends what you mean by a study. If  
13 you mean by an epidemiological study, we did not do  
14 one, but I know myself I went down and went and saw the  
15 records, and I've talked to the doctor there and I've  
16 talked to the nurse at the plants where we manufactured  
17 these materials, and they did not have any undue amount  
18 of illness that could be any illness that could be  
19 attributed to the manufacture of PCB.

20 Q Dr. Kelly, are you aware of any medical records  
21 of Monsanto's workers from their own private physicians  
22 which were reviewed to support this statement?

23 A Whenever any employee came back from a  
24 three day illness, he had in his record a statement from  
25 his physician as to what his medical condition was.

1 Q Dr. Kelly, do you know who did the study of the  
2 medical records?

3 A Well, I looked over them. I didn't make a  
4 study of them. If you mean did I publish it, no, I  
5 didn't do that.

6 Q Do you know who did the study of the medical  
7 records as reflected in this paragraph?

8 A No, I don't know that. I do not know whether  
9 he based it on medical records or he based it on  
10 authorities, such as Kimbrough.

11 Q Dr. Kelly, the statement says in the United  
12 States medical records; does it not?

13 A Well, maybe he did. Maybe somebody did. I  
14 didn't.

15 Q Are you aware of any studies of medical records  
16 from any of your customers whose workers were exposed to  
17 PCBs?

18 A Well, there was an epidemiological study by  
19 Brown of General Electric.

20 Q I'm talking on the date this was authored.

21 A I don't know what Brown's study was. I don't  
22 know if that was after 1974 or not. But I don't know  
23 what records he did.

24 Q Dr. Kelly

25 A Maybe he had a lot more than we did.

1 Q Dr. Kelly, have you seen a single piece of  
2 paper that describes a review of medical records of  
3 Monsanto Company and its customers that supports this  
4 statement?

5 A I haven't seen one, but that doesn't mean that  
6 there may not be one. I don't know what the basis of  
7 his statement was, but I do know that there were  
8 authorities that were much more qualified than whoever  
9 wrote these This statement that stated that there  
10 were no illnesses in the I can attest to there were  
11 no illnesses in the manufacturing. And obviously they  
12 had someone else attest to the fact that there were no  
13 illnesses attributable to PCBs in the users. Now, no  
14 matter how you slice it, whether he has a written thing  
15 or not, those are the facts.

16 Q But you've never seen anything in writing that  
17 reflects any type of study of medical records that  
18 supports this statement?

19 A No. But I have seen statements by authorities  
20 that support this statement.

21 Q Before 1974?

22 A No, sir, not before 1974, but

23 (Whereupon, there was an off the record  
24 discussion and video tape change.)

25 Q Dr. Kelly, I'm going to hand you what is marked

1 Plaintiff's Exhibit 1. The date of that document is  
2 what?

3 A I do not know. There is a written date  
4 6/24/65.

5 Q Did you author that document?

6 A Yes, I did.

7 Q Do you know the date it was authored?

8 A No, I don't.

9 Q Dr. Kelly, that document states in your words,  
10 quote, "Very conceivably, dioxin can be a potent  
11 carcinogen." Is that correct?

12 A Is the statement correct, or is the statement  
13 in here?

14 Q Is what I'm telling you what you wrote?

15 A I wrote there, yes. I should not indulge in  
16 speculation.

17 Q Dr. Kelly, is dioxin a chlorinated hydrocarbon?

18 A Yes.

19 Q Did you have products that contained dioxin?

20 MR. DAVIDSON: I object to the relevance of  
21 the entire line of questioning and also the duplication  
22 of your having asked it all on the prior deposition  
23 days.

24 A At the time By the time I retired, I do not  
25 know if we had physical evidence of dioxin in our

1 herbicide at our Nitro plant, which was not at all  
2 similar to PCBs, but I did have knowledge of that.

3 Q Did you, and by "you" I mean Dr. Kelly, ever  
4 issue a warning that dioxin could be a contaminant in  
5 Monsanto's products and very conceivably dioxin can be a  
6 potent carcinogen?

7 MR. DAVIDSON: Object. Move to strike.

8 A No, I did not, because I said, as I told you a  
9 little while ago, whenever this particular statement was  
10 made, if it was in 1965, I was speculating that there  
11 was no evidence that dioxin, A, was We're talking  
12 about This is entirely about a herbicide, not an  
13 electrical compound at all. It's not about PCBs at all.  
14 Let's be sure about that. That in '65 I made the  
15 speculation that it can be a potent carcinogen. That  
16 was a speculation. I did not know about it, I did not  
17 know about any evidence for it, and I would certainly  
18 see no reason to put a speculation in a warning to  
19 customers.

20 Q Dr. Kelly, in issuing communications to users  
21 of your products, do you want to fairly and accurately  
22 describe to those users potential health problems that  
23 could be related from exposure to your products?

24 A It depends on the type of communication I'm  
25 doing. What are we talking about now? Let's take them

1 one at a time. Labels, I do not believe you should put  
2 that type of information on a label. What you do on a  
3 label is to put on warnings or caution statements that  
4 will prevent them from getting anything, any ill  
5 effects.

6 Then we take bulletins. Bulletins, some of  
7 our bulletins list If they are going to scientists,  
8 if they are going to people knowledgeable in the medical  
9 field, we list or the toxicological field, we list  
10 the toxicological information that we have. In letters  
11 to physicians, medical directors of companies, we tell  
12 them everything we know.

13 Q Dr. Kelly, if you manufacture a product and you  
14 know absolutely beyond any question of any doubt that it  
15 causes a skin rash

16 A Skin what?

17 Q Skin rash.

18 A Yes.

19 Q and you have good medical reasons to believe  
20 it may be a potent carcinogen, which warning do you  
21 think is more important to put on the label?

22 A You are asking me to suppose. This is a  
23 speculation? This is a hypothetical instance you're  
24 talking about?

25 Q I said you have good medical reasons to believe

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1 that it may be not only a carcinogen but a potent  
2 carcinogen. Now, what I'd like to do is I'd like to  
3 have the court reporter reread the question.

4 A I missed the last part of your question.

5 Q I'd like for the court reporter to reread the  
6 question.

7 (Reporter read back as requested.)

8 MR. DAVIDSON: I'll enter an objection to  
9 speculation and hypotheticalness and relevance to this  
10 case.

11 A I would put on a label something to prevent  
12 both. If we put on a caution label that would prevent  
13 either an action of a potent carcinogen then it's not  
14 necessary to put that on because also if it prevents the  
15 skin rash, we put that on. You have There are two  
16 things about toxicity: one is the exposure, and the  
17 other is the inherent property of the compound. You  
18 have neglected in your hypothetical the possible  
19 exposure.

20 Q Dr. Kelly, if that worker gets your  
21 communication that the product can cause a skin rash if  
22 it gets on his skin and he protects himself from that  
23 skin rash, then is it your opinion he also would be  
24 protecting himself from cancer?

25 A Yes.

1 MR. DAVIDSON: I object. Move to strike.

2 That's not what he testified to.

3 Q Your answer is?

4 A What was the question again?

5 MR. McCREA: Read the question back.

6 (Reporter read back as requested.)

7 MR. DAVIDSON: And I'll object because the  
8 hypothetical didn't say anything about saying He did  
9 not testify that he said he would get a skin rash. He  
10 said he would tell him what he needed to do to avoid the  
11 exposure that might expose him to either risk.

12 A If I protected the man from exposure to a  
13 compound that prevented any action on the skin, I  
14 believe I believe I would protect him against any  
15 absorption through the skin, and he would not get a  
16 cancer. This is now an entirely hypothetical question  
17 which you've given me.

18 Q And that was your working methodology during  
19 the years you were medical director?

20 A Yes, sir.

21 (Reporter marked Plaintiff's Exhibit 11.)

22 Q Dr. Kelly, I hand you what is marked as  
23 Plaintiff's Exhibit 11.

24 A Yes, sir.

25 Q Dr. Kelly, do you know the author of that

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1 document?

2 A Yes. Could I identify this document first?

3 Q Yes, sir.

4 A This is a document from Mr. W. P. Papageorge  
5 dated March 18th, 1975, which was four months after I  
6 retired, to a Mr. Dan Albert, head of Personnel  
7 Relations at the Westinghouse Electric Company.

8 Q In what location, sir?

9 A South Boston, Virginia.

10 MR. DAVIDSON: I'm sorry. I didn't get the  
11 date. Could you repeat that?

12 THE WITNESS: March the 18th, 1975.

13 Q In that document, are there a series of  
14 questions that were addressed to William Papageorge at  
15 Monsanto Company from Dan Albert, Westinghouse  
16 Corporation, South Boston, Virginia?

17 A Presumably there were. I've never seen this  
18 before. I'm going over it.

19 Q All right, sir. Take your time.

20 A He does say Well, he says, "Attached are  
21 responses to your questions." So I presume his other  
22 letter said something about these questions. So what's  
23 your question?

24 Q Dr. Kelly, just for clarification, you have not  
25 seen this document before today's date; is that correct?

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1           A     I may have. I do not know. It came in after I  
2     left Monsanto, and I do not know whether it has been  
3     shown me at any deposition.

4           Q     All right. What is clear is that you were not  
5     medical director at Monsanto Company when this document  
6     was authored?

7           A     That's correct.

8           Q     You retired on what date?

9           A     November the 30th, 1974.

10          Q     And the date of this document?

11          A     March the 18th, 1975.

12          Q     And that     When you say March 18, 1975, you're  
13     referring to the date of the cover letter of William  
14     Papageorge to Dan Albert at Westinghouse in South  
15     Boston, Virginia?

16          A     That's correct.

17          Q     And the document further indicates that these  
18     were questions addressed to Monsanto from Dan Albert of  
19     Westinghouse in South Boston, Virginia; is that correct?

20          A     That's correct. Yes, sir.

21          Q     And how many questions were addressed to  
22     Mr. Papageorge?

23                 MR. DAVIDSON: I'm going to object. The  
24     document speaks for itself.

25          A     Seven. Seven.

1           MR. McCREA: All right. I agree, counsel,  
2           that the document does speak for itself, but I'd like to  
3           address the question to Dr. Kelly with respect to his  
4           knowledge.

5           Q       Would you read question number three from  
6           Westinghouse at South Boston, Virginia and, in  
7           particular, Dan Albert? Just first read the question.

8           A       It says, "Since Inerteen effects birds and  
9           other animals, if there is no real effects to human  
10          beings, how do you explain it to employees in such a way  
11          that they will understand why it can kill a bird and not  
12          a human?"

13          Q       And, Dr. Kelly, will you read the first  
14          paragraph of Mr. Papageorge's answer to that question?

15                 MR. DAVIDSON: I'm going to object, and I'm  
16          going to instruct the witness not to read the matter  
17          into the record.

18                 THE WITNESS: What are you telling me?

19                 MR. DAVIDSON: This is after his time. He  
20          said he's never seen it before. If you want to ask him  
21          a question about something that relates to this document  
22          during the time that he was a medical director, okay,  
23          but this is not     You're not gratuitously getting this  
24          into the record through him.

25                 THE WITNESS: I can't hear your question. Am

1 I supposed to answer this or not?

2 MR. McCREA: No, Dr. Kelly

3 MR. DAVIDSON: I'm instructing you not to read  
4 from the exhibit since it's past your time, and it's  
5 Mr. Papageorge, and they've deposed Mr. Papageorge, and  
6 they've had ample opportunity to ask him about this  
7 document themselves.

8 Q Dr. Kelly, you have read the question. Now I  
9 will read the answer. The answer is

10 MR. DAVIDSON: I'm going to object to your  
11 reading the answer into the record and move to strike.

12 Q The answer is, "There is a potential real  
13 effect to humans including death as discussed in the  
14 answer to Question 1." My question now to you, with  
15 that question posed by Westinghouse in 1975 and the  
16 answer that I have just read from Mr. Papageorge in  
17 which he states there is a real effect to humans,  
18 including death, is did you ever issue a communication  
19 to your customers and your users that there is a  
20 potential real effect to humans from exposure to PCBs,  
21 including death?

22 MR. DAVIDSON: Object and move to strike.

23 A Well, you have not given me the opportunity to  
24 see how he qualified that statement in paragraph one.

25 Q Can you answer the question?

1           A     No, I can't answer the question. Well,  
2     certainly I never said to any customer     That there is  
3     a real danger, including death?

4           Q     There is a potential real effect to humans,  
5     including death.

6           A     Well, there's a potential, yes. There's a  
7     potential. I never told anybody that because I did not  
8     expect anybody to be in a confined room boiling this  
9     material and inhaling it for six hours. There are all  
10    sorts of potential things with chemicals.

11           MR. MCCREA: No further questions. Thank you,  
12    Dr. Kelly.

13           MR. DAVIDSON: Okay. I'd like to take a short  
14    break and get my redirect organized, and then we can  
15    hopefully end this up real quickly.

16                       REDIRECT EXAMINATION

17    QUESTIONS BY MR. DAVIDSON:

18           Q     Dr. Kelly, I wanted to ask just a few questions  
19    to clarify a couple of items that Mr. McCrea asked you  
20    about on his cross examination, and I'd like to ask you  
21    to look first at what was marked as Defendant's Exhibit  
22    4. Do you recall that Mr. McCrea directed you to a  
23    paragraph and asked you some questions about this  
24    exhibit?

25           A     Yes, I do.

1 Q In making those questions, Mr. McCrea referred  
2 to this as a study of PCBs.

3 A Yes, sir.

4 Q Is it a study of PCBs? What is this a study  
5 of?

6 A If this is the one that he was talking about,  
7 it's 4465, which is a combination of chlorinated  
8 biphenyl and chlorinated biphenylbenzene.

9 Q Was this the substance that that you explained  
10 on your direct examination that Dr. Drinker had made a  
11 mistake about what it was?

12 A Yes. In fact, he In the title of it he  
13 refers to it as Aroclor 4465, but on page three he  
14 refers to it as chlorinated diphenyl.

15 Q As chlorinated what?

16 A As chlorinated diphenyl, when really that is  
17 not the material.

18 Q All right. You testified about that exhibit on  
19 your direct examination; did you not?

20 A Yes, I did.

21 Q And in the paragraph on page 060027 that  
22 Mr. McCrea asked you about, he asked you some questions  
23 about or there is a statement about carbon tetrachloride  
24 and ethyl alcohol.

25 A Yes, sir.

1 Q Can carbon tetrachloride alone cause atrophy of  
2 the liver?

3 A Yes. In a sufficient dose. It did not cause  
4 it in this dose that he gave here.

5 Q And can ethyl alcohol What is ethyl alcohol?

6 A Whiskey.

7 Q And can that cause yellow atrophy of the liver  
8 in sufficient dose alone?

9 A I don't think it can cause yellow atrophy of  
10 the liver. It can cause cirrhosis. It can cause lots  
11 of liver problems. But I do not think it I think the  
12 acute effect is so bad that you will not get liver  
13 atrophy acute liver atrophy.

14 Q All right, sir. And did it in this experiment?

15 A Yes. In combination with chlorinated  
16 diphenylbenzene and carbon tetrachloride.

17 Q All right. I'd like to ask you now to take a  
18 look at what is marked as Plaintiff's Exhibit 3, and I  
19 direct you to the page of that the next to the last  
20 page of that document where Mr. McCrea addressed some  
21 questions to you.

22 A Yes, sir.

23 MR. McCREA: Was that page 122?

24 MR. DAVIDSON: I assume it is. It's the next  
25 to the last one. It's the one you quoted from. This is

1 Plaintiff's your Exhibit 3. You've got the wrong  
2 exhibit.

3 MR. McCREA: Oh!

4 Q Do you see the next to the last page?

5 A Yes.

6 Q In the first beginning paragraph on that page,  
7 it starts "Dr. Oettel"?

8 A Yes.

9 Q Would you read in the second sentence of that  
10 paragraph, please? You don't Just read it to  
11 yourself.

12 A Yes, sir.

13 Q It says that, "Residues from Badische  
14 decomposition have been extracted and elemental analyses  
15 made of the extracts." What does that mean?

16 A It means that they took the decomposition gunk  
17 that they had and just extracted it somehow or another,  
18 I don't know what solvent they used, and then analyzed  
19 just for the elements. They did not analyze for the  
20 compounds in there. They analyzed for carbon, hydrogen,  
21 chlorine and oxygen.

22 Q All right. Next then it says, "Following this,  
23 a series of oxygen bearing chlorine bearing ring  
24 hydrocarbons were synthesized and checked for animal  
25 toxicity using rabbits." What does that mean?

1           A     That means that they did not use any of the  
2     material from the residues of the Badische  
3     decomposition. They made up four different compounds  
4     using carbon, hydrogen, chlorine and oxygen, but what  
5     they made up presumably had no relationship at all to  
6     what was in the Badische decomposition because they did  
7     not test that in the extracts.

8           Q     All right, sir.

9           A     I think they were in the same situation we were  
10    at Nitro where they couldn't find it out.

11          Q     All right, sir. Mr. McCrea showed you this  
12    exhibit, Plaintiff's Exhibit 9. Do you recall that?

13          A     Yes, I do.

14          Q     And he asked you some questions about what  
15    Monsanto did after it learned about Dr. Jensen and  
16    Widmark's research, and you mentioned several items.  
17    Let me ask you some questions, though. Did Mr. Wood go  
18    to visit these scientists?

19          A     Yes.

20          Q     What was the purpose of his visit?

21          A     To find out

22                 MR. MCCREA: To which Plaintiff would object  
23    on the basis of hearsay.

24          A     To find out what they knew, whether there was  
25    any complete description of the analytical work, to find

1 out whether they were certain that it was PCB rather  
2 than DDT.

3 Q And did he report back to you?

4 A Yes, he did. I don't know he reported directly  
5 to me or back to me through one of our own analytical  
6 people. I don't know that. But we were in  
7 communication. I think he went there at least twice.

8 Q Okay. I'd like to show you what was marked on  
9 the direct examination as Defendant's Exhibit 30. You  
10 described that document on your direct examination. Can  
11 you tell us again very briefly what it is?

12 A It's a letter from David Wood with a copy of  
13 Jensen's paper to me, dated February 22nd, 1967.

14 Q Does it indicate that Mr. Wood is responding to  
15 some communication from you?

16 A Yes. I wrote him a letter I don't believe  
17 that's attached here, but I don't know at the present  
18 time what it was, but I was trying to find out more  
19 information about the problem.

20 Q After you got this paper, what did you do  
21 further?

22 A Well, I sent it to our analytical people. I  
23 sent it to our marketing people. I sent it to I  
24 don't know whether or not I sent this to the government  
25 people or not. I do not know. But I think a primary

1 purpose was to investigate our analytical work to see if  
2 we could duplicate his findings as far as a PCB was  
3 concerned.

4 Q In the months and years following this, was  
5 there any activity by you or by anyone in Europe to  
6 follow up on what was being done?

7 A Oh, yes. There's a great deal of activity by  
8 people in St. Louis. We had numerous meetings with the  
9 Department of Agriculture. We had numerous meetings  
10 with the Food and Drug Administration. Our analytical  
11 people had talked to Jensen and Risebrough. We went  
12 over to see had people from our department go over to  
13 Sweden and to I don't know went to Netherlands at  
14 least twice, so there was an enormous amount of work  
15 done. We sent samples of our Aroclors for analytical  
16 purpose to all the people who were interested.

17 Q In all of the materials obtained from Jensen  
18 and Widmark, including Exhibit 30, I'm sorry,  
19 Defendant's Exhibit 30, is there any information that  
20 Jensen and Widmark ever reported that PCBs were having  
21 any effect on the fish or wildlife that they were  
22 examining?

23 A No, sir. Or even the people. I mean, he  
24 mentioned no illnesses at all in his own family where he  
25 found the material.

1 Q What was the first knowledge that you had that  
2 any scientist anywhere reported any effect in wildlife?

3 A Risebrough's work at I don't know if that  
4 was the end of '67 or beginning of '68. He noted  
5 thinning of egg shells in some of the avian species.

6 Q Was that the publication of a paper by  
7 Dr. Risebrough?

8 A Yes.

9 Q If I indicated to you that Dr. Risebrough's  
10 paper was published in December of 1968, would that  
11 refresh your recollection?

12 A Yes. That it was either late '68 or early  
13 1970.

14 Q 1970?

15 A '69.

16 Q Mr. McCrea showed you what he had marked as  
17 Plaintiff's Exhibit 9, I'm sorry, 10. Do you recall  
18 that?

19 A Yes, I do.

20 Q And what is the date of that memorandum?

21 A March the 30th, 1970.

22 Q And that memorandum, in the portions that he  
23 did not read, deals with discussions with a Dr. Hill  
24 about the appearance of PCBs in some milk, is that  
25 right, milk samples?

1           A     That's correct.

2           Q     Is that correct?

3           A     That's correct.

4           Q     Prior to this time, did you know that PCBs were  
5     used in a coating for silos?

6           A     Well, I did know     This is March the 30th,  
7     before Papageorge came onboard as far as a point man for  
8     our PCB investigation. We had communicated with  
9     Dr. Hill and heard about the problem with silage  
10    sometime in the late '69's. Late '69. That was the  
11    first time I heard.

12          Q     Do you know whether Monsanto was aware that its  
13    PCBs were being used in paint to be used in silos?

14          A     No, sir, they were not as far as I can  
15    recollect. I certainly wasn't, and I don't believe that  
16    the people in St. Louis were.

17          Q     All right. Let me hand you what was marked as  
18    Plaintiff's Exhibit No. 2. This is the memorandum  
19    written by Elmer Wheeler to you in 1956 concerning the  
20    incidents at BASF in Germany and Nitro, West Virginia;  
21    is that correct?

22          A     Yes, sir.

23          Q     I'd like to direct your attention to the first  
24    paragraph at the top of the third page.

25          A     Yes, sir.

1 Q Do you recall that Mr. McCrea asked you some  
2 questions about the research that's referred to in that  
3 paragraph?

4 A Yes, I do.

5 Q Now, was this the same Kettering Laboratory  
6 that you testified about on direct examination where  
7 Dr. Treon did inhalation tests on animals using PCBs?

8 A Yes, it is.

9 Q And are those the tests reports that were  
10 marked as Defendant's Exhibits 12 and 13? Do you  
11 recall?

12 A What were they?

13 Q 12 and 13.

14 A Yes.

15 Q Those were the test reports from Dr. Treon's  
16 work.

17 A That was 12 Yes. That's correct.

18 Q And are those reports dated in June 1955?

19 A Yes, sir.

20 Q And are those the test results that were  
21 published by Dr. Treon in an article which was  
22 Defendant's Exhibit 14 in the "Industrial Hygiene  
23 Quarterly"?

24 A Yes, sir.

25 Q And that was published in June of 1956; is that

1 right?

2 A Yes, sir.

3 Q Did any of the research done by Dr. Treon at  
4 Kettering involve tests, patch tests on human beings?

5 A No, sir.

6 Q In June of 1956, when Plaintiff's Exhibit 2,  
7 that memorandum was written, was there any research  
8 being done at Kettering on PCBs?

9 A No, sir, there was not.

10 Q What research was Mr. Wheeler referring to in  
11 that exhibit?

12 A He was referring to materials involved in the  
13 1949 episode at Nitro, West Virginia with the herbicide  
14 that we were manufacturing, the one that we had an  
15 explosion during the process.

16 Q Okay. Were there any PCBs present at the Nitro  
17 Plant?

18 A No, sir, there were not.

19 Q Was Dr. Suskind doing any research on PCBs?

20 A No, sir, he was not.

21 Q Now, have you either in the last few days that  
22 you've been deposed, have you had a chance to read  
23 through Exhibits Plaintiff's Exhibits 1, 2 and 3?

24 A Yes, I have.

25 Q In Plaintiffs Exhibit No. 1

1           A     Which is 3? This one doesn't have any     Oh, I  
2     see. Okay. Yes, sir.

3           Q     In Plaintiff's Exhibit No. 1,

4           A     Yes, sir.

5           Q           which is the memorandum that you were not  
6     sure about the date it was written, but it's a  
7     memorandum that you apparently authored; is that right?

8           A     That's correct, yes, sir.

9           Q     Is there any mention whatsoever in that  
10    memorandum anywhere of PCBs?

11          A     No, sir, there is not.

12          Q     All right. In Plaintiff's Exhibit No. 3, which  
13    you have previously identified,

14          A     Yes.

15          Q           I believe you testified this was a  
16    memorandum of a meeting that you     you do not know  
17    whether     you're not sure whether it took place in 1956  
18    or in 1960.

19          A     That's correct.

20          Q     But a memorandum of a meeting at Kettering  
21    Laboratories?

22          A     Yes, sir.

23          Q     Is there anywhere in this exhibit, in this  
24    entire exhibit, Plaintiff's Exhibit No. 3, any mention  
25    of PCBs?

1           A     No, sir, there is not.

2           Q     All right. Exhibit No. 2, which is the exhibit  
3 we've just been talking or referring to, which is the  
4 1956 memo from Elmer Wheeler to you, other than the  
5 sentence that Mr. McCrea quoted to you from the second  
6 page, is there any mention whatsoever anywhere in that  
7 document of PCBs?

8           A     Nothing outside that one sentence.

9           Q     And what is this memorandum actually about?

10          A     It's about the chloracne cases at Badische and  
11 at Nitro and the work that Oettel has done on some of  
12 the compounds and some suggestions that Suskind may have  
13 been going to do some work on it to determine the  
14 chloracnogen in the product of Monsanto's at Nitro, West  
15 Virginia.

16          Q     And what property was that of Monsanto?

17          A     2,4,5 T and its raw materials.

18          Q     All right, sir. Now, in his cross examination  
19 Mr. McCrea asked you some questions about various  
20 symptoms.

21          A     About what?

22          Q     Various symptoms suffered listed in that  
23 Exhibit No. 2. And could you tell the jury what in  
24 layman's terms what is lassitude?

25          A     Lassitude is an individual is unable to carry

1 out things he wants to do. He's really It's not  
2 quite fatigue. It's probably mental fatigue if you want  
3 to call it that.

4 Q It's

5 A Mental fatigue. It's a generic term that  
6 occurs in any number of conditions.

7 Q All right. One of the other symptoms that  
8 Mr. McCrea mentioned was fatigue. What is fatigue?

9 A You wear out. You get tired.

10 Q All right.

11 A That also is a generic symptom that occurs in  
12 any sort many, many illnesses.

13 Q What is loss of appetite other than just what  
14 it says?

15 A Just what it says.

16 Q And what is loss of libido?

17 A That means you have a loss of the sexual urge,  
18 which is not to be confused with loss of sexual potency.

19 Q In layman's terms, what does that mean?

20 A He's not interested in sex.

21 Q Does it mean that the person is impotent?

22 A No, it does not.

23 Q Now, how does a doctor find out from a patient  
24 whether those symptoms are present?

25 A Well, there are two ways. If you believe that

1       You can either ask them or you can do a general  
2       physical examination and take a general history in which  
3       you cover all those symptoms without directly asking  
4       them. If you are talking about loss of libido, if you  
5       ask the man how many times he's having sexual  
6       intercourse a week or a month, if he says zero, then you  
7       just find out what the reason is, whether he is  
8       interested in it. But if you ask him, "How is your sex  
9       life?" and he says, "It's normal. I'm as good as I  
10      always was," you don't ask him any more questions. You  
11      accept that as a fact. As far as fatigue, you say are  
12      you able to       during the course of your history you  
13      find out whether he's able to carry out his daily  
14      activities without getting exhausted. You don't have to  
15      ask him, "Do you have fatigue at the end of the day?"  
16      You just say, "Are you able to carry out your work? Are  
17      you able to do household chores when you get home?"

18       Q     Are medical doctors trained to ask patients  
19      questions to bring out those symptoms?

20       A     Well, it depends on how they ask them. They  
21      don't always ask direct questions. They ask them in a  
22      general manner how their health is, and they go into  
23      various details by systems, and they get the information  
24      without asking direct statements.

25       Q     Is that a part of a standard medical

1 examination?

2 A Yes.

3 Q Mr. McCrea asked you at another point in his  
4 cross examination whether Monsanto ever took a product  
5 off the market because of toxicity. Did you ever  
6 prevent Monsanto from marketing a product because of its  
7 toxicity?

8 A Yes.

9 Q Could you tell us what that was or examples?

10 A Well, I didn't even let it go as far as the  
11 bench. People asked us to make chlorinated  
12 polybrominated biphenyl, and bromine is a half is a  
13 cousin to chlorine. They are both halogens. So they  
14 asked me about it, and I said, "No way. We've got  
15 problems with PCBs in the environment. We've got  
16 problems with PCB in thinning eggs, egg shells. We  
17 don't want to get involved in a cousin of it." There  
18 was also

19 Q Excuse me. Was this after the PCB issue had  
20 arisen?

21 A Yes, it was. And then there was also a  
22 compound that we were using in a different I don't  
23 know what we were using it for. It was a solvent or  
24 something, and they wanted to use it in a deicer where  
25 the exposure at airplanes at airports would be much

1 more extensive, and I said I did not believe from the  
2 information that was published in the literature about  
3 its toxicity that it should be used.

4 Q And this was going to be used as what?

5 A A deicer, to spray it over the airplane wings.  
6 I don't know what they use now.

7 Q At another point in his cross examination  
8 Mr. McCrea referred you to a memorandum or a quote from  
9 a memorandum by a man named W. R. Richard that was  
10 addressed to Elmer Wheeler. Do you remember Dr. Richard  
11 or Mr. Richard?

12 A Yes.

13 Q Dr. Richard?

14 A Yes.

15 Q What was his position?

16 A He was at research. He was a Ph.D. He worked  
17 for Monsanto in the Central Research Department. He was  
18 not in the medical department.

19 Q Was he a medical doctor?

20 A No. He was a Ph.D.

21 Q Was he a toxicologist?

22 A No.

23 Q Was he an industrial hygienist?

24 A No. I think he was a chemist or a chemical  
25 engineer.

1 Q Dr. Kelly, Mr. McCrea's asked you a lot of  
2 questions about a product called dioxin. Do PCBs  
3 contain dioxin?

4 A No, they do not.

5 Q Now, if dioxin is similar in chemical structure  
6 to PCBs or to chlorinated dibenzofurans, does that mean  
7 that they have similarities in toxic effects?

8 A No way. The similarity in structure does not  
9 translate into similarity in action. You can have  
10 compounds that are completely different just with one  
11 molecule different as far as their toxicity is  
12 concerned. I think I quoted to you sometime in one of  
13 these depositions that bichloride of mercury, which is a  
14 very serious poison, shuts a kidney down once you get a  
15 good initial dose of it, is one molecule of mercury and  
16 two molecules of chlorine. If you take calomel, which  
17 is one molecule of mercury and one molecule of chlorine,  
18 that's a compound that's taken by mouth by millions of  
19 people during the early years of this century, probably  
20 all the way up to now as a tonic in the springtime, so  
21 just adding one chlorine means an awful lot of  
22 difference in toxicity.

23 Q You said that PCBs did not contain dioxin. Can  
24 the combustion or burning of PCBs lead to the formation  
25 of dioxin?

1           A     No, they cannot. It cannot.

2           Q     Do you know whether any governmental agencies  
3 agree with you on that?

4           A     Oh, yes. I agree with the government agencies.  
5 I'll reverse that. Yes. That's been published. They  
6 did work for the EPA. That was published under the  
7 auspices of the EPA.

8           Q     Now, a lot of the cross examination has been  
9 devoted to citing you to certain articles or statements  
10 in memos, statements by people totally unrelated to you  
11 or to Monsanto, and asking you whether or not that  
12 information was included on Monsanto's label. Can you  
13 tell me why you didn't include all the information that  
14 Mr. McCrea indicated and mentioned in Monsanto's memos?

15          A     Yes. Because it was my belief that the  
16 information you want to get on the label is you want to  
17 put enough information on there that it will protect the  
18 man against anything, the worker or user against  
19 anything. So you put the methods of protecting him.  
20 The other aspect is you do not want to have so much on a  
21 label that the worker will look at it and not read it,  
22 and it's been my experience that the more you have on a  
23 label, the less likelihood the worker is going to pay  
24 any attention to it at all.

25          Q     During your 38 years as medical director for

1 Monsanto, did you ever receive any reports or complaints  
2 of PCB related health problems in any of Monsanto's PCB  
3 workers?

4 A No, sir, I did not.

5 Q During those 38 years you were at Monsanto, did  
6 you ever receive any customer reports or complaints of  
7 deaths or serious long term injury in their PCB exposed  
8 workers?

9 MR. McCREA: To which Plaintiff would object  
10 for the reasons stated on district examination, that  
11 there's no evidence that workers even knew they were  
12 working with PCBs or that there was any established  
13 medical protocol implemented to determine if these  
14 workers suffered any toxic systemic effects from PCBs.

15 Q Do you remember the question?

16 A I don't remember it. There was an  
17 interruption. Would you repeat it, please?

18 (Reporter read back as requested.)

19 A No, I did not.

20 Q In your direct examination you described a  
21 handful of less than five or so complaints or reports  
22 that appeared in the literature regarding short term  
23 problems with PCBs. In your years at Monsanto, were any  
24 of those reports ever regarding capacitor or transformer  
25 workers?

1           A     No, sir, they were not. They were not all in  
2     the literature either. I mean, some were just reported  
3     directly to me. No, they were not. They were all in  
4     heat transfer units. Had one case where they were  
5     filling oven thermometers with PCB.

6           Q     During your years at Monsanto, were there ever  
7     any reports in the published literature of deaths or  
8     serious long term effects due to industrial exposure to  
9     PCBs?

10          A     No, sir, there were not.

11               MR. DAVIDSON: That's all the questions I  
12     have.

13                       RECROSS EXAMINATION

14     QUESTIONS BY MR. McCREA:

15          Q     Dr. Kelly, did you ever review any information  
16     that indicated pregnant women were particularly  
17     susceptible to exposure to polychlorinated naphthalenes  
18     and PCBs in combination?

19          A     Would you repeat that? You were talking away  
20     from me.

21          Q     I'm sorry, Dr. Kelly.

22               (Reporter read back as requested.)

23          A     I don't recall. I may have, but I don't recall  
24     it. It certainly doesn't seem very prominent in my  
25     mind.

1 Q Dr. Kelly, would you please refer to Kelly  
2 Exhibit 30?

3 A Which? 30?

4 Q Yes, sir.

5 MR. DAVIDSON: It's right here.

6 A Yes, sir.

7 Q Would you turn to page two of that exhibit,  
8 which has the Monsanto Bates number MONS 035760 on it?

9 A Yes, sir.

10 Q Do you see a heading entitled "Toxicology"?

11 A Yes, sir.

12 Q Will you turn to the next page? Will you read  
13 into the record the first paragraph from Monsanto's  
14 Exhibit 30 with Bates page number MONS 035761, starting  
15 with the name Greenburg?

16 A Yes, sir. What do you want me to read?

17 Q Read that paragraph into the record, please.

18 A "Greenburg, Mayer and Smith 1939 reported that  
19 PCB and polychlorinated naphthalenes are blamed for the  
20 death of three young workers, and that pregnant workers  
21 and persons who have at any time had any liver disease  
22 are particularly susceptible."

23 Q Dr. Kelly, I believe you said pregnant workers.

24 A Pregnant women, I'm sorry.

25 Q Pregnant women. Dr. Kelly, what do you know

1 about the susceptibility of pregnant women to  
2 polychlorinated biphenyls in combination with  
3 chlorinated naphthalenes?

4 A I don't know anything about it because I do not  
5 know that PCBs and polychlorinated naphthalenes were  
6 ever used together. Polychlorinated naphthalenes and  
7 polychlorinated diphenylbenzene were used together, and  
8 the Greenburg, Mayer and Smith's article refers If  
9 you'll read the article, you'll find out that it refers  
10 only to chlorinated naphthalene, not to the mixture.

11 Q Dr. Kelly, did Monsanto Company ever issue a  
12 warning that pregnant women are particularly susceptible  
13 to polychlorinated biphenyls and polychlorinated  
14 naphthalenes?

15 MR. DAVIDSON: Objection to the relevance.

16 A No, sir, because we did not manufacture that  
17 combination, and that combination was not used, as I  
18 said repeatedly. The Halowax situation was  
19 polychlorinated biphenylbenzene, not PCBs.

20 Q So you're saying this statement is in error in  
21 your own exhibit; correct?

22 A Yes, it is. Yes, it is.

23 MR. DAVIDSON: Well, I object. The  
24 insinuation is that that's a Monsanto document that  
25 you're reading from, and it's Dr. Widmark's either

1 Jensen or Widmark's speech. Jensen's, I believe, paper  
2 or speech.

3 Q Dr. Kelly, this document was sent to you on  
4 February 22, 1967; is that correct?

5 A Yes, sir.

6 Q And did you read it on that date?

7 A I'm not certain when I read it, but I read it.

8 Q Did you take any issue with the statement on  
9 page 035761 which you just read into the record?

10 A With who?

11 Q Anyone.

12 A No, I didn't, because I did not want to start a  
13 controversy over something that had been allegedly  
14 reported in 1939 or with his interpretation of the  
15 report.

16 Q Dr. Kelly, after you learned in December 1966  
17 that Jensen reported high levels of PCBs in his own  
18 child, who had been nursing, did you issue any warnings  
19 about pregnant women and the risk in their exposure to  
20 PCBs?

21 A No, sir, I did not. Remember, Jensen only  
22 reported the finding of the material in there. He  
23 stated nothing about any illness accruing as a result of  
24 this exposure.

25 Q Dr. Kelly, as you sit here today, name every

1 study that you're aware of that shows adverse effects in  
2 children who were exposed to PCBs.

3 A Is there what?

4 Q Identify every study of which you're aware that  
5 shows adverse effects in children who were exposed to  
6 PCBs.

7 A I'm not prepared to You mean Do you mean  
8 developmental?

9 Q I mean cognitive. I mean behavioral.

10 MR. DAVIDSON: I'm going to object.

11 Q I mean biological.

12 MR. DAVIDSON: Object to the relevance, being  
13 beyond Dr. Kelly's time as a medical director of  
14 Monsanto.

15 A There were none of those reports before 1974.

16 Q Well, Dr. Kelly, that's not the question.

17 A What was your question?

18 Q I want you to identify every study of which you  
19 are aware that shows any health problems in children who  
20 were exposed to PCBs.

21 MR. DAVIDSON: I'll object.

22 A I'm not prepared to do that. There may be  
23 some. There may be some that are negative. I do not  
24 know.

25 Q Are you aware of children born with deformities

1 whose mothers were exposed to PCBs in Japan?

2 MR. DAVIDSON: Object. Move to strike.

3 Improper statement. No basis.

4 A Are you talking about

5 MR. DAVIDSON: Irrelevant.

6 A About the Yusho episode?

7 Q Yes.

8 A At which people were exposed to large amounts  
9 of a Japanese PCB made by a different process than  
10 Monsanto does, having contaminants that the Monsanto  
11 PCBs did not? They did show some reproductive problems,  
12 yes, sir.

13 Q And was that contaminant chlorinated furans?

14 A That was what it was, yes, but it was also the  
15 amount of chlorinated furans.

16 Q And, Dr. Kelly, was that contaminant,  
17 chlorinated furans, which caused the birth defects in  
18 the children in Japan

19 A Now, when you are talking about birth defects,  
20 I think you ought to specify what you mean by birth  
21 defects. These children had pigmentation. These  
22 children had skin problems. They are not the ones  
23 the birth defects that people generally assume are birth  
24 defects, such as spina bifida, which is heart problems,  
25 and did they did not have those. They had skin

1 problems, they had ocular the eyelid problems. They  
2 had pigmentation.

3 Q Did they have joint pain?

4 A I don't know.

5 Q Did they have bronchitis?

6 A I do not know whether or not the Japanese  
7 people had established whether the bronchitis was due to  
8 the socioeconomic level of these particular people or  
9 due to the material they had taken, but this is a far  
10 cry from industrial workers here I hope you realize.

11 Q Have you done any second generational studies  
12 of children born to your workers at Monsanto?

13 MR. DAVIDSON: I object and move to strike.  
14 He retired as Monsanto's medical director in November of  
15 1974, and he is not being presented as an expert witness  
16 and he is this is entirely outside of the scope of  
17 his direct or cross examination.

18 Q Dr. Kelly, you stated that no children born to  
19 Monsanto workers suffered any health problems. Is that  
20 correct?

21 A When did I say that?

22 Q Did you state that?

23 A No, I do not think that question ever came up.

24 Q Okay. It's never been studied; has it?

25 A Not to my knowledge.

1 Q Dr. Kelly, the chlorinated furan that caused  
2 the problem in the children in Japan, is that exactly  
3 the same chemical as is diagrammed on page 015580 of  
4 Plaintiff's Exhibit 2?

5 A It's the

6 MR. DAVIDSON: Object. Move to strike.  
7 Irrelevant. He has no way of knowing the answer to  
8 that.

9 A This is a You always omit the statement of  
10 Dr. Oettel that he believes it is a compound somewhat  
11 similar to chlorinated dibenzofuran. That's what he  
12 states here. That's what I'm reading. He believes the  
13 most potent chloracnogen is a compound somewhat similar  
14 to chlorinated diphenyl oxide, which is wrong, but the  
15 diagram is a chlorinated dibenzofuran. Yes, the  
16 compound there, one of the compounds in the Yusho  
17 incident, was chlorinated dibenzofuran or also  
18 quarterphenyls, and I don't know what else.

19 Q So, doctor, the chlorinated furans in Japan  
20 that caused the problems in those children are the same  
21 chemical as is diagrammed on the Exhibit No. 2?

22 MR. DAVIDSON: Object. Move to strike.  
23 Irrelevant.

24 Q Yes or no?

25 A Yes. But also you have to take into account

1 the dosage.

2 Q Dr. Kelly,

3 A Which you have not.

4 Q that was my next question. What was the  
5 dosage of chlorinated furans that was ingested by the  
6 mothers that caused the birth defects in children?

7 A If we are going to use birth defects as a  
8 synonym for irritation of the eyes, cysts of the  
9 eyelids, pigmentation and chloracne, I do not know the  
10 dose the amount they finally arrived at. It was  
11 certainly much, much larger than the amount that was  
12 present in any of the PCBs manufactured in the United  
13 States, as we found out later when we can analyze for  
14 the dibenzofuran.

15 Q Dr. Kelly, was the dose of furans less than an  
16 ounce?

17 A Oh, yes, it was less than an ounce.

18 Q Was it less than half an ounce?

19 A Yes, it was less than half an ounce.

20 Q Was it less than a hundredth of an ounce?

21 A I don't know. I don't know the exact dose.

22 Q Do you recall testifying at an earlier  
23 deposition that it was one ten thousandth of an ounce?

24 MR. DAVIDSON: Object. Move to strike.

25 Irrelevant.

1           A     I do not know if that was my exact testimony or  
2 not.

3           Q     Just a second. Dr. Kelly, as you testify here  
4 today, do you have a judgment as to the toxic dose of  
5 furans, chlorinated furans, that caused the birth  
6 defects in the children in Japan?

7           A     No, I do not.

8           Q     Would you describe chlorinated furans as one of  
9 the most toxic chemicals ever known to mankind?

10          A     That's so     it could be.

11          Q     Dr. Kelly, I hand you a copy of a deposition  
12 taken on June 1, 1990, Volume II, in the case of Brown  
13 versus Monsanto Company, and I direct your attention to  
14 the entire deposition, but in particular the question on  
15 page 33, which reads as follows: "Dr. Kelly, there's no  
16 dispute in medical science that the Japanese people were  
17 poisoned, their offspring suffered birth defects after  
18 women consumed 1/10,000 of an ounce of furans. Is that  
19 a fair statement?" And your answer reads, "Answer I  
20 think it is because the lethal dose, the Lethal Dose 50  
21 for furans is in the neighborhood of 1/1000 of a  
22 milligram. Now, that is pretty small. Now, that's, I  
23 have that figured out for dioxin, chlorinated dioxin,  
24 and furan is somewhat less toxic. I don't have the  
25 exact figure, but 1/10,000 of a milligram per kilo is

Kelly, R. Emmet M.D. (frmr Mons Med Dir) in FISHER

1 the lethal dose for rats, and if you compare that to the  
2 PCB dose is 2,000 to 4,000 milligrams or something like  
3 40 Well, it's something over You take the dose of  
4 2,000 milligrams per kilo and the furan is 0001  
5 milligram. This is ten hundred, thousand. That's  
6 one/two thousand roughly. It's less than It's more  
7 than that. One/twenty thousand of the lethal dose of  
8 PCBs. Question Okay. Answer So we're dealing with  
9 two compounds you're talking about. one has a  
10 relatively low toxicity. The other has one of the most  
11 extreme toxicities of any compound since the beginning  
12 of chemistry." That's your answer; right?

13 A Yes. That was my answer

14 Q "Question One ounce of furans would be enough  
15 to poison 10,000 people? Answer Yes. I think so."  
16 Does that refresh your memory as to the toxicity of  
17 chlorinated furans?

18 A I never denied that furans were a very toxic  
19 compound. I never denied that they were much more toxic  
20 than PCBs. When we got into all of this discussion of  
21 yours and mine about coming down to the dose that the  
22 Japanese women were subjected to, I very I hope I was  
23 correct. I don't know. I mean, as I remember, I said,  
24 "Look, let's try to get a calculator," so we ran around  
25 and you came back with something, with some calculator,

1 I believe. But what is your What is your question  
2 now?

3 Q My question is, Dr. Kelly, isn't it a fact that  
4 when you testified in this deposition on June 1, 1990  
5 you described the toxic dose of chlorinated furans as  
6 being one ten thousandth of an ounce?

7 A Yes. I testified that. Remember, we also  
8 One of these exhibits this morning, I believe we came up  
9 with roughly the same figure per ounce per kilogram  
10 we're talking about. We're not just an absolute level  
11 of It was one tenth of a milligram per kilogram of  
12 rats. Whether that equates to one the absolute  
13 amount of the stuff, I don't know without doing quite a  
14 little bit of calculation.

15 Q Dr. Kelly, can you tell us all of the  
16 contaminants that were in PCBs that you knew about  
17 before you left Monsanto in 1974?

18 A No, I can't.

19 Q Were there contaminants in PCBs?

20 A Yes. In trace amounts.

21 Q Would you consider one ten thousandth of an  
22 ounce a trace amount?

23 A One ten thousandth of an ounce a trace amount?  
24 It depends on the compound.

25 Q You described symptoms of lassitude, loss of

1 appetite and loss of sexual urge; is that correct?

2 A Yes, sir.

3 Q And you stated that lassitude was a little bit  
4 different than fatigue.

5 A Yes, sir.

6 Q Can lassitude As a medical doctor, can  
7 lassitude be caused by several factors? Are there  
8 several things that could explain lassitude?

9 A Yes. A great number.

10 Q And could lassitude be caused by a chemical  
11 effect on the brain?

12 A I don't know.

13 Q Could the loss of a sexual urge be caused by a  
14 chemical effect on the central nervous system and brain?

15 A I don't know that either. Could be caused by a  
16 number of things. Could be caused by depression. Could  
17 be caused by family problems. Could be caused by an  
18 awful lot of things.

19 Q Could it be caused by a chemical effect on the  
20 male's gonads?

21 A I don't think so. I think you would have loss  
22 of potency there rather than loss of libido.

23 Q Can loss of appetite be caused by a number of  
24 factors?

25 A Yes.

1           Q     Can loss of appetite be caused by a chemical  
2 alteration within the body?

3           A     It depends on what chemical alteration you  
4 have. Depends on how long you've had the chemical  
5 alteration. I cannot answer that question.

6           Q     You were asked if dioxin is a contaminant of  
7 PCBs or is produced by the partial oxidation of PCBs; is  
8 that correct?

9           A     Yes, sir.

10          Q     When you refer to dioxin, are you referring to  
11 the chemical that Mr. Papageorge references on July 8,  
12 1970 in Plaintiff's Exhibit 5, page two, the first full  
13 paragraph, the eleventh sentence in parentheses?

14          A     Oh, I don't know what he is referring to. All  
15 I know is that it has been accepted by scientists, has  
16 been accepted by the EPA that dioxins are not formed by  
17 the partial incineration of PCBs.

18          Q     My question is, Dr. Kelly, when Mr. Papageorge  
19 wrote this document on 1970 and he refers to dioxin, is  
20 that the same dioxin to which you're referring?

21          A     You'll have to ask him. I know what I'm  
22 referring to. I know the chemical formulation of  
23 dioxin. And if you want me, I'll tell you what that  
24 formulation is so that then you can ask Papageorge what  
25 if that's what he means.

1 Q Did you know in 1970 that Mr. Papageorge felt  
2 that the partial oxidation of PCBs could produce  
3 chlorinated furans?

4 A In 1970?

5 Q Yes.

6 A That Papageorge knew in 1970?

7 Q That the partial oxidation or incomplete  
8 burning of PCBs could produce chlorinated furans.

9 A I do not know if Papageorge knew it or whether  
10 Papageorge suspected it.

11 MR. McCREA: No further questions.

12 MR. DAVIDSON: That's it.

13  
14 Robert Emmet Kelly, M.D.

15 Subscribed and sworn before me this \_\_\_\_ day of  
16 \_\_\_\_\_, 1994.

17 My commission expires: \_\_\_\_\_  
18  
19  
20

21 \_\_\_\_\_  
22 Notary Public  
23  
24  
25

FAO/Fisher vs. Monsanto

Waller Reporting, Inc.

404

NOTARIAL CERTIFICATE

STATE OF MISSOURI )

) SS

CITY OF ST. LOUIS )

I, FAITH A. OLLIGES, a Registered  
Professional Reporter and a duly commissioned Notary  
Public within and for the State of Missouri, do hereby  
certify that there came before me at the offices of  
Husch & Eppenberger, 100 North Broadway, St. Louis,  
Missouri,

ROBERT EMMET KELLY, M.D.,  
who was by me first duly sworn to testify to the truth  
and nothing but the truth of all knowledge touching and  
concerning the matters in controversy in this cause;  
that the witness was thereupon examined under oath and  
said examination was reduced to writing by me; that the  
signature of the witness was not waived by agreement of  
all parties; and that this deposition is a true and  
correct record of the testimony given by the witness.

I further certify that I am neither  
attorney nor counsel for nor related nor employed by any  
of the parties to the action in which this deposition is  
taken; further, that I am not a relative or employee of  
any attorney or counsel employed by the parties hereto  
or financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my  
hand and seal on April 13, 1994.

My commission expires March 21, 1997.

\_\_\_\_\_  
[NOTARY PUBLIC]

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[enormous - far]

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[far - hair]

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Kelly, R. Emmet M.D. (fmr Mons Med Dir) in FISHER

[materials - natural]

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[nearly - paragraph]

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Kelly, R. Emmet M.D. (fmnr Mons Med Dir) in FISHER

[paragraph - pretty]

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[prevent - recollect]

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[recollection - science]

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[spring - ten]

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[united - yellow]

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Kelly, R. Emmet M.D. (fmnr Mons Med Dir) in FISHER

[yesterday - zero]

|              |
|--------------|
| yesterday    |
| 318:13       |
| young        |
| 390:20       |
| yusho        |
| 394:6 396:16 |
| z            |
| zero         |
| 383:6        |