

IN THE CIRCUIT COURT OF MILWAUKEE COUNTY
STATE OF WISCONSIN

STROH DIE CASTING,

Plaintiff,

vs

Case No. 639-887

MONSANTO COMPANY,

Defendant.

Examination of R. EMMET KELLY, M.D., otherwise than as a witness upon the trial, taken at the instance of the Plaintiff, under the and pursuant to Section 804.05 of the Wisconsin Statutes, pursuant to notice, before SUSAN M. VERES, a Notary Public in and for the State of Wisconsin, at the Stouffer Concourse Hotel, 9801 Natural Bridge Road, St. Louis, Missouri, on the 20th day of April, 1988, commencing at 8:35 a.m. and concluding at 12:45 p.m.

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A P P E A R A N C E S

RIORDAN, CRIVELLO, CARLSON & MENTKOWSKI, by
Mr. Michael H. Ahrens
710 North Plankinton Avenue
Milwaukee, WI 53203
appeared on behalf of the Plaintiff.

KIRKLAND & ELLIS, by
Mr. James H. Schink
200 East Randolph Drive
Chicago, IL 60601
appeared on behalf of the Defendant.

A L S O P R E S E N T

Ms. Christine M. Jahncke

I N D E X

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herein, having been first duly sworn on oath, was examined and testified as follows:

BY MR. AHRENS:

Q And where is that located?

1 A 665 South Skinker.

2 Q Does your consulting service have a focus or an area of
3 specialty?

4 A Yes. I would say it is occupational medicine and the
5 relationship of workers to their environment.

6 Q Is it all type of environmental concerns, or does it focus
7 on chemicals, does it focus on the machinery aspect of it
8 or all of that?

9 A I would say it focuses more on chemical than it does on
10 machinery.

11 Q Are you employed -- at one time you were employed at
12 Monsanto, right?

13 A Yes, sir.

14 Q Are you still employed by Monsanto?

15 A No, sir.

16 Q Is your company?

17 A No, sir.

18 Q Has Monsanto ever been one of your company's clients?

19 A In the sense that I have done work for Monsanto, yes, sir,
20 following my retirement.

21 Q Well, what I'm trying to get at is have you done work for
22 Monsanto as an individual or has your company --

23 A Well, really I am the company. My associate is a
24 secretary, plus consulting industrial hygienists.

25 Q All right. Have you done -- since -- well, strike that.

1 When did you leave Monsanto?

2 A I retired December the 1st, 1974. I was with Monsanto on
3 a retainer for a year as a consultant for the year so that
4 from 19 -- December the 1st, 1975 any work I have done for
5 Monsanto has been on a fee-for-service basis.

6 Q Since December of '75 have you or your company done any
7 work for Monsanto?

8 A Yes.

9 Q Has any of that work related in any way to polychlorinated
10 biphenyls? Just since 1975 now.

11 A If by work you mean reading reports, giving depositions in
12 cases, yes.

13 Q Has any of your work for Monsanto been related to
14 something other than involvement of Monsanto in a lawsuit
15 or potential lawsuit or claims made?

16 A With PCB?

17 Q Yes.

18 A No, sir. Since I left -- since I retired.

19 Q Okay. Right. Since 1975 can you tell me how many times
20 you've been deposed?

21 MR. SCHINK: In connection with PCBs?

22 MR. AHRENS: In connection with PCBs, yes, sir.

23 THE WITNESS: Between five to ten, I would
24 imagine.

25 BY MR. AHRENS:

1 Q Do you know the names of any of the actions in which you
2 testified in deposition relating to PCBs?

3 A Well, One Market Plaza, San Francisco. One in Battle --
4 Broken Axe, Michigan. I forget the name of that one.

5 Q Is that Bad Axe, Michigan?

6 A Bad Axe, I suppose. And there were some others, but I
7 think the name -- instead of a company, it was a name, and
8 I'm not sure of the name, of a plaintiff. I mean, it was
9 one of a dozen plaintiffs. They used one name, so I'm not
10 sure about the company.

11 Q Do you remember the name of the plaintiff in the San
12 Francisco matter?

13 A I'm not sure if this was Binghamton. That may have been
14 New York. I'm not certain of the name. It was One Market
15 Plaza. I don't know the name of the plaintiff.

16 Q Did you testify or do any investigations in the Binghamton
17 explosion?

18 A No, I did not.

19 Q Have you ever talked with Dr. Shechter out there?

20 A I don't recall. I don't think so. Out where? Is this
21 Binghamton, New York?

22 Q Yes. Yes. In the cases in which you've been deposed,
23 again relating to PCBs, did all of them involve claimed
24 health effects of PCBs on humans?

25 A No, not all.

1 Q In the ones that did not, what was the issue that you were
2 concerned with?

3 A Environmental contamination. That was Outboard Marine. I
4 remember the name of that one.

5 Q Okay. In Outboard Marine were you deposed in Chicago or
6 in St. Louis?

7 A St. Louis.

8 Q Prior to 1975 were you ever deposed in either a lawsuit or
9 a claim being brought by someone which related to PCBs?

10 A I don't think I was. I don't recall any.

11 Q Have you been deposed in any cases brought by a Monsanto
12 employee, whether he was an employee at the time you were
13 deposed or he had formerly been a Monsanto employee?

14 A In relation to PCBs again?

15 Q Yes, sir.

16 A Yes, sir.

17 Q What matter was that?

18 A It was a case in Houston where there was alleged health
19 effects.

20 Q Do you know the name of the -- well, strike that. Was
21 that a lawsuit that had been commenced?

22 A I don't know what you mean that had been commenced.

23 Q Well, was there a lawsuit ongoing or was it --

24 A Yes. I testified at a trial.

25 Q Oh. Okay. Okay. Do you know the name of the man?

1 A I think it was Scott.

2 Q Last name Scott?

3 A Um-hum.

4 Q Were there any other parties other than Mr. Scott and --
5 well, I assume Monsanto was a party. Was Monsanto a
6 party?

7 A Yes.

8 Q Were there any other parties other than Mr. Scott and
9 Monsanto?

10 A I don't recall any other companies. There may have been
11 other plaintiffs. I'm not certain.

12 Q Approximately when did you testify at trial?

13 A Within the last two years.

14 Q Do you know where in Texas you testified, what city?

15 A Beaumont. Either Beaumont or Houston. I'm not sure
16 exactly which town. I think it was Beaumont.

17 Q Any other cases that -- where you've testified relative to
18 a claim brought by a Monsanto employee?

19 A I may have, but I don't recall it off the top of my head.

20 Q Okay. Other than the Beaumont or Houston case, whichever
21 it was, have you testified at trial as opposed to a
22 deposition?

23 MR. SCHINK: Involving PCBs?

24 MR. AHRENS: Involving PCBs.

25 THE WITNESS: I testified at Broken Axe,

1 Michigan.

2 MR. AHRENS: Bad Axe?

3 THE WITNESS: Bad Axe, Michigan.

4 BY MR. AHRENS:

5 Q Would it have been in Bad Axe? That must have been a
6 terrible experience, if it was.

7 A Yes. I don't know. It was in some town 60 miles north of
8 Saginaw. I did my best to forget the town.

9 (Discussion off the record.)

10 BY MR. AHRENS:

11 Q Any others than those where you've testified at trial
12 relative to PCBs?

13 A I may have. I'm not certain. I'm not certain of them,
14 though.

15 Q Okay. When did you begin working for Monsanto?

16 A In January of 1936.

17 Q So you were there for a while.

18 A Yes.

19 Q About almost 40 years.

20 A Well, there was almost four years I was in the service.

21 Q So in the middle of your tenure at Monsanto you were
22 called into the service and spent four years away.

23 A That's correct.

24 Q And then you came back from the service and went back into
25 Monsanto's organization.

1 A That's correct.

2 Q All right. When you started at Monsanto, what was your
3 job?

4 A Plant physician at a plant in St. Louis, which they called
5 Plant A, which subsequently the name was changed to
6 Queeny, Q-u-e-e-n-y, plant.

7 Q And what were your responsibilities as the plant
8 physician?

9 A To carry out an examination program for the workers, to
10 take care of their occupational injuries and any
11 occupational conditions that might have resulted from
12 their work contact.

13 Q Now, was there a program which you designed to facilitate
14 your responsibilities?

15 A Well, they did have an examination program in effect. I
16 added some things to it, such as blood counts and x-rays,
17 that they did not have before.

18 Q Did the workers have regular physical exams?

19 A Yes, they did.

20 Q And was that through the company or were they to go
21 outside to their own physicians?

22 A No. That was done at the company.

23 Q I take it records were kept of those examinations and the
24 results and so on?

25 A Yes, sir.

1 Q Do you have any idea where those records might be today?

2 A Unless they're in the dispensary at the Queeny plant, I
3 would have no idea.

4 Q Okay.

5 A There were no PCBs manufactured at that plant.

6 Q Now, would there have been plant physicians at other
7 locations?

8 MR. SCHINK: When?

9 MR. AHRENS: During this time, '36.

10 THE WITNESS: Yes, sir. They would have varied
11 from a doctor on call to a doctor who might spend X hours
12 one, two or three days a week.

13 MR. AHRENS: I see.

14 BY MR. AHRENS:

15 Q At that time, approximately 1936, do you know where the
16 PCBs were being manufactured?

17 A At Anniston, Alabama.

18 Q The Sauget plant was not functional at that time?

19 A I do not think it was.

20 Q All right.

21 A I mean as far as manufacturing PCBs.

22 Q Correct. Would there have been a plant physician at the
23 Anniston plant?

24 A Yes, there would have been.

25 Q Do you know who that was?

1 A A Dr. Morton, M-o-r-t-o-n.

2 Q Do you know his first name?

3 A No, I don't.

4 Q Was Dr. Morton utilizing a similar type of employee
5 occupational health program?

6 A Somewhat similar. It was a little different at the
7 Anniston plant because they had what could be called a
8 forerunner of the HMOs in which they took care of the
9 nonoccupational illnesses of the employees and their
10 families at that time.

11 Q As far as you know, though, he was also doing regular
12 examinations of the workers?

13 A I don't know how regular he was doing it at that time.

14 Q This program you were using at Queeny at about this time,
15 was that a company-wide program or was that particular
16 just to your plant?

17 A The answer is no, it was not company-wide and no, it was
18 not particular to our plant, because some plants -- we had
19 at that time seven to nine plants, and depending on the
20 amount of doctors' hours and the type of plant it was, we
21 would have a regular examination program or in some cases
22 we did not. If we had a doctor on call, we did not have.

23 Q Were you -- as plant physician were you the person in
24 charge of the program at the plant?

25 A From the medical part, yes.

1 Q Yes.

2 A Yes.

3 Q There wasn't someone higher up in management that was
4 drafting it and sort of telling you what to do.

5 A No, in the sense of if I said I want two nurses, he might
6 say you can't have two nurses, I'll give you one nurse,
7 but as far as saying this is what we will do, no. Also,
8 of course, examinations are voluntary, too.

9 Q Right. The workers could refuse to be examined if they
10 wanted.

11 A Yes.

12 Q Do you know if Dr. Morton kept records of his examinations
13 of the people down in Anniston?

14 A I'm sure he did.

15 Q Would you have any idea where those records are today?

16 A I wouldn't have the slightest.

17 Q At some point the Sauget plant began manufacturing PCBs,
18 correct?

19 A Yes, sir.

20 Q Do you know when that was?

21 A I do not -- it was either right before World War II or
22 around that time. I'm not certain of the date.

23 Q Okay. Do you know the name of the -- regardless of when
24 it was, do you know the name of the plant physician who
25 was there at that time?

1 A There were two doctors, B. Ellis and Dr. E.B. Ellis.

2 Q Related in any way?

3 A Brothers.

4 Q Now, why were there two doctors there whereas at your
5 plant -- at your plant was there more than one doctor at
6 Queeny?

7 A No. But these people were practicing together. Some days
8 one would come; other days the other would come.

9 Q I see. So these gentlemen had private practices and just
10 did this part time.

11 A That's correct.

12 Q Are either Dr. Ellis or Dr. Ellis around thesedays?

13 A They're both dead.

14 Q How about Dr. Morton?

15 A He's dead.

16 Q Do you know who the -- well, when did Dr. Morton leave the
17 Anniston plant, approximately?

18 A The early '40s.

19 Q Do you know who took his place?

20 A Dr. -- there was a doctor in there for a year or so whose
21 name I do not know, and then there was a Dr. Jack Francis,
22 who worked there, and I'm not certain of his dates of
23 employment.

24 Q And he was the plant physician at Anniston for how long?

25 A Ten, twelve years.

4 1 Q So that would take us up to mid, late '50s?

2 A I think later than that. I'm not sure when he came --
3 maybe he was there 15 years.

4 Q Okay. Is he still alive?

5 A To the best of my knowledge, he is.

6 Q Do you know where he's living?

7 A No. I haven't had any contact with him for 15 years.

8 Q The last time you knew, where was he living?

9 A In a town right around Anniston, Alabama.

10 Q Do you know who took Dr. Francis's place when he left?

11 A No, because then I was gone.

12 Q I see. Where had you gone?

13 A I retired.

14 Q Okay. Who took the Drs. Ellises' place?

15 A A Dr. Osland, O-s-l-a-n-d.

16 Q And how long was he there?

17 A I think he was there until around the time I retired.

18 Q Is he still alive?

19 A Unfortunately, he's dead, also.

20 Q How long were you the plant physician at the Queeny plant?

21 A It will save time, I believe, if I explain my tenure with
22 Monsanto. I started as a plant physician at Queeny plant.
23 I was the only doctor around in the general office in St.
24 Louis, so along about '37 or '38 I was given additional
25 informal responsibilities because other problems would

1 come up at some of the plants and I was the only doctor
2 within hailing distance of the general office. So in a
3 sense from around '38 to the time I went in the service at
4 '42 I was sort of a medical director without portfolio. I
5 would go to one plant and the other on a fairly regular
6 basis, although it was a semi-official position.

7 Then when I returned in 1942, I was head of
8 the -- '46, rather, I was -- formed a central medical
9 department. I was head of that with responsibility for
10 the medical care at all our plants in the continental
11 United States.

12 Q Would then the doctors who were the plant physicians at
13 the various plants around the United States, would they
14 have been under your charge?

15 A In a sense they had a dotted line to me. They were plant
16 physicians. They were plant -- I would approve their
17 engagement, their hiring, and I would lay down the medical
18 policies for that plant in conjunction with the plant
19 manager.

20 Q Okay. So if there were programs designed or directives
21 sent out, those would have come from you and gone to the
22 individual plant physicians.

23 A Yes, but the plant physician has only to decide I want to
24 do this and he would go ahead and do it.

25 Q Now, as the head of the central medical department -- is

1 that the name of it, central medical department?

2 A I think it was just called corporate medical department.

3 Q Okay. Did your job position change at any time until the
4 time you retired after that?

5 A Well, the scope did. The number of people in the
6 department changed. We engaged industrial hygienists. We
7 engaged other physicians. We engaged toxicologists, so
8 the scope widened, yes.

9 Q Were all those people under your charge?

10 A Yes.

11 Q When were these people added?

12 A From 1946 to 1972 at varying times.

13 Q Well, you mentioned an industrial hygienist.

14 A Yes.

15 Q When was that person brought on?

16 A '46 or '47.

17 Q An industrial hygienist, what kind of educational
18 background would he have?

19 A In those days there was no formal education per se. They
20 were either chemists or chemical engineering -- engineers,
21 and this particular individual was trained as a chemical
22 engineer.

23 Q What was his name?

24 A Elmer Wheeler, W-h-e-e-l-e-r.

25 Q Mr. Wheeler was with the company for a few years?

1 A Quite a few, until he retired about a year after I did.

2 Q Is he still living?

3 A Yes.

4 Q Does he live in the St. Louis area?

5 A No. Camden, South Carolina.

6 Q You mentioned a toxicologist. When was a toxicologist
7 brought on board?

8 A The first one was about the time the amendment to the Food
9 and Drug Act was passed. I'm not sure when that was.
10 That was I thought sometime in the '50s. Then we hired
11 two more toxicologists after that, the last one being in
12 1972 or around that.

13 Q What was the name of the first person who was hired?

14 A Dr. William Hunt, who is dead.

15 Q And the second two that you referred to?

16 A Dr. George Lavinskis, L-a-v-i-n-s-k-s-i-s, and the third
17 was Dr. Fred Johansson, J-o-h-a-n-n-s-o-n.

18 (Discussion off the record.)

19 BY MR. AHRENS:

20 Q Were there any other people hired subsequent to '46 that
21 expanded your department? You said a number of people
22 were hired.

23 A Well, yes. We engaged two or three more toxicologists, a
24 Mr. Jack Garrett, G-a-r-r-e-t-t, a Dr. Carl Bohl, B-o-h-l,
25 a Mr. Bruce Ely, E-l-y. There may have been another one

1 in there. I forget.

2 Q Anyone else? Epidemiologists?

3 A Not while I was there.

4 Q Okay. Anybody else that comes to mind that expanded your
5 department?

6 A We had a woman who functioned as a librarian, although she
7 was not a trained librarian, but I don't know her name.

8 Q The medical department had its own library?

9 A Well, in the sense that it -- yes. It did have its own
10 library. It was not an exhaustive library. It was
11 limited to the English language.

12 Q What types of materials were kept in the library?

13 A The usual texts on occupational medicine and toxicology,
14 the magazines dealing with occupational medicine and
15 toxicology.

16 Q Would you know -- if I were to ask you the names of
17 different journals, would you know if Monsanto received
18 those various journals, or would that be something you'd
19 have to look at a list to refresh your memory?

20 A Try me out.

21 Q Okay. We will. We'll get to that. We'll come back.
22 Briefly what is your educational background?

23 A Following high school I went to St. Louis University for
24 six years at the end -- it was a combined course. At the
25 end of the first four years I received a bachelor of

1 science degree, and in 1932, two years later, I received a
2 degree of doctor of medicine. I spent three years as an
3 intern and resident at St. Louis City Hospital. I have
4 done part-time work at various institutions, one and
5 two-week classes in internal medicine and occupational
6 medicine.

7 Q What was your residency, your area of --

8 A Internal medicine.

9 Q So you went from your residency to Monsanto, or was there
10 a time in between where you did something?

11 A About six months in between.

12 Q What did you do then?

13 A I was doing private practice.

14 Q Okay.

15 A I don't know if I mentioned I was part time at Monsanto
16 until I went in the service.

17 Q Okay. And the rest of the time you were doing private
18 practice.

19 A Correct.

20 Q Was that in an office with some other doctors or --

21 A It was by myself.

22 Q Here in St. Louis.

23 A Yes.

24 Q Okay. Well, I guess we might as well go back to the
25 library. Last time you knew, there was still a medical

1 library at Monsanto?

2 A Yes.

3 Q Where is that located or where was it located last you
4 knew?

5 A A building at the general office on Lindbergh.

6 Q Is that where it was located back in 1945 or '46?

7 A Yes, in much smaller quarters. No. Sorry. In -- we did
8 not move out to the general office on Lindbergh until 1955
9 or so, so it was located on south Second Street in their
10 general office.

11 Q The Monsanto general offices were on Second Street in St.
12 Louis before you moved out to Lindbergh?

13 A Correct.

14 Q Well, let me just ask you some of these and see if you
15 know. I understand fully if you can't remember any of
16 these. The Journal of Industrial Hygiene and Toxicology.

17 A Yes. We subscribed to that.

18 Q Do you know when you would have begun getting that? I
19 mean, were you getting that back in '36?

20 A Certainly by '38 we were, probably in '36 or '37.

21 Q Why does '38 ring a bell?

22 A Because around '38 I was busier going around to different
23 plants rather than just the Queeny plant.

24 Q Whose responsibility was it to subscribe to these various
25 magazines and journals?

1 A Mine.

2 Q So you would see a need for a particular journal and
3 subscribe to it.

4 A Well, yes. I wanted to self-educate myself, also.

5 Q Journal of Industrial Medicine?

6 A Yes.

7 Q Do you know when you would have begun getting that?

8 A Oh, '36.

9 Q Now, I've never heard of this one, but it's called The
10 Rubber Age?

11 A That was one we did not subscribe to. I have seen it,
12 various copies at times, but we didn't subscribe to it.

13 Q How about Public Health Reports?

14 A Yes. I don't know if we just received those as handouts
15 from the government or if we subscribed to them. I do not
16 believe you subscribe to them, but we received quite a
17 number of them.

18 Q The Review of Gastroenterology?

19 A That is not one we would subscribe to.

20 Q And you did indicate that it was limited to English
21 language journals and magazines.

22 A That's correct.

23 Q Did you get J.A.M.A.?

24 A Yes.

25 Q How about A.M.A., Archives of Dermatology?

1 A No.

2 Q How about The Journal of Investigative Dermatology?

3 A No.

4 Q Toxicology and Applied Pharmacology?

5 A Yes.

6 Q When would you have begun getting that, if you know?

7 A Probably around 1950.

8 Q American Review of Pharmacological Toxicology?

9 A No.

10 Q Nature?

11 A No.

12 Q Laboratory Investigation?

13 A No.

14 Q Journal of the AOAC?

15 A AOC?

16 Q AOAC.

17 A There was a Journal of the American Occupational Medical
18 Association. I don't know what that C is, but -- and I
19 might also say, you realize there were two other libraries
20 in St. Louis that we had access to if we wanted to use
21 them.

22 Q That would be St. Louis and Washington?

23 A Yes. The medical society itself had a large library.

24 Q Bulletin of Environmental Contamination & Toxicology?

25 A No.

1 Q Okay. Well, you have a remarkable memory.

2 A For some things.

3 Q For some things. I guess we all have that. Have you had
4 any papers or studies published?

5 A On PCBs or on anything?

6 Q Well, let's start with PCBs.

7 A No.

8 Q On anything?

9 A Yes.

10 Q Relating to what, just generally?

11 A Organization of a medical department, general
12 toxicological reviews, work with bladder tumors.

13 Q Your article on organization of medical departments, where
14 did that appear?

15 A Missouri State Medical Society.

16 Q What year?

17 A '40.

18 Q How about the toxicological reviews?

19 A Around then, too.

20 Q Same publication?

21 A No. That was in the American Journal of Public Health.

22 Q Any other published papers that come to mind?

23 A Yes. One in the New England Journal of Medicine on
24 cytology and bladder tumors, another one on the same
25 subject in the National Cancer Institute and one on

1 bladder tumors in the American Journal of Urology.

2 Q Do you remember the years of those three?

3 A Late '60s, early '70s.

4 Q Were there any other medical libraries within the Monsanto
5 organization other than the one that we've talked about?

6 A Not that -- no, sir.

7 Q Were there any other libraries that weren't called medical
8 libraries, but which contained medical or other studies
9 relating to the effects of PCBs, for example, on either
10 animals or humans?

11 A No, sir.

12 Q How about would studies related to environmental concerns
13 of various chemicals be in the medical library or would
14 they have been somewhere else?

15 A Up to the time I retired I don't believe there were many
16 articles concerning environmental contamination. I don't
17 know whether a particular chemist someplace subscribed to
18 it, so I can't answer that. I don't know. We did not
19 have any in the medical department, to the best of my
20 knowledge.

21 Q Well, were there any other scientific libraries that
22 you're aware of that were separate and apart from the
23 medical library?

24 A Oh, yes. There was a separate library at -- scientific
25 library at the general offices, there was a separate

1 library at Dayton Research Laboratories, there was a
2 library at Nitro, West Virginia, research laboratory. I'm
3 sure there was a library wherever we had a research
4 plant -- a research department in a plant.

5 Q The other I guess we're calling it scientific library at
6 the St. Louis location, was that called the scientific
7 library?

8 A It was called the library.

9 Q The materials in the libraries at Dayton and Nitro, would
10 they have contained the same things that were in the
11 library here in St. Louis or --

12 A I wouldn't know.

13 Q They subscribed based upon what they wanted and you
14 subscribed based upon what you wanted. There wasn't
15 company subscription --

16 A Well, wait now. We're confusing the medical library with
17 the general office, the library of the research department
18 in St. Louis.

19 Q Okay.

20 A The medical department library subscribed to toxicology,
21 it subscribed to general medicine, it subscribed to
22 industrial medicine. Later on, after I left, obviously,
23 publications came out about dealing with environmental
24 issues. I've seen -- I know that they subscribe to those.
25 But up to the time I left in 1974 we did not to the best

1 of my knowledge subscribe to any of those. What these
2 other libraries subscribed to, I don't know.

3 Q As far as you know, though, it was their responsibility to
4 subscribe to whatever they wanted.

5 A Oh, certainly.

6 Q In the medical library here in St. Louis, at least when
7 you were there, was there any type of index, summary, card
8 catalog where someone could go through and find whatever
9 articles they wanted?

10 A We did not have that computer capability in our medical
11 department library until about 1972, '73, right before I
12 left. At that time we hooked up into a national computer
13 data base that we could find out. We did not have our own
14 indices of our journals on a file, no.

15 Q Well, --

16 A We did, however, keep articles that we had seen of
17 interest in a file for -- labeled for individual products;
18 for example, phenyl or agricultural herbicides, that sort
19 of indexing.

20 Q Well, say somebody in 1960 wanted to go in and look at all
21 the articles he could find on PCBs. How would a person go
22 about doing that back then?

23 A I think you would manually go through the indexes of
24 the -- certainly of the journals we had, but whenever we
25 read these journals, if somebody came up with a product

1 that we were manufacturing, we would either photostat that
2 and put it in an individual file labeled say PCB, if
3 something were written about PCBs. The articles that came
4 out from the toxicological information about PCB that we
5 knew about, we would photostat it and put it in a file.
6 If it turned out to be the Journal of Investigative
7 Dermatology, as you talked to me about, we would not know
8 about that until we got our computer base where we
9 would -- and whether that went back that -- that didn't go
10 back very far in those days, either.

11 Q Yes. If an article came in relating to a product; for
12 example, PCBs, and you photocopied it, as you said, and
13 put it in a file, where would that file go or where would
14 it be kept?

15 A It would be kept in a file in the medical department under
16 what we call our toxicology file that filed reprints and
17 other information, letters from customers, et cetera,
18 labeled PCBs.

19 Q Okay.

20 A If it were about phenyl, it would be labeled under phenyl.

21 Q When you left, were those individual files related to
22 specific products still there?

23 A Yes, sir.

24 Q And that was in the medical library here in St. Louis.

25 A Yes, sir.

1 Q When you hooked up to the computer data base, what data
2 base was that?

3 A I don't know. I don't remember.

4 Q Does Medline ring a bell?

5 A Yes, it does ring a bell, but I can't be certain if that
6 was the first one or not.

7 Q You mentioned letters from customers. What letters from
8 customers would go in a file in the medical library?

9 A If somebody wrote in and said will exposure to phenyl give
10 you hives, I would write back and say I never heard of
11 that happening, and that correspondence would go into the
12 phenyl file.

13 Q So if someone wrote a letter regarding potential or
14 claimed health effects of exposure to PCBs, that also
15 would go in the file.

16 A If they asked for safe handling data concerning PCBs, that
17 would go in.

18 Q Is there as far as you know an index or summary to each of
19 those individual files on products?

20 A There was not in 1940 -- up to 1974, and I do not know
21 whether or not there has been any subsequent.

22 Q Okay. Was it -- whose job was it to look over the
23 journals that came in to see if there was anything of any
24 relevance to what Monsanto was doing?

25 A In the years when I was the only one there, I did. In the

1 years when Wheeler came, we both did. When the
2 toxicologist came, he looked over the toxicology
3 literature, we looked over the medical literature.
4 Wheeler -- by that time there were sub journals dealing
5 especially with industrial hygiene, such as the New
6 England -- the British Journal of Industrial Hygiene, I
7 believe it was. Wheeler would look over that.

8 Then we had another physician, a Dr. Morris
9 Johnson, who was a full-time physician. He would look
10 over it, too, and if any of us saw anything that would be
11 of interest to someone else, we would check that and send
12 it around to the other person. We had a pretty small
13 department at that time. We could operate on a pretty
14 close basis.

15 Q Sure. So up until the time you left, you were still doing
16 some of that.

17 A Oh, yes.

18 Q Did you ever keep any personal files that say an article
19 was routed around the department and it was of particular
20 interest to you, that you would put a copy of it into?

21 A You mean -- I'm a little confused. Personal files? My
22 own file, Kelly file?

23 Q Yes, where you kept it in your desk as opposed to in the
24 library's file.

25 A No.

1 Q All right.

2 A Now, when you say library's file, we had a file where our
3 secretaries were. They were not connected with the books.
4 They were the ones that would transcribe the letters,
5 answer the letters. These files were kept in the general
6 part of the office. There were eight or ten files that
7 these secretaries watched after. The librarian had her
8 own file. She didn't have the correspondence with
9 customers.

10 Q But were those files considered part of the library files
11 even though they weren't physically in there?

12 A Gee, I don't think we were that formal in designation. I
13 don't think so.

14 Q Okay. Are those files still there, the ones in the
15 office?

16 A I know nothing about where they are since 1974.

17 Q Where were they in 1974?

18 A Sitting right there behind the secretary's desk.

19 Q And those would have been the files that would have
20 contained the correspondence that you referred to?

21 A That is correct.

22 Q Was there a name for those files? I mean, if you said to
23 your secretary go get me something out of --

24 A Get me the PCB file, she would know where to go. If I
25 said get me the Anniston file, we had a plant file, she

1 would get the Anniston plant file.

2 Q Okay. Did you keep a file on each separate plant?

3 A Yes.

4 Q What would go into those files, what types of things?

5 A Anything related to the plant. I mean, if there were
6 accidents there, if there were serious illnesses, if there
7 was a letter from the plant doctor asking me about
8 something else, if we were going to manufacture a new
9 compound at a particular plant, I would write to the plant
10 doctor and say here is what we are going to be making,
11 here's the raw materials, here's what we know about it.

12 Q Well, for example, I assume that from time to time you got
13 internal memos or directives from people in management or
14 other departments of the plant, wherever, saying something
15 has come to our attention, look into it, see if we need to
16 do anything about it, that kind of thing.

17 A Yes, sir.

18 Q Okay. Where would that kind of memo or directive go?

19 A That would go under the product.

20 Q So if they said gee, we saw this article in a newspaper
21 someplace that has to do with PCBs, we don't know if it
22 has anything to do with us, but take a look at it, you
23 would put that in the PCB file.

24 A That's correct.

25 Q And that would have been the same file in the office as

1 opposed to the library.

2 A Yes, sir.

3 Q Are you aware of any indexes or summaries of those files,
4 the ones in the office?

5 A I'm not aware of. I'm not sure what you mean by summary.
6 You mean somebody has gone through a file and said here is
7 the gist of what's in this file, we've got 14 letters from
8 various customers, we've got two letters to the plant? Is
9 that what you mean?

10 Q That's a good question. No. What I mean is something
11 that just briefly lists each thing that's in the file so
12 if you said oh, my goodness, there's this memo I remember
13 we got six months ago and you go to the index and look it
14 up and find out where in the file it is.

15 A No, sir.

16 Q Was there a summary as you described?

17 A No, sir.

18 Q Based upon your review of the literature, the journals,
19 the studies, all the things that came into your department
20 and went into the library, do you know of any studies
21 which indicate that exposure to PCBs caused any problems
22 in humans, that even suggests that?

23 A I don't know if you -- what you mean by studies. You mean
24 a case report?

25 Q Whether they be case reports, cohort studies, so on and so

1 forth.

2 A Yusho, where Japanese PCBs were eaten. They certainly
3 showed some problems with humans.

4 Q Were there any earlier than the Yusho report that you're
5 aware of?

6 A There was one article where people were using a heat --
7 PCBs in a heat transfer unit. This was a jerry-rigged
8 apparatus that leaked hot PCBs over three days and three
9 workers developed temporary liver problems. They
10 developed jaundice, from which they recovered. It was a
11 plant in Brazil, Indiana. It was in I believe the Indiana
12 Medical Journal or something like that.

13 There were no -- there were also studies back in
14 1936 and 1938. One was a study of -- not study, report,
15 of a number of employees at our Anniston plant who
16 developed chloracne from PCBs that were manufactured by
17 off-specification benzene, and that occurred before I came
18 to work. It was written up in one of the journals and
19 that's never recurred.

20 I don't know of any other. I know of no
21 epidemiological studies of workers up to the time I
22 retired.

23 Q Okay. Do you know the date on that -- the leaking PCB
24 study that you talked about?

25 A No, and I tried to find it.

1 Q Do you know the decade?

2 A Yes. I think it was in the '50s.

3 Q Do you know who authored it?

4 A I thought it was a fellow by the name of Speicher --
5 Spolyer, S-p-o-l-y-e-r. He was in the health department
6 of the State of Indiana, but I was never able to -- I've
7 seen a reprint, but I don't know where he reported it, but
8 we just can't find it. Anyway, I've written to him and
9 the people all got well, so I've forgotten about it.

10 Q The study or report of the problems down in Anniston, when
11 did the occurrence take place?

12 A I believe '35.

13 Q And do you know how many employees were affected or
14 potentially affected?

15 A Well, I don't know what you mean by potentially affected.
16 You mean how many were exposed?

17 Q Obviously some employees claim problems when they have no
18 problems.

19 A I believe probably less than a dozen had skin problems. I
20 don't know how many.

21 Q Were there any employees in that incident that developed
22 other problems aside from the skin problems?

23 A I do not recall. Conceivably somebody may have had some
24 altered liver function tests, but the type of liver
25 function tests in the '30s was certainly unsophisticated

1 and unreliable. There was nobody with overt systemic
2 illness.

3 Q Was that report published?

4 A Yes. That was -- it was published in one of the
5 dermatological journals or a southern journal. I don't
6 know if it was a state journal or not.

7 Q Who authored it?

8 A I don't remember.

9 Q Somebody from Monsanto?

10 A No. This was the consulting dermatologist to whom the
11 cases were sent.

12 Q I see. Down in Anniston?

13 A Yes. He was in Atlanta, though, I believe, or Birmingham.

14 Q Prior to the Yusho report, are there -- you may have
15 answered this -- were there any studies undertaken by
16 Monsanto of its employees who worked with PCBs relative to
17 potential health effects other than the ones you've
18 already referred to?

19 A Well, if by studies you mean -- we examined these people
20 at regular intervals during the course of our examination
21 program, both at Anniston and at East St. Louis, and we
22 didn't find any ill effects. I myself examined about 20
23 people in the '70s at our East St. Louis plant, where we
24 had sophisticated tests at that time, as well as tests for
25 PCB in blood, and found no illness.

1 MR. SCHINK: By East St. Louis, do you mean
2 Sauget?

3 THE WITNESS: Yes. I'm sorry. East St.
4 Louis -- the term Sauget did not used to be Monsanto,
5 Illinois. It used to be Plant B, Illinois, but now it's
6 Sauget.

7 MR. SCHINK: And that's the Krummrich plant?

8 THE WITNESS: Krummrich plant, that's right.

9 BY MR. AHRENS:

10 Q Were there any epidemiological studies prior to Yusho done
11 on Monsanto workers?

12 A No, sir.

13 Q Done by anyone.

14 A Not that I know of.

15 Q Any studies done of Monsanto workers outside of the
16 company where it didn't have the company stamp of
17 approval, but somebody was doing work on employees as an
18 outside type of --

19 A With PCBs?

20 Q Yes.

21 A Not that I know of.

22 Q As far as you know, did NIOSH ever do any studies?

23 A No, sir, not until 1974. I don't know if they did any
24 afterwards. They came in once and looked while I was
25 there. They said we don't think we have enough people or

1 we don't think we have much exposure.

2 Q Are you aware of a woman by the name of Zack doing any
3 studies?

4 A Yes. She did an epidemiological study after I left the
5 company.

6 Q Do you know what years that was?

7 A Sometime after '74.

8 Q You don't know the specific year?

9 A Not the specific year, but I thought it was sometime in
10 the '70s, after '74.

11 Q Do you know what the focus of her study was?

12 A I suppose the focus was to see if there was any unusual
13 illness manifestations in the workers at the Krummrich
14 plant.

15 Q So it was a systemic problems in general kind of thing she
16 was doing?

17 A I can't answer that.

18 Q Do you know if her reports have ever been published?

19 A I can't answer that, either.

20 Q You never saw it, in any event.

21 A Yes, I've seen it, but I don't know if I saw a company
22 report or if I saw a reprint of it.

23 Q Did you take part in any way in assisting in that study?

24 A No.

25 Q And by that I mean you or your company, your consulting

1 service.

2 A No. No. No.

3 Q All right.

4 (Discussion off the record.)

5 BY MR. AHRENS:

6 Q Did the NIOSH people ever issue a report based upon their
7 visit?

8 A With the exception of what the letters say, we don't think
9 we're going to do a study.

10 Q Do you know if they have come in since '74 to any of the
11 Monsanto plants, again relative to PCBs?

12 A I don't know.

13 Q Well, assume for me that they had. Would there be a file
14 somewhere? Based upon your understanding of the filing
15 system, would there be a file somewhere based on what they
16 did and what was going on relative to their visit?

17 A If they sent a report, yes.

18 Q Where would that be?

19 A I don't -- I don't know where it would be.

20 Q Prior to the time you left, where would NIOSH reports be
21 filed?

22 A In the plant file, as well as the PCB file.

23 Q Okay. And the PCB file being the one in the office?

24 A That's correct.

25 Q We mentioned the Yusho report a little earlier. Did you

1 see that as a health study or an environmental study? How
2 did you interpret that?

3 A I interpreted it as a report on individuals eating PCBs
4 mixed with food and the serious results that could occur.

5 Q Now, as I understand it, those PCBs had nothing to do with
6 Monsanto, right?

7 A That is correct, and they had a number of contaminants in
8 there that were caused by the use to which PCBs were put.

9 Q And the contaminants were what?

10 A Dibenzofurans. There may have been others.

11 Q Did the Yusho incident cause any concern on your part for
12 the effect -- potential effects of PCBs on humans, either
13 your workers or your customers?

14 A Well, we recognized that here is a situation where we
15 better be sure that it isn't going to be used in places
16 where it comes in contact with food, such as a heat
17 transfer agent that would be used in food.

18 Q Is that how the Yusho rice was contaminated, if you know?

19 A Yes. I believe it was a heat transfer agency that leaked.

20 Q Was that the first -- the Yusho incident, was that the
21 first red flag, if you will, about possible problems with
22 PCBs?

23 A Well, no. We always recognized it as an industrial
24 chemical with a certain degree of toxicity and we warned
25 against breathing it. We warned against getting it on the

1 skin. We warned against breathing it at elevated
2 temperatures or in confined areas. It was certainly not
3 expected to be eaten.

4 Q We've referred to some skin problems that workers got when
5 they got PCBs on their skin. Is that what's normally
6 referred to as chloracne?

7 A Yes, and there are two forms, two conditions. PCBs could
8 act like a paint remover, also, and give you redness if
9 you left it on your skin long enough. If you had repeated
10 contact of enough of the material, you could get
11 chloracne, yes.

12 Q Are you aware of any studies prior to 19 -- well, what was
13 the year of the Yusho incident, as best you recall?

14 A Around 1970.

15 Q Okay. Are you aware of any reports prior to then which
16 indicate that PCBs on the skin can be drawn into the body
17 and become systemic?

18 A Well, in 1936 and 1938 there was work done by Drinker,
19 D-r-i-n-k-e-r, and other people and reports of mixtures of
20 chlorinated naphthalene, n-a-p-h-t-h-a-l-e-n-e, and some
21 PCBs with higher chlorination that were alleged to cause
22 chloracne in workers in wire pulling plants in some of the
23 industries in the Northeast. That was in the main
24 chlorinated naphthalene because only 10 percent of PCBs
25 were used in that material, and these, as I said, were

1 higher chlorinated PCBs. There were quite a bit of
2 publications about that, and in those early days people
3 always -- when more articles would come out, they would
4 always tie in PCBs with chlorinated naphthalene.

5 Q But your understanding of the literature is that the
6 conclusion was that the problems involved were caused by
7 the naphthalene as opposed to the PCBs?

8 A Well, yes, because we had toxicological work done by
9 Drinker, and in the first toxicological report Drinker
10 said that one of our PCBs was capable of causing liver
11 damage, so I wrote to him and said where did you get the
12 PCBs, and he said I got them from the Halowax Company, and
13 I said well, this is news to us. We'll send you some
14 honest to goodness PCBs from us. So we sent him some and
15 he tested it and found out that it was not nearly as toxic
16 as he had reported, and in a subsequent article he
17 retracted his statement about PCBs causing liver damage
18 under the circumstances of his experiment.

19 Q When was that initial study done by Drinker done at
20 Monsanto's request?

21 A Oh. It was done --

22 Q Approximately.

23 A The initial study was done as a result of the Halowax
24 people and they started it and they asked us to chip in
25 with some of the funding.

1 Q Okay.

2 A That was about in 1937, I believe, late '36, '37, around
3 there. The second study was done in '37 or '38. That was
4 entirely from Monsanto's point of jurisdiction.

5 Q Were both of those published?

6 A Yes. They both were in the Journal of Industrial Hygiene
7 and Toxicology.

8 Q Did the Halowax Company have anything to do with Monsanto
9 other than being a competitor?

10 A Well, they were a customer, obviously.

11 Q Monsanto sold Aroclors to them?

12 A That's correct.

13 Q And they used it to make what?

14 A Halowax.

15 Q Did that go on cables or something?

16 A That went on cables. It was a dielectric that was used on
17 cables, wire, before the onset of vinyl-covered wire.

18 You're too young to remember when we used to have a wire,
19 an electrical wire, house wire, you'd pull it and your
20 hands would get brown and gluey.

21 Q Sort of sticky, waxy?

22 A That's right.

23 Q I think I'm not too young to remember that. I think I do
24 remember that, as a matter of fact. Drinker got his
25 original materials then from Halowax.

1 A Yes, sir.

2 Q And they -- what did he get from Hallowax, what kind of
3 sample?

4 A Well, he got chlorinated naphthalene. He got something
5 that was alleged to be a PCB, which was not or was a
6 mixture of naphthalene and PCB.

7 Q When you went back to him and said we'll give you some
8 pure PCBs and redo your study, what PCBs did you give him?

9 A I think it was 1262. I'm not sure.

10 Q And his conclusions following that second study were that
11 it was not as toxic --

12 A Not nearly as toxic as he had reported earlier --

13 Q I see.

14 A -- on the compound that was reported to be 1262.

15 Q Did he find any potential health effects from exposure to
16 1262?

17 A Well, he's usually pretty -- yes. It's an industrial
18 chemical and has a certain amount of toxicity, yes, but it
19 does not have as much toxicity -- nearly as much as he had
20 ascribed to it before, something on the order of a tenth
21 of it or something like that.

22 Q Well, did he find any systemic effects of exposure to the
23 1262?

24 A Yes. If you get enough, you could get liver problems,
25 certainly, but it's a question of how much you give.

1 Q It was an animal study, obviously. What type of animals?

2 A Rats or mice. Rats, I believe. You had to heat it to get
3 up to a concentration that would give any ill effects.

4 Q Now, other than funding these two studies by Drinker that
5 we've talked about, looking at the Anniston problems that
6 you referred to earlier in '36 with the leaking PCBs, what
7 else did Monsanto do prior to 1940 to look at the
8 potential health effects of exposure to PCBs?

9 A They had work done at -- by Dr. Frederick Flinn at New
10 York at the time of the -- at the time of the original
11 problem at Anniston. I'm sorry. That was not done by
12 Monsanto. That was done by Swann, S-w-a-n-n, Chemical,
13 which was bought by Monsanto.

14 Q Okay.

15 A I do not -- we also did some acute testing prior to --
16 around 1940, I believe. I'm not sure of the dates.

17 MR. SCHINK: Off the record.)

18 (Discussion off the record.)

19 BY MR. AHRENS:

20 Q So the Anniston plant was originally the plant owned by
21 Swann.

22 A Correct.

23 Q And when the problem occurred down there in '36 or
24 thereabouts, had Swann yet been purchased by Monsanto?

25 A It had not, to the best of my knowledge.

1 Q So Swann had the study or whatever undertaken.

2 A That's correct.

3 Q Do you know of any work that Swann did prior to that to
4 look at possible health effects of PCBs?

5 A No, sir.

6 Q At any time have you ever seen any files of the Swann
7 Chemical Company of any work that was discussed or
8 potential health effects prior to 1936?

9 A I may have seen -- in the course of some of these
10 depositions I may have seen copies of letters, but I saw
11 no files of any work done with the exception of the Flinn
12 work.

13 Q Do you know if Swann did anything prior to marketing --
14 well, strike that. Did Swann market PCBs before Monsanto
15 bought them, before Monsanto bought Swann?

16 A I'm sure they did. I don't know of my own knowledge.

17 Q Are you aware of any testing or other work that Swann did
18 to determine potential health effects of PCBs prior to the
19 time Monsanto bought them?

20 A I do not know of any.

21 Q I think I probably know the answer to this, but is there
22 anyone from the old Swann Chemical Company still around?

23 A I know of no one.

24 Q All right. Dr. Flinn's work, was that published?

25 A I can't say whether it was or not. I don't believe it

1 was.

2 Q Was there a report issued?

3 A Yes. There was a report.

4 Q Would that be in Monsanto's library?

5 A It was in 1974.

6 Q In the medical library?

7 A That's correct.

8 Q Did he just do one study or was it more than one?

9 A I think he did a few -- it was some feeding tests and some
10 skin testing.

11 Q Okay. What animals?

12 A Rats.

13 Q Do you know what PCBs he used?

14 A I'm not sure. I believe it's in the White Paper that you
15 have.

16 Q We can find that. You indicated that there was some other
17 acute testing done. What did you mean by that?

18 A Well, in the days of 19 -- early 1940 if you were -- the
19 toxicology testing consisted in the main of an acute study
20 for industrial workers because you expected industrial
21 chemicals to be -- to have acute exposures, for example,
22 with PCBs, you expect a spill, and you wanted to find out
23 what the effect would be if a worker got a good-sized dose
24 on him, so the common test for toxicology and industrial
25 chemicals was a package test that you would test the oral

1 LD50, the skin MLD, the eye irritation, and if it were a
2 liquid, test it at ambient room temperature.

3 Q And who did that testing?

4 A We had an organization called Scientific Associates in St.
5 Louis which did the work, and they eventually split off
6 and there was another local organization called Younger,
7 Y-o-u-n-g-e-r, Laboratories, who did our acute testing.

8 Q At any time was Scientific Associates a part of Monsanto
9 Company?

10 A No, sir.

11 Q They were an independent lab.

12 A Yes, sir.

13 Q And then Younger, were they a break-off from Scientific
14 Associates?

15 A Yes, sir.

16 Q At any time were they a part of Monsanto?

17 A No, sir.

18 Q Did any other organizations outside of the Monsanto
19 Company do any testing relative to PCBs and potential
20 health effects?

21 A Yes.

22 MR. SCHINK: When?

23 MR. AHRENS: At any time.

24 THE WITNESS: At any time? Yes, sir.

25 BY MR. AHRENS:

1 Q What other labs?

2 A Kettering Laboratory, K-e-t-t-e-r-i-n-g, of the University
3 of Cincinnati.

4 Q Any others that come to mind?

5 A Barnard, B-a-r-n-a-r-d, Free Skin and Cancer Hospital did
6 skin testing of PCBs and PCBs incorporated in plastic
7 films on humans.

8 Q How do you spell the freeze?

9 A Free, F-r-e-e.

10 Q Oh. I'm sorry. Any others come to mind?

11 A I can't think of any.

12 Q There may have been others, but they don't come to mind
13 now?

14 A There might, yes.

15 Q Okay. When or over what period of time was Scientific
16 Associates doing any testing for Monsanto relative to
17 PCBs?

18 A I can't be sure of the early date, but I know they were
19 doing them up to about 1950, and about that time we
20 started sending most of our acute work to Younger
21 Laboratories.

22 Q Why did you decide to change labs?

23 A Well, we thought Younger would do a better job. He was a
24 man we had dealt with at Scientific Associates and he was
25 sort of dealt out of the company and started his own lab,

1 so we continued with him.

2 Q So you were satisfied with his work when he was at
3 Scientific and you decided to keep him as your testing
4 man.

5 A Yes.

6 Q So then the Younger Labs took over approximately 1950.
7 How long did they do testing for Monsanto relative to
8 PCBs?

9 A Up to the time I left. I also forgot to mention that
10 Industrial Bio-Test in Chicago did a great deal of
11 long-term testing on PCBs in about the middle or late
12 '60s.

13 Q When was Kettering Labs involved in any testing for
14 Monsanto?

15 A Well, their major testing was in 1954 and 1955 when they
16 did inhalation studies with 1248 and 1254.

17 Q Other than '54, '55 did Kettering do any testing for
18 Monsanto relative to PCBs?

19 A They may have.

20 Q How about Barnard? When did they do tests for Monsanto on
21 PCBs?

22 A Late '50s or '60s. They did a relatively small amount.

23 Q Okay. Would it be true that all of the reports and
24 documents which were generated by the various labs that
25 we've talked about were kept by Monsanto upon receipt from

1 the companies?

2 A They were kept up until 1974.

3 Q In the medical library?

4 A Yes.

5 Q Would they also have been kept in the PCB file in the
6 office?

7 A No. I don't think so. Correspondence concerning their
8 reports might, but not the reports.

9 (Discussion off the record.)

10 BY MR. AHRENS:

11 Q How would the reports and documents received by Monsanto
12 from the various labs be filed in the medical library?
13 How would you locate them if you needed to?

14 A We would call our woman who was the active librarian and
15 say get me the Kettering report on Aroclor 1254.

16 (Discussion off the record.)

17 BY MR. AHRENS:

18 Q What kind of tests did Scientific Associates do?

19 A They did only that acute screening package test that I
20 described earlier.

21 Q Younger Labs do the same?

22 A Yes.

23 Q Did they do anything in addition to the acute screening?

24 A No. For us?

25 Q Yes.

1 A No.

2 Q Well, do you know if they did any research on the effects
3 of PCBs other than for Monsanto?

4 A I wouldn't know.

5 Q Do you know if --

6 A I feel if they did, they would have told us.

7 Q Do you know if Scientific Associates did?

8 A No.

9 Q Now, Kettering you said did inhalation tests, correct?

10 A That's correct.

11 Q What did that involve?

12 A That involved generating a vapor of the material by
13 dropping products on a hot plate of various temperatures
14 and having various species of animals -- I believe it was
15 guinea pigs, rats, mice -- inhale it for six to eight
16 hours a day for 30 to 60 days.

17 Q Were they looking for anything specific, or was it a
18 general what are the potential general health effects of
19 inhaling the vapors?

20 A Well, first of all, they were looking to see what could be
21 considered a safe level for a worker. They were also
22 looking to see what would happen to the worker if they had
23 a big leak and this dropped on a hot piece of steel, would
24 it be safe for the worker to turn off the valves or should
25 he get out of there immediately. Then they were also

1 looking to see what would be the local effect on the lungs
2 at certain levels of PCBs in the air and what would be the
3 effects on other organs on inhaling this material over
4 prolonged periods of time, as I said, for 30, 60 or 90
5 days.

6 Q So they were looking for all possible effects of inhaling
7 the vapors.

8 A That's correct.

9 Q Why did Monsanto commission these tests in '54? What
10 spurred it?

11 A Because there were going to be other uses of the material.
12 Prior to that it was a dielectric, and afterwards we got
13 into the heat transfer uses and the hydraulic uses, which
14 there was exposure that would not be present as dielectric
15 in transformers.

16 Q When did Monsanto first start marketing hydraulic fluids
17 containing PCBs?

18 A I don't remember the date.

19 Q Approximately?

20 A '50s.

21 Q '50s. Was the testing done at Kettering done before it
22 was marketed or about the same time or a little after?

23 A I can't answer that.

24 Q You don't know?

25 A I don't know.

1 Q Was any of the work done by Kettering published?

2 A Yes.

3 Q Where was it published?

4 A I don't know if the Journal of Industrial Hygiene and
5 Toxicology was still being published at that time. It was
6 in one of the recognized toxicological journals or
7 industrial hygiene journals. I believe it was still the
8 Journal of Industrial Toxicology. I believe that was it,
9 but sometime they changed that to the Archives of
10 Industrial Toxicology, so I don't know.

11 Q Do you know who at Kettering conducted this study?

12 A Joseph Treon, T-r-e-o-n.

13 Q Now, at Barnard, was that primarily skin testing?

14 A Yes. It was going to be used in a plasticizer, and we
15 wanted to be sure that when it was used as a plasticizer,
16 it would not be a skin irritant or a skin sensitizer.

17 Q Was that the limit of their inquiry, the effects upon
18 skin?

19 A That's correct.

20 Q Was any of their work published?

21 A Not that I know of.

22 Q Do you know who there was in charge of the testing?

23 A Dr. Lawrence Halpern, H-a-l-p-e-r-n.

24 Q Where are they located, by the way?

25 A They were in St. Louis. Now they're a part of Washington

1 University Medical School.

2 Q Were they at any time part of Monsanto?

3 A Never.

4 Q Did Dr. Halpern ever work for Monsanto?

5 A No.

6 Q Do you know what Aroclors they used in their tests?

7 A I'm not sure. I thought it was 1254, but I'm not sure.

8 Q All right. Industrial Bio-Test, was that the name of the
9 company?

10 A That's correct.

11 Q And they were in Chicago.

12 A Correct.

13 Q You indicated that was long-term testing. Can you go into
14 a little more detail?

15 A Two years.

16 Q What were they looking for or what was the focus?

17 A Well, at that particular time the material was found in
18 the food chain and they were looking to see what long-term
19 effects of small doses of a material would be. There was
20 also information that it might be causing thinning of eggs
21 in avian species, a-v-i-a-n, avian species, and they were
22 doing work with chickens and wild fowl or mallards.

23 Q So they were looking primarily at low dose responses.

24 A Over a long period of time.

25 Q Who there did the work or was in charge of the study?

1 A I think Dr. Calandra was head of the laboratory.

2 Q Can you spell that?

3 A C-a-l-a-n-d-r-a.

4 Q And that study was middle to late '60s, I believe you
5 said.

6 MR. SCHINK: I believe the White Paper says it
7 started in '69. It went for two years. '69 to '71. It
8 seems to tie in with Yusho.

9 BY MR. AHRENS:

10 Q Is that your understanding, that the Yusho incident was
11 the -- sort of the impetus which caused this study to be
12 undertaken at Bio-Test?

13 A No. I don't think so. I think the fact that it was being
14 found in fish and in milk in some places, that was the
15 reason we did the long-term studies.

16 Q Was the study done at Industrial Bio-Test published?

17 A I think it was. I'm not sure. It was certainly in report
18 form. Whether it was published or not, I'm not sure.

19 Q And the report would be in the files?

20 A It would be in lots of people's files. Government files.
21 We gave it to the government. We gave it to customers.
22 And it's in Monsanto files.

23 Q All right. Was Monsanto doing any studies relative to the
24 existence of PCBs in the environment itself? You
25 indicated it was being found in birds, it was being found

1 in fish. Was Monsanto doing any of that work?

2 A When? Anytime?

3 Q Anytime. Well, let's make it prior to '71.

4 A I think after it was found in Sweden we did some
5 confirmation work as soon as we had a method for finding
6 it in fish or birds. I don't know when they started that.

7 Q The Swedish study was reported when?

8 A By Jensen in -- what does the paper say?

9 MR. SCHINK: Late 1960s.

10 THE WITNESS: Late 1960's, early '70s.

16

11 MR. SCHINK: You said late '60s, early '70s. I
12 just wanted to clarify what your answer was.

13 THE WITNESS: Yes.

14 BY MR. AHRENS:

15 Q Who was responsible for doing these confirmation studies,
16 as you referred to?

17 A Well, the actual work was done by the analytical group of
18 the central research department. The responsibility for
19 it was very -- was a joint effort of the manufacturing
20 group who manufactured PCB. As the medical department we
21 were the ones that -- the two groups decided that
22 something should be done to find out whether this man was
23 talking about PCBs or not and so a combination of those
24 two groups.

25 Q Who designed the study?

1 A Oh, I think the research people designed it.

2 Q Where did they look?

3 A I can't answer that now.

4 Q Did they look -- they looked in Anniston, right?

5 A I'm not sure where they looked.

6 Q There was a report, though, issued by people who were
7 working on that study?

8 A Oh, yes.

9 Q Was that published anywhere?

10 A I don't know.

11 Q Do you know who authored the report for Monsanto?

12 A There was a Dr. Robert Keller, K-e-l-l-e-r, and a Dr.
13 Scott Tucker, T-u-c-k-e-r. They were the ones that I knew
14 were working on it. Whether somebody else was the lead
15 person on the paper or the report, I don't know, but I
16 thought it was Robert Keller.

17 Q Is Dr. Tucker still at Monsanto?

18 A I don't know.

19 Q Where was he headquartered at the time of the study?

20 A St. Louis.

21 Q Was there any reference to existence in the environment of
22 PCBs prior to the Swedish study that you're aware of?

23 A I'm aware of no such evidence.

24 Q Did Monsanto at any time prior to 1960 do any studies
25 relative to the biodegradability parameters of any of the

1 PCBs?

2 A No, sir, they did not.

3 Q Did Monsanto do any studies relative to health effects --
4 potential health effects of exposure to PCBs after they
5 bought Swann but before they marketed the Aroclors and
6 various products?

7 A Would you repeat that?

8 Q Sure. Sure. Monsanto bought Swann sometime in the '30s,
9 approximately '35, let's say, okay?

10 A Yes, sir.

11 Q Did Monsanto undertake any studies to determine potential
12 health effects of PCBs prior to selling any of the
13 PCB-containing products for which they had purchased
14 Swann?

15 MR. SCHINK: Are you including in that question
16 work, for example, that was done outside by Drinker, or
17 are you talking about work done solely within Monsanto by
18 Monsanto people?

19 MR. AHRENS: Good point. Other than we've
20 already talked about. We talked about the Drinker study,
21 of course.

22 MR. SCHINK: Because that has been placed in
23 time at about the time of this acquisition.

24 MR. AHRENS: Absolutely.

25 THE WITNESS: Well, no, because remember at this

1 time the material had been used for X number of years. I
2 don't know how many years Swann was making it, but they
3 had had no reports of any ill effects from any of their
4 customers with the exception of the mixture of chlorinated
5 diphenyl and chlorinated naphthalene.

6 BY MR. AHRENS:

7 Q But my understanding was other than the Drinker study, you
8 were not aware of any studies prior to that which looked
9 at possible health effects of PCBs.

10 A No, and there were no reports of any health effects of
11 PCBs, either.

12 Q Other than the 1936 era when there was the minor
13 industrial accident down in Anniston relative to PCBs,
14 other than that have there been other industrial accidents
15 at Monsanto where workers have been exposed to PCBs in a
16 manner not anticipated?

17 MR. SCHINK: I object to the form of the
18 question because that accident was not at Monsanto because
19 it occurred before Monsanto bought the company.

20 MR. AHRENS: With that --

21 THE WITNESS: Well, it really wasn't an
22 accident, either, so I --

23 MR. AHRENS: All right.

24 THE WITNESS: So I will have to object to that
25 statement.

1 MR. AHRENS: Let me reword the question.

2 BY MR. AHRENS:

3 Q Have there been any industrial accidents at Monsanto where
4 workers have been exposed to PCBs?

5 A I'm sure there have been leaks, if you consider that, but
6 there have been no ill effects in any Monsanto workers who
7 were exposed to PCB during their regular working or during
8 any untoward spills. There have been no adverse health
9 effects.

10 Q Do you remember specifically any of these accidents or
11 spills, as you referred to them?

12 A No, but out of the natural history in the manufacture of
13 chemicals you always have overfilling drums or spills or
14 something like that, but I do not recall any.

15 Q With any production of chemicals you always have some
16 leaking, spills from time to time.

17 A There's always the potential of spills, yes, sir.

18 Q What was the -- or was there a company policy as to what a
19 worker was to do if he were involved in a spill or an
20 unexpected leak?

21 MR. SCHINK: Of an industrial chemical?

22 MR. AHRENS: Of PCBs.

23 THE WITNESS: Yes. He was supposed to put on
24 gloves and put on any sort of an absorbant material
25 similar to kitty litter or something like that or rags,

1 put it on and then put it into a covered container and
2 dispose of it.

3 BY MR. AHRENS:

4 Q His clothing, you're talking about?

5 A The floor. If he got it on himself, he's supposed to --
6 according to our company procedures, as well as the label,
7 don't get it on your skin. He's supposed to take his
8 coveralls off, yes, sir.

9 Q Was he supposed to shower?

10 A If it were sufficient, yes. If it got through to his
11 underwear, yes, sir.

12 Q I guess what I'm asking is how would a worker know if it
13 was sufficient enough to cause him to take a shower, do
14 whatever the policy said?

15 A Well, I believe that that was a question of his experience
16 in the department. I think if he got a teaspoonful of the
17 stuff on him, he would take a rag and wipe it off. If he
18 got his whole sleeve or the upper part of his coveralls
19 drenched with the stuff and it had gotten into his
20 underclothing, he would take a shower. So I don't know
21 where -- someplace between a teaspoonful and half the
22 coverall. I don't know what, how he would draw the line.

23 Q Was there any kind of a written policy that the workers
24 were supposed to follow if they were exposed to PCBs in an
25 unexpected manner?

1 A Can you quantify the exposure?

2 Q Yes. Like to all employees, if you get some of this so
3 that it soaks your clothing, here's what you're supposed
4 to do?

5 A I'm sure that this was written in the plant operating
6 procedures. It usually was. There usually were safety
7 meetings. There were safety meetings at which employees
8 were indoctrinated as to how they should handle any
9 exposures.

10 Q Who drafted those policies, rules?

11 A Well, it depended -- if we're talking about PCB here,
12 there's a product that has been manufactured before I came
13 with the company, so they had these rules in effect. If
14 it were a different compound that was new to the Anniston
15 plant, I would draft them.

16 Q The rules relative to PCB exposure, though, did those ever
17 change during your tenure, as far as you know?

18 A No, sir.

19 Q And those were written down somewhere?

20 A Of my own knowledge, I can't say that I saw these, but the
21 usual procedure was that in operating instructions in the
22 department there were. In safety meetings people would
23 impress upon workers that -- the handling precautions to
24 be taken.

25 Q Under normal practice were those kinds of things in some

1 kind of employee handbook or some handout that was given
2 to the employees?

3 A I don't know that.

4 Q Back in the '30s when you started, did you ever visit the
5 Anniston plant to see the production line in operation?

6 A Yes, sir. I do not recall the first time I went there.
7 It was either 1937 or '38. Then I would say that I was at
8 Anniston every year with the exception of my war years,
9 until I retired in 1974.

10 Q In the first years that you visited Anniston what kind of
11 clothing, work clothing, did the workers on the PCB line
12 wear?

13 A I don't remember.

14 Q Did they have a company uniform?

15 A I can't answer that, either. That was 50 years ago.

16 Q Sure. Do you know if they were to wear any type of
17 protective clothing?

18 A Well, they certainly had gloves, and they did not have
19 aprons, rubber aprons, that I recall. I do not know
20 whether they had company-furnished coveralls or not. That
21 might very well have been, but I can't be certain of that.

22 Q Do you know what material the gloves were made of? Were
23 they cloth, rubber?

24 A Well, rubber was attacked by PCBs and so they had tried to
25 have different types of gloves and of course cloth gloves

1 would soak through, so it was a little bit of a dilemma to
2 see what they would use until vinyl came along and the
3 neoprene came along.

4 Q I see. So when those came along, they went to those
5 materials.

6 A That type of gloves, right.

7 Q Other than that change, over the years was there any other
8 change in the uniform that the workers on the PCB line
9 used?

10 A Well, I know that at some time the workers did have
11 company-issued clothes, but I'm not certain when. Whether
12 that was due to general plant procedures that they gave
13 everybody in the plant company clothes, I can't be sure.

14 Q How did the uniform change, if you know?

15 A I don't know.

16 Q What would they have been wearing in the '60s, for
17 example?

18 A I don't -- I can't be sure what they were wearing in the
19 '60s.

20 Q Did you visit the plant in the '60s?

21 A Yes.

22 Q Were they wearing any type of headgear or protective
23 facial covering, anything like that?

24 A Oh, no. They used -- they had respirators available if
25 there were a spill when they were filling the hot

1 material.

2 Q My understanding is that at the end of the line, so to
3 speak, there was a pipe or a valve or something where the
4 containers were filled with the end product, whether they
5 be tank cars or drums or whatever.

6 A Yes, sir.

7 Q Are you familiar with that? Did the person who operated
8 that end of the line wear anything differently than the
9 people who worked on other parts of the line?

10 A I don't remember. Remember we're talking about two
11 different plants, and these two different plants had
12 different clothing systems. The one at Krummrich plant I
13 believe had furnished company clothes for everybody in the
14 plant. I'm not certain whether this occurred at Anniston
15 or not, but as far as the tank car unloader, I believe the
16 tank car unloader did more than just load and unload PCBs,
17 so he might be loading phenyl or something like that at
18 one time or hydrochloric acid at one time, so he might
19 very well have had different clothing than the worker out
20 in the department.

21 Q So are you saying you really don't know what he wore or
22 how it was different?

23 A No, I don't.

24 Q Now, Monsanto was the only United States company
25 manufacturing PCBs at any time; is that correct?

1 A To the best of my knowledge, yes.

2 MR. SCHINK: You're talking about during his
3 tenure. Obviously there's been testimony Swann Chemical
4 manufactured them at an earlier time.

5 MR. AHRENS: Sure.

6 MR. SCHINK: And that was not Monsanto.

7 BY MR. AHRENS:

8 Q Are you aware of any studies done by any other companies
9 that manufactured PCBs worldwide relative to potential
10 health effects of PCBs?

11 A Again, what do you mean by studies? Do you mean
12 epidemiological studies?

13 Q Any studies. We can narrow it down here, but just are you
14 aware of any?

15 A There have been case reports in the European literature,
16 but these were not -- to the best of my knowledge, did not
17 originate in the companies themselves. There were other
18 workers at universities and places who did some studies.

19 Q Any studies done by -- and by that I mean in-house now --
20 other chemical companies which at any time were producing
21 PCBs?

22 A You mean any time up to 1988?

23 Q Well, let's cut it off at '71.

24 A Not that I know of.

25 Q Are you aware of any other companies other than Swann that

1 were producing PCBs prior to 1935 or '36?

2 MR. SCHINK: In the United States?

3 MR. AHRENS: Anywhere.

4 THE WITNESS: I do not know when the French
5 produced it or the Germans or the Italians. I don't know
6 when. And I don't know when the Japanese did.

7 BY MR. AHRENS:

19 8 Q Prior to -- after they bought Swann and before they
9 actually got things rolling in the '30s, do you know if
10 Monsanto went out to other chemical companies to see if
11 other studies had been done by them?

12 A I do not know.

13 Q Do you know if there are any ongoing studies at the
14 present time at Monsanto as to potential effects of PCBs
15 on its workers?

16 A Well, of course we don't make it anymore.

17 Q I understand that.

18 A So whether there are epidemiological studies or not, I
19 don't know.

20 Q Do you know if there are any studies being done on
21 Monsanto workers by outside laboratories at the present
22 time?

23 A I don't know of any.

24 Q Are you aware of any studies done by Monsanto relative to
25 its workers and exposure to PCBs done subsequent to your

1 leaving the company but that are not ongoing anymore?

2 A Well, the Zack study was subsequent to my leaving.

3 Q Any others?

4 A That's not ongoing. I think there was a further extension
5 of parts of that study that might have been done after it
6 was concluded.

7 Q By Zack?

8 A No, not by Zack, but as I understood, the Zack study
9 showed an increase in cancer of the lung versus the
10 controls. They also did a study of the -- they used the
11 controls there, the national -- the rate for the nation as
12 a whole, so that when they did the study -- when they
13 compared this -- this was after the Zack study. They
14 compared the lung cancers to the rate for St. Clair
15 County. They found that there was no increase in lung
16 cancer, using that as a control group. So if those
17 studies -- if that's what you mean by more studies, they
18 did that.

19 Q St. Clair County is the St. Louis area?

20 A It's where the Krummrich plant is.

21 Q Okay. Who did these additional studies?

22 A Must have been under the aegis of Dr. William Gaffey,
23 G-a-f-f-e-y. He was the Monsanto epidemiologist.

24 Q Is he still the Monsanto epidemiologist?

25 A Yes. One of them. They have more than one. He's the

1 head.

2 Q Sure. When did he come on with Monsanto?

3 A After 1975.

4 Q All right. Is he in charge of epidemiology at Monsanto?

5 A Yes.

6 Q Who was in charge of epidemiology prior to Dr. Gaffey?

7 A There wasn't any. There wasn't any in '74. I don't know
8 if there was somebody -- if they -- if Zack reported to
9 Gaffey or not. I just don't know. That was after me.

10 Q Other than the Zack study and these possible follow-ups,
11 are you --

12 A It wasn't possible.

13 Q You know that these happened.

14 A Yes.

15 Q Other than the Zack study and these follow-ups, are you
16 aware of any other studies subsequent to your leaving
17 Monsanto relative to potential health effects of PCBs on
18 Monsanto workers?

19 A I don't know of any.

20 Q Are you aware of any studies subsequent to your leaving
21 Monsanto of any workers anywhere in the world who worked
22 with PCBs and potential health effects?

23 A There were all sorts of studies. I mean, some very crude
24 or un -- not crude, unscientific or unreliable, yes, and I
25 can only quote the latest authority on it was Dr.

1 Kimbrough, K-i-m-b-r-o-u-g-h, who stated it appears there
2 is no evidence of any health effects on industrial workers
3 due to PCBs. She said that in an article as recently as
4 eight months ago. I mean, there have been studies of
5 General Electric workers, there have been studies of
6 English workers, but they've all been flawed in some way
7 or the other.

8 Q That's your opinion or Dr. Kimbrough's opinion?

9 A Oh. Well, it's mine for the first one, but Kimbrough was
10 the one, she said there has been no definite relationship
11 of work exposure to PCBs and illness in the workers.

12 Q Do you know where that statement appeared, the name of the
13 journal, the name of the article?

14 A Yes. It was in -- I can get it for you. I mean, it was
15 within --

16 MR. SCHINK: They already have it.

17 THE WITNESS: Oh, they've got it already?

18 MR. AHRENS: Probably we do.

19 MR. SCHINK: It's in a pleading that was
20 recently filed in this case.

21 BY MR. AHRENS:

22 Q Do you know the name of it, though, just for the record,
23 or the name of the journal?

24 A I'm not sure of it. I have the reprint, but I do not know
25 the name.

1 Q Okay.

2 A It is a reputable journal.

3 Q Are there any disreputable journals?

4 A There are nonpeer review journals.

5 Q Such as what?

6 A The Journal of the Missouri State Medical Society. A peer
7 review, as you well know, is you send the article out to
8 half a dozen accepted authorities in the field and say
9 does this look like it's a scientifically correct article.

10 Q And the Missouri State, they don't do that?

11 A No, an awful lot of them, the state journals, don't do
12 that.

13 Q Okay. Were any of the journals or other periodicals that
14 the Monsanto medical library received, were any of those
15 what you'd call unpure or disreputable?

16 A I didn't say disreputable. I said they were not peer
17 reviewed.

18 Q Okay.

19 A That doesn't mean that they were inaccurate or not, but
20 they just did not have the scrutiny of the other people
21 who may be experts in the field. Now, what was your
22 question?

23 Q Just were any of the periodicals or journals at the
24 Monsanto medical library, did they fall into that
25 category?

1 A Well, I think -- I don't know when peer reviewing started
2 in the medical literature. I don't believe it started
3 back in the 1938s, and I don't believe the Journal of the
4 Industrial Medical Association was a peer reviewed
5 article -- journal.

6 Q So as far as you know, -- well, do you have any idea when
7 the peer review concept began?

8 A No, because I think it started with various journals. I
9 mean, if you had a journal of biological chemistry which
10 was just written for biochemists, I think they would start
11 peer reviewing a lot earlier than somebody who is
12 describing a few skin lesions or something.

13 (Discussion off the record.)

14 (Short recess in proceedings.)

15 BY MR. AHRENS:

16 Q Are you aware of any studies in which, rightly or wrongly,
17 the author concludes that exposure to PCBs are in any way
18 carcinogenic?

19 A Yes.

20 Q What's the earliest one that you are aware of?

21 A In animals or in humans?

22 Q Let's start with animals.

23 A Yes. Dr. Kimbrough's studies in 19 -- late '60s.

24 Q There are no studies or reports in the literature prior to
25 those which suggests that exposure to PCBs are

1 carcinogenic that you're aware of?

2 A That's correct.

3 Q How about for humans?

4 A Well, as I said, there have been studies, for example,
5 there were some studies in some General Electric plants, I
6 believe, that showed in one of the three plants women had
7 higher carcinoma of the rectum than others, and then
8 subsequent studies showed that that wasn't correct, they
9 decided that that was an epidemiological aberration.

10 MR. SCHINK: Now, these are not studies in the
11 '60s. Did you ask at any time?

12 MR. AHRENS: Yes. I said any time. We didn't
13 really pin down a time period.

14 THE WITNESS: On this one, this was in the '70s,
15 the late '70s, as I remember.

16 BY MR. AHRENS:

17 Q Were the General Electric reports published?

18 A Yes. I'm sure they were.

19 Q And those were in the late '70s.

20 A To the best of my knowledge, yes.

21 MR. SCHINK: And are you sure on Dr. Kimbrough
22 it's the late '60s? Just for the record, it was the mid
23 1970's is when that work was published, unless you're
24 thinking of something else. I mean, let me just show you.

25 THE WITNESS: Just before I left. Then maybe it

1 was in the early '70s.

2 MR. AHRENS: Let's clear it up if we can.

3 MR. SCHINK: I've got the White Paper here, and
4 there's a reference to a study of Dr. Kimbrough's. Let me
5 see if I can find it here in the footnote. Maybe this
6 will -- here it is. It's Footnote No. 17. Maybe that --
7 if you look at that, that might help you put a better date
8 on it.

9 THE WITNESS: Oh, yes.

10 MR. SCHINK: Is that the study you were
11 referring to?

12 THE WITNESS: That's the study.

13 MR. SCHINK: What's the date?

14 THE WITNESS: 1975.

15 MR. SCHINK: Is when the study was published,
16 but you were aware of the date --

17 THE WITNESS: She came down in '74 before I
18 left. We talked to her about it.

19 MR. SCHINK: But that was the first study that
20 you were aware of?

21 THE WITNESS: That's correct, yes.

22 MR. SCHINK: Okay. That's fine.

23 BY MR. AHRENS:

24 Q Was Dr. Kimbrough retained by Monsanto to do this work?

25 A No, she was not.

1 Q Was she invited down to Monsanto by Monsanto or was that
2 her choice?

3 A No. She was invited down because her studies were at
4 variance with our studies and we invited her down to talk
5 about it and to take slides -- to interchange slides, and
6 we took some of her slides and she took some of our
7 slides, and we sent her slides to three pathologists who
8 disagreed with Dr. Kimbrough as to the frequency and type
9 of a tumor that she called a malignancy.

10 Q Did she visit more than once?

11 A I can't answer that. I know she visited once in -- right
12 before I left, '74, I suppose.

13 Q Did she do any follow-up studies in which she backed off
14 of her position?

15 MR. SCHINK: Now, again, we ought to clarify,
16 also, because there are a whole range of PCBs, it's been
17 testified to in past depositions, and she didn't work with
18 all of the PCBs.

19 THE WITNESS: No.

20 MR. SCHINK: She worked with a particular one or
21 ones which aren't involved in this case.

22 BY MR. ARENS:

23 Q Did she do any follow-up studies in which she retracted
24 her position or backed off from her position?

25 A I don't know if she did. I do know that she never

1 published any retraction or anything of that sort. I do
2 know that the National Cancer Institute did a study with
3 1254 with which they did not find malignancies.

4 Q When was that done?

5 A Subsequent to -- is that in the White Paper?

6 MR. SCHINK: Yes. 1978, "Bioassay of Aroclor
7 1254 for Possible Carcinogenicity, National Cancer
8 Institute Technical Report Series No. 38." Kimbrough's
9 work had been done with Aroclor 1260.

10 BY MR. AHRENS:

11 Q Is the title that Mr. Schink read, is that the one you
12 were referring to?

13 A Yes.

14 Q Did Monsanto do any studies at any point, at any time,
15 relative to potential or possible carcinogenic effects of
16 PCBs in humans?

17 MR. SCHINK: By that --

18 MR. AHRENS: Studies --

19 MR. SCHINK: On humans or like using rats?

20 MR. AHRENS: No. No. Okay. Let's go back.

21 We'll break it down.

22 BY MR. AHRENS:

23 Q At any time did Monsanto do any animal studies relative to
24 potential or possible carcinogenic effects of PCBs?

25 A When you do a two-year study on rats and dogs, you include

1 in that the expectation that if you are going to -- if a
2 material is a carcinogen, you will find it in the two-year
3 study on rats. It would have to be a very potent
4 carcinogen to find it in dogs in two years, so when we did
5 our long-term study, we did not do it with the purpose of
6 finding out whether it was a carcinogen, but that was an
7 extra dividend to us.

8 Q And that was the work done by Bio-Test?

9 A That is correct.

10 Q Other than that study, were there any other animal studies
11 which looked at possible or potential carcinogenic effects
12 of PCBs by Monsanto?

13 A No.

14 Q Has Monsanto at any time done any studies, cohort studies,
15 case studies relative to possible or potential
16 carcinogenic effects in humans?

17 A Well, of course the Zack study that we mentioned.

18 Q Other than that?

19 A No.

20 Q Are there any organizations other than Monsanto of which
21 you are aware that have done case studies or cohort
22 studies looking at possible or potential carcinogenic
23 effects in humans -- of workers employed by Monsanto?

24 A I do not know of any.

25 (Exhibit Nos. 10 and 11 were marked for

1 identification.)

2 BY MR. AHRENS:

3 Q Show you, Dr. Kelly, what's been marked as Exhibit 10, ask
4 you if you would just take a look at that.

5 A Yes, sir.

6 Q That is a 1958 memo of some sort from a W.A. Stewart on
7 which you were copied in; is that correct?

8 A Yes, sir.

9 Q Now, first of all, who is W.A. Stewart?

10 A I don't know.

11 Q In the first sentence you'll see there's a phrase "It was
12 agreed that there is some hazard in the Pydrauls that
13 contain Aroclors." Do you see that?

14 A Yes, sir.

15 Q Do you have any idea what type of hazards they were
16 referring to, bearing in mind that this was 1958?

17 A I'm sure to workers that might use the product in
18 contraindication to warnings, labels.

19 Q What types of hazards would be presented to the humans
20 that were using them?

21 A Well, if you used it at elevated temperatures in confined
22 spaces, you could get liver problems. If you dunked your
23 arms in it repeatedly for prolonged -- you could get
24 chloracne.

25 Q Any other hazards that this might have referred to in that

1 it was 1958?

2 A No, sir. Those are the only two.

3 Q Okay. There was -- was there a warning label on the
4 Aroclors that warned of those hazards?

5 A There was a warning label that showed how to avoid the
6 hazard.

7 Q Okay. Did the -- let me clear this up. Was the warning
8 label on the Pydrauls or on the Aroclors or both or
9 neither?

10 A Well, it was certainly on the Aroclors. It was certainly
11 on the Pydrauls, some of the Pydrauls that contained
12 Aroclors. In other words, there are some Pydrauls that
13 are different products with no Aroclors in at all, and
14 there are some Pydrauls that are formulated, so obviously
15 if we were going to formulate Pydraul 150, it was going to
16 be labeled and this warning was arrived at.

17 Q And as far as you recall, is the warning that's referred
18 to below the full paragraph, is that the warning that went
19 on the label?

20 A Yes, sir.

21 Q It doesn't refer to potential problems with the liver. Is
22 there any reason that wasn't included?

23 A Well, yes, because you only have a certain amount of space
24 on a label and the problem is that -- I mean, the reason
25 for the warning is to avoid troubles. You don't say what

1 you're going to avoid. I mean, on gasoline you say don't
2 smoke. You don't say don't smoke or this will blow up.

3 Q Was there any thought given to putting the potential
4 health effects of exposure to the PCBs, if that in fact
5 happened, on the warning?

6 A Was there any thought given to a -- what potential harm
7 might have occurred from --

8 Q In other words, was any thought giving to adding a
9 sentence that said if you don't do this, it's possible you
10 could end up with some sort of liver problem?

11 MR. SCHINK: Chloracne or any of the whole list
12 of things.

13 MR. AHRENS: Yes.

14 THE WITNESS: No, I don't think so, because I
15 don't think that is generally -- certainly not in 1958 was
16 any thought given to putting on labels that here are the
17 possibilities that might occur. What you want to do with
18 the label is to keep everything -- any ill effect from
19 occurring, and that's what the label did.

20 BY MR. AHRENS:

21 Q When you mentioned space, you're not saying there was not
22 space on the label, are you?

23 A Well, no. No. That was -- I think it detracts from a
24 label if you put a great deal of material on it. What you
25 want the person to do when he looks at the label is say

1 how should I handle this, not if I mishandle it, what's
2 liable to happen to me?

3 Q Is that the -- or was that the philosophy about labeling
4 all of the Aroclor and Pydraul products?

5 A I think it's the policy about all industrial chemicals
6 that you tell a person how to avoid any harm that you
7 might get and you give them the details.

8 Q And was that the policy of Monsanto as to industrial
9 chemicals in general in the 1950s and '60s?

10 A Yes, sir.

11 Q Show you what --

12 A With one exception.

13 Q Yes?

14 A If there is a particular action of -- we have an
15 agricultural chemical that caused decrease in
16 cholinesterase, c-h-o-l-i-n-e-s-t-e-r-a-s-e. There we
17 might have put it on because there was a special test that
18 you would have to use for that.

19 In the case of almost every other industrial
20 chemical we did not put anything on. If we manufactured
21 phenyl, we didn't say don't get this on your skin or
22 you'll get burned, don't get this on your skin or you'll
23 get absorption of phenyl and you'll die. We didn't put
24 that on. We just said don't -- told them how to avoid it.

25 Q Did the cholinesterase problem have anything to do with

1 PCBs?

2 A None at all.

3 Q And the reason was there was a test available that someone
4 could go out and see if there had been any untoward
5 effects.

6 A That's correct.

7 Q What would that have related to, exposure to what type of
8 chemical?

9 A A phosphate esterase was a chemical that killed boll
10 weevil, it killed corn rootworm and things like that.
11 It's an agricultural insecticide, extremely serious
12 chemical.

13 Q Was that what was used in like, for example, Weevilcide,
14 if you're aware?

15 A I don't know.

16 Q Take a look at this one, Exhibit 11. I'd ask you to read
17 that whole thing, please.

18 A Okay. Yes, sir.

19 Q Exhibit 11 is a memo from Dr. Wheeler --

20 A Mr. Wheeler.

21 Q Mr. Wheeler? Okay. And you were copied in on the memo,
22 correct?

23 A Yes.

24 Q 1960 memo?

25 A Yes, sir.

1 Q In the second full paragraph that begins "Obviously," et
2 cetera, do you see that?

3 MR. SCHINK: Third full paragraph?

4 THE WITNESS: Third paragraph.

5 MR. AHRENS: Correct.

6 BY MR. AHRENS:

7 Q The dermatitis or skin irritation that's referred to, is
8 that the chloracne that we've been discussing?

9 A No, that was not.

10 Q How is that different?

11 A Well, it's just redness, skin irritation. The stuff will
12 work like a paint remover if you leave it on long enough.
13 We have not seen -- with the exception of one or two cases
14 have I had letters from customers that we have seen
15 chloracne. There has been one report in the literature
16 about somebody getting chloracne from again a heat
17 transfer apparatus that leaked, that was reported to have
18 some case of mild chloracne. We have not seen it, but we
19 have heard of irritation. If you get it on and leave it
20 on your skin, your skin will get red, if you leave it on
21 long enough. That's the irritation. It was not
22 chloracne.

23 Q Were there any confirmed reports of chloracne in any
24 Monsanto workers ever as related to exposure to PCBs?

25 A If you disregard the Swann episode.

1 Q Okay.

2 A After Swann, no, I've seen none of them.

3 Q In the last full paragraph on the first page there is
4 reference to in the first sentence "outlining the hazards
5 involved in handling any of the Pydrauls is included in
6 our technical and sales bulletins." First of all, do you
7 know what is meant by technical and sales bulletins?

8 A Yes.

9 Q What?

10 A A technical bulletin is a bulletin that describes how it
11 could be used, what particular applications they recommend
12 it for, whether it's to be used as a heat transfer agent,
13 as a dielectric, as carbonless carbon paper, as a
14 plasticizer, any of the uses that it might have been used
15 for. A sales bulletin is obviously a sheet that they try
16 to sell a material with.

17 Q Were technical bulletins as a matter of practice sent out
18 to customers of hydraulic fluids?

19 A Yes.

20 Q So a company or person who is purchasing Pydraul from
21 Monsanto in the '60s should have been sent these technical
22 bulletins. Is that what you're saying?

23 A That was the practice of the company, to send them.

24 Q And in the technical bulletins that described how the
25 material was to be handled?

1 A In the technical bulletin? Yes.

2 Q Okay.

3 A Yes. There are other ways they would get the technical
4 bulletin. When the person went out to talk to the
5 individual who was -- had a heat transfer system or a
6 hydraulic fluid, the person who went out there first may
7 have been a technical representative who went along with
8 the salesman for that particular area. He would bring the
9 technical bulletin. Then he would leave the technical
10 bulletin with the person who bought it. The salesman when
11 he went out there on the sales call would also carry a
12 technical sales bulletin and leave it with the person --
13 man he was talking to, whether that man was a purchasing
14 agent or the individual who was really running the plant.

15 Q What would the practice be, if you know, if sort of an
16 ideal situation arose with a customer, you didn't have to
17 make a sales call, and they just called you up and said
18 send me 2,000 gallons of Pydraul?

19 A The usual method would be if that came in, it would
20 probably -- if it came into a sales office, like in
21 Michigan, if it came into Detroit, they would forward it
22 to St. Louis, and if they found out this was a new
23 customer, the company would send to the best of my
24 knowledge a technical bulletin. I cannot -- I didn't see
25 this happen, but that was a practice on new customers.

1 Q Detroit, that was the distributing office?

2 A Well, no. Suppose you were in Michigan.

3 Q Oh. I see.

4 A If he called up St. Louis and said send me -- if they
5 called up Detroit sales office, Detroit would have to let
6 St. Louis know because the shipping was done out of St.
7 Louis.

8 Q I understand. The technical bulletin, did it have a
9 title? Was it called a technical bulletin or something
10 else?

11 A No. I think it said technical bulletin.

12 Q And the memo, Exhibit 11, that we've been looking at,
13 suggests that there is an outline of handling procedures
14 for the fluids. Do you know anything about that, what it
15 described, what it told the user to do?

16 A About the -- are we talking now about this Pydraul F-9 or
17 8200?

18 Q Yes. F-9 is the one we're concerned with.

19 A Okay. Well, I know that if there is any safe handling
20 information in that technical bulletin or any warnings
21 about avoidance of problems, any medical -- any medical or
22 toxicological information, that that was -- that emanated
23 from the medical department and we okayed it before the
24 technical bulletin was printed.

25 Q Who drafted it? Who drafted these technical bulletins?

1 MR. SCHINK: You mean in the medical department?

2 MR. AHRENS: Well, whatever. Any part of it.

3 THE WITNESS: Well, certainly who drafted it in
4 the medical department could have been myself. In my
5 absence it could have been Wheeler. It could have been
6 Dr. Johnson. In 1960 we did have Dr. Johnson. It could
7 have been any of those people in the medical department
8 because we did have information in our files about the
9 safe handling that we had talked about previously.

10 The rest of the technical bulletin was probably
11 done by development people who were research-oriented
12 individuals who thought up or recommended Pydraul F-9 for
13 various uses.

14 BY MR. AHRENS:

15 Q But at least as far as the medical information in the
16 technical bulletins, someone in your department drafted
17 that as opposed to just reviewing what someone else had
18 drafted.

19 A Oh, we drafted it.

20 Q Okay. In the last part of that last paragraph on page 1
21 of Exhibit 11 it says that the fluids can be handled and
22 used safely as long as they are not heated to several
23 hundred degrees Fahrenheit. Do you see that?

24 A Yes.

25 Q What was the problem if they were heated to several

1 hundred degrees Fahrenheit?

2 A There is no problem when they had ventilation. If they
3 had to remove the vapors -- if they let the vapors go into
4 the working environment, a person would get liver trouble
5 if he was in there long enough. There was three people in
6 the Indiana plant when the stuff leaked.

7 Q Was that information at least in part gained through the
8 studies at --

9 A Kettering.

10 Q -- Kettering?

11 A In '54 or '55, yes, sir.

12 Q Was there any -- well, strike that. Did you understand
13 around this time in the '60s that hydraulic fluids would
14 be used in workplace environments where there were metal
15 surfaces which were hotter than several hundred degrees
16 Fahrenheit?

17 A Yes, sir.

18 Q Was there any type of information put in the technical
19 bulletins as to ventilation is required, don't breathe the
20 vapors, that kind of thing?

21 A I feel quite certain there was.

22 Q On the last page of Exhibit 11, the first sentence of the
23 first paragraph, it refers to the UAW. I assume that
24 means the auto workers?

25 A Yes, I would assume that.

1 Q Are you aware of any type of -- well, strike that. Are
2 the workers at Monsanto unionized?

3 A Yes.

4 Q Were they back in 1960?

5 A Some plants were and some plants weren't.

6 Q Are you aware of any grievances brought -- what union
7 represented them in the '60s, those that were unionized?

8 A There was -- at Nitro, West Virginia there was the United
9 Mine Workers. There was the American Chemical Workers and
10 Atomic Workers, okay, I believe it was, at some of the
11 plants. There were the steel workers at one of the
12 plants. It varied. I don't think we had a union at
13 Anniston. We had OCCW at Queeny and the East -- Krummrich
14 plant. Oil, Coke and Chemical Workers I think was the
15 one.

16 Q Do you know which union represented the chemical workers
17 at the Sauget plant in say 1970?

18 A No, I don't. At some time they were in the Oil, Coke and
19 Chemical Workers, to the best of my knowledge.

20 Q Are you aware of any grievances brought by any unions on
21 behalf of workers who claimed that they had a problem with
22 exposure to PCBs?

23 A None.

24 Q Are you aware of any lawsuits brought by any unions for
25 the same reason?

1 A No, sir. While I was at the company?

2 Q Yes.

3 A None.

4 Q How about since you've left the company?

5 MR. SCHINK: PCB lawsuits?

6 MR. AHRENS: Yes.

7 THE WITNESS: Not by any unions. I think I told
8 you there were some individual workers who had retired.

9 MR. AHRENS: Right. And we've discussed all of
10 those, right?

11 THE WITNESS: We've discussed all those.

12 BY MR. AHRENS:

13 Q Back to Exhibit 11. On the first page if you count that
14 first little sentence as a first paragraph, one, two,
15 three, fourth paragraph down, again where the A-200 is
16 circled?

17 A Yes, sir.

18 Q It refers to a "new one," which I assume means a new
19 label, "which caused difficulty with the shop workers."
20 Do you know what that refers to?

21 A Yes. I think they were using this thing all the time and
22 then a new drum comes in with a new label on it and they
23 say hey, what is this? And --

24 Q Were there -- I'm sorry.

25 A And to the best of my knowledge, they asked people, said

1 what do you got here? And they said well, it's the same
2 stuff with a new label. That's the best of my
3 recollection.

4 Q Were there any grievances filed over that as far as you
5 know?

6 A As far as I know, no. I do not know anything about them.
7 These would be Midland Ross workers, too, not Monsanto
8 workers we're talking about here.

9 Q Midland Ross Company was what?

10 A It was a customer. I don't know what they made or what
11 they used the material for. I thought they were
12 insecticide manufacturers or something like that.

13 MR. SCHINK: Pumps.

14 THE WITNESS: Pumps? Oh, is it pumps? Okay.

15 BY MR. AHRENS:

16 Q The PCB file that we talked about a little earlier that
17 was kept in your office, how big a file are we talking
18 about? An inch thick? A foot thick? At least last time
19 you knew.

20 A My guess would be two to three inches.

21 Q Are you aware of any worker's compensation claims that
22 were filed by any workers employed by Monsanto relative to
23 exposure to PCBs?

24 A No, sir. I'm aware of none.

25 Q Are you aware of any medical treatment that Monsanto

1 workers received for alleged exposure to PCBs?

2 A No, sir. I would go to the dispensaries, you know, when I
3 visited plants once a year, at least once a year, and I
4 would talk to the nurse and the doctors there and we had
5 no problems with our workers with PCBs.

6 Q This whole issue of the presence of PCBs in the
7 environment and the claim by some that PCBs don't
8 biodegrade as fast as other chemicals do, do all PCBs
9 eventually biodegrade?

10 A Yes. The lower chlorinateds degrade quite rapidly. The
11 others, the higher chlorinateds, do not degrade very
12 rapidly. In fact, it was the common thinking that they
13 just sat like a piece of gravel at the bottom of a stream
14 and stayed there.

15 Q How is it determined how fast something biodegrades? Is
16 there something analogous to an LD50 where they determine
17 when half of it biodegrades, or how is that measured?

18 A I think they have some measure for it, but I cannot give
19 it to you.

20 Q Do you know the rate of biodegradability, for example, for
21 Aroclor 1242 or any of the Aroclors?

22 MR. SCHINK: Which isomer of the 1242? I mean
23 1242, as the testimony has indicated, is the average --
24 you know, is 42 percent weight by chlorine.

25 MR. AHRENS: Fair enough. For tetrachlorinated.

1 THE WITNESS: No, sir.

2 BY MR. AHRENS:

3 Q Would you know it for any of the PCBs?

4 A Except the 1016 is biodegradable rather rapidly. Even
5 1232 I believe is biodegradable rather rapidly. Higher
6 than that, I don't know.

7 Q Was 1232 a biphenyl structure, or was that a terphenyl?

8 A No. It was all biphenyls. All the 1200 series are
9 biphenyls.

10 (Discussion off the record.)

11 BY MR. AHRENS:

12 Q When the biodegradability issue presented itself, did
13 Monsanto do anything to warn its customers that used
14 hydraulic fluids containing PCBs?

15 MR. SCHINK: What do you mean by the
16 biodegradability issue?

17 MR. AHRENS: Well, we've been talking about
18 biodegradability as a --

19 MR. SCHINK: It's a subject for discussion, but
20 the issue --

21 MR. AHRENS: As a subject for discussion, when
22 that presented itself?

23 THE WITNESS: Well, of course, the label on the
24 material says avoid prolonged and repeated contact with
25 skin, avoid prolonged breathing of vapor or fumes. It was

1 an industrial chemical, and the disposal of the stuff is
2 also considered under the general heading of the use of
3 the material, so that if the people followed the
4 directions of avoid prolonged and repeated contact with
5 skin in their plant, they were expected to avoid prolonged
6 and repeated contact with the material when they -- if
7 they were going to finish using it in their plant. At
8 some time the company made available to individuals the --
9 to return PCBs to it, but that was sometime in the '70s.
10 But I believe that answers your question, I think.

11 BY MR. AHRENS:

12 Q Well, was there any thought given to either writing a
13 letter or putting on a warning label, there are reports
14 that PCBs are present in the environment and do not
15 biodegrade readily, anything like that?

16 A Well, when the fact of the nonbiodegradability became
17 prominent, when the fact of the bioaccumulation of the
18 material in the food chain became prominent, and when the
19 availability of sensitive methods of analysis became
20 available, then information was put on. At what
21 particular time that was done, I don't know. When I say
22 put on, I don't know if that was put in bulletins or not
23 or whether it was put on the label or not. I don't know.

24 Q Wherever it was put, was that after you left the company?

25 A Either right at or after. I'm not certain.

1 Q Why didn't the company make any of that available to its
2 customers prior to that time?

3 MR. SCHINK: Any what available?

4 MR. AHRENS: What we've been discussing, the
5 issue of nonbiodegradability, in the words of Dr. Kelly.

6 THE WITNESS: Well, I think in that particular
7 time frame the phenomonon of bioaccumulation was not
8 widely known or accepted in the scientific world. The
9 problem of biodegradability/nonbiodegradability only
10 surfaced after Jensen came out with his studies, and we
11 were able to reconfirm it, and that all tied in with those
12 two things plus the nonavailability earlier of sensitive
13 quantitative analyses for the material.

14 BY MR. AHRENS:

15 Q In the -- well, when did the Swedish study come out,
16 approximately, sixty --

17 A Middle to late '60s.

18 Q Do you know what the level of detection in terms of the
19 technology available at that time was for PCBs?

20 MR. SCHINK: What do you mean by technology
21 available, in what sense?

22 BY MR. AHRENS:

23 Q Well, do you know how the presence of PCBs is measured?

24 MR. SCHINK: At what levels?

25 MR. AHRENS: In any levels.

1 MR. SCHINK: Well, that's a big -- I object to
2 the form of that question. It's vague and ambiguous.

3 MR. AHRENS: Can you answer the question?

4 THE WITNESS: Well, I know that GLC was used at
5 some time. I don't know whether GLC just by itself was
6 good enough, if there were interfering substances, such as
7 plant proteins or other things, and I think it varied with
8 the institutions. I know that after Jensen did his work,
9 it took our scientists at Monsanto, who were no slouches
10 as far as science is concerned, quite some time to verify
11 his work and to come out with a method that they could
12 use, so I don't know the exact year. It was sometime in
13 the later '60s.

14 BY MR. AHRENS:

15 Q But at that time you don't know, using the GLC method,
16 what the level of detection was?

17 A No, I don't.

18 Q When Monsanto finally developed a process, was that a GLC
19 process?

20 A I can't answer that. I don't know.

21 Q Do you know what their level of detection was?

22 A No, sir.

23 Q Who at Monsanto would have been responsible for developing
24 that method?

25 A A Dr. Munch, who I think had something to do with

1 inventing the GLC apparatus, and Keller, Dr. Keller,
2 people in the analytical section of the central research
3 department.

4 Q Do you know if mass spec was ever used prior to 1970 to
5 detect the presence of PCBs?

6 A I don't know. I am not an analytical chemist.

7 Q Is Dr. Munch still at the company?

8 A No. He's retired.

9 Q Living in the St. Louis area?

10 A I think he's living in a boat outside of Washington, State
11 of Washington.

12 Q Do you know what city?

13 A No, I don't, but we had to get him once on a ship-to-shore
14 radio.

15 (Exhibit No. 12 was marked for identification.)

16 BY MR. AHRENS:

17 Q Showing you, Dr. Kelly, what's been marked as Exhibit 12,
18 it's a lot of pages, so you don't have to read it all yet,
19 but just look at the front page, first of all. I'll
20 represent to you, sir, that this was a document provided
21 by Monsanto's counsel in response to a request for
22 production of documents.

23 A Yes, sir.

24 Q First of all, have you ever seen this document before?

25 A I'm not sure.

1 Q It's entitled "PCB Presentation to Corporate Development
2 Committee." Do you know what the corporate development
3 committee was?

4 A Yes. I think that was a committee of the -- executive
5 committee of the company that was some of the top
6 management people of the company.

7 Q You weren't a part of it?

8 A No. I was not a member. I was at one or two meetings of
9 this committee, but I was not a member of that committee.

10 Q Would it be fair to say that they had at least some role
11 in establishing company policy and --

12 A They had a very large role.

13 Q Do you know any of the people that were on it in 1969?

14 A There was a John Eck, E-c-k, on it and an Edward Bock,
15 B-o-c-k. I would say this was the top management of the
16 company, I mean included members of the top management.

17 Q Sure. Did they have a specific task or directive in terms
18 of policy making, or were they general policy makers?

19 A I don't know what their orders were from the board of
20 directors, but these -- members of this committee ran the
21 company. I mean, some of the people who ran the company
22 were members of this. I don't know if all the members had
23 positions of running the company.

24 Q On the first page of Exhibit 12 the third full paragraph
25 down begins with "From the standpoint of reproduction, the

1 PCBs are highly toxic to birds." Do you see that
2 sentence?

3 A Yes, sir.

4 Q Do you know where that information came from or what it's
5 referring to?

6 A Oh, sure. It's referring to the thinness of egg shells.
7 Birds that ate fish that were contaminated with PCBs would
8 lay eggs with thin shells, and when they sat on the nest,
9 the eggs would break.

10 Q Was there a study that indicated that?

11 A Yes.

12 Q Do you know the name of the study or who did it?

13 A Well, I think some of that stuff emanated from people in
14 Sweden at the time, and then eventually the fish and
15 wildlife people did some work, and then we did some work
16 on thinning of egg shells at Industrial Bio-Test
17 Laboratories in Chicago.

18 Q When you say fish and wildlife, was that state or federal?

19 A Federal.

20 Q They did some studies which suggested --

21 A Yes, which corroborated the findings in Sweden.

22 Q Where did they do -- I'm sorry. I didn't mean to
23 interrupt.

24 A The problem with the PCBs was not to humans. It was to
25 birds. That was the original problem. And the problem

1 with the birds was they laid eggs with no shells or real
2 thin shells.

3 Q Where were the birds located that the fish and wildlife
4 people surveyed?

5 A I don't know where they were surveyed, but they did some
6 work at Paltauxe, P-a-l-t-a-u-x-e, Maryland, I believe.
7 It's up on the East Coast, and I think they did some in
8 the peregrine falcon out on the West Coast.

9 Q Were any studies done by anyone near either the Sauget
10 plant or the Anniston plant?

11 A Oh, no.

12 Q All right. If you would turn to page 3 of Exhibit 12 and
13 take a second to read that.

14 A What should I read?

15 Q The first full paragraph.

16 A Yes, sir.

17 Q In the first sentence there: "By way of introduction, the
18 Organic Division and the Medical Department have been
19 actively engaged for the last 18 months in developing
20 facts and knowledge," and it continues. What actions is
21 that referring to, at least as it relates to the medical
22 department?

23 A We sent people over to Sweden to talk to the authorities
24 there. I don't know if they talked to Widmark or Jensen.
25 We started toxicological work on the long-term toxicity of

1 PCBs.

2 Q That would have been the Bio-Test work?

3 A That's correct.

4 Q Who went to Sweden?

5 A Elmer Wheeler.

6 Q You're not sure who he saw, is that correct, or who he met
7 with?

8 A Well, he went to Jensen's group and he went to Widmark's
9 group, but I don't know whether he saw -- I'm not sure
10 whether he saw Jensen or one of the other people on the
11 staff.

12 Q Did Mr. Wheeler collect any documents or bring any back
13 from Sweden?

14 A Well, yes. He was there with members from the analytical
15 group, also. I believe Dr. Robert Keller went with him.
16 So he brought back documents, Keller brought back
17 documents as far as the method they used, and Wheeler
18 brought back some of the residue levels that either
19 Widmark or Jensen had found in these birds in Sweden.

20 Q Now, would that material have gone into the PCB file or
21 somewhere else?

22 A No. PCB. Anything Wheeler brought back would have gone
23 into the PCB.

24 Q Was there anyone that went with Mr. Wheeler and Dr. Keller
25 to Sweden from outside the company?

1 A Not that I know of.

2 Q And approximately when was this, do you know? Would this
3 have been just prior to '69?

4 A It was just after whenever the Swedish work showed up in
5 the newspapers.

6 Q Other than the Swedish visit, does this actively engaged
7 refer to anything else?

8 A That the medical department did?

9 Q Yes.

10 A Well, no, except that they were in constant contact with
11 the analytical group, and whether the analytical group was
12 developing information about nonbiodegradability at that
13 time or not I can't answer.

14 Q Was the analytical group doing anything other than working
15 on a method to determine the presence of PCBs and the
16 biodegradability issue?

17 A I can't answer that. I don't know whether they're doing
18 anything else.

19 Q Who was in charge of the analytical group?

20 A Keller or Tucker.

21 Q Do you know what the organic division was doing by way of
22 reference to this paragraph?

23 A Well, the analytical group might have been in the organic
24 research division. It looks like they're also --
25 according to what they're saying there, they were talking

1 to the universities about biodegradability. They were
2 talking to the industrial collaborators, whoever they
3 were. I guess that's what they were doing, but I can't be
4 sure.

5 Q You don't know what industrial collaborators means?

6 A I don't know what that means.

7 Q It indicates they were in contact with other worldwide
8 producers. Any idea who that refers to, which companies?

9 A I would imagine -- no. I don't know of my own -- there
10 were French and English and German companies making it,
11 but I don't know --

12 MR. SCHINK: His question is if you know who in
13 particular they were in contact with at that time.

14 THE WITNESS: No. I don't know.

15 BY MR. AHRENS:

16 Q Have you heard who they were in contact with?

17 A No, I haven't.

18 Q If you would look at page it looks like 9 and then there's
19 something written over the top of it, but it looks like
20 it's page 9 at the top there.

21 MR. SCHINK: The one that says --

22 THE WITNESS: "We considered" --

23 MR. AHRENS: Yes.

24 THE WITNESS: Yes.

25 BY MR. AHRENS:

1 Q Down there in the paragraph which begins "Alternative 2,"
2 do you see that paragraph?

3 A Yes, sir.

4 Q Take a second to read through that.

5 A (Witness complies.)

6 MR. SCHINK: He hasn't identified here that he's
7 seen this document before.

8 MR. AHRENS: I understand.

9 MR. SCHINK: Do you know if he was at this
10 meeting?

11 MR. AHRENS: I don't know. I wish I did.

12 THE WITNESS: No. I don't know if I've seen
13 this or not, and this looks like a draft presentation,
14 too.

15 BY MR. AHRENS:

16 Q Do you know if you were at this meeting?

17 A Well, I was at one meeting, but I don't know if that's
18 what this one refers to.

19 MR. SCHINK: This one does say Elmer Wheeler is
20 going to make the presentation. Does that tell you
21 anything?

22 THE WITNESS: I was at one, but this is a draft
23 of their presentation. This is not the minutes of the
24 meeting or anything like that.

25 MR. SCHINK: It says "In a few moments Elmer

1 Wheeler will describe" some things.

2 THE WITNESS: Yes. I think this is a
3 preliminary set of marching orders for the meeting, it
4 looks like.

5 MR. SCHINK: Is there a question?

6 MR. AHRENS: Yes, as soon as he's read the
7 paragraph.

8 THE WITNESS: Yes, sir.

9 BY MR. AHRENS:

10 Q In the middle there it refers to Monsanto profit. Do you
11 know how much profit was made in any given year on the
12 sale of Aroclors?

13 A No, sir, I don't.

14 Q Did you have any input as to alternatives available to
15 Monsanto as to what to do in the late '60s, early '70s
16 with reference to PCB products? In other words, were you
17 consulted by upper level people?

18 A Yes. We were consulted. When I say we, I and Wheeler and
19 members of the organic business group met with the CDC and
20 they talked about what the situation was. They asked me
21 what there was, what the situation was, and I told them.

22 Q When did you meet with the CDC?

23 A Within less than a year when Elmer Wheeler went to Sweden
24 and that would be after -- about -- within the year and a
25 half after Jensen's publication -- or newspaper articles,

1 not publications.

2 Q What did you tell the CDC?

3 A I said it appears that it's true that we have PCBs in the
4 environment. It's also true that they are hurting game,
5 fish -- or they are -- not hurting, their presence is in
6 game fish, but there is bioaccumulation which was not
7 realized before and that when fish-eating birds such as
8 the bald eagle and the peregrine falcon, eat these fish,
9 they lay eggs with no shells on them and it could be a
10 very serious problem to endangered species. I also said
11 there was no problem with humans. This does not present
12 any human health problem. It is completely an avian
13 problem. And if it continues, it will get worse.

14 Q Has your position changed in any way since you talked to
15 the CDC?

16 A No.

17 Q If you could turn to what appears to be page 20. It's a
18 handwritten 20. I can't read what the typed number is.
19 The words "Recommended Action Plan" are at the top.

20 A Yes, sir.

21 Q If you could read through that, please.

22 A Yes, sir.

23 Q It refers to an action plan developed by the medical and
24 law departments. Do you see that?

25 A Yes, sir.

1 Q Would that have been something you were involved with?

2 A Yes, sir.

3 Q Under Point No. 1 it indicates that a project manager was
4 to be appointed. Do you see that?

5 A Yes, sir.

6 Q Do you know who that project manager was?

7 A Bill Papageorge.

8 Q Mr. Papageorge is no longer with the company, correct?

9 A That's right.

10 Q Still living in the St. Louis area?

11 A Yes.

12 Q It indicates still under Point No. 1 that he would be
13 assisted by a task force from members of each business
14 group plus medical. Do you see that?

15 A Yes, sir.

16 Q Do you know who the person from the medical department was
17 who would be assisting Mr. Papageorge?

18 A Elmer Wheeler.

19 Q In No. 2 it says "Notify all Aroclor customers of PCB
20 problem and relabel containers - within 60 days." Do you
21 see that?

22 A Yes, sir.

23 Q What does the term relabel containers refer to?

24 A I'm not certain by recollection, but I just -- I'm not
25 certain what they put on the labels after this action

1 plan. I don't know.

2 Q Well, do you know if it refers to a situation where they
3 were going to change the label on hence-produced products
4 or if they were going to send out labels to be put on
5 canisters that had already been sent out? Do you know
6 that?

7 A I don't know that.

8 MR. SCHINK: You mean new labels on the
9 canisters that had already been sent out?

10 MR. AHRENS: Yes, like stickers or something.

11 MR. SCHINK: You don't mean to imply that the
12 canisters that were sold in the past weren't labeled.

13 MR. AHRENS: No. I don't mean to imply that at
14 all.

15 MR. SCHINK: Okay.

16 BY MR. AHRENS:

17 Q No. 5, where it states "Educate customers on need for
18 clean-up at their plants - within four months," do you see
19 that?

20 A Yes, sir.

21 Q What does clean-up refer to, if you know?

22 A Don't let the stuff get into the environment.

23 Q What if it already had? What were they to do?

24 A Well, first stop it.

25 Q Okay.

1 A And second it all depends where it had gotten into. If it
2 had gotten into a creek or stream, stop it. That didn't
3 mean that they would go out and dig up the bottom of the
4 stream, the stream bed.

5 Q You weren't recommending that.

6 A No, sir.

7 Q Did a letter go out to customers indicating this, that
8 you're aware of?

9 A To the best of my knowledge, a letter did go out. I am
10 not certain of the scope of the letter.

11 Q All right. Did you have any role in drafting it, for
12 example?

13 A I don't think so. I think Elmer Wheeler may have.

14 Q Was there any consideration -- well, strike that. Does
15 clean-up refer to anything else other than what we've
16 talked about, as far as you recall?

17 A No, sir. I don't believe it does.

18 Q Why didn't you think there was a need to clean up a creek
19 bed, for example, as you referred to?

20 A Because we had thought that the material in the creek bed
21 would be sitting down there, as I said, like a piece of
22 gravel, and that the amount of material that could be
23 picked up by the bottom of the food chain and getting up
24 into game fish was not a very large problem at that time.

25 Q Okay.

1 A The PCBs are a relatively inert biological chemical.

2 Q In retrospect now, having read additional literature,
3 studies and so forth, do you think that that was more of a
4 problem than you thought back then?

5 MR. SCHINK: What was more of a problem?

6 MR. AHRENS: What we just talked about.

7 MR. SCHINK: Which is what?

8 MR. AHRENS: Which is the PCBs in the bottom of
9 a creek bed getting picked up by --

10 MR. SCHINK: Do you mean the handling procedures
11 and allowing that to happen?

12 MR. AHRENS: Do you understand the question?

13 THE WITNESS: No, I'm not so sure.

14 MR. AHRENS: Okay.

15 BY MR. AHRENS:

16 Q You just testified in response to a question about not
17 recommending, for example, that creek beds be cleaned up,
18 that at least one of the reasons at least for that was
19 that you didn't feel that it was a real environmental
20 problem at the time. Is that a fair paraphrase of what
21 you said?

22 A That the presence of that amount of PCBs that was in the
23 creek beds was not -- did not constitute an environmental
24 problem at that time, that's correct.

25 Q Since that time have you changed your position on it?

1 A Well, I have changed my position from the sense that the
2 government is recommending types of actions. I don't --
3 and I accept the fact that we have to go along with the
4 government, but I do not believe that it constitutes the
5 environmental problem that the government is stating.

6 Q Okay. Do you believe that in a situation where there is
7 some sort of ambient PCB in the bottom of a creek
8 somewhere, that that can get picked up by fish, eaten by
9 birds and get into the food chain that way?

10 MR. SCHINK: I object to the form of the
11 question. The term ambient PCB has no meaning whatsoever
12 to me.

13 MR. AHRENS: Can you answer the question?

14 MR. SCHINK: I don't understand it.

15 THE WITNESS: It doesn't have much to me,
16 either. PCBs are insoluble in water. Let's start with
17 that.

18 MR. AHRENS: Right.

19 THE WITNESS: So if you have PCB in the bottom,
20 it's not going to be picked up by the water.

21 BY MR. AHRENS:

22 Q Could be picked up by fish, though, right, catfish,
23 something that feeds off the bottom?

24 A If it did, that would be a very small amount. It would
25 have to be picked up by something that catfish would eat.

1 It would have to be picked up by plankton which would be
2 eaten by shrimp which would be eaten by catfish. That's
3 the phenomenon of bioaccumulation.

4 It appears that once the excess -- once these
5 things had been carried out that stopped the leaks into
6 the creeks, the environmental problem does not seem to be
7 serious enough to have me change my mind. The government,
8 however, has said this is what we have to do, you have to
9 do, so people have to go along with the government.

10 Q Are you aware of any studies that relate to this
11 phenomenon of bioaccumulation in a creek, for example?

12 A Yes. There have been studies of that.

13 Q Any come to mind?

14 A No. I don't know them.

15 Q Do you know when they were done?

16 A Probably from '69 all the way up to the present date they
17 may be doing them.

18 Q Were there any situations in particular where, for
19 example, a creek bed was involved that came to your
20 attention?

21 MR. SCHINK: When? When?

22 MR. AHRENS: At any time.

23 THE WITNESS: There was some increase in the --
24 of PCBs in the shrimp outside the outflow of our plant at
25 Pensacola, Florida, so when we cleaned up our effluence in

1 No. 3, that problem stopped. That's one I know of. There
2 may have been others. I don't recall them right off the
3 bat.

4 BY MR. AHRENS:

5 Q What was produced at Pensacola?

6 A Textile fibers. It was used as a -- as a hydraulic fluid
7 there. It was not manufactured there.

8 Q I see. The Pensacola plant was a Monsanto plant that was
9 using --

10 A PCB.

11 Q -- PCB-containing hydraulic fluid.

12 A That's correct.

13 Q Do you know how the PCBs got into the plant effluent?

14 A No, sir.

15 Q Was there any study ever undertaken to find out how?

16 A I'm sure there was, but I'm not familiar with the details
17 because they stopped doing it, whatever they were doing.

18 Q Do you know when they stopped doing them?

19 A No, sir, I don't.

20 Q Does the -- is the Pensacola plant known as the Pensacola
21 plant or is there another name for it?

22 A Pensacola plant.

23 Q Is that still in operation?

24 A Yes, sir.

25 Q Do you know when it began operation?

1 A '52 to '54.

2 Q The effluent which contained the PCBs, that was being
3 discharged into what, a creek, a river?

4 A I think it was a bay. I'm not sure.

5 Q Was that discharge an intentional discharge or inadvertant
6 discharge?

7 A Inadvertant.

8 Q Do you know if it was caused -- or if it resulted from
9 leaks, spillages within the plant?

10 A Well, it had to. It wasn't put in there deliberately.

11 MR. SCHINK: Well, then it's not relevant to
12 this case because our case involves a deliberate
13 discharge, but --

14 MR. AHRENS: Move to strike that comment.

15 MR. SCHINK: It's a fact.

16 MR. AHRENS: Well, I assume we'll be able to
17 bring this before a jury and let them be the fact finders.

18 MR. SCHINK: I don't know that we'll get that
19 far, but --

20 MR. AHRENS: Well, that's true. The Court may
21 decide in our favor before then.

22 MR. SCHINK: Or our favor.

23 BY MR. AHRENS:

24 Q Following the Yusho incident and the subsequent reports,
25 was there any concern at Monsanto that the PCBs that were

1 getting into the food chain, as you referred to, would
2 eventually get into the human population?

3 MR. SCHINK: Now wait. Which -- you're talking
4 about like a rice/oil situation in Japan? What are you
5 referring to?

6 MR. AHRENS: I'm talking about any PCBs that
7 would be discharged as a result of any of the Aroclors
8 that Monsanto produced.

9 THE WITNESS: Well, certainly there was concern,
10 but then it was found out that the PCBs in Yusho were very
11 probably not the problem, it was the dibenzofurans, and we
12 knew that we were not putting dibenzofurans in the PCBs,
13 that that was due to situations of heat and other problems
14 or other procedures that was -- that had caused the Yusho
15 incident. We did have concern. That's why we ran the
16 two-year testing on it.

17 BY MR. AHRENS:

18 Q Were there tests run on any of the Aroclors produced by
19 Monsanto to determine if there were dibenzofurans
20 contained in them?

21 A Yes, sir.

22 Q When were those done?

23 A They were done shortly before I left.

24 Q '74, '73, in that neighborhood?

25 A Yes. I know there were some run in Europe on Monsanto

1 PCBs, on German PCBs, Italian PCBs, French PCBs. They
2 found dibenzofurans in the European PCBs. They did not
3 find it in the Monsanto. I don't know the level of
4 sophistication of their testing. When Monsanto ran it, I
5 don't recall seeing any reports of the presence of
6 dibenzofurans.

7 Q Was it a one time testing, or was it an ongoing quality
8 control type situation?

9 A I think it was more -- it wasn't either of those. I think
10 it was a repeated research testing. It wasn't -- the
11 testing wasn't quite simple enough that they could give it
12 to any analytical laboratory. To find dibenzofurans in
13 PCBs is pretty tough to do, and so I can't say that it was
14 an ongoing quality control thing.

15 Q Who ran the tests, what department or group?

16 A Either the organic division, central research department
17 or the central research department analytical group. I
18 don't know which one.

19 Q Were tests run to determine if dioxins were present in any
20 of the Aroclors?

21 A Yes, sir. They never were present.

22 Q Same timing, or was this a different situation?

23 A I'm not sure about the timing. I'm sure about the result.

24 Q Do you know when the first time they would have been run,
25 regardless of when they may have ended or --

1 A No, sir, because I do not know when the first time -- we
2 had a method for picking up dioxin in PCBs. I know that
3 we had a method for picking up dioxin in herbicides, along
4 about the late '50s, but I don't know whether that was
5 done as far as PCBs are concerned.

6 Q Were any tests run on Pydraul as a product separate and
7 apart from the Aroclors to determine the presence of
8 either dioxins or furans?

9 A I don't know. Some Pydrauls may be entirely PCBs, so I
10 don't know whether -- if they were run on the compound
11 itself, it might be under the name of Aroclor 1262 or
12 whether they took it out of a drum labeled Pydraul
13 something something. I don't know.

14 Q Do you know if tests were ever done to determine presence
15 or not of dioxins or furans in either Pydraul F-9 or 312?

16 A Well, I know that whenever they ran any tests on dioxin on
17 any of the compounds, we found none. I cannot say that I
18 remember seeing reports. I may have seen reports on F-9
19 or not. I don't know.

20 As far as the running for dibenzofurans in
21 Pydraul, I'm not -- I do not recall when I saw any results
22 on that.

23 Q Are you saying that you think tests were done, you haven't
24 seen the results, or you just don't know?

25 A I think tests were done, but I don't recall the results.

1 Q All right. Were those also done by the organic division?

2 A Either the organic or the central research division, yes.

3 (Exhibit No. 13 was marked for identification.)

4 BY MR. AHRENS:

5 Q Is the LD50 in various animals different as the level of
6 chlorination increases in a biphenyl molecule?

7 A Yes, sir. It depends on how you administer it. As the
8 chlorination goes up, it is somewhat more toxic from the
9 inhalation point of view. From the oral point of view,
10 that doesn't pertain because if you get up to 1268, which
11 is a resin, it isn't absorbed, but I think everything else
12 being equal, there is some increase of toxicity with
13 increasing chlorination.

14 Q Showing you what's been marked as Exhibit 13, and please
15 familiarize yourself with whatever you want, but I'm going
16 to be asking you questions about the third page near the
17 bottom of the page, the last paragraph.

18 A Yes, sir. Third page?

19 Q Yes, the last paragraph begins "In March, we held
20 discussions" and so on? Do you see that?

21 A Yes, sir.

22 Q First of all, who is Dr. Risebrough, if you know?

23 A I think he's a Ph.D. at California. I thought he was
24 either an analytical man or an environmentalist. He is
25 not a physician, to the best of my knowledge.

1 Q How about Dr. Olcutt?

2 A I don't remember him at all.

3 Q Were you involved in these discussions that are referred
4 to here?

5 A No. I don't know who the we is on this. There doesn't
6 seem to be any name on this.

7 MR. SCHINK: Have you ever seen this document
8 before?

9 THE WITNESS: I don't think so. No, sir. I
10 don't think I've seen this document.

11 BY MR. AHRENS:

12 Q In any event, you don't know who had discussions with Dr.
13 Risebrough, at least as referred to in this paragraph.

14 A No, sir.

15 MR. SCHINK: You know, this deposition is being
16 taken pursuant to your request that we designate somebody
17 who is knowledgeable about the epidemiology and the
18 toxicology of Pydrauls in the 1960's. I think the witness
19 has tried to answer all those questions fully.

20 MR. AHRENS: I would agree with you, Counsel.

21 MR. SCHINK: Now you're moving into a later
22 period of time. It's not covered by your notice of
23 deposition. And, you know, unless you're going to get
24 back to the purpose of this deposition, it seems to me
25 that this is just completely beyond the scope of the

1 notice.

2 MR. AHRENS: Well, under Wisconsin law discovery
3 is broad and --

4 MR. SCHINK: Well it may be under Wisconsin law,
5 but you designated somebody for toxicology in the 1960's
6 and epidemiology in the 1960's, and now you're showing him
7 documents he hasn't seen before, he doesn't know who wrote
8 them, and asking him a whole bunch of extraneous
9 questions.

10 MR. AHRENS: Well, are you saying you're not
11 going to let him answer any more questions?

12 MR. SCHINK: I'm not saying that, but I'm just
13 making a matter of record as to what you're doing and
14 noting my objection for future purposes.

15 BY MR. AHRENS:

16 Q On the last page of this document, Doctor, --

17 A This one we're talking about?

18 Q Yes. Yes. Exhibit 13.

19 A Yes, sir.

20 Q In the top paragraph the second sentence which reads "Data
21 to date indicate that Aroclors are mildly toxic to
22 mammals," do you see that?

23 A Yes, sir.

24 Q Do you know what is meant by mildly toxic?

25 A Well, everybody's definition -- it will vary with who

1 you're talking to. I think that mildly toxic generally
2 means from an acute point of view one to five grams per
3 kilogram in the animal. That's mildly toxic.

4 There are other factors that indicate toxicity,
5 could be reproduction of things that -- I think this they
6 are based on just feeding studies and up to this time in a
7 relative sense it's mildly toxic as an industrial chemical
8 is. It's certainly not a food chemical. It's not a drug.
9 So it's mildly toxic as far as industrial chemical goes.

10 Q In your terminology does toxic refer to the poisonousness
11 of it as opposed to causing systemic problems or is there
12 no differentiation?

13 A No. There is no differentiation. Almost everything has a
14 certain amount of toxicity, I mean from salt, that's toxic
15 in certain levels. People use salt three times a day for
16 their whole life, so you wouldn't consider that salt
17 toxic, but it can be if -- you can kill an animal with
18 salt. Same thing with Aroclor. I'm not saying Aroclor is
19 the same toxicity as salt, but it's mildly toxic as far as
20 an industrial chemical is concerned, yes.

21 Q Do you know --

22 A To mammals.

23 Q Yes. I'm sorry.

24 A To mammals.

25 Q Well, are you including humans within mammals? Not to

1 mean that you wrote this, but in your own mind do you
2 include humans in the term mammals?

3 A Well, I -- well, humans obviously are mammals, but they're
4 talking here about laboratory mammals.

5 Q Okay. Thank you. Do you know the names of any people
6 that went to Pensacola to end the discharge of PCBs in the
7 effluent there?

8 A No, sir.

9 MR. SCHINK: Again I object to the relevance of
10 this. Our case involves a willful, knowing discharge of
11 PCBs to the environment by your client, whereas the
12 witness already testified the situation at Pensacola was
13 an inadvertant situation, so it seems to me the
14 questioning is wholly irrelevant to issues in this case,
15 which are either known to you or, if you had made a
16 reasonable investigation as required by Wisconsin rules,
17 would have been known to you.

18 BY MR. AHRENS:

19 Q Do you know anybody who worked on that project?

20 A No, sir.

21 Q Under normal practices of Monsanto would that have been
22 done under the aegis of the Pensacola plant, or would the
23 home office have become involved?

24 A I don't know what started the people even to think about
25 it in the shrimp. It may very well have been some outside

1 agency found it in the shrimp.

2 Q Did you have any input into the drafting of what's been
3 referred to as the White Paper?

4 A No, sir. That came out after I left.

5 Q Were you ever involved in responding to any inquiries or
6 complaints by customers who used PCB products? And by
7 involved in, I mean directly involved in, where you spoke
8 to the customer.

9 MR. SCHINK: Complaints about what?

10 MR. AHRENS: About anything to do with PCBs,
11 health effects, clean-up, pure inquiries, you know,
12 anything.

13 THE WITNESS: Yes, sir.

14 BY MR. AHRENS:

15 Q In what way were you involved in contact with customers?

16 A Well, at one time back in the '40s a customer either wrote
17 me or called me and said some of our people have
18 chloracne, and I went up to the plant, and this was a
19 plant where the individuals were filling little bellows
20 for thermometers. A bellow is a little thing about the
21 size of an onion. So they were dipping their hands in
22 there and filling these bellows. I said well, your
23 problem is very simple. You get some sort of a gimmick
24 that will keep your hands out of there. And they did and
25 the two cases of chloracne went. They never had any more.

1 Q Do you know what company that was?

2 A Some thermometer company up in the East someplace. I
3 don't know where.

4 I've had relatively few inquiries about possible
5 harmful effects. I mean, you always in an industrial
6 organization where you're making 5,000 chemicals get
7 letters saying I have a worker who has had this, do you
8 think there's any relationship? I recall of no cases of
9 systemic illness that anybody reported to me on PCBs.

10 Q Do you remember the names of any other customers
11 specifically with whom you've had contact?

12 A No, sir, I don't.

13 Q Did any of the cases in which you testified either in --
14 have you testified in court at all in any of the cases?

15 A Yes, sir.

16 Q Including both the situations where you testified in court
17 and those in which you gave deposition testimony, other
18 than the one involving the Monsanto worker, did any of
19 them involve situations where health effects were being
20 claimed?

21 A Well, the one in Michigan he alleged fear of health
22 effects. He didn't have any health effects. He admitted
23 that. But he was worried that he might have it.

24 Q Where was he working?

25 A He was a dairy farmer. He was not a worker. And there

1 was some PCBs that were on -- paint that went on the
2 inside of a silo.

3 Q Any others involve claimed health effects of PCBs?

4 A In cases I've testified?

5 Q Yes, sir.

6 A For Monsanto? For Monsanto cases or just PCBs anyplace?

7 Q Anywhere.

8 A I testified once in Knoxville, Tennessee where a
9 transformer was being -- large transformer was being
10 hauled by GE along the road and it sprung a leak and two
11 Tennessee people were going the other way in the road and
12 allegedly the fumes -- or the material came off the
13 transformer and into the window of the truck going the
14 other way, which no matter how you figure would be a
15 pretty small amount, and they alleged asthma and other
16 problems to that particular exposure.

17 Q And where was that venued?

18 A Knoxville, Tennessee.

19 Q Do you know the names of either of the parties?

20 A No, I don't.

21 Q When was that?

22 A At the time of the Knoxville World Fair. Can't get it any
23 more accurate than that.

24 Q Any others which have involved alleged health effects of
25 PCBs?

1 A There may, but I just don't know off the top of my head.

2 Q Did that San Francisco matter involve claimed health
3 effects?

4 A I don't think so. I think that was clean-up.

5 Q Do you know what company was involved?

6 A No, I don't.

7 Q Was the company in the San Francisco area?

8 A Oh, yes. It was in the San Francisco area.

9 Q Now, as I understand it, you played some role in the
10 drafting or determination of what warnings, instructions
11 would go on the various labels of products; is that
12 correct?

13 A Yes, sir.

14 (Discussion off the record.)

15 (Exhibit Nos. 14, 15 and 16 were marked for
16 identification.)

17 BY MR. AHRENS:

18 Q Dr. Kelly, showing you what's been marked as Exhibit 14,
19 which consists of seven pages, I'll represent to you that
20 those are copies of labels provided by Monsanto's counsel.

21 A Yes, sir.

22 Q Is there any way to tell by looking at those labels the
23 dates when they were used?

24 A There is no way I can tell. There are some code numbers
25 down there, but I'm not sure that those things, 9.03/53

1 refers to months, days and years. I don't know that.

2 Q With your understanding of how the system worked, at least
3 back in 1974, just before you left the company, would
4 there be any way to find out when those various labels
5 were used?

6 A I wouldn't know.

7 Q Do you know who would or what department within the
8 Monsanto organization would know?

9 A Well, they had various people who were in charge of
10 labelings at various times.

11 Q The responsibility changed over a period of time?

12 A Well, a person might have retired or something like that.
13 There was a label man, Robert Sido, S-i-d-o, but I don't
14 know when he came or when he left.

15 Q What department was he in or division?

16 A I'm not sure. I mean, labeling may have been under a
17 purchasing department, or traffic department was part of
18 purchasing and he may have been in that department.

19 Q You're just not sure?

20 A I'm not sure.

21 Q Well, based upon just your knowledge and experience with
22 the company, is there any way you can tell me which one in
23 Exhibit 14 was first, which came next and so on?

24 A No, sir. I sure can't.

25 Q Was there at any time any requirement that labels be

1 registered with the EPA, obviously after the EPA came into
2 existence, and I'm talking about Pydraul now.

3 MR. SCHINK: Well, that assumes a fact not in
4 issue; that is, the PCB-containing Pydraul was ever
5 produced by Monsanto after the EPA came into existence.

6 MR. AHRENS: Can you answer the question?

7 THE WITNESS: When did the EPA come into
8 existence?

9 MR. AHRENS: Well, assume it came into existence
10 in 1972.

11 THE WITNESS: And what was the question again?

12 MR. AHRENS: Do you know if there was any
13 requirement that any labels for Pydraul ever had to be
14 registered with the EPA?

15 THE WITNESS: I do not know.

16 MR. SCHINK: What is the relevance of this?
17 They stopped selling PCB-bearing Pydrauls prior to that
18 time.

19 BY MR. AHRENS:

20 Q Do you know if there was ever any requirement that labels
21 for the Aroclor products had to be registered with the
22 EPA?

23 A I do not know that, either.

24 Q Was there a -- do you know if there was a person at
25 Monsanto responsible for such registration with the EPA?

1 MR. SCHINK: Objection. No foundation.

2 THE WITNESS: If there was a requirement of the
3 EPA, which I don't know whether there was, was there
4 somebody responsible for that registration? I don't know
5 that, either.

6 MR. AHRENS: Okay.

7 BY MR. AHRENS:

8 Q Show you what's been marked as Exhibit 15, which contains
9 four documents, and again represent to you that those are
10 copies of labels provided by Monsanto counsel.

11 A Yes, sir. I've seen them.

12 Q Is there any way to tell from those labels when they were
13 used?

14 A No, sir.

15 Q And again, based upon your experience, is there any way
16 you can say which was used first, second and so on?

17 A No, there is not.

18 Q I can guess the answer to the next question, but I'll ask
19 it anyway. Showing you what's been marked as Exhibit 16,
20 which again are copies of labels provided by counsel
21 relative to Aroclor products.

22 A And what are the questions?

23 MR. SCHINK: The date and sequence in which they
24 were used I think are the two questions.

25 THE WITNESS: Well, --

1 MR. AHRENS: Correct.

2 THE WITNESS: -- I don't know the dates, but I
3 do know that the statements where it says --

4 MR. SCHINK: You're now referring to the second
5 page of the exhibit.

6 THE WITNESS: Second page of the exhibit where
7 it mentions certain polychlorinated biphenyls may -- some
8 studies may have shown to be an environmental contaminant.
9 That is a later date than some of the others. Same thing
10 as No. 3, where they're talking about returning it for
11 incineration. That was after we built the incinerator,
12 which was also in the later dates.

13 BY MR. AHRENS:

14 Q By later dates do you mean in the '70s sometime?

15 A In the '70s, and I don't know whether they had the
16 incinerator built in '74 or not, but it was certainly in
17 the '70s, after '71 or '72, I believe, but sometime in the
18 '70s. Same question goes with No. 4.

19 MR. SCHINK: Page 4.

20 THE WITNESS: Page 4. Page 5. English it says
21 here. That also mentions environment. That's a later
22 one.

23 MR. SCHINK: That's page 12 you're at now.

24 THE WITNESS: Page 12 also is a later one.

25 MR. AHRENS: Okay.

1 THE WITNESS: Page 13 is a later one. Page 14
2 is a later one. Page 15 is a later one. Page 16 is
3 later. Page 17 is later. That's all I know.

4 BY MR. AHRENS:

5 Q Again, you wouldn't be able to decipher the codes that are
6 on some of these labels.

7 A No, sir.

8 Q Who was responsible for drafting the warnings that were on
9 the various labels contained in Exhibits 14, 15 and 16?

10 A The medical department.

11 Q Any specific person or was it a group effort?

12 A Elmer Wheeler may have drafted the warnings as far as the
13 environment contamination. If there are also warnings for
14 health reasons to workers, that would have been one of our
15 physicians.

16 Q Would Mr. Wheeler have done or drafted warnings on Pydraul
17 products?

18 A Which warnings?

19 Q Well, I guess we can go through these just one at a time.

20 A Well, this would be -- this is medical.

21 Q Okay. This is Exhibit 14, the first page, correct?

22 A Yes, sir.

23 Q Who would have drafted that warning? That begins
24 "Caution" and so on?

25 A It would be in the medical department, and it would be

1 under my supervision, probably myself or Dr. Johnson.

2 Q Is it fair to say that it either would have been you, Mr.
3 Wheeler or Dr. Johnson?

4 A Yes.

5 MR. SCHINK: But under your direction and
6 control.

7 THE WITNESS: Yes.

8 BY MR. AHRENS:

9 Q The second page?

10 A Same.

11 Q Third page?

12 A Same.

13 Q Fourth page?

14 A Same. Fifth page, same; sixth, same; seventh, same.

15 MR. SCHINK: By same you're referring to all the
16 language after the word "Caution."

17 THE WITNESS: That's correct. And by same I
18 mean that would be the medical department. Either
19 Wheeler, Johnson or Kelly would have done it.

20 BY MR. AHRENS:

21 Q Now, after you drafted it, were there people in other
22 departments who reviewed the language?

23 A You mean did they view it? I guess when they saw the
24 label.

25 MR. SCHINK: I think he said review. And I

1 think the implication was could they change it.

2 THE WITNESS: No. They couldn't change it.

3 BY MR. AHRENS:

4 Q Did, for example, it go to the research and development
5 people for their input?

6 A No. The label man would come in with it and say here is a
7 label I am going to do with Pydraul F-9, give me the
8 warning statement. I would give it to him and that was
9 it.

10 Q Okay. And you don't remember the label man's name?

11 A Well, Sido was one of them, S-i-d-o.

12 Q Do you remember any others.

13 A One was Minter, M-i-n-t-e-e-r, who is dead, and that's
14 about the only two I remember.

15 Q Was there a guideline or a format that you utilized which
16 helped guide you in drafting warnings?

17 A Well, there wasn't a format. It was a knowledge of what
18 the characteristic -- toxic characteristics of a product
19 were, what the proposed use was, what the proposed
20 accidental exposure might be. There was no format. It
21 was just the knowledge of the property of the compound and
22 its use.

23 Q Okay. I guess what I'm getting at is at some point they
24 asked you to draft a warning and you'd never done that
25 before. I mean, obviously there was your first one,

1 right?

2 A Yes.

3 Q How did you know how to draft a warning?

4 A I guess because I'm an expert on drafting warnings. I
5 mean, they come in with a product and I know the toxic
6 properties of it and say what is this going to be and they
7 say it's going to be an electrical fluid inside
8 transformers. Is it going to be heated? We put that
9 down. So that's all the format you needed.

10 Q So you would get information from whom as to the uses and
11 so on and so forth?

12 A Well, I would get information from the -- our own file,
13 because we may have had correspondence on that before,
14 before it ever went into the market. I would get it from
15 the label man who would walk in, who was also a chemist,
16 and he would tell me what it is going to be used for.
17 Then if I needed other information, I would call up one of
18 the technical people in either the Pydraul department or
19 the electrical application department and say what is this
20 going to be used for?

21 Q Okay. So the criteria on which you based the contents of
22 each individual warning included input from the various
23 departments as to use, it would be your own experience,
24 would be one of the criterion, I suppose?

25 A Yes.

1 Q Your readings of the literature?

2 A Yes.

3 Q Anything else?

4 A Well, it was my knowledge of the toxic properties of a
5 compound, no matter where I got that.

6 Q Okay.

7 A And how it was going to be used. Those are the two
8 fundamental things you'd need to do about protecting
9 somebody from a compound. So I knew the toxic properties
10 of it from any number of ways, and I got the input about
11 the use from either the label man himself or the
12 department that was going to manufacture and sell the
13 material.

14 Q Do you know when Monsanto stopped producing Pydraul F-9?

15 A Early '70s.

16 Q Was testing ever done on the effluent from the incinerator
17 which was built to dispose of PCB-containing products?

18 MR. SCHINK: The effluent are you talking about,
19 the water effluent?

20 MR. AHRENS: No, the exhaust.

21 THE WITNESS: The exhaust? Yes, sir.

22 BY MR. AHRENS:

23 Q During the entire time it was in operation?

24 A Oh, I don't know. I have seen reports that said it was 99
25 point something something percent effective, so I don't

1 know when that testing was carried out.

2 Q Was testing specifically done to determine whether dioxins
3 were present or not?

4 A I can't answer that.

5 Q Do you know who did the testing, what department?

6 A I don't know that, either.

7 Q Based upon your understanding of how the company was
8 structured, who would you anticipate would have done the
9 testing?

10 A Well, of course this was located at our Krummrich plant,
11 so conceivably it might have been the analytical
12 laboratory, the control laboratory of the plant, or they
13 may have sent somebody over from Scott Tucker's group. I
14 can't -- I don't know which.

15 Q Okay. The document you saw relative to the testing
16 results, did it refer in any way to dioxins, whether they
17 were present or were not present?

18 A I don't remember, but I have never seen any report that
19 shows that -- any Monsanto report or any other report,
20 frankly, that shows that dioxins were present with PCBs.

21 Q How about furans? Again, --

22 MR. SCHINK: Monsanto's PCBs or the Japanese
23 PCBs?

24 BY MR. AHRENS:

25 Q Well, did you incinerate Japanese PCBs?

1 A No.

2 MR. SCHINK: You're asking generally.

3 MR. AHRENS: I want you to limit yourself to the
4 exhaust or fumes from the incineration.

5 MR. SCHINK: He's already testified as to that.
6 Repeat it.

7 THE WITNESS: I testified that it was 99.99
8 something percent effective in destroying the PCBs, and at
9 the temperature at which they destroyed PCBs there would
10 be no furans present because this was in over 1,000
11 degrees Centigrade. There would be no furans present at
12 that time.

13 MR. AHRENS: All I want to know is if the report
14 made any mention of furans, that they were there or were
15 not there?

16 MR. SCHINK: Is the report you're referring to
17 the White Paper or something else?

18 MR. AHRENS: No, the --

19 MR. SCHINK: It is in the White Paper.

20 THE WITNESS: Is it in there?

21 MR. SCHINK: Yeah.

22 MR. AHRENS: If you recall.

23 THE WITNESS: Well, that's a half answer,
24 because I did not recall it mentioned furans, but I do
25 know that furans are destroyed at temperatures that this

1 incinerator worked at.

2 MR. AHRENS: Okay.

3 BY MR. AHRENS:

4 Q Why was the incinerator torn down or dismantled?

5 A It was my impression that it was -- many other commercial
6 incinerators were being built around the country and it
7 obviated the freight cost of shipping used PCB back to us.

8 Q Was Monsanto paying for the shipping of used PCB back to
9 the company?

10 A That I don't know.

11 Q Did you have any role in setting up the program of
12 incineration?

13 A No, sir.

14 Q Were there any effluent studies done relative to the
15 fumes, exhaust from the incineration in the surrounding
16 area that you're aware of?

17 A With the exception of showing that there were no PCBs in
18 point something something, outside of those studies, I
19 don't know.

20 Q But I mean somebody didn't go out into the countryside and
21 test animals or take leaf specimens or anything like that?

22 A No, they did not. They saw no reason for doing that.

23 Q Okay. Since I don't know the dates of use of these
24 labels, I can't be real specific, but to your knowledge,
25 recollection, was there a different warning put on

1 containers of Aroclors as opposed to put on containers of
2 Pydraul which used the same Aroclor?

3 MR. SCHINK: At the same time?

4 MR. AHRENS: At the same time, correct.

5 THE WITNESS: I don't -- I can't answer that.

6 BY MR. AHRENS:

7 Q Would it help you if we had the dates to look at labels
8 that were used at the same time?

9 A It might, but remember some Aroclors were going into
10 closed applications, so that the warning may be different
11 in that particular thing, if it were an electrograde
12 Aroclor than where it's going to be used as a heat
13 transfer agency where you expect elevated temperatures.
14 There might be some difference there.

15 Q Would the fact that Pydraul -- well, strike that. Do you
16 consider the use for which Pydraul was intended to be an
17 open or closed situation?

18 A Closed. Closed in a sense -- not as closed as an
19 electrical.

20 MR. SCHINK: But it's an enclosed system.

21 THE WITNESS: Enclosed, yes. It's not as open
22 as a plasticizer.

23 (Discussion off the record.)

24 MR. AHRENS: Okay, Doctor. Thank you. As I
25 have on the other depositions, we're expecting some more

1 documents, and if any of them refer to work Dr. Kelly has
2 done, I would reserve the right to interrogate him on
3 those, but other than that, thank you very much.

4 MR. SCHINK: Let me just state for the record I
5 don't believe there are any more documents you've asked
6 for that relate to toxicology or the epidemiology of
7 Pydrauls in the 1960's, and the purpose of Dr. Kelly's
8 deposition was that. You've obviously been free to ask
9 him anything else you want and have, but I can't see any
10 basis whatsoever in the record for reopening this
11 deposition.

12 MR. AHRENS: Thank you.

13 (The deposition was concluded at 12:45 p.m.)
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