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IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF TENNESSEE
COLUMBIA DIVISION

KATHERINE JOYCE BREWER,	)	
et al.,	)	
	)	
Plaintiffs,	)	Nos. 1-88-008 and
	)	1-88-0014 through
-vs-	)	1-88-0368
	)	Judge Wiseman
MONSANTO CORPORATION,	)	
et al.,	)	
	)	
Defendants.	)	

DEPOSITION OF WILLIAM B. PAPAGEORGE
Taken on behalf of the Plaintiffs
December 21, 1988

ORIGINAL

KARPOWICZ REPORTING COMPANY
Registered Professional Reporters
408 Olive Street, Suite 316
St. Louis, Missouri 63102
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Parties stipulated to attachment of first and last pages only
of lengthy exhibits.

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF TENNESSEE
COLUMBIA DIVISION

KATHERINE JOYCE BREWER,)
et al.,)

Plaintiffs,)

-vs-)

MONSANTO CORPORATION,)
et al.,)

Defendants.)

Nos. 1-88-008 and
1-88-0014 through
1-88-0368
Judge Wiseman

ORIGINAL TRANSCRIPT
FOR THE COURT

DEPOSITION OF WILLIAM B. PAPAGEORGE produced,
sworn and examined on the 21st day of December, 1988,
between the hours of eight o'clock in the forenoon
and six o'clock in the afternoon of that day, at the
Karpowicz Reporting Company Conference Room, 314
North Broadway, 11th Floor, in the City of St. Louis,
State of Missouri, before Gwen A. Huffman, a
Registered Professional Reporter, and Notary Public
within and for the County of St. Louis, State of
Missouri, in a certain cause now pending in the
United States District Court, for the Middle District
of Tennessee, Columbia Division, between Katherine
Joyce Brewer, et al., Plaintiffs, and Monsanto
Corporation, et al., Defendants, taken on behalf of
the Plaintiffs.

A P P E A R A N C E S

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8 Inc.

9 IT IS HEREBY STIPULATED AND AGREED by and
10 between Counsel for the Plaintiffs and Counsel for
11 the Defendants, that this deposition may be taken in
12 shorthand by GWEN A. HUFFMAN, a Registered
13 Professional Reporter and Notary Public, and
14 afterwards transcribed into typewriting, and that the
15 signature of the witness is not waived.

16 - - - - -

17 WILLIAM B. PAPAGEORGE,
18 of lawful age, being produced, sworn and examined on
19 behalf of the Plaintiffs, deposes and says:

20 DIRECT EXAMINATION

21 BY MR. CUKER:

22 Q. Mr. Papageorge, my name is Mark Cuker.
23 I represent a group of workers and families of
24 workers at the P. R. Mallory & Company plant in
25 Waynesboro, Tennessee.

1 I'm going to be asking you about your
2 work at Monsanto in the area of PCBs and relationship
3 between Monsanto and Mallory during the years 1969 to
4 1978. If at anytime you don't understand any of my
5 questions, will you let me know and I'll rephrase the
6 question?

7 A. I will.

8 Q. How old are you, sir?

9 A. Sixty-six.

10 Q. Okay. And where do you live?

11 A. You want the specific address?

12 Q. Yeah.

13 A. Or just the area? 321 Pebble Valley
14 Drive, St. Louis County, Missouri 63141.

15 Q. Okay. Are you retired?

16 A. Yes.

17 Q. How long have you been retired?

18 A. Since the end of '86.

19 Q. What was your position at the time of
20 retirement?

21 A. Manager of occupational health for
22 Monsanto Chemical Company, an operating unit of
23 Monsanto Company.

24 Q. Okay. Was Monsanto Chemical Company
25 once called Monsanto Industrial Chemical Company?

1 A. Parts of it.

2 Q. Okay. How long did you hold the
3 position of manager of occupational health?

4 A. One year.

5 Q. What was your position before that?

6 A. Director - Environmental Operations for
7 Monsanto Industrial Chemicals Company.

8 Q. Was there a reorganization between '85
9 and '86?

10 A. Yes.

11 Q. How long were you director of
12 environmental operations?

13 A. For that particular operating unit?

14 Q. Yeah.

15 A. From 1983 through 1985.

16 Q. Okay. What was your position before
17 that?

18 A. Director - Environmental Operations for
19 Monsanto Intermediate Chemicals Company.

20 Q. Was the intermediate chemicals company
21 separate from the industrial chemicals company?

22 A. Yes.

23 Q. What was the difference?

24 A. The intermediate chemicals company made
25 chemicals that were the starting materials for other

1 chemicals used either within Monsanto or to
2 customers.

3 Q. How long did you hold that position?

4 A. From 1977 to 1983.

5 Q. Is my understanding correct that
6 Monsanto stopped making PCBs in 1977?

7 A. Yes.

8 Q. Do you remember -- do you know what
9 month it was in '77?

10 A. September of '77.

11 Q. Okay.

12 A. I'm sorry, no, they stopped selling it
13 in September, stopped making it in July of 1977.

14 Q. Okay. When in 1977 did you become
15 director of environmental operations for the
16 intermediate chemicals company?

17 A. I believe it was August of 1977.

18 Q. And what was your position before that?

19 A. I was manager of product acceptability
20 for intermediate chemicals company.

21 Q. Okay. Was the intermediate chemicals
22 company involved with PCBs?

23 A. No.

24 Q. And how long were you manager of product
25 acceptability for the intermediate chemical company?

1 A. As best I remember, it was about
2 September, October of 1976 until I was named director
3 of environmental operations in 1977.

4 Q. So it would be October of '76 to August
5 of '77?

6 A. Yes.

7 Q. During that period, did you have any
8 involvement at all with PCBs? When I say
9 involvement, I mean in terms of communications with
10 outside people, be they customers, government, public
11 groups.

12 A. I attended a committee meeting. It was
13 a review committee meeting called by NIOSH in
14 November of 1976 to critique a document they had
15 drafted on PCBs.

16 On rare occasion, I would get telephone
17 calls from many types of individuals seeking
18 information on PCBs, which I would direct to those
19 people who were still active with that issue.

20 Q. Okay. So you would refer that to people
21 in the industrial chemical company?

22 A. Yes.

23 Q. All right. Which people would you refer
24 that to?

25 A. Oh, individuals such as Mr. Cole Weber,

1 Mr. David Wood. They were the two key people. Or if
2 it was a medical inquiry, I'd direct it to someone in
3 the medical department.

4 Q. Anybody in particular?

5 A. In '76, Dr. Roush, George Roush, Jack
6 Garrett. I don't recall if Mr. Wheeler had retired
7 by then or not, but if he were there, I certainly
8 would.

9 Q. Mr. Wheeler still alive?

10 A. Yes, to my knowledge, he is, yes.

11 Q. You know where he lives?

12 A. Somewhere in the Carolinas. I don't
13 know if it's South or North Carolina.

14 Q. Okay. Before October 1976, what was
15 your position?

16 A. October '76.

17 Q. That is, before becoming --

18 A. I was manager, product acceptability for
19 special -- let me think. For specialty and process
20 chemicals.

21 Q. Did that include PCBs?

22 A. No.

23 Q. Okay. How long were you manager of
24 product acceptability for specialty and process
25 chemicals?

1 A. I believe it was about a year.

2 Q. So that would be from about October '75
3 to October '76?

4 A. Those may not be the exact months, but
5 it's close.

6 Q. Was specialty and process chemicals
7 within the industrial chemical company or the --

8 A. Yes.

9 Q. Okay. And that's the same company that
10 was making PCBs?

11 A. Yes.

12 Q. What was the name of the division that
13 was making PCBs?

14 A. I don't remember.

15 Q. Did you ever hear of a name of a special
16 chemicals division?

17 A. Yes.

18 Q. Was there a division by that name
19 between October '75 and October '76?

20 A. I think the word specialty chemicals and
21 special chemicals were used interchangeably. I don't
22 recall which was the formal title.

23 Q. Was the manufacture of PCBs within the
24 special chemicals division?

25 MR. BUSTER: Talking about the '75-'76

1 time frame?

2 MR. CUKER: Yeah.

3 THE WITNESS: I honestly don't
4 remember. It could well have been, but I don't
5 remember.

6 Q. (BY MR. CUKER) Okay. Before October
7 1975 -- well, let's say between October '75 and
8 October '76, were you involved -- and that is when
9 you were manager of product acceptability for the
10 specialty and process chemical division, were you
11 involved with handling inquiries or making
12 communications to outside parties about PCBs?

13 A. Yes.

14 Q. How much was that part of your job?

15 A. Well, from the -- from about October '75
16 to February '76, I was fairly actively involved with
17 Mr. Cole Weber joining me in many of the activities.
18 He was more or less taking over the baton during
19 about a six-month period, the transition of the
20 assignment.

21 Q. Okay. And would these activities
22 include communications with customers?

23 A. Yes.

24 Q. Communications with governmental or
25 other public agencies?

1 A. Yes.

2 Q. The media?

3 A. Yes.

4 Q. When would that six months be during the
5 October '75 to October '76 period?

6 A. When would it be?

7 Q. Yeah.

8 A. I don't understand the question.

9 Q. Okay. I think you said you were fairly
10 actively involved with Mr. Weber between October '75
11 and '76, and I think you said there was a six-month
12 period of transition where your activity was greater,
13 is that -- am I correct? Is that your testimony?

14 A. No, I don't -- I didn't mean that.

15 Q. Okay.

16 A. In the period we talked about, October
17 '76 to August '77, I believe that was your initial
18 question.

19 Q. Yeah.

20 A. When I was product -- or manager of
21 product acceptability for special chemicals and
22 process chemicals, the first six months of that
23 period, I was joining Mr. Cole Weber in the PCB
24 activity, turning over the whole assignment to him in
25 February of 1976.

1 Q. Okay.

2 MR. BUSTER: Let me point out that I
3 believe Mr. Papageorge said late '76 to early '77 at
4 the beginning of his answer, and I believe that
5 should be late '75 to late '76.

6 THE WITNESS: Did I --

7 Q. (BY MR. CUKER) Mr. Papageorge, I
8 believe your testimony was that between October '75
9 and October '76, that was when you were manager of
10 product acceptability in the special and process
11 chemicals.

12 A. That is correct.

13 Q. So it would be about the first six
14 months of that period that you were more heavily
15 involved with Mr. Weber in dealing with PCB issues.

16 A. That is correct. That is what I meant
17 to say.

18 Q. Okay. What was your position before
19 October '75?

20 A. Going backward, from '75 back to about
21 mid '73, I had the title manager of product
22 acceptability. During that period --

23 Q. Which division?

24 A. It was all in the industrial chemicals
25 division.

1 Q. All right. The industrial chemicals
2 company?

3 A. Company, yes. The division --

4 Q. Was it the whole company?

5 A. The divisions were initially -- it was a
6 functional fluids division. And at one time it was
7 paired up with specialty chemicals, so it was
8 functional fluids and specialty chemicals.

9 Q. Functional fluids did include PCBs?

10 A. Yes. That's as best I recall all these
11 titles, but the job title was manager, product
12 acceptability. The divisions were being reorganized
13 on some frequency and --

14 Q. Okay.

15 A. Assigned to me.

16 Q. Okay. And before '73.

17 A. Before '73, as best I remember, I had
18 the title of manager, environmental protection in the
19 functional fluids business group, which, as best I
20 recall, was part of the organic chemicals division of
21 Monsanto Company.

22 Q. How long did you hold that position?

23 A. That goes back to about 1971 when I had
24 a different title but the same assignment. The title
25 then was manager, environmental control.

1 Q. Okay. Let's talk about '73 to '75.

2 A. '73. All right.

3 Q. Okay? You're manager of product
4 acceptability in the industrial chemical company.

5 A. Right.

6 Q. What were your duties in terms of
7 communicating with customers about PCBs?

8 A. Well, I guess I can best define it, I
9 served as an information hub. This information
10 related to PCBs in just about every way imaginable,
11 from chemistry to manufacturing technology to methods
12 of transportation, labeling, even medical. Although
13 I was limited in many of these areas because of my
14 particular background, I at least served as a
15 starting point.

16 Q. Were you the primary information hub in
17 the company during that period for PCBs?

18 A. For PCBs? For broad, general
19 information, yes.

20 Q. Okay. How about specific information on
21 environment and in health?

22 A. Well, if it's a health question, that
23 would be quickly turned over to the medical
24 department.

25 Q. Environmental.

1 A. Environmental depended on the particular
2 question. If it had to do with analyzing for PCBs in
3 the environment, I would relay that question, if it
4 got beyond my expertise, to the individuals in the
5 analytical services section of Monsanto's research
6 department.

7 Q. Was that a Mr. Tucker?

8 A. That was -- Dr. Tucker was a member of
9 that group, yes.

10 Q. Was there anyone else who you would
11 refer those questions to?

12 A. Dr. Keller was the supervisor of that
13 group.

14 Q. Robert Keller?

15 A. Robert Keller.

16 Q. Okay. How about on issues of plant
17 housekeeping and employee safety?

18 A. Plant housekeeping, I would answer those
19 since I had that particular personal experience.

20 Q. Okay.

21 A. Again, on employee safety, if it related
22 to specific medical questions, I would ask our
23 medical department to respond.

24 Q. How about if it related to industrial
25 hygiene measures?

1 A. Well, that would be -- that was under
2 our medical department.

3 Q. You would refer those to the medical
4 department?

5 A. If it got beyond a point that I just had
6 no personal knowledge, I would say now, wait, this is
7 getting a little too deep.

8 Q. Okay. So it got to a certain level of
9 sophistication where you were not comfortable with
10 providing an answer, you would refer the question?

11 A. Yes.

12 Q. All right. Now, between '71 and '73,
13 did you serve as an information hub?

14 A. Yes.

15 Q. With regard -- was there any change in
16 your informational duties between '71 and '73 and '73
17 and '75 or was it basically the same?

18 A. It was -- there was no change as it
19 relates to PCBs.

20 Q. How about before '71?

21 A. No change from '71 back to January '70.

22 Q. What was your title in that period?

23 A. That was the manager, environmental
24 control title.

25 Q. As opposed to manager of environmental

1 protection?

2 A. That is correct.

3 Q. Was that also for the -- I'm sorry, the
4 functional fluids company, a division, group?

5 A. It was -- yes.

6 Q. Okay. And before January 1970.

7 A. I was plant manager at the Monsanto
8 plant located in Anniston, Alabama.

9 Q. Which made PCBs?

10 A. Yes.

11 Q. They make other chemicals there, too?

12 A. Yes.

13 Q. About how many workers in Anniston were
14 working in the PCB area?

15 MR. MOORE: What period of time, Mark?

16 Q. (BY MR. CUKER) Okay. How long were you
17 plant manager?

18 A. About five years. '65 through '69.

19 Q. Okay. During that period, was it a
20 drastic variation in numbers?

21 A. I need some help on defining how many
22 employees -- there were individuals who were there
23 full-time.

24 Q. Full-time employees then.

25 A. Full-time employees working with PCBs,

1 the number will not be exact as I don't remember it,
2 but it will be about thirty individuals.

3 Q. Okay. Did the PCB process have its own
4 building in Anniston?

5 A. No, this is an outdoor structure.

6 Q. An outdoor structure?

7 A. Well, I don't know how to describe it.
8 There is a room about the size of this room in which
9 the controls and instruments, gauges and meters are
10 located, but the facility is out in the open steel
11 structure.

12 Q. Okay. Was it an enclosed -- I mean was
13 it like a barn or something?

14 A. No, it's open.

15 Q. Okay.

16 A. You could see it from the street. You
17 could look and see the tanks and pipelines.

18 Q. And you could watch the process from
19 there?

20 A. Yes.

21 Q. When was Anniston closed?

22 MR. MOORE: You mean when was the
23 airborne unit closed?

24 MR. CUKER: Yes. Thank you.

25 THE WITNESS: I believe it was 1971.

1 early '72.

2 Q. (BY MR. CUKER) When did you start
3 working with Monsanto?

4 A. 1951.

5 Q. What was your educational background
6 before that?

7 A. I have a master's degree in chemical
8 engineering from Washington University - St. Louis.

9 Q. Any postgraduate work?

10 A. Yes, I have some earned credits with --
11 at that time it was Oklahoma A&M. I believe now it's
12 referred to as Oklahoma State. Those were credits
13 toward a doctorate in chemical engineering.

14 Q. Okay. Between -- when did you get out
15 of school?

16 A. Which time? Which degrees?

17 Q. Okay. Let's say '50 -- well, after you
18 got your master's at Washington.

19 A. 1947.

20 Q. Okay. Between '47 and 1965, did you
21 have any training? By training I would include, you
22 know, employer sponsored seminars and courses in the
23 area of occupational health.

24 A. No.

25 Q. Okay. What training did you --

1 A. I -- I better ask for a clarification.

2 Q. Uh-huh.

3 A. You mean a formal course in which the
4 principles of industrial hygiene were taught, is that
5 what you mean by a course? Or do you mean training
6 on how to handle chemicals?

7 Q. I mean a formal course.

8 A. Huh?

9 Q. A formal course.

10 A. A formal course? No.

11 Q. Before becoming manager of occupational
12 health for Monsanto in '86, what training did you
13 have in occupational health?

14 A. No formal training.

15 Q. What informal training did you have?

16 A. I would call it on-the-job experience.

17 Q. Okay. And was that from working with
18 other people who were formally trained in
19 occupational health?

20 A. Yes.

21 Q. Such as --

22 A. Part of it.

23 Q. Okay. Such as which people?

24 A. Well, through the years, the earliest
25 contact of course was with the medical doctors at the

1 plant. And early on, the individual at each plant
2 who was assigned the safety matters was also assigned
3 industrial hygiene matters. I would work with them.

4 Mr. Jack Garrett served as Monsanto's
5 key industrial hygienist. Later, as the need for
6 more professionals increased, I was working with many
7 individuals who had formal training. I don't
8 remember all of their names by any means.
9 Mr. Garrett eventually ended up with a team of
10 industrial hygienists.

11 Q. This team was --

12 A. Almost a dozen of them, located in
13 St. Louis.

14 Q. The team, they worked under him?

15 A. They worked under him. And they in turn
16 were assigned different manufacturing sites that they
17 would serve as consultants to and advise the plants
18 on matters as appropriate because each plant had
19 different chemicals that they were handling.

20 Q. Just so I'm clear, Mr. Papageorge, your
21 service as the informational hub for PCBs, did that
22 begin in January 1970 when you were the manager --
23 became manager of environmental control?

24 A. Yes.

25 Q. And that continued until at least

1 October '75 when you left the position of manager of
2 product acceptability within the industrial chemical
3 company?

4 A. Yes. I would extend that October over
5 into February.

6 Q. Okay.

7 A. Because until February, I was still it.

8 Q. Okay. Now, have you testified in other
9 PCB litigation?

10 A. Yes.

11 Q. Approximately how many cases?

12 A. In depositions, in discovery --

13 Q. Yeah.

14 A. Or in trial?

15 Q. Well, we'll take it one at a time. In
16 depositions.

17 A. Depositions. I have never kept score.
18 I believe it's hit about twenty, twenty-four, a
19 couple dozen.

20 Q. Okay. I'm going to show you an exhibit
21 marked Roush Exhibit 5, which is a sixteen page list
22 of PCB cases involving Monsanto.

23 A. Uh-huh.

24 Q. And I wonder if you'd go through it and
25 simply check off or write your initials next to the

1 cases in which you've given depositions.

2 A. I'll try to remember them.

3 MR. BUSTER: Could I make a suggestion
4 that maybe we allow Mr. Papageorge to do this at some
5 break or something like that so we don't have to take
6 up deposition time?

7 MR. CUKER: That's fine with me.

8 MR. MOORE: Suits me all right. Is that
9 okay with you, Bill?

10 THE WITNESS: Sure.

11 MR. MOORE: At some break later in the
12 day?

13 THE WITNESS: I'd be happy to.

14 Q. (BY MR. CUKER) Mr. Papageorge, how
15 about at trials? How many trials have there been at
16 which you've testified?

17 A. I believe it's five.

18 Q. Okay. Can you remember those?

19 A. I'll try. I may not refer to these by
20 the proper title, but I call them -- I'll use my
21 terminology.

22 Q. Sure.

23 A. There was the Bethlehem Mink case in New
24 Hampshire. There was a transformer spill case
25 involving General Electric Company in Tennessee.

1 There was a silo case in Michigan. There was an
2 employee exposure case in Texas.

3 Q. Is that the Scott case?

4 A. Yes. And then there was a site cleanup
5 case in Bloomington, Indiana.

6 Q. Was that the case that was brought by
7 the U.S. government or by private parties?

8 A. This was brought by the city of
9 Bloomington.

10 Q. City of Bloomington. Thank you.

11 Now, can you recall any specific
12 involvement with P. R. Mallory & Company as an
13 informational hub responding to questions submitted
14 by P. R. Mallory & Company related to PCBs?

15 A. Yes.

16 Q. Okay. What can you just generally
17 recall about the communications you had with P. R.
18 Mallory Company?

19 A. I recall a visit to their plant in
20 Tennessee. I recall at least one, and I'm sure it's
21 more than one, visit to the Indianapolis office. I
22 recall several discussions with representatives of
23 the company. In particular, a Mr. Dibble and a
24 Dr. Doty.

25 Mr. Dibble and Dr. Doty were the

1 principal individuals, at least from where I was
2 sitting, and with whom I had the most frequent
3 contact.

4 Q. Okay.

5 A. That about describes -- I had some
6 correspondence, as I remember, in responding to
7 inquiries. I would prepare letters back trying to
8 respond to the inquiries.

9 Q. Did you review any of those documents
10 before today?

11 A. I reviewed some, yes.

12 Q. Did you meet with Mr. Buster and
13 Mr. Schneider before today?

14 A. Yes.

15 Q. For about how long?

16 A. About two hours.

17 Q. Okay. And when was that?

18 A. About a week ago.

19 Q. Okay. What were your discussions with
20 Mr. Buster and Mr. Schneider?

21 A. We reviewed a collection of documents
22 that I was led to believe had been introduced in this
23 case.

24 Q. Okay. Did you discuss with them your
25 recollection of your meetings with Mallory personnel

1 in Tennessee and Indianapolis?

2 A. Yes.

3 Q. Okay. And what were those discussions?

4 A. About like I just described to you.

5 Q. Can you recall the subject of discussion
6 at the Indianapolis visit, the one Indianapolis visit
7 that you specifically remember?

8 A. I can recall some of it. Not all the
9 details.

10 Q. What can you recall about it?

11 A. I recall meeting in a room with several
12 representatives of P. R. Mallory Company. Mr. Dibble
13 was present. He, in fact, served as sort of a
14 chairman, if you will. I recall reviewing with that
15 group Monsanto's knowledge of the PCB environmental
16 issue as it was known at that point in time.

17 Q. What point in time was this?

18 A. 1970, '71. I reviewed with them the
19 status of Monsanto's attempt to develop analytical
20 methods that would give accurate answers. I reviewed
21 with them Monsanto's program for determining whether
22 PCBs would degrade in the environment.

23 And also reviewed with them the animal
24 test studies that Monsanto had placed and were under
25 way at that time and the results that were reported

1 to me up to that point.

2 Q. Okay. The analytical methods, did that
3 include methods of analysis and sampling the air for
4 airborne PCBs?

5 A. Yes.

6 Q. Okay. What was the state of the
7 analytical methods at that time?

8 A. By today's standards, I would call it
9 rather crude. I'm trying to recall what level they
10 could detect. It was still in the low parts per
11 million range. And they were trying to reach parts
12 per billion and parts per trillion, if they could.
13 That was the objective of the Monsanto program.

14 Q. Okay. What was the status of the
15 environmental test studies at that time? I'm sorry,
16 the animal test studies.

17 A. The animals? In '70 and '71, the
18 studies were still under way. There were indications
19 that the -- in the rats that the high dose level,
20 which was a hundred parts per million in the daily
21 diet of the higher chlorinated mixtures, this is what
22 Monsanto called Aroclor 1254 and 1260, was resulting
23 in a decrease in the weight gained by the animals.
24 As they got older, they were not growing as fast as
25 the controls. There appeared to be a showing of

1 enlarged livers.

2 In the reproduction studies, as I
3 remember at that point in time, there was some hint,
4 although it wasn't confirmed yet, that the rats were
5 having some reduction in the size of the litters.
6 Not as many pups were born as the controls.

7 Q. Was that, the reproductive effect, more
8 common with the lower chlorinated mixtures?

9 A. Not with the rats. It was the higher
10 chlorinated.

11 Q. Okay.

12 A. Now, with the leghorn chickens, it
13 appeared that the lower chlorinated mixtures, as we
14 used to call the lower chlorinated mixture used in
15 this test as Aroclor 1242, that particular material
16 seemed at fairly low levels, somewhere between one
17 and ten parts per million, the eggs that were laid
18 had hatchability problems and some of the shells were
19 thinner than normal. So that test was later rerun at
20 lower levels.

21 I forget just the point in time this was
22 done, but eventually we demonstrated with further
23 testing that about three parts per million of the
24 Aroclor 1242 affected egg hatchability and egg shell
25 thickness.

1 The dog study at that point in time
2 wasn't showing anything that was obvious.

3 Q. What was their reaction to this
4 information?

5 MR. BUSTER: The dogs or ---

6 MR. CUKER: No, the information about
7 the animal study.

8 THE WITNESS: The information? I -- a
9 lot of interest. Just total attention. This was,
10 for most of us laymen, laymen in terms of medical
11 kinds of studies, it's kind of fascinating
12 information. And it was not something that's normal
13 to most of our businesses.

14 So this was a totally new kind of
15 subject and they were very interested. They asked,
16 of course, to be kept up-to-date in terms of the
17 final results. And, of course, I offered to send
18 them copies of summaries that I had arranged with the
19 laboratory to send me every six or eight months. And
20 that was done.

21 Q. (BY MR. CUKER) Okay. You did that as
22 time went on?

23 A. Yes, uh-huh.

24 Q. Mr. Papageorge, did you have any
25 involvement with any of the activities of the

1 American Industrial Hygiene Association?

2 A. Involvement in -- in later years, I
3 attended their meetings.

4 Q. Okay. Did you participate in those
5 meetings from any type of a leadership point of view,
6 serving on committees or things like that?

7 A. No.

8 Q. How about the American Conference on
9 Industrial Hygienists?

10 A. No.

11 Q. Did anybody at Monsanto participate in
12 those organizations from an active service point of
13 view with regard to PCBs?

14 A. Oh, yes. I don't know the extent of
15 their involvement, but I do know that Mr. Garrett and
16 his members of his team, some of the plant industrial
17 hygiene individuals in Monsanto participated. In
18 fact, Dr. Roush was a member of a panel, as I recall,
19 that helped establish exposure levels for ACGIH.

20 Q. Helped establish the TLV?

21 A. TLVs, yes.

22 Q. For ACGIH?

23 A. Yes.

24 Q. When did he do that?

25 A. In the '80s. I don't know the exact

1 timing.

2 Q. Okay. Do you know of anybody at
3 Monsanto who served on a TLV committee before the
4 '80s for PCBs?

5 A. Not to my knowledge.

6 Q. Let me show you a document that's
7 already been marked Roush Exhibit 2. Have you seen
8 that document before --

9 A. Yes.

10 Q. -- Mr. Papageorge?

11 A. Yes, I have.

12 Q. You see a reference in the lower
13 left-hand corner to Jack Garrett and Elmer Wheeler?

14 A. Yes, I do.

15 Q. Do you know what their involvement was
16 with the preparation of that document?

17 A. I understood that they shared with the
18 panel that reviewed all this information data from
19 Monsanto's animal testing studies that had been
20 conducted through the years starting in the '40s, the
21 '50s, and into the '60s.

22 Q. Do you know if they shared with that
23 panel the industrial hygiene practices that Monsanto
24 employed?

25 A. I'm told they did, yes.

1 Q. Told by whom?

2 A. By Mr. Wheeler, yeah.

3 Q. Okay. Were you familiar with the
4 practices at the Krummrich plant between say January
5 1970 and February 1976?

6 A. Yes.

7 Q. Okay. How far is the Krummrich plant
8 from here?

9 A. Gosh, it's about four or five miles.

10 Q. It's four or five miles outside of
11 St. Louis?

12 A. Right across the river and --

13 Q. How often did you go there?

14 A. At what point in time?

15 Q. Let's say between January of '70 and
16 February of '76.

17 A. About every six months.

18 Q. Okay. Were you familiar with the
19 industrial hygiene practices that were employed at
20 that plant?

21 A. Yes.

22 Q. Okay. I want to go through the
23 practices laid out in Roush Exhibit 2, and I'm going
24 to ask you for each one, whether that was employed
25 for Krummrich between January 1970 and February

1 1976. Let me just ask you, were you familiar with
2 the practices after February '76 at Krummrich?

3 A. Yes.

4 Q. Okay.

5 A. Uh-huh.

6 Q. All right. For what period of time
7 would you be familiar beyond February of '76?

8 A. Until I retired.

9 Q. Okay.

10 A. For other chemicals, too. I mean the
11 whole plant.

12 Q. Okay. Let me ask you for the period
13 January 1970 until July 1977. That was the date they
14 stopped making PCBs.

15 A. All right.

16 Q. Whether these practices were followed at
17 Krummrich.

18 A. Uh-huh.

19 Q. I want you to turn to -- let's see,
20 start with Roman Numeral III, letter three. Okay?

21 A. Roman Numeral III, letter three.

22 Q. I'm sorry, excuse me, C.

23 MR. MOORE: C, the subheading under
24 Roman III. All right. Entitled Hazards And Their
25 Recommended Control, is that right?

1 MR. CUKER: Yeah.

2 Q. (BY MR. CUKER) "Concentrations in the
3 workroom atmosphere should be maintained below the
4 recommended levels." Was that done at Krummrich?

5 A. Yes.

6 Q. Okay. Now, I'm just going to skip a
7 sentence. "When these materials are subjected to
8 elevated temperatures, the process either should be
9 completely enclosed or other adequate mechanical
10 exhaust ventilation must be provided to reduce
11 concentrations to safe levels." Was that done at
12 Krummrich?

13 A. Yes.

14 Q. What did Krummrich or what did Monsanto
15 interpret elevated temperatures to mean?

16 A. Oh, in the neighborhood of -- these are
17 not exact. Three hundred and fifty degrees
18 Fahrenheit and above.

19 Q. Okay. Did they ever consider elevated
20 temperatures to mean fifty-five degrees centigrade or
21 above?

22 A. That's pretty low. No, that's --
23 fifty-five would be about a hundred Fahrenheit. No,
24 that would be considered low for PCBs.

25 Q. Okay. Was it ever considered to be a

1 hundred degrees centigrade or above?

2 A. That would be moderate. I would not
3 call it high.

4 Q. Okay. When the materials were subjected
5 to elevated temperatures, was the process either
6 completely enclosed or other adequate mechanical
7 exhaust ventilation provided to reduce concentrations
8 to safe levels?

9 A. Yes. I thought I answered that.

10 Q. Were the employees informed of the need
11 of that, of doing that?

12 A. Yes.

13 Q. Okay. I'm going to skip a sentence.
14 Were special gasket materials and pump seals provided
15 to prevent leakage?

16 A. Yes.

17 Q. Were the employees informed of the need
18 of that?

19 A. Yes.

20 Q. Was the reservoir tank kept airtight
21 except for vent to the outdoors?

22 A. Yes, definitely.

23 Q. Were the employees informed of the need
24 of that?

25 A. Yes.

1 Q. Okay. In the event of spills or leaks
2 of hot fluids, were chemical cartridge respirators or
3 gas masks approved by the U.S. Bureau of Mines for
4 protection against organic vapors, were those
5 provided?

6 A. Yes.

7 Q. And were the employees informed of the
8 need of that?

9 A. Yes.

10 Q. Okay. Number two, skin contact, were
11 operations and handling procedures designed such as
12 to avoid the possibility of prolonged or repeated
13 skin contact?

14 A. Yes.

15 Q. Were the employees informed of the need
16 of that?

17 A. Yes.

18 Q. Was contaminated clothing required to be
19 laundered before reuse?

20 A. Yes.

21 Q. Were employees informed of the need of
22 that?

23 A. Yes.

24 Q. Did the employees wear eye protection
25 where there was a possibility of liquid splashes?

1 A. Yes.

2 Q. Were they informed of the need of that?

3 A. Yes.

4 Q. Okay. I'm going to just skip down to
5 Roman Numeral IV under medical information. Were the
6 employees informed that skin surfaces exposed to
7 chlorodiphenyls should be thoroughly washed with soap
8 and water at once?

9 A. Yes.

10 Q. Were the employees informed that if
11 clothing has been contaminated, it should be removed
12 promptly?

13 A. Not quite. If the contamination was
14 such that skin was being involved, skin exposure,
15 yes. But if the contamination was such that the skin
16 of the individual, whether leg, arm, or the rest of
17 the body was not immediately involved, they could
18 wait until the end of the shift to discard that
19 clothing.

20 Q. Okay. Were the employees informed that
21 if exposure to a high vapor concentration occurs,
22 that is in the case of spills at elevated
23 temperatures, they should leave the area?

24 A. Yes, this was left to -- it was a
25 judgment call on the part of the employee as to what

1 was excessive.

2 Q. Okay. What did they base that judgment
3 on?

4 A. Primarily, a discomfort factor, really.
5 It gets so bad they leave.

6 Q. Okay. Just going back to your answer on
7 the clothing --

8 A. Yes.

9 Q. -- did that vary at all between '69 and
10 '70 -- between '70 and '77? The answer on the
11 removal of contaminated clothing.

12 A. Not to my knowledge.

13 Q. So you think that was kept the same?

14 A. That's correct.

15 Q. Did this area include Aroclor 1242 or
16 1254?

17 A. No.

18 Q. Were the employees informed that eyes
19 contaminated with chlorodiphenyl should be irrigated
20 with water for at least fifteen minutes and they
21 should be seen by a physician?

22 A. Yes.

23 Q. Were persons who are regularly or
24 repeatedly exposed to chlorodiphenyls examined
25 periodically by physicians to detect early evidence

1 of skin irritation and/or liver damage?

2 A. They had the annual medical examination,
3 yes.

4 Q. Okay. Did that examination also examine
5 them to detect early evidence of skin -- of liver --
6 of skin irritation?

7 A. Well, certainly if it was evident, the
8 physician would see it. On the other hand, if the
9 employee appeared at the dispensary with red hands or
10 red spots on their legs, certainly the doctor would
11 look at it.

12 Q. Was the annual examination designed to
13 detect early evidence of liver damage?

14 A. To my knowledge, it was, yes.

15 Q. In what way?

16 A. As I understood it, the blood samples
17 would help determine how the liver was functioning.
18 And then also the -- I don't know what the doctors
19 call it, but they feel for an enlarged liver when
20 they check us.

21 Q. Did the doctors customarily do tests of
22 liver function?

23 A. Yes. To my knowledge, yes.

24 Q. Okay. Did Monsanto expose persons with
25 known liver disease to repeated contact with

1 chlorodiphenyls?

2 A. Not knowingly, no.

3 Q. Did you ever submit this Roush Exhibit 2
4 to customers of Monsanto as a guideline for their
5 usage?

6 A. Upon request, yes, but -- to me. It's
7 my understanding, however, that this document back in
8 the '60s when it was available was widely circulated
9 by Monsanto's medical department. I came along in
10 1970 and then this was already in place.

11 Q. Okay. When you say upon request, would
12 that be a specific request if someone said I want the
13 AIHA guide, or would it be I want some information on
14 industrial hygiene?

15 A. It would be more close to the latter;
16 give me any information you have, which is the broad
17 question. Then this would be included. Or give me
18 information on employee exposure that you have. This
19 would be part of it, yes.

20 Q. Okay. Did you communicate in words or
21 in substance these principles to the Mallory Company?

22 A. Yes.

23 Q. When?

24 A. Well, certainly when I talked to the
25 assembled groups in Indianapolis and also in

1 Waynesboro.

2 Q. Which assembled group did you speak to
3 in Waynesboro?

4 A. It was the plant staff. I don't
5 remember all the individuals.

6 Q. How many people?

7 A. It was like half a dozen or so.

8 Q. Okay.

9 A. Something like that. It was a good
10 group.

11 Q. Do you remember the name of any specific
12 people you spoke to in Waynesboro?

13 A. I believe there was a Mr. Lewis. And I
14 remember him only because his name was similar to a
15 Monsanto employee. I believe Mr. Dibble was present.

16 Q. In Waynesboro?

17 A. I believe he was. It's been eighteen
18 years. But, anyway, I think that's where I first met
19 Mr. Dibble. There were other members of the staff,
20 but I -- their name escapes me at the moment.

21 Q. Okay. Were you -- do you recall if you
22 were still submitting this AIHA guide to users of
23 PCBs in 1975?

24 A. It was certainly the document of
25 relevance at the time. I don't remember any specific

1 case where in 1975 anybody asked for it because in
2 '75 the remaining couple dozen customers were really
3 well versed on this subject.

4 Q. Was it still the document of relevance
5 in 1976?

6 A. Yes.

7 MR. BUSTER: Object to the form as to
8 what you mean by document of relevance.

9 Q. (BY MR. CUKER) Well, Mr. Papageorge,
10 that's your phrase. I assume you understand what's
11 meant by that. But can you explain that to
12 Mr. Buster?

13 A. What I really had in mind was that the
14 recommended exposure levels in this document and the
15 suggested approaches were still appropriate in '75
16 and in '76 as compared to the '60s when this was
17 first put out.

18 Q. How about as of August 1977?

19 A. I believe it's still pertinent, yes.

20 Q. Okay.

21 A. Nothing has shown up to change it.

22 Q. All right. I want to go into some other
23 aspects of the Krummrich plant procedures. What type
24 of environmental monitoring was done at Krummrich
25 between '70 and '77? And if the answer changes with

1 the time period within those six years, please let me
2 know.

3 MR. MOORE: Are you talking about air
4 levels, Mark?

5 MR. CUKER: Yeah.

6 MR. MOORE: Okay.

7 THE WITNESS: Well, there were certainly
8 changes in the analytical methodology. In early
9 1970, before the --

10 Q. (BY MR. CUKER) Mr. Papageorge, I don't
11 want to cut you off, okay? Let me break that down.
12 Let me talk about the -- let me ask you first about
13 the frequency of air monitoring done in the places
14 where it was done. And then afterwards, we can get
15 into the methodology, unless you really feel it's --
16 you can't discuss one without the other.

17 A. The frequency.

18 Q. How often they would sample the air,
19 where they would sample the air.

20 A. They would sample the air in the
21 periphery of the manufacturing unit, up wind and down
22 wind. Remember, this is an outdoor structure.

23 Q. Was Krummrich an outdoor structure, too?

24 A. Yes. Yes. They would sample it at
25 the -- what we call the drumming station. That's

1 when the material is introduced into the drum, the
2 package. They would sample it at the equipment
3 during the step when lime is added to the process.
4 This is when the vessel is opened and the powdered
5 lime is dumped into the reactor.

6 The frequency is not great because it
7 was found that the levels were acceptable. They were
8 within the guidelines. Once that's established, then
9 the next opportunity or the next need for resampling
10 is when someone who manages the operation decides
11 that a significant change has been made, either a new
12 drumming station lab installed or a new way to
13 introduce the lime. So, then, again, these sample
14 points are checked out.

15 Q. Mr. Papageorge, what did it -- okay.
16 How many repeat tests would be done before they were
17 satisfied that they were within the level?

18 A. I don't recall any repeat tests. It's a
19 single test taken and the answer is developed and
20 someone looks at it and said okay, it's acceptable.

21 Q. They would do one sample in each area,
22 and if they were within the level, they would not
23 repeat unless there was a process change?

24 A. Oh, I don't know about the one sample.

25 Q. Okay.

1 A. At least one sampling effort was made.
2 I don't know if they had several units out there
3 picking up samples.

4 Q. Oh, okay. Now, and was that the
5 practice through '76?

6 A. Yes.

7 Q. That unless there was a process change,
8 they would not do repeat sampling?

9 A. That is right.

10 Q. How frequently were there process
11 changes during that period?

12 A. Not too often.

**ORIGINAL TRANSCRIPT
FOR THE COURT**

13 Q. Once a year?

14 A. No, I'd say -- huh. I don't know
15 exact. A couple, three years.

16 Q. Okay. Was there monitoring of all vents
17 and traps at the Krummrich plant?

18 MR. MOORE: What kind of monitoring are
19 you talking about?

20 Q. (BY MR. CUKER) Monitoring for release
21 of PCBs.

22 A. As I remember, there was a program to
23 monitor vents and traps as it related to escape into
24 the environment, not related to worker exposure. As
25 best I recall, this was done once to establish what

1 PCBs were entering the environment.

2 Q. Okay. Now, where were these vents and
3 traps located?

4 A. All over the unit. There were vents;
5 for example, off of the devices that pull a vacuum on
6 the reaction so that the temperature can be kept
7 lower as the chemical is being made.

8 There are vents, of course, on all the
9 storage tanks. The tanks have to breathe.
10 Otherwise, they would collapse or would burst. There
11 were vents, when they fill tank cars, that hook up a
12 pipe to release the vapor higher up.

13 There were, of course, vents at the
14 drumming station. There was a hood over the unit
15 that would suck the air upward away from the worker.

16 Q. Now, these vents would vent airborne
17 PCBs, is that right?

18 A. That's what a vent does, uh-huh, yes.

19 Q. Okay. You have to forgive my
20 engineering ignorance here.

21 A. I'm sorry.

22 Q. How about the traps, was that airborne
23 or liquid discharge?

24 A. Well, it's both.

25 Q. Okay. Can you --

1 A. As the liquid is discharged and it's hot
2 enough, it could release airborne PCBs. That depends
3 there on the temperature of that particular liquid.

4 Q. Okay, fine. And was there monitoring of
5 those traps, also?

6 A. Yes.

7 Q. Okay. Now, was this one time monitoring
8 or a daily monitoring?

9 A. I would call it --

10 Q. Or something in between that?

11 A. It was not daily. It was done -- that's
12 a judgment call. Has anything changed to require new
13 information or is it like it was last year. Is last
14 year's data still applicable.

15 Q. Okay. But it's your testimony that this
16 monitoring of the vents and traps was solely on the
17 environmental purposes and did not have any
18 industrial hygiene purpose?

19 A. The one effort that I'm aware of, yes.
20 I am not aware of any others that were made.

21 Q. Okay. Were the pumps checked for
22 leakage on every shift at Krummrich?

23 A. What point in time?

24 Q. '70 to '76 or within that period, if
25 it's a smaller period.

1 A. Starting in 1970, the frequency of check
2 was increased such that about 1971, it was checked
3 certainly once a shift, and more often, if
4 practical. If the worker had a chance to walk by and
5 check, he was encouraged to do so.

6 Q. Okay. And would that be to -- what was
7 the surface, the work surface in this outdoor
8 structure, the floor, if there was a floor?

9 A. The upper levels are steel grating.
10 Under the pumps we had mounted steel pans with lips
11 on them to contain any small leakage. These pans in
12 turn had a drain, a pipe that would lead down to a
13 collecting point. So the employee was expected to
14 look and see if this pan was dry or whether it had
15 evidence of oil.

16 Q. And how were the floor spills cleaned up
17 when there was a spill?

18 A. I didn't finish.

19 Q. I'm sorry.

20 A. The upper levels were steel grating.
21 The bottom level, the ground level was a concrete
22 surface with eventually concrete curbs. Any drippage
23 that collected from all the levels above it would end
24 up in a sump, which was underneath this concrete
25 floor. And the PCBs were collected, disposed of.

1 Q. How were spills cleaned up off the floor
2 when they were on the floor and did not collect in
3 any container?

4 A. If they were large enough, the attempt
5 was made to collect it as a liquid, squeegee it, and
6 by some means, either a suction pump or something,
7 collect it.

8 If it was too small to be collectible by
9 that means, an absorbent material would be used,
10 absorbent clays or sawdust or rags. And these
11 materials would be put in steel drums and taken to a
12 landfill. Now, this, of course, is after 1970 as we
13 learned more about --

14 Q. Would that have started in '71?

15 A. It would have been in place in '71,
16 uh-huh.

17 Q. Okay. Did the workmen who did this
18 cleanup job wear protective clothing against skin
19 contact?

20 MR. MOORE: You mean something other
21 than the normal cotton work clothes?

22 Q. (BY MR. CUKER) Well, do they wear
23 gloves, for instance?

24 A. Well, they always wore gloves for
25 operating and they had a chance of getting exposed.

1 They always carried them in their back pockets and
2 were encouraged, taught --

3 Q. Did they -- my understanding from
4 Dr. Roush is that the employees wore coveralls that
5 were supplied by the company, is that correct?

6 A. Yes.

7 Q. Okay. Did the employees do any
8 protective -- I'm sorry, the cleanup wear anything in
9 addition to the coveralls in clean up of spills?

10 A. That would depend on the magnitude of
11 the cleanup. Normally, no. But if it's a major
12 cleanup -- I don't recall any involving PCBs, but if
13 it were major, they were -- they had access to rubber
14 suits or whatever was appropriate. They could go
15 check one out and use it.

16 Q. I'm talking about a cleanup where
17 they're trying to conserve the liquid in bulk as
18 opposed to sop it up with rags or with sawdust.

19 A. Normally, they would not have anything
20 unusual.

21 Q. Okay. Did Monsanto at anytime, going
22 back as long as you were working with PCBs, use
23 trichlorethylene to clean up PCBs?

24 A. Not to my knowledge.

25 Q. Did you ever recommend against the use

1 of TCE as a vehicle to clean up --

2 A. No.

3 Q. -- spills?

4 A. No.

5 Q. You never made a recommendation one way
6 or the other?

7 A. No. In fact, I did recommend the use of
8 materials like TCE to customers for --

9 Q. To clean --

10 A. For cleanup and what we call degreasing,
11 deoiling.

12 Q. Okay. I'm talking about for cleaning up
13 spills on the floor.

14 A. Oh. No, I never referred to any solvent
15 for cleaning up spills.

16 Q. Okay. You only referred to what
17 Monsanto is using at Krummrich?

18 A. Right.

19 Q. Were there mist eliminators used to
20 collect PCB -- airborne PCB ointment -- excuse me,
21 airborne PCBs at Krummrich?

22 A. Yes.

23 Q. And how were they used?

24 A. To put it simply, they are put literally
25 at the end of the vent. That's the last piece of

1 equipment. And the intent there is for the cooled
2 gases to condense and collect on these surfaces
3 inside these mist eliminators and drip on back into a
4 collecting point so that the air that's finally
5 released has a minimum amount of chemical or PCBs, in
6 this case.

7 Q. Was that put on all the vents?

8 A. No, not all vents.

9 Q. Okay. What determined whether it was
10 put on a vent or not?

11 A. It was -- generally, a mist eliminator
12 is put on a piece of equipment that is connected to
13 the high temperature part of a process and which
14 would be most likely to involve periods when the
15 amount of vapors is greater than other periods. It's
16 a fluctuating kind of need. And that's to
17 distinguish between a vent that's tied into a storage
18 tank where the material is at ambient temperatures.

19 Q. Okay. Would a vent in a tank where the
20 PCBs would be heated, would that vent have a mist
21 eliminator?

22 A. Depends on the temperature of heating.

23 Q. Okay.

24 A. Again, in the hundreds of degrees
25 Fahrenheit.

1 Q. Okay. Well, at two hundred degrees
2 Fahrenheit.

3 A. I don't recall any of Monsanto's process
4 that had two hundred.

5 Q. It was either ambient or three fifty?

6 A. It was three fifty, four hundred, five
7 hundred.

8 Q. Okay.

9 A. They were cooled down to about the three
10 hundred and then pumped into a tank and then were
11 allowed to cool to ambient temperatures. I just
12 don't remember. It could be, but I don't remember.

13 Q. Okay. Did you ever hear the term of
14 a -- hear of a Brink mist eliminator?

15 A. Yes.

16 Q. Is that the type that they used?

17 A. That was a Monsanto patented unit, yes.

18 Q. Okay. Was there a procedure to route or
19 reroute any ruptured lines to tanks or settling
20 bases?

21 A. I'm confused by the expression ruptured
22 lines.

23 Q. Ruptured disk lines?

24 A. Oh, oh. Yes.

25 Q. What's a ruptured disk line?

1 A. A ruptured disk is a device that's
2 inserted in a pipeline to prevent the flow of liquid
3 until a certain pressure is reached. And then this
4 disk deliberately is designed to rupture to release
5 the pressure so that the tank isn't damaged.

6 Now, when it ruptures and the liquid is
7 forced through that new opening, now, at one time,
8 these would be discharged freely onto the ground or
9 into the air. And we decided this was not
10 appropriate.

11 And the intent there was to direct this
12 line into a -- some tank or other reasonable
13 collecting point so it wouldn't get out of control.

14 Q. Okay. Was the worker's clothing
15 laundered at the plant site?

16 A. No.

17 Q. Was it laundered by the company?

18 A. It was laundered by a laundry contracted
19 by the company.

20 Q. Okay. And that was done routinely?

21 A. Yes.

22 Q. Okay. Who provided the shoes?

23 A. The company.

24 Q. Okay. Did it sell it to the workers at
25 a subsidized price or did they just --

1 MR. MOORE: Are we back talking about
2 '71 to '76 at Krummrich?

3 MR. CUKER: '70 to '76.

4 MR. MOORE: '70 to '76 at Krummrich.
5 Okay.

6 MR. CUKER: Yes.

7 THE WITNESS: Shoes are provided to all
8 the employees at the plant at least once a year.
9 This is part of the labor contract for all chemicals,
10 all operations from telephone operator to the
11 chemical worker.

12 Q. (BY MR. CUKER) Was this a union
13 collective bargaining agreement?

14 A. Yes.

15 Q. Okay. Who's the union?

16 A. It's FS International Chemical Workers.

17 Q. Is that part of the OCAW at all?

18 A. No.

19 Q. I take it then that the company did not
20 sell the shoes to the worker?

21 A. No.

22 Q. Okay.

23 A. They were given a pair a year unless the
24 shoes were damaged while in use at the job, and then
25 they would replace the damaged shoe.

1 Q. What was done with the cleaning fluid
2 that was used to wash this clothing?

3 A. I don't know.

4 Q. Was it incinerated?

5 A. I don't know.

6 Q. Let me show you a article from Chemical
7 Week Magazine dated April 21st, 1971. It's been
8 stamped number 500009 through 11. I'll have it
9 marked -- this will be the first Papageorge.

10 (Papageorge Deposition Exhibit No. 1 was
11 marked by the court reporter for identification.)

12 (A discussion was held off the record.)

13 THE WITNESS: I've looked at it.

14 Q. (BY MR. CUKER) Okay.

15 A. I recall it.

16 Q. Okay. There's a reference here that --

17 MR. BUSTER: May I look at the document,
18 please?

19 MR. CUKER: Oh, sure.

20 (A discussion was held off the record.)

21 (A break was taken.)

22 Q. (BY MR. CUKER) Mr. Papageorge, I want
23 to call your attention to some specific things on
24 page 500011.

25 MR. MOORE: Referring to the bate stamp

1 in the lower right-hand corner of the third page of
2 the exhibit. Okay.

3 Q. (BY MR. CUKER) You see here where it
4 says "Monsanto even provides clothing for all the
5 workers, and after the clothes are cleaned all the
6 cleaning fluid is collected for destruction in the
7 incinerator." You see that?

8 A. I see that.

9 Q. Now, first of all, do you provide the
10 information -- were you the primary source of the
11 information contained in this article?

12 A. Yes.

13 Q. Okay. Does that refresh your
14 recollection as to how that cleaning fluid was
15 handled?

16 A. It refreshes my recollection. I
17 discussed my objective regarding the hope that we had
18 at the time as to go to the laundry company and
19 institute this approach. I do not recall if that was
20 ever done. And this is why my answer previously, I
21 don't know.

22 Q. Just so I'm clear, is it that you don't
23 recall that it was actually incinerated or you don't
24 recall whether Monsanto made the offer to the laundry
25 company?

1 A. I don't recall either one of those.

2 Q. Okay. Now, there's another reference in
3 here. You see where it says "All tanks are," quote,
4 'buttoned up,' unquote, "so that operators don't have
5 to look in." You see that?

6 A. Yes.

7 Q. All right. What does that mean?

8 A. At one time, there was a large circular
9 opening on each tank which was provided with a lid,
10 but for the convenience of the operator, that lid
11 would be removed and set off to the side. And that
12 practice was condoned up until this point in time,
13 the 1970s. We insisted then --

14 Q. Mr. Papageorge, when you said this point
15 in time, you pointed to the article which is dated
16 April 21, 1971, is that correct?

17 A. Yes, that's why I said the 1970s.

18 Q. All right.

19 A. Instead of a cover plate, which would be
20 bolted to this opening, we provided what is known in
21 the industry as a sight glass, which is just what it
22 is, it's a glass cover such that the operator can,
23 with the aid of either a fixed light or a flashlight,
24 can look into the reactor.

25 Q. Okay. So that when they had the plate

1 bolted on there, when anyone removed that plate, it
2 was just a hole, there was no glass cover?

3 A. That is right.

4 Q. Okay. And was that glass plate provided
5 to reduce PCB emissions?

6 A. Yes.

7 Q. Where did the workers eat at that plant?

8 A. We're talking still the Krummrich plant.

9 Q. Yeah.

10 A. The reason I'm hesitating is there was a
11 change made. I believe -- in the '70s, there was a
12 centrally located cafeteria and the employees went to
13 that site either with their lunch that they brought
14 from home or purchased at this -- in this separate
15 building.

16 Q. It was a separate building?

17 A. Yes.

18 Q. To get from the PCB area to the lunch --
19 to the cafeteria, excuse me, they would have to go a
20 certain distance?

21 A. Yes.

22 Q. Approximately how far?

23 A. About three or four city blocks.

24 Q. Good size complex.

25 A. Yes.

1 Q. Were they instructed to clean up before
2 eating?

3 A. Yes.

4 Q. Were they told that that was a
5 hygiene -- an important hygiene measure?--

6 A. That's true for industrial chemicals,
7 wash up, wash your hands, wash your face.

8 Q. Were they told --

9 A. Go eat.

10 Q. Were they told what to use in washing
11 PCBs off?

12 A. Other than the soap and water that's
13 available throughout the plant.

14 Q. Okay. Now, I want to direct your
15 attention to a different section of the article.
16 Under the heading of educating customers, it says "We
17 tell our customers that if they ignore us, we may be
18 forced to stop selling them PCBs." Was that your
19 prac -- let me go back for a second. Ignore us with
20 regard to what?

21 A. At that time, we were encouraging all
22 our customers to avoid the release of PCBs to the
23 environment by tighter and tighter controls. And we
24 said you may not believe this is necessary, but we
25 assure you that if we don't tighten up, some

1 government agency or agencies are going to force us
2 to tighten up and they're going to force us to stop
3 using the material or stop selling it. That was the
4 message we tried to convey.

5 Q. Okay. Was it part of the message that
6 Monsanto would on its own stop selling it to
7 customers who did not tighten up?

8 A. It was not a Monsanto stated formal
9 policy, but some of our marketing people implied
10 that, yes.

11 Q. Do you know if that was implied to P. R.
12 Mallory?

13 A. I do not know.

14 Q. Mr. Papageorge, what were you doing
15 between -- before 1965?

16 A. I was a general superintendent of
17 manufacturing at the Krummrich plant.

18 Q. And that included manufacturing of PCBs
19 and the other chemicals made at Krummrich?

20 A. No, I was not involved with
21 manufacturing PCBs at that time.

22 Q. Okay. How long were you general
23 superintendent at Krummrich?

24 A. One year.

25 Q. Okay. From '65 -- from '64 to '65?

1 A. Yes.

2 Q. Before '64.

3 A. I was at the John F. Queeny plant of
4 Monsanto located in St. Louis. And I was general
5 superintendent of distribution, shipping,
6 warehousing, utilities, et cetera.

7 Q. How long did you hold that position?

8 A. As best as I remember, something like
9 1961 to 1964, or '62 to '64.

10 Q. What did they make at that plant?

11 A. I don't think I can remember all the
12 chemicals. About a hundred different chemicals.

13 Q. Okay. I won't ask you to give me the
14 names of them, of any of them. How about in '60,
15 1960?

16 A. About 1960, I was a superintendent in
17 the plant, that same plant, Queeny plant, St. Louis,
18 superintendent of technical services, which was the
19 engineering department in the plant.

20 Q. Okay. Let me show you a document that
21 was marked yesterday as Weber Exhibit 3. Have you
22 seen that before?

23 A. Yes, I have.

24 Q. Okay. As you can see, it's apparently
25 authored by Paul Benignus in 1960.

1 A. Yes.

2 Q. Did you work with Mr. Benignus?

3 A. When?

4 Q. Not -- at anytime.

5 A. Yes, I have.

6 Q. Okay. Was that during the time you were

7 the informational hub for PCBs?

8 A. Yes.

9 Q. All right. Well, did you work with him

10 around 1960?

11 A. No.

12 Q. Okay. Are you familiar with the

13 circumstances under which that document was

14 distributed by Monsanto?

15 A. No.

16 Q. Okay. But you have seen it before?

17 A. Yes.

18 Q. Do you remember whether that was used at

19 all by Monsanto in the '70s, that particular

20 document?

21 A. There was a document in existence in

22 1970 that I believe was a revision of this one with a

23 later date.

24 Q. Was it the same format?

25 A. It appears to be. I'm assuming that

1 these dash lines down the left-hand edge is a spiral
2 bound? All I remember is a black cover that referred
3 to the electrical industry and Aroclors, and it was
4 an updated version.

5 Q. Okay.

6 MR. CUKER: I'm going to ask that that
7 be produced. I'll send a formal letter.

8 MR. MOORE: Okay. We'll take a look at
9 it when we get it.

10 MR. CUKER: Okay.

11 THE WITNESS: This may be a copy of the
12 original, but it just looks different because it is a
13 copy.

14 Q. (BY MR. CUKER) Okay. I want you to
15 turn to page ninety-nine. All right. I just want to
16 read one paragraph. I'll read it out loud.

17 On page ninety-nine it says "Capacitor
18 impregnations may be done at temperatures as high as
19 two hundred sixty-six degrees Fahrenheit, one hundred
20 and thirty degrees centigrade. Following
21 impregnation and draining the chamber, exhaust
22 ventilation should be supplied to the chamber to
23 prevent askarel vapors entering the work room."

24 MR. MOORE: Just one slight thing, Mark,
25 I think it says applied to the chamber rather than

1 supplied to the chamber.

2 MR. CUKER: Okay, applied to the
3 chamber.

4 Q. (BY MR. CUKER) "Also, when opening a
5 heated capacitor impregnating chamber, the workmen
6 should wear a respirator during this short interval
7 of exposure."

8 Was that instruction applicable in the
9 1970s, Mr. Papageorge?

10 A. It is applicable, but it's dependent
11 upon the amount of fumes that would billow out of the
12 unit. If the unit was allowed to cool down for an
13 extended period of time, such when you opened the
14 chamber nothing happened in the way of fumes, it
15 would just not be appropriate to ask the man to go
16 get a respirator and put it on. So there's a
17 judgment call required here.

18 Q. So if the Aroclor had cooled completely
19 or near completely, that would not be indicated?

20 A. That is true.

21 Q. If the Aroclor were still hot and giving
22 off fumes, that would still be appropriate?

23 A. Yes.

24 MR. CUKER: Off the record.

25 (A discussion was held off the record.)

1 Q. (BY MR. CUKER) All right.

2 Mr. Papageorge, let me go back to asking about the
3 air sampling. What were the sampling methods and
4 analysis methods used by Monsanto during the period
5 from '70 to '77?

6 A. Sampling method, without getting into an
7 awful lot of detail, which I don't remember a good
8 bit of, it was primarily a method for sucking the air
9 through a series of glass bubblers, as it's called in
10 the trade, which are simply glass vessels in which
11 solvents are present.

12 And the air is -- as it passes through
13 the solvents, the material in the air is trapped in
14 that solvent so that by the time that air goes
15 through a series of these glass vessels and it comes
16 out the other end, there should be no chemical in it,
17 no industrial chemical. These solvents are then put
18 through analytical procedures to determine what
19 materials are present.

20 In early 1970, the method available to
21 the plant for determining PCBs was very crude.
22 Although back in the research department there were
23 attempts made to use the modern gas chromatography
24 and electron capture and mass spectrophotometer, the
25 methodology was not available to the work site. That

1 was in the early '70s.

2 About 1972, the methodology had been
3 developed to the point where the plant was able to
4 use it and, as I remember, the appropriate equipment
5 was purchased for the plant to be able to conduct
6 this. So the entrapment device was essentially the
7 same. The analytical method was the one that was
8 improving with time.

9 Q. You mean in terms of gas chromatography?

10 A. Yes, and the electron capturer and the
11 mass spectrophotometer for verification.

12 Q. Okay. Let me go with these solvents
13 kept in vessels. Was there a series of vessels, one
14 after another after another?

15 A. Yes, as I remember, most commonly, about
16 three will do it.

17 Q. They used three in series?

18 A. Most of the time.

19 Q. Did they ever use less than three?

20 A. I personally never saw less than three.

21 Q. Ever use more than three?

22 A. Yes, on occasion, if you suspect that
23 three doesn't get it all, you add a couple more just
24 to make sure that the last one, when analyzed, shows
25 zero.

1 Q. Okay.

2 A. Which assures you that four, three, two,
3 and one captured it all.

4 Q. Did they -- you recall what type of
5 solvents they used?

6 A. Hexane was the preferred solvent.

7 Q. They use toluene, also?

8 A. That could be used. In any case, the
9 analyst must assure himself that the solvent used
10 doesn't have the material you're looking for in it to
11 start with.

12 Q. That it's not already contaminated.

13 A. That is true. So it in itself is
14 analyzed to start with.

15 Q. Are these vessels, do you know if they
16 were called impingers?

17 A. The word -- to me the word impinger is
18 the device through which the air is introduced and is
19 caused to disperse to form the bubbles through the --
20 it's a sort of a -- it's made of glass.

21 Q. Uh-huh.

22 A. It's almost like a shower head, if you
23 can imagine that, underneath the surface of the
24 liquid, and it causes the air to disperse to get
25 better mixing in the column of liquid above it.

1 Q. Is the impinger then a mechanism within
2 the vessel?

3 A. That's my use of the word, yes.

4 Q. Okay. And if you had three vessels,
5 you'd have three impingers?

6 A. Yes, uh-huh.

7 Q. Did Monsanto ever compare the efficacy
8 of this hexane impinger or the vessel method with
9 other collection methods for air sampling?

10 A. I don't know.

11 Q. Did they ever try organic vapor tubes or
12 carbon tubes as a method of sampling?

13 A. Not to my knowledge.

14 Q. Do you know why they didn't?

15 A. I don't know that they did not.

16 Q. Oh, okay. So then you don't know why
17 they didn't?

18 A. That's right.

19 Q. Okay.

20 MR. CUKER: Can we have this marked as
21 Papageorge 2?

22 (Papageorge Deposition Exhibit No. 2 was
23 marked by the court reporter for identification.)

24 Q. (BY MR. CUKER) Mr. Papageorge, I've had
25 marked as Papageorge Exhibit 2 the American National

1 Standard Guidelines For The Handling And Disposal Of
2 Capacitor And Transformer Grade Askarels Containing
3 PCBs. It was produced by Monsanto in the Paoli
4 Railroad. And it also bears the date stamp numbers
5 PRR 002919 through 2954.

6 You were the chairman of that -- the
7 committee that issued that standard, Mr. Papageorge?

8 A. Yes.

9 Q. Mr. Papageorge, I want to call your
10 attention to page ten of that document. In the
11 right-hand column of page ten, the first full
12 paragraph, it says there "Breathing vapor or fumes
13 from heated askarel should be avoided. Provisions
14 should be made for adequate ventilation and
15 regulation of manufacturing operations to avoid open
16 exposure to askarel," parenthesis, "especially at
17 temperatures of fifty-five degrees C or higher," end
18 parenthesis.

19 Why was it determined that these
20 precautions should be taken especially at
21 temperatures of fifty-five degrees C or higher?

22 MR. BUSTER: Object to form. Lack of
23 foundation.

24 THE WITNESS: I don't know the reason
25 personally for selecting fifty-five centigrade. It's

1 just the -- my understanding is that this is the
2 consensus of the representatives of capacitor
3 manufacturers that this was a reasonable, practical
4 kind of temperature that might be encountered in the
5 work place, and they felt that this was a pretty good
6 control temperature.

7 Q. (BY MR. CUKER) Okay. Well, what do you
8 mean by a pretty good control temperature?

9 A. Well, they could have set it say at a
10 hundred degrees centigrade, but in order to be on a
11 conservative side, drop it down. And then they
12 discuss well, how far do we drop it. And the
13 consensus of the group ended up at fifty-five. How
14 they arrived at fifty-five and not sixty or fifty, I
15 don't know.

16 Q. Okay. I just want to know, how do they
17 arrive at the concept of beneath a hundred?

18 A. I don't know that.

19 Q. Did you participate in their
20 discussions?

21 A. No.

22 Q. How -- was that -- were they their own
23 subcommittee?

24 A. Yes, there was two committees, one on
25 capacitors, one on transformers. They would go back

1 and have work sessions.

2 Q. And you would only participate in the --

3 A. In the plenary meetings, when the two
4 groups got together.

5 Q. So you did not have any input into that
6 particular guideline?

7 A. No, that particular one, no.

8 Q. The same if you turn to page 11, under
9 the second paragraph, it also says there "Enclosed
10 systems of sealed piping, properly gasketed joints,
11 valves, containers, and processing chambers should be
12 used for any portion of the processing where askarel
13 temperatures may exceed fifty-five degrees C." Is
14 your answer the same with regard to that guideline?

15 A. Yes.

16 Q. You know if anyone from Monsanto sat in
17 or participated in the -- with the capacitor
18 subcommittee?

19 A. Not as an active member, no. We --
20 Monsanto people were ex officio.

21 Q. What does that mean in this context?

22 A. We were there primarily to provide a
23 status report on the results of our Monsanto testing
24 programs that I described earlier and also to bring
25 the groups up-to-date on PCB information that I might

1 get from other laboratories and from government
2 agencies. That was our primary role in this.

3 Q. Okay.

4 MR. CUKER: Off the record.

5 (A discussion was held off the record.)

6 (A lunch break was taken.)

7 Q. (BY MR. CUKER) During the lunch break,
8 were you with Messrs. Buster and Schneider?

9 A. Yes.

10 Q. Okay. Did you discuss anything about
11 the relationship between Monsanto and the Mallory
12 Company during the lunch break?

13 A. No.

14 Q. Okay.

15 MR. CUKER: Let's mark these Papageorge
16 Exhibits 3, 4, and 5.

17 (Papageorge Deposition Exhibits Nos. 3
18 through and including 5 were marked by the court
19 reporter for identification.)

20 THE WITNESS: I've looked them over.

21 Q. (BY MR. CUKER) Okay. Mr. Papageorge,
22 did you have anything to do with composing a language
23 on any of those Aroclor labels that are marked 3, 4,
24 and 5?

25 A. I was involved in the wording associated

1 with environmental contamination and wording that
2 referred to storing away from food, pharmaceuticals,
3 animal feedstuffs.

4 Q. Who was involved with the wording of
5 let's say the industrial hygiene type wordings?

6 A. That is initiated by the representatives
7 of the medical department.

8 Q. Do you know specifically who in the
9 medical department was involved in composing these
10 labels?

11 A. Exhibit 5, the references to avoiding
12 contact and prolonged breathing of fumes were
13 principally the work of Dr. Emmet Kelly, assisted by
14 Mr. Elmer Wheeler.

15 Q. Dr. Kelly leave the company in 1975?

16 A. He retired in 1973, as I remember, late
17 '73.

18 Q. Okay.

19 A. Exhibits 3 and 4 references to
20 industrial hygiene matters were similar to the
21 wording of Exhibit 5 but were reviewed by Mr. Elmer
22 Wheeler.

23 Q. Were reviewed by Mr. Elmer Wheeler in
24 connection with the composition of Exhibit 5 or were
25 they reviewed by Mr. Wheeler when Exhibits 3 and 4

1 were composed?

2 A. Mr. Wheeler was involved in the
3 preparation of Exhibit 5, assisting Dr. Kelly.

4 Q. Okay.

5 A. When Exhibits 3 and 4 were being
6 prepared, Mr. Wheeler reviewed the wording that did
7 appear on 5 to see if it was still relevant to the
8 situation as it existed in the '70s when Exhibits 3
9 and 4 were prepared.

10 Q. Can you tell what the -- can you
11 determine a date for Exhibits 3, 4, or 5?

12 A. Not from looking at the exhibits.

13 Q. Is there any other source of information
14 that Monsanto would have that would indicate the
15 dates on which these labels were used?

16 A. That I don't know. I would refer to the
17 cataloging number at the lower right-hand corner and
18 see if that led me to further information.

19 Q. But it is your testimony that Exhibit 5
20 was prepared by Dr. Kelly presumably before his
21 retirement?

22 A. Oh, yes, this -- the wording on
23 Exhibit 5 has been in existence since the '50s, if
24 not earlier.

25 Q. Okay.

1 MR. MOORE: Mr. Papageorge is referring,
2 for clarification, to the cautionary language
3 regarding handling, right?

4 THE WITNESS: The industrial hygiene
5 message has been in existence since the late '40s,
6 maybe even earlier.

7 Q. (BY MR. CUKER) Okay.

8 A. But I know it's '40s, '50s, '60s, on to
9 the present.

10 Q. Okay. Now, the Exhibits 3 and 4, are
11 they more recent or less recent than Exhibit 5?

12 A. Exhibits 3 and 4, if I remember
13 correctly, date from about 1973.

14 Q. Okay.

15 MR. MOORE: For the record, too,
16 Mr. Cuker, I might point out that the exhibits that
17 you've marked are copies of documents that were
18 produced in discovery.

19 MR. CUKER: Sure.

20 MR. MOORE: They're in black and white.
21 The originals were in color. And page two of both
22 Exhibit 3 and 4 are in reduced size for convenience
23 in producing the documents.

24 MR. CUKER: Okay. Can either of you
25 inform me as to what the size of the reduction is?

1 MR. MOORE: I can tell you that the
2 actual label might be fifty percent to a hundred
3 percent larger than this. Mr. Papageorge can check
4 me on that.

5 THE WITNESS: The messages shown on the
6 second page of Exhibits 3 and 4 appear -- they are
7 lithographed on steel drums and cover the
8 circumference of the drum, the whole circle. So I
9 would suggest that these are about a fourth of the
10 original size, roughly.

11 Q. (BY MR. CUKER) When you say
12 lithographed on steel drums, they're put on -- go
13 ahead.

14 A. It's a yellow painted drum and this
15 wording is printed right on that yellow paint, and
16 it's a permanent part then of that drum.

17 Q. I understand.

18 A. The first page, which identifies a
19 specific type of Aroclor, is a paper label, which
20 affixes to the drum, and it refers to the message
21 already on the drum.

22 Q. Now, in situations where Aroclor was not
23 transported by drums but in bulk by tank car, what
24 kind of measures did Monsanto take to see to it that
25 the people using the chemical were informed of these

1 warnings?

2 A. The purchaser of the material had
3 already been given the information that's on the
4 label.

5 Starting in 1972, copies of the labels
6 were folded and inserted in plastic envelopes that
7 were attached to the dome of the tank car or the tank
8 truck, if that was the mode of transportation, such
9 that an employee approaching that dome to open it,
10 the first item he would see would be this tag and
11 would have to remove the tag to break the seal on the
12 dome to get to the contents.

13 Q. Okay. What is the dome of the tank
14 truck?

15 A. Well, it's usually a -- it's a
16 misnomer. It's really the valve. And the cover --
17 some of these are covered so that the valve itself is
18 not damaged by any accidental bumping, knocking.

19 Q. Okay. I'm trying to visualize a valve
20 on the truck. So was there a paper label placed on
21 this valve so you couldn't open the valve without
22 dealing with the label?

23 A. No, the label was in a plastic envelope
24 which in turn had a wire that was fastened onto the
25 valve handle for the drum. I'm sorry, for the

1 trucks.

2 Q. In situations where -- okay. Now, were
3 these situations where Monsanto transported the
4 Aroclor by tank car?

5 A. Monsanto? Yes.

6 Q. Okay.

7 A. Yes.

8 Q. In other words, it was a Monsanto
9 driver, a Monsanto truck?

10 A. No, no, no.

11 Q. Okay.

12 MR. MOORE: You might clarify that in
13 the '70s, the material was sold FOB Monsanto's
14 plant. Isn't that right, Mr. Papageorge?

15 THE WITNESS: That is correct.

16 Q. (BY MR. CUKER) Okay.

17 A. To clarify, the truck movements were
18 few. But they were of the type where the purchaser
19 would arrange for a truck to arrive at the Monsanto
20 plant to receive the load. Monsanto was not involved
21 in arranging for that truck or providing drivers or
22 anything.

23 Q. Was Monsanto involved with assuring that
24 this label would be connected to the valve of the
25 truck?

1 A. Yes.

2 Q. So that would mean when the person --
3 when the truck pulled up to the plant and when they
4 pumped the Aroclor onto the truck, the tank truck,
5 they would -- they closed the valve, they would put
6 this label there?

7 A. Yes.

8 Q. Okay. Are you familiar with how PCBs
9 were transported to the Waynesboro plant?

10 A. I think I am, yes.

11 Q. Okay. Do you know how they were
12 transported?

13 A. Tank car.

14 Q. Railway tank car?

15 A. Yes.

16 Q. You know how -- to Lawrenceburg,
17 Tennessee?

18 A. Lawrenceburg?

19 Q. Yes, sir.

20 A. I have never heard Lawrenceburg.

21 Q. Okay. Do you know where the railroad
22 tank car went to?

23 A. I assumed it was Waynesboro. I don't
24 think the switching arrangements or --

25 Q. Okay. Were you aware that they were

1 transported by railway tank carrier to Lawrenceburg
2 and then transferred to a truck tank in Lawrenceburg?

3 A. No, I wasn't.

4 Q. Okay. Did Monsanto advise its customers
5 to relay the information, the warnings contained in
6 these labels, to their employees?

7 A. Yeah.

8 Q. In situations where the delivery was in
9 bulk as opposed to by drums.

10 A. We advised the customer of the proper
11 way to handle these materials. Now, we did not look
12 them in the eye and say now, you go tell your
13 employer. We assumed that that was the practice.

14 Q. Okay. That was your expectation?

15 A. Yes.

16 Q. Was that your expectation with P. R.
17 Mallory?

18 A. Yes.

19 Q. And that is true of the period 1970
20 through 1977?

21 A. Yes.

22 MR. CUKER: Off the record.

23 (A discussion was held off the record.)

24 Q. (BY MR. CUKER) Mr. Papageorge, I'm
25 going to show you an exhibit that's already been

1 marked Weber Exhibit 2, and I'm going to ask you some
2 questions on -- about page seventeen of the exhibit.

3 A. I have read it.

4 Q. Okay. Did you help prepare any of the
5 information that's contained on that page seventeen?

6 A. No.

7 Q. Okay. Now, you note there is a
8 reference to lower chlorinated Aroclors being more
9 volatile. You see that?

10 A. Well, I'd like to not correct, but
11 amplify a little.

12 Q. Sure.

13 A. You'll notice the references to
14 polychlorinated polyphenyls. Now, that covers more
15 than just biphenyls.

16 Q. Okay.

17 A. And this then sentence says that the
18 lower chlorinated ones, I'm assuming that's
19 polyphenyls, being -- yes. The statement is true as
20 it applies to the polyphenyls.

21 Q. Is it not true as applied to biphenyls?
22 Or let me ask you this, was Monsanto's thinking in
23 1971 when this document was prepared that it was not
24 true as it applied to biphenyls?

25 A. That's true, they were more volatile.

1 Q. By --

2 A. It's a matter of degree.

3 Q. I understand.

4 A. It's more dramatic for the polyphenyl
5 family than it was just biphenyls.

6 Q. So the lower chlorinated biphenyls were
7 more volatile?

8 A. Correct.

9 Q. And was it also Monsanto's position that
10 being more volatile, they presented more of a
11 potential problem from the standpoint of both
12 inhalation --

13 MR. MOORE: And skin contact is what it
14 says.

15 Q. (BY MR. CUKER) And skin contact?

16 A. That's true.

17 Q. Okay. Now, and then later on it says
18 here "Inhalation tests on animals indicate that the
19 maximum safe concentration of vapor is in the range
20 of 0.5 to 1.0 milligrams of the lower chlorinated
21 Aroclor compounds per cubic meter of air," is that
22 right?

23 A. That is correct.

24 Q. Now, lower chlorinated ones could be
25 Aroclor 1242? Would that be one of the lower

1 chlorinated ones?

2 A. Yes. In fact, that is specifically
3 mentioned.

4 Q. Okay.

5 A. As it refers to the one milligram per
6 cubic meter.

7 Q. Okay. Was Aroclor 1016 in production by
8 November '71?

9 A. Yes.

10 Q. Okay. Would that also be one of the
11 lower chlorinated?

12 A. Yes.

13 Q. Okay. Now, it then says that the TLV
14 set by the -- I guess it's the ACGIH, or really here
15 it's just called the ACGH, are 1.0 milligrams of the
16 lower chlorinated compound and 0.5 of the more highly
17 chlorinated compounds. Okay?

18 Now, was Monsanto of the opinion that it
19 was desirable to keep the lower chlorinated compounds
20 below 0.5 milligrams per cubic meter of air,
21 notwithstanding that the ACGH had a TLV of 1.0?

22 A. I never understood it that way. There
23 was a difference between 1 and .5, and it was applied
24 selectively.

25 Q. I don't think I understand your answer.

1 A. If the material present in the working
2 environment was classified by practice as lower
3 chlorinated, then the 1 milligram per cubic meter
4 standard would be the guideline.

5 If on the other hand -- and that would
6 be -- Aroclor 1242 would fit that. If the material
7 were an Aroclor 1254, which was used in transformers,
8 then the .5 would apply.

9 Q. 1254 was not used in capacitors?

10 A. Not to my knowledge.

11 Q. But didn't Monsanto recommend to its
12 customers that even with 1242, they should try to
13 keep it below 0.5 milligrams per cubic meter?

14 A. I don't remember that. I -- I didn't
15 suggest that. Otherwise, the guideline is
16 meaningless.

17 MR. CUKER: Well, let's have this marked
18 Papageorge 6.

19 (Papageorge Deposition Exhibit No. 6 was
20 marked by the court reporter for identification.)

21 THE WITNESS: I've reviewed the
22 document.

23 Q. (BY MR. CUKER) Okay. Mr. Papageorge,
24 this is obviously a letter from you to Gene Lewis at
25 the Waynesboro plant dated July 7th, 1970.

1 For the record, it's produced by
2 Monsanto, stamped BRW 001874 through 1876.

3 Now, there in the fourth paragraph you
4 state "Aroclors, being chlorinated hydrocarbons,
5 should not be permitted to exceed 0.5 to 1.0
6 milligram per cubic foot of air in the work area."
7 Did you mean meter of air?

8 A. I should have said meter. That's a
9 typographical error. Also, in hindsight, this should
10 have been or on. Then I should have elaborated on
11 the types.

12 Q. You knew that Mallory was using Aroclor
13 1242?

14 A. Correct.

15 Q. Not 1254. Now, you testified earlier
16 today that you had a -- you do recall one meeting at
17 the Waynesboro plant at which you discussed hygiene
18 practices with a group of about six people, you
19 said.

20 A. Yes.

21 Q. Was that meeting on or about the time of
22 this letter?

23 A. It was -- this letter is in response to
24 my observations of that meeting.

25 Q. Okay. So you talked with them and then

1 you sent this letter?

2 A. And then I went back to my desk and
3 prepared this letter.

4 Q. Okay. Now, I assume that there were no
5 air samples taken during your trip down to
6 Waynesboro?

7 A. That is correct.

8 Q. How were you able to determine that the
9 levels were in excess of 0.5 to 1.0?

10 A. I wasn't. I was just really reminding
11 them of something that I felt they already knew.

12 Q. Did you suspect that the levels were in
13 excess of those amounts based upon what you saw and
14 felt there?

15 A. I don't know that I suspected, I just
16 wanted to make sure that they didn't exceed it. I
17 knew I could smell the material, but that doesn't
18 tell me how much is there. And I could visually see
19 something there in the room.

20 Q. Did you see -- well, can you recall that
21 visit other than what's in this letter? Can you
22 remember that today?

23 A. Yes, I do, uh-huh.

24 Q. Okay. Can you see fumes coming out of
25 the impregnation tanks?

1 A. No. No, in fact, I don't know that they
2 opened a tank while I was there. No.

3 Q. So the fumes were just in the plant
4 itself?

5 A. Yes.

6 Q. Were they throughout the plant?

7 A. As I remember, it's a large area, big
8 bay, and I could see across, and the lights to
9 illuminate the area had a rainbow effect around them,
10 sort of a bluish haze.

11 Q. Okay. Was the fact that the -- you use
12 the term in there, "The amount was high enough to
13 cause eye irritation which persisted for several
14 hours after the exposure." Did that suggest to you
15 that the levels might be in excess of those
16 recommended levels?

17 A. No, it suggests to me that this is more
18 than I had witnessed anywhere else.

19 Q. Okay.

20 A. I didn't know the level. There was no
21 way -- I had nothing to judge it with.

22 Q. Anywhere else meaning?

23 A. Monsanto's experience. And then I had
24 been to a few other capacitor plants before this
25 visit.

1 Q. Okay. Did you ever visit levels -- did
2 you ever visit -- was that more than you were to
3 visit anywhere else in the future?

4 A. I saw a few others after that, also,
5 similar, uh-huh.

6 Q. Okay. Were those Mallory plants?

7 A. No.

8 Q. Do you remember Mr. Pat Boo of the
9 Mallory Company?

10 A. I recall the name, but I don't -- I
11 don't remember what the man looked like.

12 Q. Okay. Did you ever tell Mr. Boo that
13 there were no hazards involved in the use of Aroclor
14 1016?

15 A. I don't recall that. That wouldn't be a
16 correct statement.

17 Q. Was anybody at Monsanto authorized to
18 make that kind of a statement to a customer?

19 A. No. No, because you have to describe
20 the conditions a little better.

21 Q. Okay. That would not have been a
22 correct statement in 1972?

23 A. No.

24 (Papageorge Deposition Exhibit No. 7 was
25 marked by the court reporter for identification.)

1 Q. (BY MR. CUKER) Mr. Papageorge, Exhibit
2 7 is a document stamped BRW 003381, a letter from you
3 to Donald Wilson at P. R. Mallory, January 25th,
4 1972. Is the commissioner referred to in that letter
5 the FDA commissioner?

6 A. Yes.

7 Q. And were those the information -- that
8 information relayed to FDA guidelines or rules
9 related to PCB composition in food?

10 A. Yes.

11 Q. Was that -- would that information have
12 been the actual regulations themselves or something
13 else?

14 A. No, this was a report of what Charles
15 Edwards was divulging to the press as to the thinking
16 of FDA regarding the presence of PCBs as an
17 adulterant in foods. And they were considering
18 making formal guidelines and publishing them in the
19 federal register and going through the formal process
20 of establishing a guideline.

21 Q. Is an adulterant the same as a
22 contaminant?

23 MR. MOORE: Well, that's a legal
24 question.

25 MR. CUKER: Excuse me, I honestly didn't

1 know.

2 MR. MOORE: Yeah.

3 Q. (BY MR. CUKER) What's an adulterant?

4 MR. MOORE: To Mr. Papageorge's
5 understanding.

6 MR. CUKER: Sure.

7 THE WITNESS: To my understanding, this
8 is a material that's present in food that is either
9 deliberately or nondeliberately added. And it adds
10 nothing to the value of that food.

11 MR. CUKER: Okay.

12 (Papageorge Deposition Exhibit No. 8 was
13 marked by the court reporter for identification.)

14 Q. (BY MR. CUKER) Mr. Papageorge, I'll
15 show you Papageorge Exhibit 8. It's a document
16 stamped BRW 003382, your letter to Arnold Doty of
17 June 15th, 1972.

18 A. I have reviewed the document.

19 Q. Okay. Mr. Papageorge, what is the --
20 what is meant by a sample of Aroclor 1016?

21 A. This is a small quantity of the material
22 that is typical of what is produced and shipped.

23 Q. So it actually is the oil? You actually
24 sent him the oil?

25 A. Yes.

1 Q. Okay.

2 A. And that's what the laboratory uses to
3 run through their analytical system to prepare their
4 standard chart. And then they run an unknown sample
5 through which prepares the other chart, and the two
6 charts are compared.

7 Q. And that's how they determine the level
8 of Aroclor?

9 A. The type of Aroclor and the level, yes.

10 Q. Okay. Now, you also refer to enclosing
11 Monsanto's analytical procedure. Would the
12 analytical procedure have included information about
13 sampling methods or simply have gone into the methods
14 of analysis of the sample?

15 A. Analysis of a sample.

16 Q. Okay. It would not have gone into
17 sampling methods itself?

18 A. No.

19 Q. And you described in -- I think in 1970,
20 you described Monsanto's analytical procedure as
21 crude due to the early stage of the technology at the
22 time.

23 MR. MOORE: Well, that's not really an
24 accurate characterization. I think you need to
25 specify just what techniques you're talking about

1 when you characterize it as that.

2 Q. (BY MR. CUKER) Well, let me -- I just
3 really want to know, you did use the word crude to
4 apply to some technique which Monsanto used in 1970.
5 I just want to know, was that also true in 1972?

6 A. No, by 1972, it became quite
7 sophisticated.

8 Q. Just so the record is clear, what is the
9 technique that you described as crude?

10 A. It amounted really to converting all of
11 the chlorine that's present in the sample to a solid
12 material. Generally, it was silver chloride in the
13 laboratory. And then weighing that silver chloride
14 to see how much you determined. Now, that's --

15 Q. That's crude.

16 A. It picks up chlorine of all kinds and is
17 subject to the errors that are prevalent in weighing
18 solid materials and transferring them to the proper
19 container with which it can be handled and weighed
20 and then such.

21 MR. MOORE: I think, if I can shortcut
22 this --

23 MR. CUKER: Sure.

24 MR. MOORE: And I apologize if I'm
25 interfering, Mark.

1 MR. CUKER: That's okay.

2 MR. MOORE: Mr. Papageorge was just now
3 speaking of the techniques that were available in the
4 plant by 1970. By 1972, gas liquid chromatography
5 had reached the point where it could be put in the
6 plant away from the very sophisticated analytical
7 laboratories, as such. If I'm expressing myself
8 clear.

9 Q. (BY MR. CUKER) Let me just ask you one
10 thing. You talked about the sampling procedures
11 before and these glass vessels. You know what a flow
12 rate is?

13 A. Flow rate?

14 Q. Yeah.

15 A. Yes, sir.

16 Q. Do you recall what the recommended flow
17 rate was for sampling of Aroclor in air when Monsanto
18 did it?

19 A. No, I don't. I don't know the number.
20 But there is an optimum flow rate which assures
21 capture of the unknown material in the solvents.
22 Otherwise, it's pulled through so fast that it
23 becomes inefficient.

24 Q. Right.

25 A. I'd like to also, if I can add, this

1 memorandum does not really tell me which analytical
2 procedure was provided here, whether it's for air,
3 water, or solid material.

4 Q. That's true, yeah. I assume you have no
5 recollection of what it was?

6 A. No, I don't, not in this case.

7 Q. Okay. Who was Carl Clay?

8 A. A Monsanto salesman.

9 Q. Did he cover Waynesboro?

10 A. For a while, yes.

11 (Papageorge Deposition Exhibit No. 9 was
12 marked by the court reporter for identification.)

13 Q. (BY MR. CUKER) Mr. Papageorge, Exhibit
14 9 is your letter to J. R. Wood of P. R. Mallory dated
15 February 22nd, 1973 stamped BRW 003384.

16 A. I've read it.

17 Q. Okay. What's a request for a sample?

18 A. It was a form that Monsanto instituted,
19 as I recall, in late '72. I don't recall the exact
20 wording, but it -- the intent was to assure that the
21 recipient of the sample understood that it was not to
22 be mishandled and that it could be an environmental
23 contaminant and the like. And the individual was
24 asked to sign that he had read the above and it would
25 be returned to me. And that would then be sent to

1 the laboratory for a sample to be shipped.

2 Q. Was this sample -- can you tell from the
3 context of this letter whether this is also a sample
4 being sent for analytical purposes like the sample
5 that you sent to Mr. Doty?

6 A. That is the intent of these samples,
7 yes.

8 Q. Okay.

9 (Papageorge Deposition Exhibit No. 10
10 was marked by the court reporter for identification.)

11 Q. (BY MR. CUKER) Mr. Papageorge, Exhibit
12 10 --

13 MR. BUSTER: I'd like to see that for a
14 second, please.

15 MR. CUKER: I'm sorry.

16 THE WITNESS: I've read it.

17 Q. (BY MR. CUKER) Okay. This is a call
18 report dated -- the date it was typed would be
19 8/7/73, stamped BRW 003117.

20 MR. MOORE: The best I can tell from a
21 quick review, Mark, there is no indication that this
22 was sent to Mr. Papageorge, is that correct?

23 MR. CUKER: You're asking me?

24 MR. MOORE: Well, obviously you've
25 studied it and I've just looked at it.

1 MR. CUKER: No, his name does not appear
2 on the document.

3 Q. (BY MR. CUKER) Do you know what it
4 refers to where it says "I understand that the fire
5 results were filmed and that this film may be
6 available for showing to customers?"

7 A. I think I do.

8 Q. Can you tell me?

9 A. In the program for finding alternative
10 capacitor fluids, the laboratory, in testing out
11 these potential alternatives, exposed the material to
12 a standard fire test. I don't know the specifics of
13 it, but as I understand it, it is a test that the
14 underwriters laboratories have established decades
15 back.

16 These materials, as they're being
17 tested, are filmed. And they're referring here to
18 the film that was obtained when this particular
19 material, MCS 1475/1480, was tested for fire
20 resistance.

21 Q. So that is a test for MCS 1475 and not
22 for Aroclor 1016?

23 A. That is true.

24 Q. Okay. Did Mallory do any of that
25 testing or was that just done by Monsanto in its

1 product development?

2 MR. MOORE: If you know.

3 Q. (BY MR. CUKER) If you know.

4 A. I don't know what Mallory tested. I do
5 know that Monsanto, when they tested those materials,
6 did perform this test.

7 Q. And did you -- are you familiar with
8 this film? Have you seen this film?

9 A. I have seen several films. I don't know
10 today which product was being tested.

11 Q. Okay.

12 A. I don't remember which product was being
13 tested.

14 Q. Okay. I asked you earlier about flow
15 rates, and I think you said you couldn't recall the
16 exact recommended flow rate. Do you recall whether
17 the recommended flow rate was less than one liter per
18 minute for an air sample?

19 A. I just don't remember a number.

20 Q. Okay.

21 (Papageorge Deposition Exhibit No. 11
22 was marked by the court reporter for identification.)

23 Q. (BY MR. CUKER) Mr. Papageorge, marked
24 as Exhibit 11 is your letter to Mr. Doty of 3/19/74
25 stamped BRW 003605 and 6.

1 A. Did you say this was my letter?

2 Q. I'm sorry, excuse me, Mr. Papageorge,
3 that's Scott Tucker's letter. You're just copied in
4 on it.

5 A. I have read it.

6 Q. Do you remember -- do you recall the
7 background of why a chromatogram was sent to
8 Mr. Doty?

9 A. The only background I recall is that
10 Dr. Doty was interested in what the standard solution
11 graph looked like and what each of these peaks --
12 which peaks for 1242 matched the peaks in Aroclor
13 1016. I don't recall anything other than that.

14 Q. Standard solution meaning the same as
15 what you've -- as the sample analysis that you
16 described earlier?

17 A. Yes, unused material.

18 Q. Okay.

19 (Papageorge Deposition Exhibits Nos. 12
20 through and including 15 were marked by the court
21 reporter for identification.)

22 Q. (BY MR. CUKER) Mr. Papageorge, Exhibits
23 12 and 13 appear to relate to a visit by Mr. George
24 Smith to Monsanto, Exhibit 12 being a memo dated
25 10/29/74 stamped BRW 003604, and Exhibit 13, I guess

1 is that also in the form of a memorandum?

2 A. Yes.

3 Q. Okay. And that's dated 11/6/74 stamped
4 BRW 0003602 and 3. Do you have any present
5 recollection of that visit at all?

6 A. Yes.

7 Q. Okay. What do you recall about the
8 visit?

9 A. P. R. Mallory was attempting to become
10 self-sufficient, I guess is the word, in doing their
11 own PCB analyses. And they had set up the facilities
12 to do that and then asked Monsanto for advice and
13 some guidance, which we were glad to offer them.

14 And these documents reflect the
15 correspondence that set up the meeting and
16 Dr. Tucker's, a Monsanto analytical chemist, analysis
17 of the total situation resulted from that visit.

18 Q. Okay. Were they going to be
19 self-sufficient in terms of analysis of both water
20 and air?

21 A. That was my understanding.

22 Q. Okay. Was there a time -- was there
23 anytime that there was such a thing as certifying a
24 lab as qualified to do PCB analysis?

25 A. Not to my knowledge.

1 Q. All right. Now, there's a reference in
2 paragraph two to where it says -- you see the
3 sentence says "The check sample was spiked with five
4 ppm," that means parts per million?

5 A. Parts per million.

6 Q. "Aroclor 1016 and he found only fifty
7 percent of the amount added." Is that an indication
8 that they're not detecting all of the Aroclor? At
9 least in that particular sentence, they did not
10 detect all the Aroclor 1016 that they would expect to
11 be there?

12 A. That is right, but they don't know what
13 happened to it. They don't know if it's in the
14 analytical or if it plated out on the equipment, just
15 where it went. All they know is what he saw was half
16 of what he expected to see.

17 Q. Okay. And then it says -- I guess this
18 is Mr. Tucker's words. "It appears that with more
19 experience and some guidance they should be able to
20 accurately and precisely measure PCB levels in
21 effluent samples." Do you know specifically what
22 type of experience that would be?

23 A. Well, those of us involved with PCBs
24 learn the hard way that the more samples a laboratory
25 looks at, the more proficient it becomes and just

1 learns from its mistakes.

2 Q. Okay. Now, on the second page it says
3 "We will send him literature information on
4 adsorption of PCBs with polyurethane foam and
5 internal information, which has been previously
6 released, on the best air sampling techniques."

7 The part about adsorption of PCBs with
8 polyurethane, does that apply to air sample or water
9 sample or both?

10 A. I think this applies to polyurethane
11 foam in these glass chromatograph tubes. There are
12 many -- several materials that could be used.

13 Q. And what does adsorption mean?

14 A. Adsorption means that the chemical
15 attaches itself to the surface of the material as
16 distinguished from absorption which means it goes
17 internally like water in a sponge.

18 Q. So, in other words, the foam would be
19 used to distract the chemical from the sample?

20 A. To capture the chemical as it's run
21 through. And then they send a solvent through to
22 wash that chemical off that foam to concentrate it.

23 Q. Oh, okay.

24 A. That's one use that can be made of it.

25 Q. Okay.

1 A. Uh-huh.

2 Q. And that is -- okay. But is that used
3 after the sample has been taken?

4 A. Yes.

5 Q. To remove the chemical from--the sample?

6 A. It could be used either point. It could
7 be used to concentrate a sample that's already been
8 taken by some other means, or it can be used in the
9 field to substitute for this bubbler train that we
10 talked about earlier to capture a PCB from the air.

11 Q. Right.

12 A. For the original sample.

13 Q. Okay. Now, do you know what the
14 internal information previously released on the best
15 air sampling techniques, you know what that was?

16 A. That was Monsanto's developed method.

17 Q. And was that --

18 A. It had to do with these impinger tubes
19 and the bubblers and the trains and the flow rate we
20 talked about, all of these features. That's the
21 internal -- what he calls the internal method.

22 Q. Okay. Now, I'm just going to skip ahead
23 to Exhibit 15, which is dated 11/25/74, stamped BRW
24 003132. You are copied in on that letter,
25 Mr. Papageorge. Would this -- would that -- well,

1 there's a reference here to copies of literature
2 articles on air sampling.

3 A. Yes.

4 Q. Okay. Would that be any different from
5 what you just described?

6 A. I would suggest that that implies there
7 were articles of systems or methods other than
8 Monsanto's.

9 Q. Uh-huh.

10 A. Because it refers to literature articles
11 as distinguished from the in-house Monsanto -- the
12 internal, what he called the internal method earlier.

13 Q. Okay. Do you know what those articles
14 would be?

15 A. I don't remember them now, no.

16 Q. All right. Can you recall whether the
17 Monsanto internal method of air sampling was
18 disclosed to Mallory?

19 A. Yes, yes.

20 Q. It was?

21 A. Definitely.

22 Q. Would it have been on the '74 visit or
23 before then?

24 A. I think following that.

25 Q. Okay.

1 A. Dr. Tucker mailed it to them, but I have
2 no evidence of that in front of me.

3 Q. Okay. Now, Exhibit 14 involves another
4 sample request form. Is that really the same as what
5 you've already described?

6 A. Yes.

7 Q. For the record, it's a letter -- Exhibit
8 14 is a letter dated 11/20/74, stamped BRW 003129.
9 Scott Tucker was copied in on that letter.

10 A. Yes.

11 Q. Okay.

12 (Papageorge Deposition Exhibit No. 16
13 was marked by the court reporter for identification.)

14 Q. (BY MR. CUKER) Mr. Papageorge, Exhibit
15 16 is your letter to George Wallis, W-a-l-l-i-s,
16 dated January 7th, 1975, bates -- numbered BRW
17 003130, and it refers to an article by Dr. Kenneth
18 Price. Do you remember anything about that article?

19 A. No, I don't.

20 Q. Was it -- whether it was an article in
21 an established journal or a -- it's actually -- I'm
22 sorry, I should say -- it says a report, not an
23 article. Whether it was in the form of an article or
24 a report?

25 A. I just don't remember that.

1 Q. You know who Dr. Kenneth Price was?

2 A. If my memory serves me right, he's a
3 member of EPA. But I'm not certain of that.

4 Q. Okay. You have any -- recall how long
5 it may have been?

6 A. No.

7 Q. Okay.

8 A. I just --

9 (Papageorge Deposition Exhibits Nos. 17
10 and 18 were marked by the court reporter for
11 identification.)

12 THE WITNESS: I've read the documents.

13 Q. (BY MR. CUKER) Okay. For the record,
14 Exhibit 17 is a memo from David Wood dated 6/17/75
15 stamped BRW 002816, and Exhibit 18 is your letter to
16 John Burney of June 19th, 1975 stamped BRW 003131.

17 Can you recall today any discussions
18 with Mr. Burney about the methodology for Aroclor?

19 A. Nothing that's unique other than his
20 request for copies of the latest methodology and --

21 Q. Would this Exhibit 18 have been your
22 sending him the Monsanto methodology for sampling an
23 air?

24 A. Very likely.

25 Q. I know it doesn't say that in the

1 letter, but judging from the context of Exhibit 17,
2 you think that's what it was?

3 A. Well, more specifically, whenever
4 customers, representatives ask for the Monsanto
5 methodology, I would send them all three, air, water,
6 and sediment and solid, all three.

7 Q. Now, in Exhibit 17, there is a reference
8 to the NIOSH collection method. Were you familiar
9 with the NIOSH collection method?

10 A. I was at one time, yes.

11 Q. Do you recall the use of fluorsil,
12 f-l -- I'm sorry, f-l-u-o-r-s-i-l, as a medium for
13 collection in the NIOSH method?

14 A. No.

15 Q. You know what fluorsil is?

16 A. Yes. I don't recall it as a medium for
17 collecting a sample, I recall it as a medium used in
18 analyses.

19 Q. Oh, okay. What is fluorsil, is it a
20 solvent?

21 A. No, it's a solid material. I don't know
22 how to describe it. It's got silicone in it.

23 Q. Was fluorine in it, too?

24 A. Yes. I don't know that.

25 Q. All right.

1 A. I don't know about the fluorine.

2 Q. Did it -- how is it used, as you can
3 recall, is it used the same way as polyurethane foam
4 was used?

5 A. Yeah.

6 Q. In tubes to absorb the material?

7 A. Yeah, absorb, trap.

8 Q. Now, you see a reference here to ASTM
9 D3304 in Exhibit 17.

10 A. Yes.

11 Q. What is that?

12 A. ASTM stands for the American Society of
13 Testing Materials, which is an industry supported
14 group that develops and promotes the use of standard
15 testing methods of all kinds.

16 Q. Okay.

17 A. And this, if I can reference here, this
18 relates really to Monsanto's methods that were
19 offered to ASTM for their consideration and final
20 adoption.

21 Q. Okay. And the number refers to the ASTM
22 adopted method?

23 A. Correct.

24 Q. Okay.

25 (Papageorge Deposition Exhibit No. 19

1 was marked by the court reporter for identification.)

2 MR. MOORE: Mark, as to Exhibit 19, I
3 would note that this document doesn't bear
4 Mr. Papageorge's name either.

5 MR. CUKER: Correct.

6 THE WITNESS: That's from you.

7 MR. MOORE: Go ahead, Bill.

8 MR. BUSTER: I'd like to see it,
9 please.

10 Q. (BY MR. CUKER) Mr. Papageorge, there's
11 a reference here, also, in this letter, which is a
12 letter from David Wood to a Mr. Tuttle of Aerovox
13 Corporation with a copy going to Bud Dibble at
14 Mallory, a letter dated January 19th, 1976 and
15 stamped 035232, a reference there to "The ASTM method
16 for collection of samples from air which should be
17 read in conjunction with ASTM D3304 is D1605." What
18 was ASTM D1605?

19 A. That described the sampling method that
20 was recommended.

21 Q. Was that also an ASTM adoption of a
22 Monsanto sampling method?

23 A. I don't know if that was a Monsanto
24 sampling method.

25 Q. Okay. Do you know what kind of method

1 it was?

2 A. No, I don't.

3 Q. Now, you've looked at documents in the
4 last week relating to a meeting between Monsanto and
5 Mallory in March 1976?

6 A. March '76. I saw references to a
7 proposed meeting and -- huh. I'm aware that a
8 meeting took place, but I don't remember if I saw it
9 in the document or --

10 Q. Okay. Do you have any recollection of
11 that meeting taking place other than having reviewed
12 documents about it recently?

13 A. No, I wasn't involved.

14 Q. Okay. Were you consulted by anybody at
15 Monsanto in the preparation of the meeting?

16 A. No.

17 Q. You recall any conversations with
18 anybody at Monsanto, Mr. Weber or anybody else about
19 that meeting?

20 A. Well, before the meeting was scheduled,
21 I received a call from someone at Mallory Company and
22 suggested that since the questions appear to be
23 medical in nature, that Dr. Roush would be the
24 appropriate Monsanto person to contact.

25 And I did talk to George Roush and gave

1 him phone numbers and names suggesting that he
2 contact them. From that point on, I was left out of
3 the final arrangements.

4 Q. Okay. As of 1976, what was your
5 understanding of the conditions under which dioxins
6 were formed on heating PCBs?

7 MR. MOORE: I object. There's no basis
8 for that question.

9 Q. (BY MR. CUKER) You can answer.

10 A. It's my understanding that PCBs do not
11 lead to the formation of dioxins.

12 Q. Okay. Was it your understanding that
13 dioxins could not be formed?

14 A. That is my considerate opinion, yes.

15 MR. CUKER: Okay. I have no other
16 questions of this witness.

17 MR. BUSTER: Let's take a break.

18 (A break was taken.)

19 CROSS EXAMINATION

20 BY MR. BUSTER:

21 Q. Mr. Papageorge, I'm Kevin Buster of the
22 law firm of King & Spalding. I represent Duracell
23 International, Inc. in this litigation and I want to
24 ask you a few questions in follow-up to Mr. Cuker's
25 questions today. If you don't understand any of my

1 questions, please feel free to ask me to rephrase it
2 and I'll be happy to do that.

3 Mr. Cuker asked you some questions today
4 about the annual employee physicals that were given
5 to workers at the Krummrich plant of Monsanto. Do
6 you recall those questions?

7 A. I do.

8 Q. Were those annual physicals limited to
9 any particular type of employee at Monsanto?

10 A. No, all employees at the sites would get
11 that medical examination.

12 Q. In other words, all employees company
13 wide at Monsanto received annual physicals?

14 A. No, at the plants involved with PCBs,
15 all employees at those plants, from the plant manager
16 down to the newest hiree, would get annual physicals
17 because some Monsanto plants had physicals every two
18 years, some had physicals that depended on age.
19 Reach a certain age, you hit the annual point.

20 Q. Uh-huh.

21 A. And the younger people didn't get it as
22 often. So there was some difference when you speak
23 of all of Monsanto.

24 Q. All right. At the Krummrich plant,
25 approximately how many chemicals were manufactured

1 there?

2 MR. MOORE: Talking about '70 to '76
3 now?

4 MR. BUSTER: Yes.

5 THE WITNESS: I don't recall the exact
6 number. I would -- it also depends how you classify
7 them. I think you could list over a hundred
8 different chemical entities.

9 Q. (BY MR. BUSTER) Did the employees who
10 worked in the manufacture of all those chemicals
11 receive periodic physicals?

12 A. Yes.

13 Q. And at the Krummrich plant, were they
14 all on an annual basis?

15 A. Yes.

16 Q. Without regard to what the chemical was?

17 A. That is correct.

18 Q. Were those annual physicals required as
19 a part of any labor contract?

20 A. No.

21 Q. All right. Was there anything special
22 about the physicals of the PCB employees as opposed
23 to the workers who worked in the manufacture of other
24 chemicals at Monsanto?

25 A. No.

1 Q. So when Mr. Cuker asked you about the
2 physicals designed to detect skin rashes, for
3 example, for liver abnormalities, for example, that
4 applies equally to workers in all of the chemicals
5 manufactured at the Krummrich plant and not just
6 PCBs, correct?

7 A. If those symptoms were apparent, yeah,
8 everyone was looked at the same.

9 Q. All right. In that connection, based
10 upon your experience at Anniston and then your later
11 experience in your various other positions from 1970
12 through 1977, how was the PCB job assignment viewed
13 in comparison to the assignments with respect to
14 other chemicals?

15 MR. CUKER: Objection.

16 THE WITNESS: Well, in my experience, it
17 was one of the preferred positions in the plant. The
18 senior individuals would, when an opening existed,
19 bid to be considered for that opening.

20 Q. (BY MR. BUSTER) Do you know why that
21 was? Why was the PCB detail considered to be more
22 desirable than the other details with other
23 chemicals?

24 A. Well, it involved the less hazardous
25 materials. It involved lighter work physically. It

1 was not demanding in many ways stressfully, and there
2 weren't high temperatures involved. And many other
3 undesirable features just were not present.

4 Q. How would you characterize the
5 hazardousness of PCBs relative to the other
6 chemical -- to other industrial chemicals?

7 MR. CUKER: Objection. Let me just ask,
8 you mean today? How does he characterize it today?

9 MR. BUSTER: In the period '70 to '77.
10 We'll start with that.

11 THE WITNESS: Well, when you consider
12 the full spectrum of chemicals, I would suggest that
13 PCBs -- let's limit this to industrial chemicals,
14 because that's what PCBs were. Thinking of
15 industrial chemicals, I would say that PCBs are
16 probably the least harmful if, of course, all these
17 chemicals are handled properly. When you think of
18 cyanides and acids and gases of all kinds, PCBs just
19 don't fit those frightening kinds of categories.

20 Q. (BY MR. BUSTER) Did Monsanto have
21 certain chemical manufacturing areas that they
22 denominated toxic and others nontoxic, to your
23 recollection?

24 A. No.

25 Q. All right.

1 MR. BUSTER: I'd like to mark this as
2 whatever the next Papageorge exhibit is.

3 (Papageorge Deposition Exhibit No. 20
4 was marked by the court reporter for identification.)

5 THE WITNESS: I've read the--- or
6 reviewed the article.

7 Q. (BY MR. BUSTER) All right. For the
8 record, this is a copy of a letter from Elmer Wheeler
9 to Jerry Rowe dated March 3, 1969 and has number
10 stamps BRW 000442 through 445. The addressee page
11 shows that Mr. Rowe was plant manager at P. R.
12 Mallory's Indiana plant at the time it was sent.

13 You've had a chance to review this,
14 Mr. Papageorge?

15 A. Yes, I have.

16 Q. Now, tell us once again who -- is it
17 Dr. Wheeler or Mr. Wheeler?

18 A. Mr. Wheeler.

19 Q. Mr. Wheeler. Who is Mr. Wheeler?

20 A. Mr. Wheeler was a member of Monsanto's
21 corporate medical department and at that time was
22 manager of environmental health.

23 Q. And you had an occasion to work with
24 Mr. Wheeler?

25 A. Yes.

1 Q. Turning to page two of the letter,
2 directing your attention to the very last paragraph,
3 it says "Compared to the thousands of industrial
4 chemicals and home products, PCBs are not toxic
5 unless they are mishandled or misused. During more
6 than thirty years of U.S. production and use, cases
7 of any toxic effect have been extremely rare, and
8 then only where the simple precautions recommended
9 for use were not followed." Do you agree with that
10 statement?

11 A. Yes, if the word toxic is defined as
12 harmful.

13 Q. All right, sir. You stated that you
14 agree with that. Was that your -- did you agree with
15 that statement at the time it was made and through
16 the period of 1977?

17 A. Yes.

18 Q. All right. If a customer had asked you
19 about the toxicity of PCBs, is that the type of
20 answer you would have provided a customer?

21 A. Yes.

22 MR. CUKER: Objection.

23 THE WITNESS: Not in those -- maybe
24 those words, but that thought was expressed, yes.

25 Q. (BY MR. BUSTER) All right, sir.

1 Mr. Cuker questioned you about your first visit to
2 the Waynesboro plant and you recounted that you
3 noticed the smell of Aroclor on that visit, correct?

4 A. Yes.

5 Q. And you saw some haze, a blue haze
6 around the light fixtures, is that correct?

7 A. Yes.

8 Q. Did you or representatives of Monsanto,
9 to your knowledge, follow up to see whether
10 conditions at the plant were or were not improved?

11 A. Oh, yes, Monsanto representatives did
12 follow up.

13 Q. And what were the results of that
14 follow-up?

15 MR. CUKER: Objection.

16 THE WITNESS: The reports that I
17 received as part of my job, to stay tuned in, is that
18 considerable improvement had been made and the
19 response from Mallory was encouraging.

20 Q. (BY MR. BUSTER) How would you
21 characterize the timeliness of Mallory's response?

22 MR. CUKER: Objection.

23 THE WITNESS: I can compare that to
24 other capacitor manufacturers, and they were as quick
25 as anybody in responding and making corrections.

1 Q. (BY MR. BUSTER) Well, to your
2 knowledge, did Mallory take care of the problems or
3 did they not take care of the problems that you noted
4 on your visit to Mallory in 1971?

5 MR. CUKER: Objection.

6 MR. MOORE: Excuse me. What was the
7 date of the visit?

8 MR. SCHNEIDER: 1970.

9 MR. BUSTER: 1970.

10 Q. (BY MR. BUSTER) I'm sorry?

11 A. 1970?

12 Q. Yes.

13 A. They took care of the problems that
14 existed in 1970 as best as I can recall. There was
15 no reason to think that they did not address and take
16 care of the problems.

17 Q. All right.

18 MR. BUSTER: Let's mark this, please.

19 (Papageorge Deposition Exhibit No. 21
20 was marked by the court reporter for identification.)

21 THE WITNESS: I have read the letter.

22 Q. (BY MR. BUSTER) For the record, we've
23 marked for identification purposes Papageorge Exhibit
24 21, which is a January 12, 1971 memo apparently from
25 Mr. Papageorge to a Mr. Graham. Number stamp is BRW

1 003457. Do you recognize this document,
2 Mr. Papageorge?

3 A. I do.

4 Q. What is it?

5 A. It's a letter that I sent to Randy
6 Graham, a Monsanto salesman, back in early -- January
7 of 1971. It refers to P. R. Mallory and their
8 efforts to control pollution by PCBs.

9 Q. All right. I direct your attention to
10 the third paragraph where you state he, I assume that
11 means Mr. Rowe, is that correct?

12 A. That is correct.

13 Q. "He stated that he followed your advice
14 concerning closing impregnating chambers for final
15 dry-out and was successful in improving the amount of
16 fumes in the building. He asked for design
17 information for reducing the fumes leaving his
18 ventilating system. I promised to send him any
19 information I could get together and that I was
20 attempting to find information that would result in
21 good fume control but would not be very costly to
22 install and operate."

23 Do you recall the conversation with
24 Mr. Rowe that's referred to in that paragraph?

25 A. I do, yes.

1 Q. Who is Mr. Rowe?

2 A. He was the -- as I remember, the plant
3 manager.

4 Q. In Waynesboro?

5 A. In Waynesboro at that -- at--this time.

6 Q. For Mallory?

7 A. Yes.

8 Q. All right. Do you recall furnishing any
9 design information relating to the ventilation system
10 in Waynesboro?

11 A. I was not able to give the Mallory
12 people specifics, primarily because after I discussed
13 ventilation design with Monsanto's engineering
14 department, they told me that they were in a very
15 poor position to suggest specifics because they
16 didn't know the conditions that existed at the
17 Mallory plant regarding volume, concentration of
18 fumes, ability of the existing equipment to move the
19 air through the system.

20 They needed to know much more before
21 they could sit down and specifically recommend types
22 of blowers, types of -- the size of the duct systems,
23 all of the details that go.

24 And I forwarded that through Monsanto
25 marketing department. And, as I remember, the answer

1 came back, they said thanks, but we're going to take
2 care of that with some engineering firm locally.

3 Q. This is what Mallory communicated to --

4 A. Mallory back through Monsanto field
5 contacts back to me. So the request wasn't
6 fulfilled, but they in turn suggested that I need do
7 no more. They were not willing to give me the
8 specifics, apparently, to conduct any kind of
9 engineering design.

10 Q. In other words, after Mallory, through
11 Monsanto representatives, requested you to provide
12 such information, you later found out that they were
13 receiving such design assistance from an outside
14 party?

15 A. From somewhere.

16 MR. CUKER: Objection.

17 THE WITNESS: I don't know outside or
18 inside. Someone else was working on it.

19 Q. (BY MR. BUSTER) All right. Well, why
20 did you send Mr. Graham this memo?

21 A. Mr. Graham had called me and suggested
22 that the Waynesboro facility people needed more
23 support, more help. Could I call them and see what I
24 could do for them. So I went to the telephone and
25 made the contact. And this was my way of telling

1 Randy Graham what had transpired.

2 Q. All right.

3 (Papageorge Deposition Exhibit No. 22
4 was marked by the court reporter for identification.)

5 THE WITNESS: I've read it.

6 Q. (BY MR. BUSTER) All right. For the
7 record, what's been marked for identification
8 purposes as Papageorge Exhibit 22 is a one page call
9 report. The date of the call is 6/14/71. It's
10 prepared by a Mr. J. G. Bryant. The number stamp on
11 the document is BRW 001987.

12 Mr. Papageorge, do you recall receiving
13 this call report in 1971?

14 A. I do, uh-huh.

15 Q. You are shown as a cc on the report, is
16 that correct?

17 A. Yes.

18 Q. Who is Mr. Bryant?

19 A. Mr. Bryant is a Monsanto chemist who
20 worked in the marketing department of the group that
21 sold PCBs, and he served as the technical support
22 person to help the field salesman with technical
23 problems as they related to PCBs in dielectric use.

24 Q. All right. Down in the body of this
25 memo there's a heading that says results. Do you see

1 that?

2 A. I do.

3 Q. Along about midway in that section,
4 Mr. Bryant says "About one year ago Bob Vaught and
5 the writer designed degassers, towers, miscellaneous
6 handling equipment to improve the performance of
7 their," that is Mallory's, "operation." Do you see
8 that?

9 A. Yes, I do.

10 Q. Was Mr. Bryant, by virtue of his
11 training, qualified to do that sort of thing for
12 customers?

13 MR. CUKER: Objection.

14 THE WITNESS: Yes.

15 Q. (BY MR. BUSTER) All right. He goes on
16 to say "This equipment was ordered and had been
17 installed. In addition to sealing the system,
18 Mallory is installing an in-line analyzer to close
19 the loop on handling Aroclor." Do you know what
20 Mr. Bryant means by sealing the system?

21 A. That's the expression used to denote
22 that as few opportunities for the release of the
23 liquid to the work area as possible are designed in
24 the system or is maintained so that not many of these
25 opportunities occur.

1 Q. When you say to stop the liquid from
2 getting into the work area, does that include fumes
3 as well?

4 A. Yes. Yes.

5 Q. All right. He then says "There is
6 considerable improvement in the conditions." Was
7 Mr. Bryant qualified to render such an opinion as
8 that?

9 MR. CUKER: Objection.

10 THE WITNESS: Oh, yeah. Yeah.

11 Q. (BY MR. BUSTER) As part of his
12 day-to-day business, did he have occasion to report
13 to you about other customers, conditions regarding
14 PCBs with respect to other customers?

15 MR. CUKER: Objection.

16 THE WITNESS: Yes, he did.

17 Q. (BY MR. BUSTER) Did you rely on those
18 reports of Mr. Bryant?

19 A. Certainly.

20 Q. Now, he's got a little bullet down here
21 that says "Attention Bill Papageorge: The grey haze
22 and the Aroclor wet floors are gone. The operation
23 is greatly improved. There is still room for some
24 cleanup improvement." Do you recall him telling you
25 that?

1 A. Yes.

2 Q. Is this report from Mr. Bryant the type
3 of communication that you typically relied upon to
4 determine whether a customer had cleared up any
5 problems that you might have seen?

6 A. Yes.

7 Q. Do you know what he was referring to
8 when he talks about this in-line analyzer?

9 A. I believe I do, yes.

10 Q. And what is that?

11 A. It's a device that determines the
12 quality of the liquid and whether it's suitable for
13 use, in this case in capacitors. So they don't have
14 to open a spigot and catch a sample and thereby
15 releasing fumes, running chances of a spill, and then
16 disposal of the liquid.

17 So as this liquid flows through the
18 line, this in-line analyzer tells the operator that
19 it's acceptable or it isn't for use in the intended
20 service.

21 Q. All right. In addition to what's set
22 forth in this memorandum from Mr. Bryant, are you
23 aware of the various steps that Mallory took in the
24 months following your visit to alleviate the problems--
25 that you had noted?

1 A. I'm not aware of the specifics. I am
2 aware in general that they tightened up the
3 operations as they were -- as they existed at the
4 time. In the meantime, they bought the necessary
5 equipment to do even better.

6 And they -- the big step, as I
7 understood it, was one of sensitizing all employees
8 not to tolerate an oily floor anymore, to look for
9 what I refer to many times as a bone dry floor.
10 That's the best signal you have that things are going
11 your way, as they should be.

12 Q. And did you have an impression or an
13 understanding about whether Mallory had talked to
14 their employees on that subject?

15 A. Yes, I did.

16 Q. And what was that understanding?

17 A. My understanding was that there was
18 emphasis placed on this. I got that from Mr. Doty in
19 particular, Dr. Doty, and Bud Dibble.

20 Q. All right. Did you at anytime back in
21 this time frame, '70 through early '72, learn about
22 any other changes in process to reduce Aroclor fumes
23 and emissions such as reduction in temperatures in
24 the process or keeping chamber doors closed longer or--
25 improvements in the ventilation system or anything

1 like that?

2 A. I heard of all of those.

3 Q. Based upon what you heard, was Mallory
4 doing what you felt it should have been doing to take
5 care of the problems that you noted?

6 MR. CUKER: Objection.

7 THE WITNESS: I had an impression that
8 they were doing what should have been -- should be --
9 what they should be doing and were achieving the
10 results they were seeking, uh-huh.

11 Q. (BY MR. BUSTER) Were you aware of any
12 steps that Mallory was not taking that you felt they
13 should have been taking?

14 A. No, I don't recall any.

15 Q. And based on your practice, had you
16 known about such steps, would you have communicated
17 those to Mallory?

18 MR. CUKER: Objection.

19 THE WITNESS: Oh, definitely.

20 Q. (BY MR. BUSTER) Based upon your
21 knowledge of the Mallory plant at Waynesboro and the
22 process going on there, both from your visits and
23 from your reports from Mallory representatives, was
24 there anything about that process that caused you to
25 think that the workers at the Mallory plant in

1 Waynesboro were being subjected to any health hazards
2 as a result of PCBs?

3 MR. CUKER: Objection.

4 THE WITNESS: Assuming you have the same
5 definition I have of health hazards.

6 Q. (BY MR. BUSTER) And what is that
7 definition? I think you said before dangerous to
8 use?

9 A. Well, I was thinking of a level of
10 exposure that results in some harm to the worker.

11 Q. That's a fair definition. I'll accept
12 that for my question.

13 A. And the harm I have in mind would be
14 certainly something undesirable. But whether it be
15 red skin or chloracne or other kinds of symptoms, I
16 didn't see anything that I think would have caused
17 that.

18 I did see, though, this haze I talked
19 about, and I thought that this is something that
20 could be easily corrected without too much in the way
21 of cost. And it did create, at least for some
22 people, an eye irritation that ought to be removed,
23 and they understood that and they did take care of
24 it.

25 Q. All right. Mr. Papageorge, in any of

1 Monsanto's operations where chemicals are
2 manufactured, are any of the workers paid premiums
3 because of working with dangerous chemicals? In
4 other words, hazard pay? Is there any concept like
5 that at Monsanto?

6 A. I am personally not aware of any such
7 practice in Monsanto.

8 Q. After your initial visit to Waynesboro
9 and your follow-up with respect to Waynesboro, did
10 you have any other continuing contact with Mallory
11 personnel?

12 A. Yes, I did.

13 Q. Who were your primary contacts at
14 Mallory?

15 A. My primary contacts were Dr. Doty and
16 Bud Dibble. They were the key contacts.

17 Q. Over what time period were these
18 contacts?

19 A. I would say starting from my plant visit
20 until about 1974 or so.

21 Q. And I know it's difficult to summarize,
22 but what were the nature of those contacts by and
23 large over that time period?

24 MR. CUKER: Objection.

25 THE WITNESS: It was primarily one of

1 they asking what's the latest on the PCB issue. I
2 tried to respond by bringing them up-to-date. And
3 during the conversation, I would probe a bit as to
4 how they were doing at their site. And the reports
5 would come back that things were improving all the
6 time.

7 Q. (BY MR. BUSTER) Would they tell you,
8 you know, steps that had been taken to effectuate
9 improvements?

10 MR. CUKER: Objection.

11 THE WITNESS: I don't remember them, but
12 they did, yeah, they talked about we followed your
13 idea about curbing and venting and these kinds of
14 things. I don't remember the exact specifics,
15 however. It's too long ago and there are too many
16 similar plants. And with Dr. Doty, the contact was
17 fairly frequent because of his participation in
18 committee work, the ANSI committee.

19 Q. (BY MR. BUSTER) All right. One
20 moment. Mr. Cuker was going over some AIHA
21 guidelines this morning, and I believe he asked you a
22 question about the use of respirators. And I'm not
23 trying to characterize your testimony, but my
24 recollection is you said that that was an area that
25 called for judgment by the employees. Do you recall

1 that testimony?

2 A. Yes, I do.

3 Q. How often were respirators used in
4 Monsanto's PCB manufacturing process, if at all?

5 A. I have no count, frankly, it happened so
6 infrequently. To give some measure of the frequency,
7 I would suggest that in my five years in Anniston, I
8 recall one incident that involved respirators because
9 of chlorine emission, which was used in making PCBs.

10 Now, that's a different -- definite kind
11 of respirator. And I would suggest that one incident
12 that might have called for the respirator that would
13 be against PCB fumes with an overflow tank, as I
14 remember, to spill over the edges, a very hot batch,
15 and the fellows had to grab respirators to go turn
16 off the valves and the pumps and so on.

17 Q. All right.

18 A. That's about a once in five year kind of
19 frequency.

20 Q. And in the manufacturing process of
21 PCBs, that did involve a heat process, correct?

22 A. Oh, yes, yes.

23 Q. Mr. Cuker mentioned several items such
24 as coveralls, gloves, change of shoes annually, those
25 sorts of things that were provided by Monsanto to its

1 workers. Do you recall that?

2 A. Yes.

3 Q. Was that special to the PCB workers or
4 was that applicable to all the chemical manufacture
5 employees at Monsanto?

6 A. All the employees could get the
7 necessary shoes, gloves, booties depending on the
8 activity they're involved in.

9 Q. How long prior to 1970 had Monsanto been
10 engaged in the manufacture of PCBs?

11 A. Monsanto is a company that became
12 involved with the manufacture of PCBs in about 1934
13 when they bought an existing unit from another
14 company that had been making PCBs since '29, 1929.

15 Q. Was that Swan Chemical?

16 A. Swan Chemical, yes.

17 Q. And where was Swan's manufacturing
18 facility located?

19 A. Anniston, Alabama.

20 Q. And was -- in the early years, in the
21 '30s through the '50s or '60s, was there any
22 difference in the type of PCBs manufactured then as
23 opposed to the type manufactured in the '70 through
24 '77 time period?

25 A. Well, through the years, additional

1 commercial mixtures were put together and offered for
2 sale. And the major change in PCBs occurred when
3 1016 was introduced to the dielectric applications
4 which involved an additional processing step.
5 Otherwise, they're pretty much alike through the
6 years.

7 Q. Were the earlier years -- did the
8 earlier years typically involve the higher
9 chlorinated types of PCBs?

10 A. Yes.

11 Q. 1260 and 1254?

12 A. That is correct.

13 Q. And did you come to know, based upon
14 your time at Anniston, that in earlier years, and I'm
15 talking 1930s, 1940s, maybe up into the 1950s, worker
16 contact with the PCBs was higher, more frequent than
17 it was in the later years, '60s through '70s?

18 MR. CUKER: Objection.

19 THE WITNESS: It's my understanding
20 that's true. In fact, the difference between '70s
21 and the '60s was quite evident to me, which I saw
22 with my own eyes. It was a different emphasis with
23 respect to industrial chemicals, which apply not only
24 to PCBs but all the other chemicals in the plant. So
25 you could see a change occurring in the PCB

1 department.

2 Q. (BY MR. BUSTER) Is it fair to say in
3 the earlier years, employees more frequently breathed
4 Aroclor fumes and more frequently came into dermal
5 contact with the Aroclor?

6 MR. CUKER: Objection.

7 THE WITNESS: Yes, that's -- yes, I
8 would say so.

9 Q. (BY MR. BUSTER) In all of Monsanto's
10 history or manufacture of PCBs, are you aware of any
11 significant health effects to the workers of
12 Monsanto?

13 A. Of course, this depends on your
14 definition of significant. I'm not aware of any
15 serious health problem with that population of
16 employees.

17 I personally saw only one case of
18 severely red hands to the point where blood was
19 oozing out. The employee told me personally that he
20 was just careless and should have known better. And
21 after about a ten-day or two-week period, that
22 disappeared, he put his gloves back on.

23 Q. Did you ever see any incident of
24 chloracne --

25 A. No.

1 Q. -- at Monsanto or hear of one at
2 Monsanto involving a Monsanto worker?

3 A. Relating to PCBs?

4 Q. To PCBs, correct.

5 A. I never seen that.

6 Q. Did you ever know or hear of any liver
7 abnormality regarding usage of PCBs by a Monsanto
8 employee?

9 A. No.

10 MR. BUSTER: That's all.

11 MR. SPODEN: Emhart has no questions.

12 REDIRECT EXAMINATION

13 BY MR. CUKER:

14 Q. Mr. Papageorge, you have that letter
15 from Dr. Wheeler in front of you?

16 A. Doctor who?

17 Q. Wheeler.

18 A. Wheeler?

19 Q. Did I incorrectly call him a doctor?

20 A. That's Mr. Wheeler, uh-huh.

21 Q. Mr. Wheeler. Sorry. Going back to this
22 sentence Mr. Buster asked you about, "Compared to
23 thousands of industrial chemicals and home products,
24 PCBs are not toxic unless they are mishandled or
25 misused," by mishandled or misused, do you consider

1 that to be used in violation of the guidelines, the
2 American Industrial Hygiene Association, already
3 marked as Roush Exhibit 2?

4 A. I see this Exhibit 2 as applying to --
5 referring to handling and mishandling.

6 Q. Yes.

7 A. As distinguished from misused.

8 Q. Okay. Let me just call -- let me just
9 use the term mishandling then.

10 A. Mishandling.

11 Q. Would mishandling include mishandling in
12 violation of Roush Exhibit 2, the AIHA guide?

13 A. I see the guideline as a very
14 conservative approach to assuring that you don't even
15 approach seeing any of the symptoms that would result
16 from mishandling.

17 The red hands should never occur if this
18 is followed. The chloracne, the damaged livers, all
19 these things we hear about would never happen if you
20 follow these guidelines.

21 And these guidelines, of course, are
22 based on some animal studies, as you can read, and
23 there was the attempt to translate to humans, which
24 is always an estimate on the part of the people
25 involved.

1 So I find, in my own thinking, that
2 mishandling is a true abuse of the material as
3 distinguished from the guideline approach which
4 assures you'll never see the symptoms.

5 Q. What do you consider a true abuse,
6 drinking it?

7 A. Well, obviously drinking it would be.
8 But I'm referring to a case of the red hands approach
9 to the point where the individual that goes beyond
10 the red hands and shows up his chloracne on the
11 person's -- let's say his cheeks.

12 Q. Well, that's a symptom, Mr. Papageorge.

13 A. That's a symptom.

14 Q. What's the mishandling that leads to
15 that?

16 A. The mishandling is the dunking the hands
17 in day-in and day-out so long that eventually the
18 symptom shows up. Or I see an abuse where the fumes
19 are breathed by the individual who is maybe for some
20 reason reluctant to put on his respirator. Next
21 thing you know, he ends up with a respiratory
22 condition which resembles a severe chest cold. And
23 it hurts. It's very painful. That I call a severe
24 abuse.

25 Q. Okay. Talking about respirators, was

1 the reason that you saw respirators used so
2 infrequently at Monsanto, was the reason for that was
3 there were so few spills of hot PCBs?

4 MR. BUSTER: Objection. Leading.

5 THE WITNESS: I don't know how to
6 describe so few.

7 Q. (BY MR. CUKER) Well, you said there was
8 one --

9 A. One major spill. It was the size of the
10 spill. Because we have a lot of minor spills that
11 create some local fume problems where the intelligent
12 employee doesn't go into that area unless he has to
13 to, so he doesn't need a respirator.

14 Q. Can you give me some idea of a local
15 spill and a major spill?

16 A. Well, I would define a failed pumping
17 gland, which is the device around the rotating shaft
18 that seals the liquid, that fails and it sprays out
19 some liquid maybe a distance of six to ten feet from
20 the pump, creating some fumes because the liquid is
21 hot, I would call that a local spill. As compared --
22 local, yes. As compared to this tank incident where
23 it overflowed and I don't know how many pounds of
24 material got away.

25 Q. Can you define local in the size of the

1 area effected by the spill?

2 A. Oh, gosh, that's hard to do because --

3 Q. Approximately. I know we're dealing
4 with subjective terms.

5 A. Gee, I don't know how to define that
6 because it depends really on the size of the tank,
7 say. Could be a ten foot diameter tank and might
8 affect a twenty foot area.

9 Q. Okay.

10 A. I just don't know how to define that.

11 Q. I think you said in your testimony you
12 considered PCBs to be among the least harmful of
13 industrial chemicals if handled properly. Would you
14 consider improper handling to be handling in
15 violation of the AIHA guide, Roush Exhibit 2?

16 A. Oh, I guess technically speaking, if you
17 exceed those numbers, you're in violation.

18 Q. Well, I'm not just talking about the
19 numbers, I'm talking about the other provisions in
20 there.

21 A. The other provisions? If you don't
22 follow them, you're not abiding by them. Therefore,
23 I guess you could technically say you're violating
24 them.

25 Q. Would you consider improper handling to

1 include handling in violation of the ANSI standards,
2 Papageorge Exhibit 2?

3 A. Yeah, I think so. Subjectively.

4 Q. You referred to some fright -- I think
5 you used the term frightening chemicals,--cyanide,
6 some other chemicals like that. Does Monsanto make
7 those?

8 A. Certainly we use them. Chlorine itself
9 is a World War I gas that's used to make PCBs.

10 Q. What else does -- of the ones you
11 mentioned -- you mentioned cyanide. What were the
12 others you mentioned? Let me just ask you, were all
13 of those chemicals that Monsanto makes or uses in its
14 processes?

15 A. Those that I mentioned?

16 Q. Yeah.

17 A. I believe so, yeah.

18 Q. So within Monsanto, PCB was considered
19 less harmful than certainly cyanide and fluorine gas?

20 A. And benzene.

21 Q. Benzene.

22 A. And many, many chemicals, phosphorus,
23 phosphorus trichloride and thiram and parathion, the
24 boll weevil killer.

25 Q. In the 1970s, did you consider PCBs to

1 have the potential of causing liver damage to humans?

2 A. Yes, that was one of the points that was
3 discussed with the workers and the supervisors and
4 all.

5 Q. With workers where?

6 A. At our plants.

7 Q. Did you also discuss that with the
8 Mallory people?

9 A. I believe so. It was in some of the
10 literature that they received.

11 Q. Did you -- in the 1970s, did you
12 consider PCBs to having the potential of being fatal
13 in humans if not used properly?

14 A. Oh, yeah, there is a point beyond
15 which --

16 Q. And did you discuss that with the
17 Mallory people?

18 A. Yes.

19 Q. And when I say 1970s, I mean the early
20 period between '70 and '77.

21 A. I understand.

22 Q. You would not have had discussions with
23 them after 1977.

24 A. Sure.

25 Q. Now, do we have -- where is that exhibit

1 that's dated 7/25/71? Actually, let me ask you
2 another question before that. On this issue of the
3 compensation of Monsanto workers, do you recall what
4 Monsanto workers in the PCB process were paid between
5 '70 and '76?

6 A. No, I do not.

7 Q. You were plant manager in Anniston. Can
8 you remember what they were paid back in Anniston?

9 A. No, I don't.

10 Q. All right. Mr. Papageorge, part of this
11 Exhibit 22 that Mr. Buster did not read where it says
12 "The Waynesboro location was at best a real," quote,
13 "'slop shop' which grew out of equipment salvaged
14 from the Crawfordsville, Indiana location which
15 burned," is that description consistent with your
16 impression of the plant from your visit in '71?

17 MR. BUSTER: In '70.

18 Q. (BY MR. CUKER) '70, that's right.

19 A. I personally would not use that
20 expression. That's Mr. Bryant's terminology.

21 Q. This is an internal -- this was an
22 internal memo, Mr. Papageorge.

23 A. I understand.

24 Q. Obviously, this was not going out.

25 A. That's right.

1 Q. Would you use that expression internally
2 within the company?

3 A. No, I -- no. That's a subjective term
4 that doesn't come easy for me. I wouldn't use it.

5 MR. CUKER: Can we mark this document?

6 (Papageorge Deposition Exhibit No. 23
7 was marked by the court reporter for identification.)

8 Q. (BY MR. CUKER) Mr. Papageorge, I have
9 marked a document as Exhibit 23, a document --
10 actually, a memo from N. T. Johnson which attaches
11 summary sheets prepared by Randy Graham. I believe
12 he was one of the people you dealt with?

13 A. Yes.

14 Q. Okay. And it's -- the cover sheet is
15 dated March 25th, '71. It's date stamp number BRW
16 003411 through 3418. Your name does not appear on
17 the document.

18 I want to call your attention to page
19 003414 and, in particular, one sentence underneath
20 where it says Mallory Capacitor Company. You see
21 where it says -- well, let me just ask you, were
22 these -- under what circumstances would Mr. Graham
23 prepare summaries like this?

24 MR. MOORE: If you know, Bill.

25 MR. BUSTER: I object to the form of the

1 question. I don't think it's clear that Mr. Graham
2 prepared this summary.

3 Q. (BY MR. CUKER) All right. Well, let me
4 just ask you, you want to take your time and look at
5 the document and you can tell from looking at it
6 whether it's of a nature that Mr. -- of a document
7 that Mr. Graham would prepare.

8 A. Looking over the document, this appears
9 to me like a special effort made by Mr. Graham
10 because he was leaving Monsanto's employ, employment.

11 Q. Were these documents that salesmen
12 typically prepared when they were leaving the company
13 to brief their successors on the accounts?

14 A. I don't know.

15 Q. Who would know?

16 A. I guess the marketing supervisors
17 would. It depends on their style of supervising and
18 how they conduct their turnover of jobs.

19 Q. You see there where he says, and I
20 quote, "The Waynesboro plant is one of the worst in
21 the industry," end quote? Was that consistent with
22 your opinion of the plant when you were there in
23 1970?

24 A. It's one of those that needed a lot of
25 correction, yeah.

1 Q. Now, I think you said that your main
2 source of information on the processes that they were
3 developing at that plant to tighten up their
4 operation were Mr. Dibble and Mr. Doty, Dr. Doty, is
5 that right?

6 MR. MOORE: Objection. I don't believe
7 that fairly characterizes the testimony.

8 MR. BUSTER: I don't either. I join in
9 that objection. He mentioned several other
10 individuals.

11 THE WITNESS: My main contacts were the
12 two individuals mentioned. In terms of main source
13 of information, I would suggest that I got as much
14 out of the Monsanto representatives in terms of total
15 substance as I got out of the discussions with
16 Mr. Dibble and Dr. Doty.

17 Q. (BY MR. CUKER) Now, when Monsanto
18 representatives would visit the plant, how were those
19 visits arranged?

20 A. Oh, I don't know the details of the
21 arrangement.

22 Q. Did they normally -- were they normally
23 made by appointment?

24 A. That is the normal way, although
25 sometimes they happened to be in the neighborhood and

1 drop by.

2 Q. Is there anything in the neighborhood of
3 Waynesboro, Tennessee that they would happen to be
4 in?

5 A. Well, by neighborhood, I'm talking about
6 the part of the country, the northwest or the
7 northeast or so on.

8 Q. And they would just drop by Waynesboro
9 and --

10 A. Or they might call the night before and
11 say I'm in town, can I drop by tomorrow morning. And
12 usually it was with the purchasing man, the buyer.

13 Q. Now, are you speaking from your personal
14 recollection or are you hypothesizing,
15 Mr. Papageorge?

16 MR. BUSTER: I'll object.

17 MR. MOORE: You asked about the
18 practices.

19 MR. BUSTER: And you don't like the
20 answer.

21 Q. (BY MR. CUKER) You mean they would
22 happen to be in Waynesboro, Tennessee and drop by?

23 A. That's what Mr. Graham's job was.

24 Q. To just happen to be in Waynesboro and
25 drop by?

1 A. Well, I don't know that it happened for
2 him. He planned to be in that area.

3 Q. Are there any Monsanto customers that
4 you're aware of within a twenty-five mile radius of
5 Waynesboro, Tennessee?

6 A. Not twenty-five, but that's too short a
7 distance.

8 Q. Well, what kind of radius were they
9 within?

10 A. I don't remember the close -- well, a
11 day's drive is sort of typical.

12 Q. A day's drive, meaning how many driving
13 hours?

14 A. Eight or ten.

15 MR. MOORE: Mark, listen, it's late in
16 the day. This witness has been very responsive to
17 your questions. Now, let's not get into this kind of
18 nitpicking.

19 MR. CUKER: I'm entitled to know what he
20 means by a day's drive.

21 Q. (BY MR. CUKER) I'm sorry, did you say?

22 A. Eight to ten hours, sometimes. It
23 varies.

24 Q. Okay. Now, were you informed of the
25 levels in the air, PCB levels in the air at that

1 plant?

2 A. I don't remember any numbers mentioned.

3 Q. All right. Assuming that the air test
4 taken in 1976 showed levels in excess of the TLV at
5 the Waynesboro plant, would you consider that to have
6 been taking care of the problem?

7 MR. BUSTER: Object to the form of that
8 question. That's a hypothetical.

9 THE WITNESS: Doesn't tell me enough.

10 MR. BUSTER: Asks for opinion
11 testimony.

12 THE WITNESS: Doesn't tell us how your
13 sample was prepared, and the employees in that area,
14 were they exposed for that eight hours day-in and
15 day-out.

16 Q. (BY MR. CUKER) Let me refine the
17 question. Would you consider a sampling on a --
18 personal sample on a worker -- you know what a
19 personal sample is?

20 A. Yes.

21 Q. In excess of the TLV in 1976, six years
22 after you visited the plant, approximately, would you
23 consider that to have been taking care of the
24 problem?

25 MR. BUSTER: Are you paying

1 Mr. Papageorge an expert witness fee?

2 MR. CUKER: You asked him whether
3 Mallory took care of the problem in his opinion.

4 MR. BUSTER: I asked him for his
5 knowledge.

6 MR. CUKER: I'm entitled to clarify his
7 opinion.

8 MR. BUSTER: Object to form.
9 Hypothetical question.

10 THE WITNESS: I would be interested in
11 that particular incident and would like to know are
12 others involved and did this employee have anything
13 unusual happen during his shift coverage and so on to
14 try to evaluate the total.

15 Q. (BY MR. CUKER) So you can't give an
16 opinion as to whether you'd consider that taking care
17 of the problem?

18 MR. BUSTER: Based on your hypothetical.

19 Q. (BY MR. CUKER) Based on my
20 hypothetical.

21 A. I can't go one way or the other on that.

22 MR. MOORE: That's as far as we're
23 going.

24 Q. (BY MR. CUKER) But can you give an
25 opinion to Mr. Buster as to whether they did take

1 care of the problem based on what he told you?

2 MR. BUSTER: Object to the form of
3 that. It's entirely argumentative and
4 mischaracterizes his testimony.

5 Q. (BY MR. CUKER) Based on what you
6 heard?

7 MR. MOORE: I don't understand the
8 question.

9 THE WITNESS: I don't either.

10 MR. CUKER: Okay.

11 THE WITNESS: Would you rephrase it?

12 Q. (BY MR. CUKER) What is your basis for
13 your opinion that Mallory was taking care of the
14 problem as quickly as anyone in the capacitor
15 industry?

16 MR. BUSTER: Asked and answered.

17 THE WITNESS: It's based on reports made
18 to me by Monsanto representatives and it's compared
19 to similar operations of other customers and reports
20 by the same individuals so there's a uniformity
21 involved as to the kinds of input I'm getting.

22 And then when I compare the progress
23 being made, I can only arrive at a conclusion that
24 these people are doing what is possible and
25 practical. And improvement was being made. There's

1 no reason to believe otherwise.

2 Q. (BY MR. CUKER) Would a person -- would
3 personal samples showing readings in excess of the
4 TLV in 1976 be reason to believe otherwise?

5 MR. BUSTER: I object to the form of the
6 question. It's an incomplete hypothetical and
7 therefore incapable of meaningful response, and it
8 seeks an expert opinion testimony from
9 Mr. Papageorge.

10 MR. MOORE: Well, and even more to the
11 point, Mark, he told you that that doesn't give him
12 enough to answer the question, so I don't think it's
13 fair.

14 MR. CUKER: The only issue is is it
15 reasonable to believe otherwise.

16 MR. MOORE: He already said he didn't
17 consider any basis for answering the question.

18 MR. CUKER: I'd like an answer to the
19 question.

20 MR. MOORE: Put the question to him
21 again.

22 Q. (BY MR. CUKER) Would readings of PCBs
23 in air above the TLVs in 1976 in the Waynesboro
24 plant, including readings on personal samples in
25 excess of the TLV, be reason for believing

1 otherwise?

2 MR. BUSTER: Same objection.

3 MR. MOORE: Otherwise than what?

4 MR. CUKER: Otherwise that they were
5 doing the best that could be done under the
6 circumstances.

7 MR. BUSTER: Same objection.

8 MR. MOORE: I'm going to ask
9 Mr. Papageorge if he feels he has enough information
10 to answer that question.

11 THE WITNESS: I have many more questions
12 than I have answers to that.

13 MR. MOORE: All right. So that's a
14 hypothetical question, inadequate information, and I
15 don't think it's fair to require him to answer that
16 question.

17 Q. (BY MR. CUKER) Did Mr. Buster's
18 question, the -- you're quite certain your only visit
19 to Waynesboro was in 1970?

20 A. Yes.

21 MR. CUKER: That's all I have.

22 MR. MOORE: Thank you. Any other
23 questions?

24 FURTHER CROSS EXAMINATION

25 BY MR. BUSTER:

1 Q. Mr. Papageorge, on your visit to the
2 Waynesboro plant in 1970, was it your understanding
3 or impression that Mallory had made any special
4 preparations or cleanup for your visit there?

5 A. No. They were unique in a way that they
6 had not made special preparations compared to other
7 plants I visited.

8 Q. Now, Mr. Cuker asked you a question
9 whether under some conditions it might be possible
10 for PCBs to be fatal. Do you recall that question?

11 A. Yes.

12 Q. What kind of conditions are we talking
13 about there, Mr. Papageorge?

14 A. I can only pass on to you what the
15 medical department told me at one time, and this
16 amounts to a very serious exposure, way beyond what
17 had been experienced by Monsanto's forty years in the
18 business. But the potential was always there.

19 Therefore, those of us in charge of the
20 operations were tutored to be aware of the potential
21 for if you really don't do this right, you could end
22 up, God forbid, but it could end up with a fatality.

23 But the conditions that existed I'm led
24 to believe would never approach those con -- that
25 condition where damaged liver could not -- I forget

1 the expression. Where it could recover once the
2 exposure was removed.

3 Q. (BY MR. BUSTER) Are you referring to
4 the conditions at Mallory?

5 A. Or similar, yeah.

6 MR. CUKER: Objection.

7 THE WITNESS: They're part of this.

8 Q. (BY MR. BUSTER) Now, Mr. Cuker pointed
9 your attention to the language that referred to the
10 Waynesboro operation as a slop shop and to one of the
11 worst in the industry, correct?

12 A. Yes, I remember that.

13 Q. And, in fact, in your letter to -- was
14 it Mr. Lewis?

15 MR. SCHNEIDER: Lewis, yeah.

16 Q. (BY MR. BUSTER) Mr. Lewis, you referred
17 to the Mallory problems in Waynesboro as being
18 challenging, correct?

19 A. Yes.

20 Q. Was it those conditions that, based upon
21 what you -- the information that you acquired over
22 the next several months, were improved?

23 A. Certainly.

24 MR. BUSTER: No further questions.

25 MR. CUKER: I'm done.

1 MR. MOORE: Thank you, Bill.

2
3 _____
4 WILLIAM B. PAPAGEORGE

5 Subscribed and sworn to before me on
6 this _____ day of _____, 1989.

7 My commission expires _____.

8 _____
9 NOTARY PUBLIC

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17 ORIGINAL TRANSCRIPT
18 FOR THE COURT.
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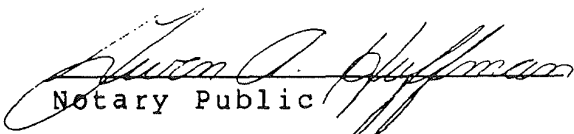
NOTARIAL CERTIFICATE

STATE OF MISSOURI)
)
COUNTY OF ST. LOUIS)

I, Gwen A. Huffman, a Registered Professional Reporter and Notary Public duly commissioned and qualified in and for the County of St. Louis, State of Missouri, do hereby certify that, pursuant to agreement between Counsel, came before me on the 21st day of December, 1988, at the Karpowicz Reporting Company Conference Room, 314 North Broadway, 11th Floor, St. Louis, Missouri, WILLIAM B. PAPAGEORGE, who was by me first duly sworn on his oath to testify to the truth and nothing but the truth of his knowledge touching and concerning the matters in controversy in this cause; that he was thereupon carefully examined upon his oath, and his examination reduced to writing under my supervision; that the deposition is a true record of the testimony given by the witness.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal this 21th day of January, 1989.

My commission will expire January 27th, 1991.


Notary Public

KARPOWICZ REPORTING COMPANY
408 Olive Street, Suite 316
St. Louis, MO 63102

January 11, 1989

Mr. William B. Papageorge
321 Pebble Valley Drive
St. Louis, MO 63141

In Re: Katherine Joyce Brewer, et al. vs
Monsanto Corporation, et al.

Dear Mr. Papageorge:

This letter, incorporated as the last page of your deposition taken on December 21, 1988, will serve as notice to you that your testimony is now ready for your reading and signing of same.

I would appreciate your contacting my office by calling 314/621-8883 so that arrangements can be made to accomplish this.

This letter is being mailed to you, as you know, by Certified Mail with return receipt requested. If we have not heard from you within thirty days after receiving your return receipt, this testimony will be filed with our indication of this offer of submission to you and your refusal to sign.

I would appreciate hearing from you at your earliest convenience and appreciate your cooperation in this regard.

Sincerely yours,

Gwen A. Huffman, RPR

CERTIFIED MAIL: P 714 737 468

MAILED ON: January 11, 1989

KARPOWICZ REPORTING COMPANY

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UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF TENNESSEE
COLUMBIA DIVISION

KATHERINE JOYCE BREWER,	)	
et al.,	)	
	)	
Plaintiffs,	)	Nos. 1-88-008 and
	)	1-88-0014 through
-vs-	)	1-88-0368
	)	Judge Wiseman
MONSANTO CORPORATION,	)	
et al.,	)	
	)	
Defendants.	)	

A F F I D A V I T

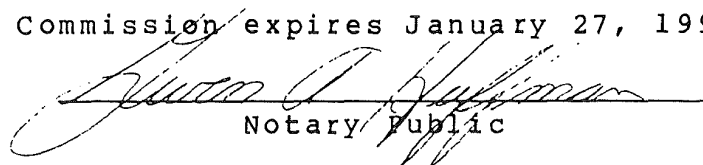
I, GWEN A. HUFFMAN, a Registered
Professional Reporter and Notary Public within and
for the State of Missouri, do hereby certify that
under Certified Mail No. P 714 737 468

WILLIAM B. PAPAGEORGE

was duly notified that his deposition taken in the
above matter had been transcribed and could be read
and signed; that signed receipt was returned showing
signature date of _____

That over thirty days have elapsed since the sending
of the aforementioned Certified Letter; that there
has been no response from this party or counsel; that
therefore, said deposition is herewith filed.

My Commission expires January 27, 1991.


Notary Public

1323 Ambassador Building 441 North Seventh Street

KARPOWICZ REPORTING COMPANY
316 MERCHANTS LAKEDE BLDG.
408 OLIVE STREET
ST. LOUIS, MO 63102

UPON READING THE DEPOSITION AND BEFORE SUBSCRIBING THERETO, THE DEPONENT

[illegible]

William B Papageorge
(Signature of Witness)

1 MR. MOORE: Thank you, Bill.

2
3 William B Papageorge
4 WILLIAM B. PAPAGEORGE

5 Subscribed and sworn to before me on
6 this 27th day of January, 1989. JOSEPHINE S. NIBLOCK
7 Notary Public - State of Missouri
8 St. Louis County
9 My commission expires My Commission Expires January 15, 1991

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11 Josephine S. Niblock
12 NOTARY PUBLIC
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ORIGINAL TRANSCRIPT
FOR THE COURT.