

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEVADA

NEVADA POWER COMPANY,)
)
) Plaintiff,)
 -vs-) # CV-S-89-555-LDG (LR
)
 MONSANTO COMPANY, et al.,)
)
) Defendants.)

30(b)(6) DISCOVERY DEPOSITION OF
JOHN H. CRADDOCK

On the part of the Plaintiff

July 21, 1993

 **Concannon
& Jaeger**
General
Court
Reporters

705 Olive Street, Suite 604
St. Louis, Missouri 63101
(314) 421-1000

STLCOPCB4025726

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEVADA

NEVADA POWER COMPANY,)
)
Plaintiff,)
-vs-) # CV-S-89-555-LDG (LRL)
)
)
MONSANTO COMPANY, et al.,)
)
Defendants.)

* * *

I N D E X

WITNESS:

Page:

JOHN H. CRADDOCK

Direct Examination by Mr. Bradley 4

E X H I B I T S

Plaintiff's Deposition Exhibit # 1220.	75
Plaintiff's Deposition Exhibit # 1232.	.74, 76
Plaintiff's Deposition Exhibit # 1224.	78
Plaintiff's Deposition Exhibit # 2816.	54
Plaintiff's Deposition Exhibit # 2846.	78
Plaintiff's Deposition Exhibit # 2914.	74
Plaintiff's Deposition Exhibit # 2915.	64
Plaintiff's Deposition Exhibit # 2916.	64
Plaintiff's Deposition Exhibit # 2917.	60
Plaintiff's Deposition Exhibit # 2918.	59
Plaintiff's Deposition Exhibit # 2919.	56
Plaintiff's Deposition Exhibit # 2920.	54
Plaintiff's Deposition Exhibit # 3066.	.64, 65

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEVADA

NEVADA POWER COMPANY,)
)
Plaintiff,)
-vs-) # CV-S-89-555-LDG (LRL)
)
MONSANTO COMPANY, et al.,)
)
Defendants.)

30(b)(6) DISCOVERY DEPOSITION OF WITNESS, to be used
in an action pending in the District Court of the United
States, for the District of Nevada, wherein NEVADA POWER
COMPANY is Plaintiff, and MONSANTO COMPANY, et al. are
Defendants, pursuant to Notice, under the provisions of
Rule 26 of the Rules of Civil Procedure, taken on July 21,
1993, at the law offices of Messrs. Husch, Eppenberger,
Donohue, Cornfeld & Jenkins, 100 N. Broadway, Ste. 1300,
St. Louis, Missouri 63102, before Mark D. Concannon, a
Notary Public within and for the State of Missouri.

A P P E A R A N C E S

The Plaintiff was represented by Attorney Ralph A.
Bradley of the law firm of Jones, Jones, Close & Brown,
Chartered, 700 Bank of America Plaza, 300 South Fourth
Street, Ste. 700, Las Vegas, Nevada 89101.

The Defendant, Monsanto, was represented by Attorney
Scott R. Bauer of the law firm of Kirkland & Ellis, 1999
Broadway, Ste. 4000, Denver, Colorado 70202.

The Defendant, Westinghouse, was represented by
Robert P. Morgan, In-House Counsel, Westinghouse Electric
Corporation, Westinghouse Building, Gateway Center,
Pittsburgh, Pennsylvania 15222.

1 JOHN H. CRADDOCK,
2 of lawful age, being first duly sworn to tell the truth,
3 the whole truth, and nothing but the truth, deposes and
4 says on behalf of the Plaintiff, as follows:

5 DIRECT EXAMINATION

6 QUESTIONS BY MR. BRADLEY:

7 Q. Would you please state your name.

8 A. John H. Craddock.

9 Q. And would you spell your last name?

10 A. C-r-a-d-d-o-c-k.

11 Q. Dr. Craddock, you're here today as a person
12 designated by Monsanto Company to give testimony in the
13 case of Nevada Power Company versus Monsanto, General
14 Electric, and Westinghouse, as the corporate designee, to
15 discuss those topics contained in Attachment A, subject to
16 a time limitation, as I understand it, and I have had
17 marked for identification as Deposition Exhibit 1 the
18 notice, along with the attachment, that has the topic for
19 today's deposition.

20 You're here today represented by Scott Bauer;
21 is that correct?

22 A. Yes.

23 MR. BRADLEY: Mr. Bauer, will you indicate for
24 the record what areas the witness is being tendered on and
25 for what time periods.

1 MR. BAUER: Attachment A for the time period
2 from the beginning of 1976 essentially through the present,
3 although I believe Dr. Craddock's official retirement date
4 is in January of 1993.

5 MR. BRADLEY: It is my understanding that Mr.
6 Papageorge just testified to 1976, not through 1976. Am I
7 incorrect in that?

8 MR. BAUER: Yes, I think so. Sometime in
9 January or February of 1976 -- Mr. Papageorge's testimony
10 is whatever it was. Sometime in that time period he left
11 his responsibility as being directly responsible for PCB
12 matters, and it's our intention to have Dr. Craddock to
13 pick up from that time period. Whether it's January or
14 February of '76, it's that basic time period.

15 Q. (by Mr. Bradley) Dr. Craddock, you received
16 your doctorate in 1961 from Vanderbilt University; is that
17 correct?

18 A. That's correct.

19 Q. And did you receive your doctorate in inor-
20 ganic chemistry?

21 A. Yes.

22 Q. Is inorganic chemistry chemistry primarily of
23 mostly noncarbon atoms?

24 A. Yes.

25 Q. And following completion of your doctorate

1 degree, you worked for M.W. Kellogg Company in New York
2 City; is that correct?

3 A. That's correct.

4 Q. You worked there from 1961 to 1965?

5 A. Yes.

6 Q. And while you were there you worked in their
7 corporate research department as a research chemist,
8 research specialist; is that correct?

9 A. Right. Various titles at that time.

10 Q. While at M.W. Kellogg Company you were study-
11 ing exploratory chemistry of precious metals as a liquid-
12 based catalyst for petrochemical reactions?

13 A. That's correct.

14 MR. BAUER: Excuse me, Mr. Bradley. Mr.
15 Papageorge was designated with a cutoff date. As we
16 discussed, there is an opening issue about whether he was
17 also covering health hazards to humans during that time
18 period. He was originally designated and then withdrawn,
19 and Dr. Craddock is picking up at that time period,
20 covering human health hazards as well as environmental
21 matters. Do you understand what I'm saying?

22 MR. BRADLEY: I understand what Dr. Craddock's
23 testimony covers on Attachment A.

24 MR. BAUER: All topics on Attachment A for the
25 time period January, February of '76 forward.

1 MR. BRADLEY: That's correct.

2 When you left the Kellogg Company you began
3 employment with Monsanto Company?

4 A. That is correct.

5 Q. (by Mr. Bradley) And the work you did at the
6 Kellogg Company did not involve any products containing
7 polychlorinated biphenyls?

8 A. No, it did not.

9 Q. And you began your work with Monsanto Company
10 in 1965?

11 A. Yes.

12 Q. And at that time you were in the central
13 research department as a research chemist or research
14 specialist?

15 A. That's correct.

16 Q. And in that kind of work you were doing
17 exploratory catalytic reactions of the precious metals for
18 synthesis with petrochemicals?

19 A. That's true.

20 Q. And that work involved polychlorinated
21 biphenyls only as a tool in the laboratory in a high-
22 temperature heating vat?

23 A. That's correct.

24 Q. And when you worked with PCB's in the lab as a
25 research specialist, you used a fume hood; is that correct?

1 A. That's correct.

2 Q. What is a fume hood?

3 A. It's a standard piece of laboratory apparatus
4 that's like a cover that you can close the doors or
5 restrict the access. It has negative pressure so that any
6 fumes from reactions to vapors would be kept within the
7 fume cover. So if you do any type of reactions that
8 involve volatile chemicals, they will not get into the
9 whole laboratory or office part of the facility. They're
10 vented separately from the building.

11 Q. Did the fume hood when you used it in the lab
12 prevent the vapors from the chemicals from entering your
13 system?

14 A. Yes.

15 Q. Is the purpose of a fume hood -- Was the
16 purpose of the fume hood to protect you from breathing the
17 vapors and to prevent the vapors from entering the work
18 place?

19 A. Yes. It's a standard piece of operating
20 equipment in a lab.

21 Q. You then began working as a senior chemist,
22 research -- Excuse me. In your career at central research
23 you were a senior chemist research specialist and a
24 research group leader; is that correct?

25 A. Yes.

1 Q. And you stayed in the central research depart-
2 ment until roughly the 1971 time frame?

3 A. That's correct.

4 Q. And during that period of time you were either
5 managing or doing exploratory research?

6 A. That's true.

7 Q. And the research you were doing related to
8 precious metals catalysts?

9 A. Yes. That's correct.

10 Q. In 1971 you became a supervisor of commercial
11 development?

12 A. Yes.

13 Q. And in that job are your functions to transfer
14 successful research projects to one of the operating units
15 of the Monsanto Company?

16 A. That's correct.

17 Q. And none of those research projects involved
18 products containing PCB's?

19 A. That's true.

20 Q. You then transferred to the Monsanto
21 Industrial Chemicals Company as a manager of commercial
22 development, in the food and fine chemicals division,
23 primarily dealing with food preservatives; is that correct?

24 A. That's true.

25 Q. And that occurred in roughly the '74 time

1 frame?

2 A. That's true.

3 Q. And in that job you were not working with
4 products that contained PCB's?

5 A. That's correct.

6 Q. In 1977 you then moved into the environmental
7 operations, which was a newly-formed operations department
8 of the Monsanto Industrial Chemicals Company; is that
9 correct?

10 A. That's correct.

11 Q. And in that job you did have contact with
12 Monsanto products containing PCB's?

13 A. Yes.

14 Q. In that job were you responsible with com-
15 pliance with regulations which were promulgated under the
16 Toxic Substances Control Act?

17 A. Yes. Those regulations came into affect from
18 '78 forward.

19 Q. During the time that you had that job did all
20 of Monsanto's plant operations have large amounts of
21 electrical equipment which primarily contained PCB's as a
22 dielectric fluid component of the electric power distribu-
23 tion system?

24 A. Yes.

25 Q. And you had that job until 1980?

1 A. Yes.

2 Q. In 1980 did you become the corporate focal
3 point for PCB issues at Monsanto where you answered PCB
4 questions, monitored PCB regulations, provided corporate
5 responses to regulatory agencies, including questions in
6 the Federal Register, and answered customer questions and
7 calls and so forth?

8 A. Yes.

9 Q. And you had that job until your retirement in
10 January of 1993?

11 A. That's correct.

12 Q. And the job that you had between 1980 and 1983
13 did not exist before you got that job in 1980?

14 A. Not in that form, no.

15 Q. And the title of the job you had in 1980 was
16 manager of product and environmental safety?

17 A. I believe that is correct, yes.

18 Q. Did you review any documents in preparation
19 for today's deposition?

20 A. Yes.

21 Q. What documents did you review?

22 A. I reviewed some of the health effects studies,
23 roughly the time frame, some of the same material that I
24 viewed prior, for my prior deposition, just to refresh my
25 memory on the chronology of when papers were published, and

1 so forth.

2 Q. So you reviewed the prior depositions you have
3 given in this lawsuit?

4 A. Or the material that was used in those deposi-
5 tions, yes. Not the depositions, per se, but the material
6 that was used in preparation.

7 Q. Did you review the depositions, as well,
8 though, in addition to the materials?

9 A. No.

10 Q. In March of 1976 did you have any responsi-
11 bility for any Monsanto products containing PCB's?

12 A. No.

13 Q. Your first responsibility for working with any
14 products containing PCB's began in 1977?

15 A. That's correct.

16 Q. Okay. During your employment at Monsanto, did
17 you ever review any compilation of studies, reports, and
18 other similar kinds of information, that cataloged, as of
19 March of 1976, the dates and substance of Monsanto's
20 acquisition of notice and/or knowledge concerning any and
21 all alleged potential or actual hazards of PCB's or mono-
22 chlorinated biphenyls?

23 A. No.

24 Q. Do you know whether in March of 1976 such a
25 compilation of studies or reports existed?

1 A. It did not, to my knowledge.

2 Q. Are you able to tell us what information or
3 studies regarding any and all alleged potential or actual
4 hazards of PCB's or monochlorinated biphenyls Monsanto
5 learned between March of 1976 and 1977?

6 A. I can recall the landmark papers and review
7 studies, I think, that have been published, that I read,
8 that were available.

9 Q. As I understand your testimony, some studies
10 became available during that time and you are able to talk
11 about the studies that you know of that were published
12 between March of 1976 and 1977; is that correct?

13 A. Well, I can recall, as I said, the landmark
14 studies, and I can probably tell you the gist of some of
15 the information without having the paper in front of me,
16 but I can't discuss the complete study in detail.

17 Q. All right. And it wasn't until 1980, was it,
18 that you made an effort to collect information which sum-
19 marized Monsanto's known information about PCB's and PCB
20 issues?

21 A. That's correct.

22 Q. Why did you collect information in 1980 which
23 summarized Monsanto's known information about PCB's and PCB
24 issues?

25 MR. BAUER: Object to the form of the ques-

1 tion. Vague.

2 Q. (by Mr. Bradley) You can go ahead and answer
3 now.

4 A. I was newly appointed to a new position, and
5 one of the first tasks that I deemed that was important to
6 do was to review all of the information that I could find
7 from the published literature, from Monsanto files, from
8 anywhere, to learn about PCB's.

9 Q. And did you present that information in a
10 summary report that was provided to Senator Ekhardt's
11 committee?

12 A. I did not do that. That information was put
13 together -- I think that testimony was probably presented
14 to the Ekhardt Committee in '79, but that was the -- the
15 body of information that had been assembled was one of the
16 files of information that was at my disposal to review the
17 history of PCB health effects and the history of Monsanto's
18 activities with PCB.

19 Q. I want you to be as specific as you can be in
20 recounting for me where within Monsanto you turned to
21 gather information which summarized Monsanto's known
22 information about PCB's and PCB issues.

23 A. The first thing I did was, I went to the
24 Monsanto library and did a chemical abstract search for
25 published reviews and surveys and summaries of PCB

1 articles.

2 Q. Is the Monsanto library different from the
3 library in Monsanto's medical department?

4 A. Well, Monsanto medical library is part of the
5 Monsanto's library system. Sometimes they call it the
6 Monsanto Library System, sometimes they call it the
7 Monsanto Information System; but it's all one library, just
8 different parts are located in different buildings.

9 Q. When you did the chemical abstract search, was
10 that in Monsanto's Information Center or Monsanto's medical
11 department library?

12 A. This was done at the Information Center, which
13 is the master library, has the master catalogues.

14 Q. What did you receive as a result of your
15 access to the chemical abstract search?

16 A. A couple of the major documents that I recall,
17 which are the standards, one is the very recent 1979 mono-
18 graphed by the National Academy of Sciences, entitled
19 "Polychlorinated Biphenyls," which detailed the significant
20 published environmental health effects in animal testing up
21 until its publication. Another document that turned up was
22 a document called -- I think it was called the "Report of
23 the Interagency Task Force on PCB's," which was published
24 in May of 1972. This was the earliest summary of history,
25 uses, known health effects and environmental effects and so

1 forth of PCB's. Those were the two major documents that
2 turned up at that time.

3 In addition, I was able to -- through reading
4 just some of the files and information, I learned of the
5 Ekhart Committee submission and was able to get a copy of
6 that, which was available.

7 Q. I am not familiar with the chemical abstract
8 search system. Is that a system that allows you to make
9 entries on a computer systems by topic?

10 A. It is today, yes. You can -- It's a very
11 sophisticated search. You can put together chemicals,
12 words in a title, authors, dates and so forth.

13 Q. And how did it function when you used it in
14 1980?

15 A. In 1980 it was a computerized data base.

16 Q. And did you punch in, then, the topic,
17 "PCB's"?

18 A. I did not do that; I had this done. I called
19 the information center. We have information specialists,
20 and you sort of give them a summary of what you're looking
21 for, articles on PCB's related to health effects, and so
22 forth. Primarily summaries and review articles is what I
23 asked for rather than dozens and dozens of individual
24 articles. I was looking for surveys, and particularly the
25 most current surveys that had the latest information and

1 covered the broadest period of time, up to the latest.

2 Q. In response to your request to the Information
3 Center, did you receive the two reports that you mentioned,
4 the National Academy of Science's report and the Inter-
5 agency Task Force report, or did you receive a printout
6 that listed different documents, or did you receive some-
7 thing entirely different?

8 A. I don't recall specifically, but many times
9 this comes back as a printout, and then you can circle
10 articles that you want, and if they have them in the stacks
11 or in the reference books, they will provide you with
12 copies of articles, or else you can have them ordered. So
13 I probably used some of all of the techniques above to
14 obtain the information.

15 Q. And you indicated that you also went into the
16 files and other information to learn about the Ekhart
17 Committee submission. Which files did you locate that
18 submission in?

19 A. I don't recall how that turned up, whether it
20 turned up on the list or whether it was a -- it was a pub-
21 lished document. There were a lot of government documents
22 and public domain documents that turned up. For instance,
23 another major document that turned up was a document known
24 as the Versar Study, which was -- Versar was a contract
25 research organization which had been commissioned by EPA to

1 essentially do a total history of what is known about
2 PCB's, everything from uses to health effects and
3 environmental effects and so forth.

4 Q. Including information regarding imports and
5 exports?

6 A. I don't know what they had about imports or
7 exports, but Monsanto contributed to the Versar document.
8 For instance, Monsanto made available its production and
9 sales figures. Those numbers in the Versar study come
10 directly from Monsanto. If you compare that with the
11 Ekhart thing, you might not get the curves and graphs and
12 such, but that was available.

13 Q. Did you request any information from
14 Monsanto's medical department in your effort to collect
15 information which summarized Monsanto known information
16 about PCB's and PCB issues?

17 A. Not at that stage, no. I was looking for
18 published information, reviews, summaries of PCB informa-
19 tion.

20 Q. Did you ever request that anyone within the
21 medical department of Monsanto provide to you information
22 which summarized Monsanto's known information about PCB's
23 and PCB issues?

24 MR. BAUER: Objection. Vague as to the use of
25 the term "information which summarizes information."

1 But you can answer.

2 A. I don't recall specifically. Some of this
3 information that you are talking about was summarized in
4 the Ekhart Report. There was a summary document in the
5 Ekhart Report that Monsanto subsequently published. It was
6 referred to as the white paper, because it was a white,
7 sort of plastic-covered, booklet with black letters, of
8 Monsanto's PCB uses. I've forgotten the exact title. This
9 document, which was an overview summary to the Eckart
10 report had this information summarized: What tests had
11 been done, what types of feeding tests had been done by
12 Monsanto, what significant tests had been published in the
13 literature. And I guess probably the publications went
14 from about '77 or '78. At this time it included what was
15 known about scientific studies that were in progress but
16 not yet published, and so on and so forth. This informa-
17 tion was already summarized. I guess it had been done for
18 the Ekhart thing.

19 Q. (by Mr. Bradley) I appreciate the depth of
20 your response. I am not certain, though, that I got an
21 answer to my specific question, which was intended to be,
22 between 1980, when you began collecting information, and
23 your retirement, did you ever request anyone within
24 Monsanto's corporate medical department to provide you with
25 any information regarding Monsanto's knowledge about PCB's

1 and PCB issues?

2 A. I guess I don't understand the question,
3 still. I thought you asked me if anybody had -- if I had
4 asked anybody to provide a summary of information. I asked
5 for specific information from time to time, yes, but I
6 didn't ask for any summary of all information.

7 Q. All right. Then between 1980 and your retire-
8 ment you did not request a summary from the medical depart-
9 ment of the information that was known to Monsanto about
10 the actual or alleged or potential hazards of PCB's?

11 A. Again, I guess I don't understand the ques-
12 tion. There were specific things that I asked for; and
13 when I would ask for information, then they would provide,
14 or answer the questions.

15 Q. Well, then let me try to make the question a
16 little clearer to you.

17 A. Break it down or something.

18 Q. In 1980 you collected information which sum-
19 marized Monsanto's known information about PCB's and PCB
20 issues, correct?

21 A. Yes, along with everybody else's.

22 Q. As part of that effort did you request that
23 Monsanto's corporate medical department provide you with
24 summaries about what was known about the potential or
25 alleged hazards of PCB's and PCB issues?

1 A. In 1980 I did not.

2 Q. Did you request that information ever from
3 Monsanto's corporate medical department? The summary, I'm
4 talking about.

5 MR. BAUER: I think it's still vague. I mean,
6 I don't understand the use of the word "summary" in this
7 context.

8 THE WITNESS: Can I say something.

9 MR. BAUER: No. Because any --

10 Well, is this like a bibliography, a purported
11 summary of everything that is was known, or an abstract of
12 a particular paper, all of which would fit easily within
13 the definition of the word "summary."

14 MR. BRADLEY: Well, I don't think I'm pre-
15 pared to define "summary." I am entitled to know whether
16 he views himself as requesting a summary, and then, if he
17 did, I'll ask about it. But I appreciate your effort to
18 narrow any confusion, or eliminate any confusion about my
19 question.

20 MR. BAUER: Obviously, anything that you can
21 think of falling under the word "summary" is included in
22 that answer. I guess.

23 MR. BRADLEY: That's correct.

24 A. I guess I'm not quite sure what the question
25 is, but I will give you an answer about what summaries I

1 asked for. I can tell you I asked for specific summaries
2 of specific information at various times, but I didn't ask
3 for summaries for all information at all times.

4 Q. (by Mr. Bradley) All right. So you did make
5 a request for summaries of some information from Monsanto's
6 corporate medical department in 1980 until the time you
7 retired?

8 A. Yes. I testified to that previously.

9 Q. On what topics did you request summaries from
10 Monsanto's corporate medical department between 1980 and
11 the time of your retirement?

12 A. The first summary that I asked for was probab-
13 ly in the fall of 1980, about that time frame. After I had
14 been in the job a few months, I asked Dr. Gaffey, who was
15 the director of our epidemiology department, to provide me
16 with a summary of all of the known human health effect
17 studies that had been published.

18 Q. Did you request summaries on any other topics
19 from Monsanto's corporate medical department?

20 A. Yes. In 1981, I asked the director of our
21 toxicology department to provide me with summaries of our
22 chronic animal-feeding studies that had been performed at
23 IBT Laboratories, a summary of the data, and a summary of
24 information related to other animals' feeding studies -
25 PCB's.

1 Q. Any other topics?

2 A. From the corporate medical department?

3 Q. Yes.

4 A. Those are the two major topics that come to
5 mind.

6 Q. Between 1980 and until the time of your
7 retirement did Monsanto's corporate medical department
8 include the industrial hygiene section?

9 A. Yes, it did.

10 Q. Between 1980 and the time of your retirement
11 did Monsanto's medical department include a toxicology
12 section or department?

13 A. Yes.

14 Q. Who was the head of toxicology within
15 Monsanto's medical department in 1981?

16 A. I believe it was Dr. George Levinskas.

17 Q. Did Dr. Gaffey provide you with a summary of
18 all of the known human health affect studies that had been
19 published?

20 A. What Dr. Gaffey provided me with was a sum-
21 mary of the significant literature of human epidemiological
22 studies and some clinical studies which had been published
23 primarily in the Peer Review Journal, and he prepared this
24 in a format suitable for a presentation in a Peer Review
25 Journal, because it hadn't been done, to our knowledge,

1 before.

2 MR. BRADLEY: Off the record.

3 (Thereupon, a short colloquy was had.)

4 Q. (by Mr. Bradley) Back on the record. Dr.
5 Craddock, does the document prepared by Dr. Gaffey have
6 your name on it?

7 A. Not to my knowledge, no.

8 Q. How do you spell Gaffey?

9 A. G-a-f-f-e-y.

10 Q. Between 1980 and -- Let me start all over
11 again. Between March of 1976 and today, did you request
12 any other information from Monsanto's corporate medical
13 department regarding any and all alleged potential or
14 actual hazards of PCB's or monochlorinated biphenyls?

15 A. Again, I guess the breadth of the question
16 throws me, but yes, I did ask for specific information from
17 Monsanto's medical department.

18 Q. Tell me what you can recall regarding your
19 requests to the corporate medical department for informa-
20 tion on that topic.

21 A. In 1980 one of the first tasks that I per-
22 formed was to published a generic material safety data
23 sheet on polychlorinated biphenyls.

24 Q. Did the published generic material safety data
25 sheet have any information on it other than -- What I'm

1 trying to figure out is, did the material safety data sheet
2 -- which are also known as MSDS's; is that correct?

3 A. Yes.

4 Q. Did the MSDS's that you published in generic
5 form in 1980 indicate known toxicological information
6 regarding PCB's?

7 A. Yes, they did.

8 MR. BRADLEY: Okay. Would you now go back
9 about three questions. I want to hear the question to
10 which he responded, "In 1980, I published the generic
11 material safety data sheet..."

12 (Thereupon, the reporter read back the question and
13 answer.)

14 Q. (by Mr. Bradley) What else, if anything, can
15 you recall about requests that you made to Monsanto's
16 corporate medical department regarding any and all alleged
17 potential or actual hazards of polychlorinated biphenyls,
18 or monochlorinated biphenyls?

19 A. From time to time various studies would appear
20 in the Peer Review literature that was identified in our
21 search. I would have the head of the particular department
22 that had a particular expertise look at these documents in
23 particular and give me their opinion as to what they
24 thought about the document, what it said, since I'm a lay-
25 man in these terms, to make sure that I understood what the

1 author was saying and what their evaluation was of the
2 study, and so forth.

3 Q. Anything else?

4 A. No. That's roughly it. That's about as broad
5 as I can make it.

6 Q. All right. And did you make those requests to
7 Monsanto's corporate medical department regarding those
8 Peer Review Journal articles -- were your requests made in
9 writing?

10 A. Sometimes they may have been; sometimes it may
11 have been as casual as a phone call.

12 Q. And were the responses of the corporate
13 medical department to your requests for reviews of journal
14 articles given to you in written form?

15 A. Sometimes they may have been, and sometimes it
16 would be a phone call back, or whatever.

17 Q. In March of 1976, or at any time later, did
18 Monsanto gain knowledge that exposure to PCB's on one's
19 skin could lead to the PCB's being absorbed into one's
20 body?

21 A. In what time period?

22 Q. From March of 1976 to today's date.

23 A. We certainly knew that in 1976, yes.

24 Q. I am going to refer to March, 1976 to today's
25 date as the period.

1 A. Okay. If we knew it before that? I mean,
2 does that -- you know. I don't know how you want me to
3 answer that question.

4 MR. BAUER: His question was, "acquired."
5 Listen to the question, and you've got to answer the
6 question as it's posed.

7 Q. (by Mr. Bradley) And I am going to refer to
8 that time period either as "the date," or "during that
9 period of time," or something similar.

10 During that period of time, did Monsanto know
11 that if PCB's enter the skin, it could cause a condition
12 known as chloracne?

13 A. Under certain conditions, yes.

14 Q. And during that period of time, did Monsanto
15 know that if PCB's entered the body through the skin in
16 sufficient quantities to cause chloracne, that it could be
17 a sign of more systemic poisoning?

18 A. I guess I don't know what you mean by the term
19 "systemic poisoning."

20 Q. Did Monsanto know that during that time that,
21 if PCB's entered the body through the skin and chloracne
22 was formed, that it could be an indication of damage to
23 one's liver, or to --

24 A. Yes.

25 Q. During that period of time, did Monsanto learn

1 that any of its PCB products contained polychlorinated
2 dibenzofurans?

3 A. Did it learn during this time period? We
4 certainly knew during the time period, whether we had
5 learned it during that time period -- I will say yes.

6 Q. So in March of 1976 Monsanto knew that some of
7 its PCB products contained polychlorinated dibenzofurans,
8 correct?

9 MR. BAUER: Object to the form. I think what
10 he just testified to was that it knew it during the time
11 period -- Monsanto knew that during this time period, but
12 he wasn't sure when it learn it. So I don't know how he
13 could answer the next question, when did it know it in
14 1976, when he has testified he didn't know when it learned
15 it.

16 But go ahead, if you can answer.

17 Q. (by Mr. Bradley) As I understand your answer,
18 you don't know the specific date that Monsanto learned that
19 some of its PCB products contained polychlorinated dibenzo-
20 furans, but it knew that information by at least March of
21 1976; is that correct?

22 A. I believe that is correct.

23 Q. During this time period, did Monsanto learn
24 anything about the alleged or potential or actual hazards
25 of the polychlorinated dibenzofurans which were part of the

1 PCB mixtures manufactured by Monsanto?

2 MR. BAUER: Objection. Vague as to whether
3 you are talking about knowledge of furans, generally, in
4 any dose, or knowledge in the dosage that they were being
5 found in the Aroclors.

6 MR. BRADLEY: Read the question back.

7 (Thereupon, the reporter propounded the previous
8 question.)

9 A. Yes.

10 Q. (by Mr. Bradley) When did it learn that
11 information?

12 A. I don't think that there is a specific date.
13 During that time period they knew that information.

14 Q. Did Monsanto -- Do you know whether Monsanto
15 knew that information -- and by "that information," I'm
16 talking about the alleged or real hazard of the poly-
17 chlorinated dibenzofurans -- before March of 1976?

18 MR. BAUER: Same objection. Vague as to
19 whether we're talking about any dose versus, for instance,
20 the dose in the Aroclors.

21 A. What Monsanto knew was that the testing result
22 of the Aroclor polychlorinated biphenyls gave a certain re-
23 sult, whether that result was based on the testing of these
24 materials as manufactured, as they came from the plant, as
25 they were shipped, as they were used. So whatever the re-

1 sult was was the result of the commercial material with
2 whatever it contained, so the test results that were
3 obtained would show no chronic effects, had no chronic
4 effects, or the PCB, as they had no effects. So what they
5 knew is that the material, as tested, gave whatever result
6 it gave, and whatever it contained contributed to that or
7 did not contribute to that. So that is what they knew.

8 Q. Did Monsanto learn anything during this time
9 period about any specific health effects associated with
10 polychlorinated dibenzofurans of the type that were found
11 in Monsanto's PCB products?

12 A. I guess I don't know how to answer that ques-
13 tion, either. It's very broad and vague. I'm not sure
14 what you're looking for.

15 Q. Well, I'm less interested in you're knowing
16 what I'm looking for than in your answering my question.
17 But if they go hand in hand, then I can make an effort to
18 make my question better understood. I'm interested in
19 knowing whether, during this time period, Monsanto learned
20 any distinct information regarding the health hazards of
21 polychlorinated dibenzofurans of the type that were found
22 in Monsanto's PCB products.

23 A. To my knowledge, there has been no direct
24 testing of PCDF, per se, to determine health effects of
25 animals or humans or anything else. So I would say the

1 answer is no. I don't know of any direct testing of PCB's
2 at any time.

3 Q. Are you aware of any papers that have dis-
4 cussed the relative toxicity of polychlorinated dibenzo-
5 furans, comparing their toxicity to the toxicity, for
6 example, of PCB's?

7 A. Yes.

8 Q. When did Monsanto learn that information?

9 MR. BAUER: Object to the form. It's beyond
10 the scope in terms of time frame.

11 But you can answer to the extent that you know
12 the answer.

13 A. The relative comparisons of toxicities was
14 first discussed in the scientific literature in about the
15 1982-'83 time frame.

16 Q. (by Mr. Bradley) So is that roughly the
17 period, then, when Monsanto learned the information?

18 A. About the relative toxicities?

19 Q. Yes.

20 A. Or -- I'd say it's when Monsanto learned that
21 there were relative comparisons of toxicities being made.
22 This is without testing data. This is based on other --

23 Q. So Monsanto learned of the information about
24 the time that the comparisons were made in the published
25 literature?

1 MR. BAUER: Objection. Vague as to how the
2 term, "the information," is now being used in the question.

3 Q. (by Mr. Bradley) All right. And Monsanto
4 learned about the comparative toxicities of PCDF's with
5 PCB's at or about the time that the comparisons were pub-
6 lished in the literature?

7 MR. BAUER: Objection. Still vague. We have
8 designated him from '76 forward. So he is not familiar
9 with everything Monsanto knew prior to '76.

10 MR. BRADLEY: But he already indicated that
11 literature came out in '82.

12 MR. BAUER: That's a specific piece of litera-
13 ture he's talking about.

14 MR. BRADLEY: You are the one who designated
15 him on this topic. He's given an answer that indicates his
16 knowledge within the period for which he's been presented.

17 I'm not interested in any answer regarding in-
18 formation that predates March of '76. You're here to give
19 testimony regarding the period of time, March of '76 to
20 today, July 21, 1993.

21 THE WITNESS: Is that today?

22 MR. BRADLEY: I'll ask that question again.

23 THE WITNESS: I thought I answered with
24 reference to 1982. That is within that time frame, right?

25 MR. BRADLEY: Yes.

1 (Thereupon, a short recess was taken.)

2 Q. (by Mr. Bradley) Has Monsanto received during
3 this period of time any information indicating that PCB's
4 may be harmful to human health?

5 A. Yes.

6 Q. And what information did Monsanto learn during
7 this period that indicates that PCB's may be harmful to
8 human health?

9 MR. BAUER: Objection. Overbroad.

10 But you can answer.

11 MR. BRADLEY: It's intended to be broad.

12 I'm really interested in all that you know on
13 that topic, as best you are able to recall.

14 A. There have been various publications from
15 newspapers to preambles in legislative history of regula-
16 tions, scientific articles, pseudoscience, that made all
17 sorts of statements about PCB health effects, some of it
18 based on good hard science, some of it based on not so good
19 science. So there are be publications that have come to
20 opposite conclusions using similar data.

21 Q. (by Mr. Bradley) Well, did Monsanto, during
22 this period of time, know of any hazards to human health
23 from exposure to polychlorinated biphenyls?

24 A. Yes.

25 Q. What did Monsanto learn during this period

1 about real hazards to human health from exposure to poly-
2 chlorinated biphenyls?

3 MR. BAUER: Object to the form. Use of the
4 word "real." I take it what you mean is things that
5 Monsanto thought was good science or agreed with the
6 conclusions on?

7 MR. BRADLEY: That's fine.

8 Not pseudoscience, that you referred to in the
9 prior answer.

10 A. As far as clinical effects, Monsanto knew that
11 PCB's, like other chlorinated organic compounds, would
12 cause dermatological reactions. Monsanto also knew that
13 PCB's, like other chlorinated organic chemicals, could
14 cause liver injuries. Those are well known and well
15 established.

16 Q. (by Mr. Bradley) Anything else?

17 A. It was known that if you got PCB's in your
18 eyes, the same as these other chlorinated chemicals, it
19 could cause a burning sensation to the eyes.

20 Q. Anything else?

21 A. Depending on the dose and the species, other
22 effects from PCB's, like other chemicals, could occur.

23 Q. What other effects did Monsanto know during
24 this period could occur from exposure to PCB's?

25 MR. BAUER: Object to the form. I thought the

1 previous question was talking about human health effects,
2 and now I think you are following up on species, and it's
3 unclear to me whether we're talking human health effects or
4 for animals.

5 Q. (by Mr. Bradley) What other human health
6 effects did Monsanto know one could have if they were
7 exposed to PCB's?

8 A. Clinical manifestations. Those are the major
9 known health effects.

10 Q. Did Monsanto ever gain knowledge during this
11 period of time of studies showing a relationship between
12 malignant melanoma and exposure to PCB's?

13 A. Showing a relationship?

14 A. Yes.

15 Q. I don't recall ever having seen a paper that
16 shows a statistical relationship between statistically
17 significant malignant melanoma and exposure to PCB's.

18 Q. Did Monsanto ever learn during this period of
19 time of any increased incidences of brain tumors in people
20 exposed to PCB's?

21 A. Again, there have been reports in the news
22 media and in the published literature that there is an
23 elevated increase of brain tumors, but, again, I don't
24 think this has been reported to be statistically signifi-
25 cant.

1 Q. During this period of time did Monsanto learn
2 that exposure to PCB's could result in a statistically
3 significant increase in adverse reproductive abilities in
4 humans?

5 MR. BAUER: Object to the form of the ques-
6 tion.

7 MR. BRADLEY: What's wrong with the form?

8 MR. BAUER: The use of the word "could." Does
9 that mean it would, does, or has anyone alleged in any pub-
10 lication ever that it does?

11 Q. (by Mr. Bradley) During this period of time
12 did Monsanto learn of any studies indicating a relationship
13 between exposure of PCB's and adverse reproductive effects
14 in human beings?

15 A. I don't recall any statistically significant
16 correlation between PCB's and human reproduction.

17 Q. I appreciate the answer, but that really
18 wasn't my question. My question was, during this period of
19 time did Monsanto learn of any -- No matter what my ques-
20 tion was, my question now is, during this period of time
21 did Monsanto learn that there is an increased incidence of
22 adverse reproductive effects in humans exposed to PCB's?

23 A. There have been literature reports of in-
24 creased adverse reproductive effects. I don't think these
25 have been shown to be statistically significant.

1 Q. Did Monsanto learn during this period of time
2 that there was an increased incidence in reproductive fail-
3 ure of women who were exposed to PCB's?

4 MR. BAUER: Object. Asked and answered.

5 Q. (by Mr. Bradley) I asked on humans before,
6 now I am specifically asking relative to women.

7 A. I don't think there is any information that
8 shows a statistical significance in reproductive ill
9 effects in women.

10 Q. During this period of time did Monsanto learn
11 any information that reported an increase in breast cancer
12 in women exposed to PCB's?

13 A. There have been newspaper accounts alleging
14 this, but there is no statistically-significant scientific
15 information that links PCB's as a causal agent in breast
16 cancer in women.

17 Q. Do you know whether polychlorinated dibenzo-
18 furans are formed when PCB's are heated to low tempera-
19 tures?

20 A. The U.S. EPA has published data on the forma-
21 tion of polychlorinated dibenzofurans from PCB's. The pub-
22 lished EPA data indicates that the PCDF's are formed in the
23 presence of oxygen, excessive oxygen, when the temperature
24 exceeds about six hundred degrees centigrade, which is a
25 fairly high temperature.

1 Q. Do you know whether transformers or capacitors
2 containing PCB dielectric fluid blended by Monsanto ever
3 reach temperatures that would result in the formation of
4 polychlorinated dibenzofurans?

5 MR. BAUER: Object to the form of the ques-
6 tion. Lacks foundation and outside of the copy of the
7 30(b)(6) Notice.

8 MR. BRADLEY: The rules are, you answer unless
9 you're instructed not to.

10 A. I guess the question is unclear. Are you
11 talking about normally-functioning equipment, or malfunc-
12 tioning equipment, or catastrophic conditions, or how?

13 Q. (by Mr. Bradley) Under any conditions, par-
14 ticularly conditions of failure.

15 A. There have been reports that under cata-
16 strophic conditions, fire, that PCDF's could be generated
17 from PCB's and dielectric fluid, and --

18 Q. And what?

19 A. I was trying to think. From PCB's or PCB
20 blended fluids? Is that correct? You asked about PCB
21 blended fluids?

22 Q. Isn't there a different in your answer if I
23 said PCB's or PCB blended fluids?

24 A. Well, yes, there is.

25 Q. How would the answer be different if we were

1 discussing PCDF's and PCB's versus PCB fluids?

2 A. PCDF's have been shown to be generated from
3 PCB fluids under catastrophic fire conditions. PCDF's have
4 also been shown to come from trichlorobenzenes under cata-
5 strophic fire conditions. Trichlorobenzenes in some cases
6 can be part of an askarel blended fluid.

7 Q. Are they scavengers?

8 A. Are what a scavenger?

9 Q. Is trichlorobenzene a scavenger?

10 MR. BAUER: Object to the form. Lacks founda-
11 tion and is outside of the scope.

12 But you can give him your understanding.

13 A. Trichlorobenzene is part of the blended fluid
14 and functions as a dielectric purpose.

15 Q. (by Mr. Bradley) From 1980 to today's date,
16 as opposed to the prior period of time we have been talking
17 about, has there been someone within Monsanto responsible
18 for keeping current on the alleged potential or actual
19 hazards of polychlorinated biphenyls?

20 A. Yes.

21 Q. Who was that person or who were those people?

22 A. From June, 1980, until January 29th or 30th,
23 1993, it was me. From the date I retired, I guess it was
24 the next Monday, it would have been February 1st to the
25 present, it would be Dr. Gary Mappes, M-a-p-p-e-s.

1 Q. During this period of time as we previously
2 defined it, March, '76 to today's date, did Monsanto gain
3 any information that PCB's from leaking transformers caused
4 any adverse human health effects?

5 A. Again, it's a broad question. I don't know
6 how to answer that. There have been reports that PCB fluid
7 that had leaked from equipment had caused health effects.

8 Q. And what health effects were reported?

9 A. Skin rashes, liver damage. The news media
10 reported things such as breast cancer - a litany of things
11 which were not necessarily clinically significant.

12 Q. During this period of time was Monsanto ever
13 sued relative to adverse human health effects resulting
14 from leaking transformers that were discharging PCB
15 dielectric fluid?

16 MR. BAUER: Objection. Lack of foundation
17 that the witness would know whether particular lawsuits
18 were for health effects related to transformer leaks.

19 But if you know, tell him.

20 A. I don't know specifically, no.

21 Q. (by Mr. Bradley) Do you know whether, during
22 this period of time, Monsanto was ever sued regarding ad-
23 verse health effects resulting from capacitors that leaked
24 PCB dielectric fluid?

25 MR. BAUER: Same objection.

1 A. I don't know specifically.

2 Q. (by Mr. Bradley) Do you know whether, during
3 this period of time, Monsanto was ever sued for any adverse
4 health affect resulting from an exposure to any PCB
5 material manufactured by Monsanto?

6 A. Yes, there have been.

7 Q. How frequently -- Roughly, how frequently does
8 Monsanto get sudden regarding adverse health effects from
9 exposure to any of its PCB's?

10 MR. BAUER: Objection. Irrelevant and outside
11 of the scope.

12 A. I couldn't answer that. I have no way of
13 knowing that.

14 Q. (by Mr. Bradley) You don't know how frequent-
15 ly.

16 MR. BAUER: Same objection.

17 A. No.

18 Q. (by Mr. Bradley) Did Monsanto learn during
19 this period of time that greatest personal hygiene is of
20 paramount important for workers exposed to PCB's?

21 A. What kind of personal hygiene?

22 Q. Greatest. G-r-e-a-t-e-s-t. Greatest personal
23 hygiene.

24 A. I guess I don't understand the question.

25 Q. Did Monsanto learn during this period of time

1 that careful personal hygiene is of paramount importance
2 for workers exposed to PCB's?

3 MR. BAUER: Object to the form of the ques-
4 tion.

5 A. Monsanto knew during this period of time that
6 personal hygiene was important, yes.

7 Q. (by Mr. Bradley) Did Monsanto know during
8 this period of time that workers handling PCB's, or with
9 frequent exposure to its vapors, should undergo periodic
10 medical examinations?

11 MR. BAUER: Object to the form of the ques-
12 tion.

13 MR. BRADLEY: What's wrong with the form?

14 MR. BAUER: Well, I don't know what you mean
15 by the word, "should."

16 MR. BRADLEY: Fine.

17 Go ahead and answer the question.

18 MR. BAUER: Medically advisable? A good prac-
19 tice of workers? A good practice of employers? Good moral
20 responsibility of employers to employees?

21 Q. (by Mr. Bradley) Do you recall the question?
22 Let me ask it again: Did Monsanto learn during this period
23 of time that workers handling PCB's or with frequent
24 exposure to its vapors should undergo periodic medical
25 examinations?

1 A. Monsanto knew during this period of time that
2 workers handling PCB's, like any other industrial chemi-
3 cals, should practice good hygiene and have annual periodic
4 medical checkups.

5 Q. Did Monsanto acquire that information -- Let
6 me ask it this way: Had Monsanto already acquired that
7 information by March of 1976?

8 A. Yes.

9 Q. Did Monsanto know during this period of time
10 that repeated exposures to PCB vapor may produce internal
11 bodily injury which may be disabling or could be fatal?

12 A. Yes.

13 Q. Did Monsanto learn during this period of time
14 that ingestion of one ounce of polychlorinated dibenzo-
15 furans would be enough to harm ten thousand people?

16 MR. BAUER: Object to the form of the ques-
17 tion. Vague use of the word "harm."

18 A. I guess I would have to put that into concen-
19 tration and dosage. That is an awfully large quantity of
20 dibenzofurans.

21 Q. (by Mr. Bradley) During this period of time
22 did Monsanto learn that if an ounce of polychlorinated
23 dibenzofuran was divided into equal portions and given to
24 ten thousand people, that that would be enough to cause
25 harmful adverse human health effects in those ten thousand

1 people?

2 MR. BAUER: Object to the form of the ques-
3 tion. Calls for speculation.

4 A. I guess in that form I don't know what the
5 dose would be. Monsanto did know that there were signifi-
6 cant dose levels of polychlorinated dibenzofurans which
7 were reported to cause human health effects.

8 Q. Did Monsanto learn during this period of time
9 that preplacement periodic physical examinations should be
10 conducted by medical personnel on workers exposed to PCB's?

11 MR. BAUER: Object to the form of the ques-
12 tion.

13 A. As I stated previously, Monsanto knew during
14 this period of time that workers that manufactured chemi-
15 cals including PCB's should have a routine medical monitor-
16 ing program.

17 Q. (by Mr. Bradley) Would that routine medical
18 monitoring program that you referred to include preplace-
19 ment physical examinations?

20 MR. BAUER: Object to the form of the ques-
21 tion.

22 A. I'm not sure what you mean by the term "pre-
23 placement."

24 Q. (by Mr. Bradley) Examination of a worker
25 before that worker was allowed to be exposed to PCB's.

1 MR. BAUER: Same objection.

2 A. I guess the answer is the same, that PCB's are
3 like any other industrial chemicals. Workers are subjected
4 to preemployment physicals and periodic medical monitoring.

5 Q. (by Mr. Bradley) During your work at Monsanto
6 did you know a gentleman by the name of Dr. Emmett Kelly?

7 A. Yes, I did.

8 Q. Was Dr. Kelly an employee of Monsanto during
9 any period of time that you worked there?

10 A. Yes, he was.

11 Q. During your work at Monsanto, did you ever
12 learn that Dr. Kelly had stated that furans have one of the
13 most extreme toxicities of any compound since the beginning
14 of chemistry?

15 A. No, I had not heard that.

16 Q. Do you agree with that statement?

17 A. I don't know if I agree with it totally. I do
18 believe that polychlorinated dibenzofurans can probably be
19 toxic. I don't know what the relative toxicity is. I have
20 seen no data.

21 Q. During this period of time, did Monsanto know
22 that PCB's had entered the human food chain?

23 A. Yes.

24 Q. During this period of time did Monsanto know
25 that fish were detected with PCB's at levels higher than

1 The Food and Drug Administration limit for human consump-
2 tion?

3 A. Yes.

4 Q. Did Monsanto know during this period of time
5 that chlorinated naphthelenes had been identified as trace
6 constituents of commercial PCB mixtures?

7 A. Are we talking about the time frame from 1976
8 to '93?

9 Q. March of 1976 to July 21, 1993 at 2 10 P.M.,
10 central standard time.

11 A. During this time period Monsanto knew that
12 chlorinated naphthelenes had been reported as impurities
13 produced in the early 1930's time frame, or thereabouts.

14 Q. During this period of time did Monsanto learn
15 that chlorinated naphthelenes are combustion by-products
16 formed during transformer fires?

17 A. Monsanto knew that chlorinated naphthelenes
18 were reported to be combustion products of fires involving
19 dielectric fluids, whether it was transformers or capaci-
20 tors or what, I don't know.

21 Q. Did Monsanto know during this period of time
22 that the manufacture of chlorinated naphthelenes was phased
23 out after World War I because they could rapidly destroy
24 the liver?

25 MR. BAUER: Object to the form.

1 A. Monsanto knew that chlorinated naphthelenes
2 could cause liver damage. I don't know about the rapid
3 phase-out afterward Word War I.

4 Q. (by Mr. Bradley) Did Monsanto learn during
5 this period of time that chlorinated dibenzodioxins are
6 formed in transformer fires in transformers containing PCB
7 dielectric fluid?

8 A. Under certain conditions, yes.

9 Q. Did Monsanto learn during this period of time
10 that chlorinated dibenzodioxins are one of the most toxic
11 forms of chemicals ever manufactured?

12 A. To certain species at certain doses, yes.

13 Q. Would that include the species, homo sapiens?

14 A. No.

15 Q. Did Monsanto learn during this period of time
16 that ninety-nine percent of all Americans reportedly have
17 over five hundred parts per billion PCB in their adipose
18 tissue?

19 A. Five hundred parts per billion?

20 Q. Yes.

21 A. I am not sure of the concentration units, but
22 Monsanto learned during this period of time that a large
23 portion of the U.S. population had it, yes.

24 Q. Did Monsanto learn during this period of time
25 that over ten percent of the population had over one part

1 per million PCB in their adipose tissue?

2 A. During a portion of that time that is true,
3 Monsanto also learned during this period of time that these
4 levels have dropped significantly since '81.

5 Q. And the lowest levels they ever dropped to and
6 been measured at is nine percent of the population contain
7 one part per million PCB's in their adipose tissue; is that
8 correct?

9 MR. BAUER: Object to the form.

10 Q. (by Mr. Bradley) All right. Well, let me re-
11 ask the question, then. Is the lowest percentage of humans
12 reported to have one part per million PCB in their adipose
13 tissue nine percent during this period of time?

14 A. There is a paper that discusses that that
15 comes out of the U.S. EPA's National -- NHAT's Study,
16 National Human Adipose Tissue Study. There are trends that
17 are published periodically as the data comes out. It's
18 been declining since the eighties.

19 Q. Do you recall, though, whether the lowest per-
20 centage reported is nine percent.

21 MR. BAUER: Objection. Asked and answered.

22 Q. (by Mr. Bradley) Go ahead and answer.

23 A. I guess we have discussed so many units that,
24 without having the paper in front of me, I can't correctly
25 state which of these we're talking about now. But there

1 are papers that are published periodically by the U.S. EPA
2 which detail these numbers.

3 Q. Did Monsanto learn during this period of time
4 that over one million pounds of PCB's which were produced
5 by Monsanto between 1929 and 1979 were released to the
6 environment and are still present out in the environment?

7 A. Monsanto is aware that PCB's have been
8 released to the environment. I don't know what level of
9 PCB's or what poundages are in the environment. I don't
10 think we have any data on that; but PCB's have been
11 released to the environment, yes.

12 Q. You have never seen any data that shows the
13 amount of PCB's that have been released to the environment
14 during that period of time?

15 A. I have seen several reports of what the data
16 is. In 1979 the EPA reported seven hundred and fifty
17 million pounds had been released to the environment. The
18 number keeps changing. Monsanto has seen information that
19 PCB's have been released to the environment, but I don't
20 know how to put a verification as to your number, the
21 accuracy of your number.

22 Q. During this period of time did Monsanto learn
23 that PCB's had been found in human mothers' milk?

24 A. Yes.

25 Q. During this period of time did Monsanto learn

1 that PCB's had been found in human fetuses?

2 A. Fetal tissue? I think that's probably true.

3 Q. Did Monsanto learn during this period of time
4 that PCB's pass through the mother's placenta to the fetus
5 in humans?

6 A. Yes.

7 Q. During this period of time did Monsanto learn
8 that PCB's are likely to remain a feature of our planet for
9 centuries because they are slow to biodegrade?

10 MR. BAUER: Object to the form. How someone
11 can state what's going to --

12 You can answer, if you are able.

13 A. I can't forecast the future. PCB's do biode-
14 grade, some of them at perceptibly slow rates.

15 Q. (by Mr. Bradley) Well, are you able to tell
16 us during this period of time whether Monsanto learned that
17 PCB's will be in our environment for at least another hun-
18 dred years?

19 A. No. I don't think I can make that statement.

20 Q. Okay.

21 A. That's speculation.

22 Q. Well, Monsanto has employees, does it not,
23 that have determined rates of biodegradation of different
24 isomers and homologs of its Aroclor products?

25 A. Yes. And the biodegradation rate depends on

1 ambient conditions and whatever populations are present.
2 There are a lot of factors that have to be taken into
3 account.

4 Q. At least you're not familiar with any report
5 or opinion of anyone, for that matter, about whether PCB's
6 will be in our environment for the next hundred years?

7 A. I have seen no scientific report that says
8 PCB's will be in the environment for any specific time
9 period, no.

10 Q. During this period of time did Monsanto learn
11 that PCB's biomagnify in the human food chain?

12 A. Yes.

13 Q. During this period of time did Monsanto learn
14 that PCB's biomagnify in human beings?

15 A. Yes.

16 Q. During this period of time did Monsanto learn
17 that PCB's biomagnification rates in the human species for
18 PCB's could be as high as two hundred thousand times?

19 MR. BAUER: Object to the form of the ques-
20 tion. I don't know how you could learn about something
21 that could be.

22 But you can answer the question about whether
23 we learned that could have happened?

24 A. There are biomagnification factors that have
25 been reported. I don't know what the upper limits are. I

1 know they have been reported in the forty or fifty thousand
2 range. I don't know about two hundred thousand.

3 Q. (by Mr. Bradley) Did Monsanto learn during
4 this period of time that changes in liver chemistry were
5 observed in humans exposed to PCB's?

6 A. Yes.

7 Q. Did Monsanto learn during this period of time
8 that PCB's can work synergistically with other compounds to
9 impair the human immune system?

10 A. I don't know how to answer that question.

11 MR. BAUER: Objection. Assumes a fact not in
12 evidence.

13 MR. BRADLEY: Okay.

14 A. Monsanto learned during this time that PCB's
15 can work synergistically with other chemicals and change
16 the effects on the chemicals on the species and on the
17 organ.

18 Q. (by Mr. Bradley) And did Monsanto learn
19 during this period of time that PCB's work synergistically
20 with other compounds and impair the human immune system?

21 A. I guess I don't know of any scientific data
22 that is a statistically significant report that shows that.

23 Q. During this period of time did Monsanto learn
24 that any agency of the United States Government considered
25 and labeled PCB's as probable carcinogens?

1 A. Yes.

2 Q. Do you know whether Dr. Kelly, Monsanto's
3 former medical director, ever calculated that one ounce of
4 furans would be enough to poison ten thousand people?

5 A. No, I do not.

6 Q. Did Monsanto learn during this period of time
7 that incineration of PCB materials in open-dump burning was
8 a source of PCB's in the environment?

9 A. Yes.

10 MR. BRADLEY: Let's take a break.

11 (Thereupon, a short recess was taken.)

12 Q. (by Mr. Bradley) All right. Dr. Craddock,
13 you are not a medical doctor?

14 A. No.

15 Q. You are not a toxicologist?

16 A. No.

17 Q. You are not an epidemiologist?

18 A. No.

19 Q. You are not a gentleman who has gone to a
20 university and taken any courses in toxicology?

21 A. I think I'm a gentleman. I have taken
22 advanced continuing education courses in toxicology at
23 Jefferson Medical University in Philadelphia, but I have
24 not taken formal toxicology courses.

25 Q. You have not taken any formal epidemiological

1 courses?

2 A. No.

3 Q. Nor any formal studies in medicine?

4 A. No, sir.

5 Q. I am going to show you what is marked for
6 identification as Plaintiff's Exhibit 2816. Is that a
7 document you have seen before?

8 A. No. I don't think I have seen that.

9 Q. I am going to show you 2920. Is that a docu-
10 ment you have seen before?

11 A. Yes. I have.

12 Q. What is that document?

13 A. This is a chapter out of an internal document
14 that Monsanto publishes and sends to its plants called the
15 "Workplace Exposure Control Guideline."

16 Q. Is the intended reader of that document a
17 Monsanto employee?

18 A. Yes.

19 Q. It's not intended for reading by Monsanto
20 customers?

21 A. It's not developed for that purpose, no.

22 Q. Are you able to tell the date that the docu-
23 ment was prepared?

24 A. Yes. This one was prepared in November of
25 1986.

1 Q. Do you know who the author is?

2 A. Yes. Albert E. Peterson.

3 Q. And what is the subject matter discussed or
4 contained in the exhibit?

5 A. The title is "PCB Handling Guideline," and
6 it's to provide -- Well, that's it.

7 Q. Okay. Is that exhibit a true and accurate
8 copy of the "PCB Handling Guideline" prepared in November
9 of '86 by Albert Peterson?

10 A. It appears to be.

11 Q. Is the information that is contain in that
12 exhibit -- Let me ask it this way --

13 MR. BAUER: Well, hold on a second.

14 A. It's not a complete copy. I guess it's page
15 one of fifty-five, and then it stopped somewhere else.

16 Q. (by Mr. Bradley) Is this a true and accurate
17 copy of the first forty-three pages of the fifty-five-page
18 document that was prepared by Mr. Peterson?

19 A. I have not examined every page of this docu-
20 ment. Looking at the title page, as I said earlier, it
21 looks like the document that we're discussing. I don't
22 know if all of the pages -- It's got every other page.
23 It's a two-sided document, and somehow they have gotten
24 every other one for the first bunch. It's really messed
25 up.

1 MR. BRADLEY: I note that we copied it in the
2 same order that it was provided to us, according to the
3 numbering system that Monsanto uses.

4 MR. BAUER: Then the bad photocopy job hap-
5 pened before we produced it, obviously.

6 MR. BRADLEY: Right. But that doesn't stop it
7 from being a bad photo, so I would request that Monsanto
8 provide us with a complete copy of that document.

9 MR. BAUER: We'll endeavor to find out if we
10 can do that. I will endeavor to find out if we can do
11 that.

12 MR. BRADLEY: Okay.

13 I am now going to show you Plaintiff's Exhibit
14 2919, which unfortunately doesn't have a complete date on
15 it, and I am hoping that you will recall the date, if you
16 have seen the document before.

17 Is Plaintiff's Exhibit 2919 a document you
18 have seen before today?

19 A. I have seen this type of document, whether
20 it's this particular one, and I don't have the date, but
21 most probably I have seen this document, yes.

22 Q. Is it a true and accurate copy of a document
23 you saw before today that was entitled, "Monsanto Back-
24 grounder"?

25 MR. BAUER: Object to the form of the ques-

1 tion. He testified that he saw some kind of documents of
2 that type but he couldn't recall if it was this one, so I
3 don't know how he could answer that question.

4 But if you can, go ahead.

5 A. I don't know if this is the exact true and
6 accurate copy. I presume it is. I see nothing wrong with
7 this.

8 Q. (by Mr. Bradley) Are you able from your re-
9 view of the document to tell us what date it was authored?

10 A. Well, September 19 -- the year was left off.
11 It was after '87 because it has 1987 references in it.

12 Q. So it was minimally in the last six years?

13 A. This -- I could speculate and say this may
14 have been about 19 --

15 Q. Before you speculate, Dr. Craddock, the law
16 doesn't allow you to speculate, but the law does allow you
17 to make a best estimate. Are you able to do that?

18 A. I would say sometime after 1987, based on what
19 is there, then.

20 Q. Did Monsanto routinely produce a document
21 entitled "Monsanto Backgrounder, PCB Backgrounder"?

22 A. Yes.

23 Q. Over what period of time did Monsanto produce
24 that type of document?

25 A. The PCB Backgrounder was produced from about

1 1980 up until the present.

2 Q. And was the purpose of that document to relate
3 new information that became available regarding PCB's?

4 A. The purpose of this document was to provide a
5 historical background on Monsanto's involvement with PCB's.
6 This document starts from when PCB's were first manufac-
7 tured in 1929 and goes up to the date of the document.

8 Q. And did the document contain information that
9 was available to the author when the author wrote the docu-
10 ment?

11 A. Yes.

12 Q. Did the author of that document prepare the
13 document as part of Monsanto's regular business activities?

14 MR. BAUER: Object to the form. Lacks founda-
15 tion.

16 A. I would assume so.

17 Q. Monsanto regularly prepared those types of
18 documents as part of its regular business activities
19 involving PCB's; is that not true?

20 A. Yes. A similar type document, yes.

21 Q. Did Monsanto maintain a copy of that document
22 in its files as part of its regularly-conducted business?

23 A. Monsanto maintained a copy of the current
24 draft or edition of the document in its files. Older ones
25 were discarded.

1 Q. So whichever document was current was main-
2 tained in Monsanto's files as part of its regularly-
3 conducted business?

4 A. Yes.

5 Q. I am now going to show you Plaintiff's Exhibit
6 2918 and ask you if you have seen that document before.

7 A. Yes, I have seen that document.

8 Q. What is the document?

9 A. The document is a letter by me to a Mr. S.H.
10 Brand at Monsanto.

11 Q. What is the date of it?

12 A. January 25th, 1984.

13 Q. Is Exhibit 2918 a true and accurate copy of
14 the January 25th, 1984 letter you wrote?

15 A. It appears to be.

16 Q. Did you write that letter at or about the time
17 you obtained the information that is referred to in the
18 exhibit?

19 A. Yes.

20 Q. Did you write that letter as part of
21 Monsanto's regularly-conducted business activities?

22 A. As part of my function in carrying out
23 Monsanto's business, yes.

24 Q. And during January of 1984 did Monsanto gene-
25 rate documents of that type as part of its regularly-

1 conducted business activity?

2 A. Yes. This was in answer to an inquiry, and we
3 answered inquiries.

4 Q. Was a copy of that document maintained within
5 Monsanto's files as part of its regularly-conducted busi-
6 ness?

7 A. Monsanto has a records retention policy on
8 current correspondence and so forth, and it would probably
9 be maintained along that line. Some PCB documents are kept
10 longer, but yes, it would be maintained for the time period
11 that is specified.

12 Q. I am now showing you Plaintiff's Exhibit 2917
13 and ask you to review that document.

14 A. Yes, I have seen that document.

15 Q. What is it?

16 A. It's a note that was written to me during an
17 EPA meeting and workshop that the industry consensus group
18 attended with EPA managers and staff at Washington's Water-
19 side Mall to work on development of the new PCB cleanup
20 policy.

21 Q. Who authored the note?

22 A. Dr. Ellen Silvergeld.

23 Q. Is that a true and accurate copy of the note
24 authored to you by Dr. Silvergeld?

25 MR. BAUER: Object to the form of the ques-

1 tion. Are you talking about the top part or the whole
2 page?

3 Q. (by Mr. Bradley) Does the exhibit contain
4 both a note to you and a note from you?

5 A. I don't know who the bottom note is by. That
6 is not my writing.

7 Q. And is the bottom half of that exhibit not the
8 note that was given to you by Dr. Silvergeld?

9 A. The top portion of the note was given to me by
10 Dr. Silvergeld. Let me read the bottom half.

11 I don't know who --

12 Q. That is the form that we got it in. Would you
13 take this pen, please, and mark on this exhibit the point
14 at which the note to you from Dr. Silvergeld ends.

15 A. The point at which it ends?

16 Q. Yes. And you have done that, and you have
17 written "END," and drawn an arrow?

18 A. Correct.

19 Q. Is the portion of that exhibit that was the
20 note from Dr. Silvergeld to you a true and accurate copy of
21 the note provided to you by Dr. Silvergeld?

22 A. Yes.

23 Q. Did Monsanto maintain a copy of that note in
24 its files as part of its regularly-conducted business?

25 A. Yes. This came out of my files.

1 Q. Does the information in the top portion of
2 that exhibit related -- is it information that was related
3 at or about the time that the note was written?

4 A. Yes.

5 Q. And was -- I'm going to show you --

6 A. Are we through with this?

7 Q. Do you know the date of the exhibit?

8 A. Not off the top of my head, no.

9 Q. Do you know whether -- As I understand it,
10 this note was written to you during an EPA meeting at an
11 industry consensus group?

12 A. This was a meeting of the industry consensus
13 group with EPA staff members, convened by Lee Thomas, the
14 administrator of the EPA, and it was prior to the new spill
15 cleanup rule. We were developing the final standards in
16 1987, so this note was probably written within six months
17 of that meeting where we developed the final standards for
18 the regulations.

19 Q. So it was probably written within six months
20 of 1987?

21 A. Whatever time it took for the rule to go in
22 and come out.

23 Q. Did Monsanto learn during the period of time
24 we have been discussing, referring again to March, '76 to
25 July 21, 1993, whether dibenzofurans in Aroclors manu-

1 factured by it were as high as ten parts per million?

2 A. Did we learn from '76 to --

3 Q. Between March of '76 and today's date, that
4 the highest values seen for polychlorinated dibenzofurans
5 in Aroclors manufactured by Monsanto was ten parts per
6 million.

7 A. The highest number that I have seen was the
8 number published in the National Academy of Science Report,
9 and it was less than that. The report said that it was in
10 the order of two, the highest number reported.

11 That was a hypothetical number that Dr.
12 Silvergeld was using. We were calculating to see what a
13 suitable cleanup level would be. And she assumed that --
14 She just picked a number and assumed, if it were as high as
15 that number, it would be inconsequential, because, if PCB's
16 were fifty parts per million and polychlorinated dibenzo-
17 furans were as high as ten, then the concentration left in
18 the residuals of the leaky electrical piece of apparatus
19 would be less than a half a part per trillion, which was
20 significantly less than the regulatory cutoff level, and
21 that it would be toxicologically insignificant.

22 Q. Do you know whether, by the reference to
23 dibenzofurans in this exhibit, Dr. Silvergeld --

24 A. That's her statement. She said she saw that
25 level. I didn't see that level.

1 Q. I understand that, but by the term "dibenzo-
2 furans," did you understand that to be chlorinated dibenzo-
3 furans?

4 A. PCDF's, yes. That was what the discussion was
5 about.

6 Q. I am now going to show you what has been marked
7 for identification as Plaintiff's Exhibit 2916 and ask you
8 if you have seen that document before?

9 A. I don't know if I have or not.

10 Q. All right. I am now going to show you Plain-
11 tiff's Exhibit 2915 and ask if you have seen that document
12 before.

13 A. I don't think I have seen this document be-
14 fore, no.

15 Q. I am now going to show you Plaintiff's Exhibit
16 3066 and ask if you have seen that document before.

17 A. I don't think I ever saw this. I wish I had.

18 Q. Do you know whether Dr. Throdahl is still
19 living?

20 A. I believe he is still alive.

21 Q. Is he retired?

22 A. Yes.

23 Q. Do you know if he resides in the St. Louis
24 area?

25 A. He used to live in the St. Louis area. I

1 believe he does, yes.

2 Q. Do you recall the name Dr. Louis Fernandez?

3 A. Yes.

4 Q. What position if any did Dr. Fernandez have at
5 Monsanto?

6 A. At one point in time he was as high as chair-
7 man of Monsanto, president, CEO, and that may have been
8 about that time frame.

9 Q. On Exhibit 3066 do you see the section that
10 says reference, colon, LF/MCT 12/13/79?

11 A. Yes.

12 Q. Does that mean anything to you?

13 A. It's the initials of the two gentlemen the
14 memo is about, and the date, and I don't know what else it
15 means.

16 Q. Who is the memo about, the two gentlemen?

17 A. Well, the memo is to Dr. Louis Fernandez, L.
18 F., and it's from M.C. Throdahl, and those are the ini-
19 tials.

20 Q. What was EPS at Monsanto in 1979?

21 A. EPS was the Environmental Policy Staff. That
22 was the beginning of the environmental organization that I
23 mentioned when I became involved. The Environmental Policy
24 Staff was corporate, and they provided the general direc-
25 tion of each operating company who had people at lower

1 levels who implemented the corporate policy of the organi-
2 zation.

3 Q. Were you part of the corporation portion of
4 EPS?

5 A. At what point in time? '79?

6 Q. Yes.

7 A. No. In '79 I was MIC.

8 Q. In '80 were you part of the corporate function
9 of EPS?

10 A. In June of 1980 I assumed part of the cor-
11 porate portion of EPS and assumed the job similar to what
12 is described there.

13 Q. And in -- Were there other corporate members
14 of EPS that included members of Monsanto's board of direc-
15 tors?

16 A. The Environmental Policy Staff was primarily a
17 working group that didn't include the board of directors.
18 Mr. Throdahl was the vice-president of environmental
19 affairs, and he was also simultaneously a board member,
20 an internal board member, an EPS board member. Other
21 members of the EPS were lower-level working staff, if
22 that's clear.

23 Q. When you began your job in June of 1980 with
24 EPS -- First of all, am I correct that you began a job in
25 June of '80 with EPS?

1 A. I guess I might have misspoke. I began my job
2 in 1980 as the corporate focal point for PCB, and that
3 remained in the industrial chemical company for a period of
4 time, and at some point in time that moved over to the cor-
5 porate staff department, which is EPS, but my initial
6 assignment was to keep up with what was done within the
7 operating company. The environmental staff in the operat-
8 ing company, as an ad hoc member of the EPS, it was not
9 corporate. It was more or less a bookkeeping type of
10 thing.

11 Q. During the period of time for which you're
12 giving testimony here today --

13 A. Yes.

14 Q. -- did Monsanto take the position that, rela-
15 tive to health or environmental effects, alleged or real,
16 for PCB's, that Monsanto's involvement with those issues
17 and effects would not cease until there were no further
18 problems?

19 A. Yes.

20 Q. During the period of time for which you have
21 been tendered as a witness for this deposition, did
22 Monsanto take the position that PCB's were a learning model
23 for determining the most effective corporate action in the
24 event that other products or by-products are at some future
25 time deleted from the product line?

1 A. Yes.

2 Q. Relative to PCB's, did by-products include
3 polychlorinated dibenzofurans?

4 A. I assume so.

5 Q. Do you know whether any form of dioxin, in-
6 cluding polychlorinated dibenzodioxin, has been found in
7 any PCB manufactured by Monsanto?

8 A. There has not.

9 Q. Do you know whether any form of dioxin,
10 including chlorinated dibenzodioxin, has been found in any
11 PCB blend manufactured by Monsanto?

12 MR. BAUER: Object to the form. By "PCB
13 blend," do you mean to include dielectric fluids that con-
14 tain compounds other than PCB's?

15 MR. BRADLEY: I mean PCB blends.

16 MR. BAUER: Objection. Vague.

17 MR. BRADLEY: I mean PCB dielectric fluid
18 blends.

19 MR. BAUER: PCB's blended with PCB's?

20 MR. BRADLEY: Different witnesses have
21 requested that I refer to the different Aroclor products in
22 different ways.

23 MR. BAUER: Correct.

24 MR. BRADLEY: I was during one deposition
25 asking a question about PCB's manufactured by Monsanto and

1 was told that a better phrase would be PCB's blended by
2 Monsanto.

3 MR. BAUER: He said dielectric fluids blended,
4 not PCB's blended.

5 Q. (by Mr. Bradley) Well, whatever he said.

6 Did Monsanto ever, during the period of time
7 that you have been designated as a witness for today's
8 deposition, learn that any form of dioxin, including
9 chlorinated dibenzodioxin, were found in any PCB dielectric
10 fluid blends manufactured by Monsanto?

11 A. As manufactured and sold by Monsanto? Is that
12 what you mean?

13 Q. (by Mr. Bradley) Yes.

14 A. The answer is no. Dioxins have not been found
15 in any PCB's or PCB blends used as dielectrics sold by
16 Monsanto, to my knowledge.

17 Q. In 1980 when you became the focal point for
18 responding to PCB issues at Monsanto, was there a potential
19 unresolved issue involving contaminated hot spots, example,
20 at the Hudson River in Waukegan Harbor?

21 A. Yes.

22 Q. Was there a potential unresolved issue regard-
23 ing poly -- possible chlorinated dibenzofurans in aged or
24 incinerated PCB's?

25 MR. BAUER: Can I hear that back?

1 (Thereupon, the reporter propounded the previous
2 question.)

3 MR. BAUER: Object to the form. Vague about
4 what a "possible unresolved" -- Vague as to what a poten-
5 tial unresolved issue about something possible means.

6 But you can answer if you are able.

7 Q. (by Mr. Bradley) I meant when you became the
8 focal point.

9 A. There was an unresolved issue, yes.

10 Q. What was that potential unresolved issue?

11 A. There was a question as to whether PCDF's were
12 generated during incineration of PCB's in an EPA-approved
13 type incinerator. The question of -- EPA was looking for
14 incinerators with .999999, or so, so the measurement of
15 this was very -- That is one potential problem.

16 Q. When you began your work as the focal point
17 for PCB's at Monsanto was there a potential unresolved
18 issue regarding reduction of body levels of PCB's by
19 absorbent drugs?

20 A. Yes.

21 Q. What was that unresolved issue?

22 A. There had been published literature to the
23 effect that you could treat persons who had high body bur-
24 dens of PCB's in their adipose tissue or blood serum with
25 certain compounds which were designated drugs, not neces-

1 sarily drugs in the classical sense, and that they would
2 remove these PCB's from the human body.

3 Q. When you began your work as the focal point of
4 Monsanto, was there a potential unresolved issue regarding
5 PCB's being possible carcinogens?

6 A. Yes.

7 Q. Was that issue ever resolved for Monsanto?

8 A. It's still ongoing.

9 Q. Does Monsanto take the position that PCB's are
10 possible carcinogens?

11 A. Monsanto takes the position that PCB's lower
12 than sixty percent chlorination are not carcinogenic in
13 animal studies, and Monsanto takes the position that PCB's,
14 per se, have not been shown to be human carcinogens.

15 Q. Does Monsanto take the position that PCB's
16 with chlorination of sixty percent or greater are possible
17 carcinogens?

18 A. Monsanto takes the position that PCB's with
19 sixty percent chlorine or greater could be possible car-
20 cinogens in certain animal species at certain doses,
21 rodents, for example.

22 Q. But not in humans

23 A. Correct. Not in humans.

24 Q. Does Monsanto take the position that PCB's in
25 the food chain including mothers' milk is a resolved issue?

1 A. No.

2 Q. In 1980 when you were the focal point for
3 Monsanto on issues involving PCB's, was there a potential
4 unresolved issue of PCB's in the food chain including
5 mothers' milk?

6 A. Yes.

7 Q. What was that potential unresolved issue?

8 A. The potential unresolved issue was, is there
9 sufficient PCB in the food chain to provide a dose level
10 sufficient that it will cause human health effects.

11 Q. And does Monsanto take the position that there
12 is a level of PCB's in the food chain including mothers'
13 milk which would cause adverse health effects?

14 MR. BAUER: Object to the form. What do you
15 mean, "would?"

16 Q. (by Mr. Bradley) Let me rephrase it, then.
17 Does Monsanto take the position that there is a dose level
18 of PCB's in the food chain including mothers' milk which
19 results in adverse human health effects?

20 MR. BAUER: I still object to the form. I
21 understand dose level, I understand food chain, but you put
22 the two together and I think the question is vague.

23 But you can answer.

24 Q. (by Mr. Bradley) I'll try one more time.
25 Does Monsanto take the position that there is any level of

1 PCB's in the food chain including human mothers' milk which
2 could cause adverse health effects?

3 A. Monsanto takes the position that the dose
4 level is critical in determining human health effects, not
5 absolute concentration. So you would have to know the
6 dose, which is the consumption per unit of time per kilo-
7 gram of human body weight.

8 Q. Is there a dose level in which PCB's in the
9 food chain including human mothers' milk could cause
10 adverse human health effects?

11 MR. BAUER: Object to the form of the ques-
12 tion. He just explained -- Are you asking whether we know
13 that there is a dose level in some particular species?
14 That if someone -- I mean, a concentration, I think, is the
15 problem. Never mind. I am not going to argue. Asked and
16 answered. Object to the form, and asked and answered.

17 You can answer the question.

18 A. I am not sure I can answer the question. I
19 guess I'm not sure what the question is now.

20 Monsanto has not taken the position that we
21 know that there is a level of PCB's that causes an adverse
22 human health affect.

23 Q. (by Mr. Bradley) In 1980 when you became the
24 focal point for Monsanto's PCB questions and problems and
25 issues, were you made aware of the known claims and law-

1 suits involving PCB's that were brought then against
2 Monsanto?

3 A. No. Not necessarily.

4 Q. I am now going to show you Plaintiff's Exhibit
5 2914 and ask you to review that document.

6 A. Okay.

7 Q. Is that a document that you have seen before?

8 A. I may have seen this before, but I am not
9 sure.

10 Q. Are you able to tell us whether it's a true
11 and accurate copy of a document you have seen before?

12 A. No, I am not.

13 Q. I am going to show you Plaintiff's Exhibit
14 1232 and ask you to review that document.

15 MR. BAUER: Mr. Bradley, you just put that
16 document on the floor.

17 MR. BRADLEY: You want this on the record?

18 MR. BAUER: Yes.

19 You told us that documents above twenty-six
20 hundred are documents we have not seen before, and it was
21 just shown to the witness and used in his deposition, and I
22 have understood before, when you're putting documents on
23 the floor, that they're not going into the court room.

24 MR. BRADLEY: Mr. Bauer, if this is your way
25 of requesting the document so that you can have a copy of

1 it, I would be happy to make certain that one is provided
2 to you. Does that answer your inquiry?

3 MR. BAUER: I have two requests, I guess:
4 One, any document shown to the witness, if it's not a docu-
5 ment that has already been provided to everybody, it should
6 be given to the court reporter; and I also request that I
7 get a copy before the end of the day.

8 MR. BRADLEY: Since we're not in my office, I
9 can't guarantee you'll get a copy before the end of the
10 day, but --

11 MR. BAUER: If you will give it to me, I will
12 copy it.

13 MR. BRADLEY: That's fine. All you have to do
14 is ask.

15 I am now going to show you Plaintiff's Exhibit
16 1232 and ask you to review that document for me.

17 Mr. Bauer, I am now handing you all of the
18 exhibits that I have that are above Plaintiff's Exhibit
19 2600 so that you can make copies.

20 MR. BAUER: I will get that started right now
21 while he is looking at that.

22 Q. (by Mr. Bradley) You have in front of you
23 Plaintiff's Exhibit 1220. Is that a document entitled,
24 "Polychlorinated Biphenyls," that you authored?

25 A. Yes.

1 Q. When did you do that?

2 A. 1981.

3 Q. Is that a true and accurate copy of the docu-
4 ment you authored in 1981?

5 A. It appears to be.

6 Q. Does that exhibit contain information that was
7 made available to you at or about the time you authored the
8 exhibit?

9 A. Yes.

10 Q. Did you author that document as part of your
11 regular employee responsibilities at Monsanto?

12 A. Yes.

13 Q. Was it Monsanto's regular practice as part of
14 its business activity in 1981 to generate documents of that
15 sort?

16 A. This document was in response to an inquiry
17 from the Dayton Chamber of Commerce to participate in a
18 workshop they had, and responses like that were honored, I
19 would say, as a public service.

20 Q. Did Monsanto maintain a copy of that exhibit
21 as part of its regularly-conducted business?

22 A. According to the record retention policies,
23 yes.

24 Q. And I am now showing you Plaintiff's Exhibit
25 1232. Is that a document you have seen before?

1 A. Yes.

2 Q. What is it?

3 A. It's a copy of a Monsanto Material Safety Data
4 Sheet for generic PCB's.

5 Q. Is there a date on the document?

6 A. Yes.

7 Q. What is the date?

8 A. This document is dated October 15th, 1985.

9 Q. Is that document the same as the generic MSDS
10 that you indicated that you prepared in 1980?

11 A. It's similar to it. It's a six-page document;
12 the 1980 document was four pages. It was revised and up-
13 dated.

14 Q. Did you do that?

15 A. Yes.

16 Q. Is that a true and accurate copy of the MSDS
17 for PCB's in October of '85?

18 A. It appears to be.

19 Q. Does that document contain information that
20 was current as of the date that it was written?

21 A. Yes.

22 Q. Was it based upon information that was made
23 available to its author on or about the date it was
24 written?

25 A. Yes.

1 Q. Was it generated and authored as part of
2 Monsanto's regular business activities?

3 A. Yes.

4 Q. Was a copy maintained in Monsanto's files as
5 part of Monsanto's regularly-conducted business?

6 A. Yes.

7 Q. I am now going to show you Plaintiff's Exhibit
8 1224 and ask you if you have seen that document before
9 today?

10 A. Yes.

11 Q. What is it?

12 A. It's a memo from David Forsyth Zoll. At this
13 time he was Assistant General Counsel for the Chemical
14 Manufacturers Association, to CMA members, all caps.

15 Q. Is that a document that Monsanto maintained in
16 its records as part of its regularly-conducted business?

17 A. Yes. According to its records retention
18 policy, yes.

19 Q. I am now handing you Plaintiff's Exhibit 2846.
20 Have you seen that document before today?

21 A. No.

22 MR. BRADLEY: Okay. I have nothing further.
23 Do you have questions of the witness?

24 MR. MORGAN: No, I have no questions.

25 MR. BAUER: I have no questions. This wit-

1 ness's portion of the 30(B)(6) deposition is therefore
2 concluded.

3

4

5

JOHN H. CRADDOCK

6

Subscribed and sworn to before me this _____ day

7

of _____, A. D., 1993.

8

MY COMMISSION EXPIRES _____.

9

10

11

Notary Public, within and
for the State of Missouri

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 STATE OF MISSOURI)
2) SS
3 COUNTY OF ST. LOUIS)

4 I, Mark D. Concannon, a Notary Public within and for
5 the State of Missouri, duly commissioned, qualified and
6 authorized to administer oaths and to take and certify to
7 depositions, do hereby certify that pursuant to Notice in
8 the civil cause now pending and undetermined in the
9 District Court of the United States, within and for the
10 District of Nevada, entitled NEVADA POWER COMPANY,
11 Plaintiff, -vs- MONSANTO COMPANY, et al., Defendants, to be
12 used in the trial of said cause in said Court, I was
13 attended at the law offices of Messrs. Husch, Eppenberger,
14 Donohue, Cornfeld & Jenkins, 100 N. Broadway, Ste. 1300, in
15 the City of St. Louis, State of Missouri, by Ralph A.
16 Bradley, attorney for the Plaintiff; by Scott R. Bauer,
17 attorney for the Defendant Monsanto; by Robert P. Morgan,
18 In-House Counsel for the Defendant Westinghouse; and by
19 JOHN H. CRADDOCK, the witness, in said office on July 21,
20 1993.

21 The said witness, JOHN H. CRADDOCK, being of sound
22 mind and being by me first carefully examined and duly
23 cautioned and sworn to testify the truth, the whole truth
24 and nothing but the truth in the case aforesaid, thereupon
25 testified as is shown in the foregoing tran- script, said
testimony being by me reported in shorthand and caused to

1 be transcribed into typewriting, and that the foregoing
2 pages correctly set out the testimony of the aforementioned
3 witness, JOHN H. CRADDOCK, together with the questions
4 propounded by counsel and the remarks and objections of
5 counsel thereto, and is in all respects a full, true and
6 complete transcript of the questions propounded to and the
7 answers given by said witness; and that said testimony, so
8 transcribed, was subscribed to by the witness on the _____
9 day of _____, A.D., 1993.

10 I FURTHER CERTIFY that I am not of counsel nor
11 attorney for any of the parties to said suit, nor related,
12 nor interested in any of the parties or their attorneys.

13 WITNESS MY HAND and Notarial Seal, given this _____
14 day of _____, A. D., 1993, at St. Louis, Missouri.

15 MY COMMISSION EXPIRES MARCH 21, 1994.

16
17
18
19 MARK D. CONCANNON,
20 Notary Public, within and
21 for the State of Missouri
22
23
24
25

Concannon and Jaeger
General Court Reporters
705 Olive Street, Ste. 604
St. Louis, Missouri 63101

August 10, 1993

Mr. Scott R. Bauer
Kirkland & Ellis
1999 Broadway
Denver, Colorado 80202

Re: Nevada Power Vs. Monsanto

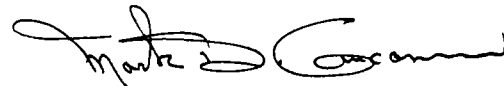
Dear Mr. Bauer:

This letter, incorporated as the last page of Mr. Craddock's deposition, taken on July 20 and 21, 1993, will serve as notice to you that Mr. Craddock's testimony is now ready for his reading and signing of same.

Enclosed, please find your copy of the deposition, along with the original signature page, (pg.79), and errata sheets. Please have Mr. Craddock read his deposition at his earliest possible convenience, making whatever changes he feels necessary on the errata sheets, along with his reason for making same. Have him sign the original signature page and errata sheets before any notary, and return the original signature page and errata sheets to me at the above address so that I may file the original transcript in Court and notify opposing counsel of the changes.

Thank you for your cooperation in this regard.

Sincerely,



MARK D. CONCANNON

MDC:mk
encs.

JOHN H. CRADDOCK

- DEPOSITION CORRECTION SHEET -

In Re: NEVADA POWER Vs. MONSANTO

Upon reading his deposition transcript and before subscribing thereto, the deponent indicated the following:

Page Line should read:

Reason assigned for change:

Page Line should read:

Reason assigned for change:

Page Line should read:

Reason assigned for change:

Page Line should read:

Reason assigned for change:

Page Line should read:

Reason assigned for change:

Page Line should read:

Reason assigned for change:

Page Line should read:

Reason assigned for change:

Page Line should read:

Reason assigned for change:

Page Line should read:

JOHN H. CRADDOCK