

COPY

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA

UNITED STATES OF AMERICA,)
)
Plaintiff,)
)
vs.)
PEPPER'S STEEL AND ALLOYS, INC.,)
FLORIDA POWER & LIGHT COMPANY,)
NORTON BLOOM, THOMAS A.)
CURTIS, WILLIAM PAYNE,)
FLORA B. PAYNE and LOWELL PAYNE,)
)
Defendants.)

-----)
PEPPER'S STEEL AND ALLOYS, INC.)
and NORTON BLOOM,)

Cross-Plaintiffs,)
vs.)
FLORIDA POWER & LIGHT COMPANY,)
)
Cross-Defendant.)
-----)

FLORIDA POWER & LIGHT COMPANY,)
)
Cross-Plaintiff and)
Third-Party Plaintiff,)

vs.)
PEPPER'S STEEL AND ALLOYS, INC.,)
et al.,)
)
Cross-Defendants,)
and)
UNITED STATES FIDELITY AND)
GUARANTY COMPANY, et al.)

Third-Party Defendants.)

Deposition of Witness
WILLIAM B. PAPAGEORGE
On Behalf of Pepper's and Bloom

Volume II

February 22, 1990

Reported by: JUNE M. FUNKHOUSER, RPR, CCR, CSR
of

INDEX OF EXAMINATIONWITNESS:PageWILLIAM B. PAPAGEORGE:

Cont'd Direct Examination by Mr. Granoff . .	181
Cross-Examination by Mr. Smith	235
Cross-Examination by Ms. Nelson.	305
Cross-Examination by Mr. Clayman	308
Cross-Examination by Ms. Berkowitz	335
Cross-Examination by Ms. Ramage.	347
Redirect Examination by Mr. Granoff.	369
Recross-Examination by Ms. Berkowitz	370

INDEX OF EXHIBITS

<u>Exhibit Number</u>	<u>Page Marked</u>	<u>Page Iden.</u>	<u>Description</u>
381	188	188	Collection of Documents, mid-1970 to 2-23-71
382	212	212	Open Letter to Electric Utility Customers from G.E.
383	215	215	Minutes of Meeting, 10-2-74
384	219	219	Two Documents, Monsanto Letterhead
385	221	222	FP&L Materials Returned to Monsanto for Incineration
386	228	228	Inter-Office Correspondence to File from D. Chow, 2-26-82
387	251	251	Transformer Askarel Inspection and Maintenance Guide
388	299	299	Purchase Orders FP&L and FP&L Materials Returned to Monsanto for Incineration
389	302	303	Letter w/Attachment from H. Bergen, 2-4-72

Originals Exhibits Retained
by Counsel for Pepper's and Bloom

1 Now, this being the 22nd day of
2 February, 1990, the same being Thursday, all parties
3 being present, the witness, WILLIAM B. PAPAGEORGE,
4 testifies further, to-wit:

5 WILLIAM B. PAPAGEORGE

6 being previously produced, sworn and examined on
7 behalf of Pepper's and Bloom, deposeth and saith:

8 CONTINUED DIRECT EXAMINATION

9 BY MR. GRANOFF:

10 Q. Mr. Papageorge, I just want to remind
11 you you're still under oath.

12 A. I understand.

13 Q. Okay. During the time frame from the
14 ANSI C107 organizational meeting in September 1971
15 until the adoption of C107 in January 1974, did you
16 learn whether there were any international groups or
17 committees addressing the PCB or the evolving PCB
18 environmental issue?

19 A. I was informed that a European
20 organization with the acronym CIGRE, C-I-G-R-E I
21 believe are the letters, which is the equivalent of
22 the American NEMA organization, was addressing the
23 PCB issue.

24 Q. Did you receive any input from any
25 representative of CIGRE as to exactly how they were

1 addressing the PCB issue?

2 A. No.

3 Q. Did anyone from the ANSI C107 Committee
4 report to you what they had heard or learned as to
5 where CIGRE was going with their investigation as to
6 the PCB issue?

7 A. I was aware of the activities to a
8 rather limited degree as a result of discussions
9 held by the Transformer Working Committee in ANSI.

10 Q. And what can you relate to me as to the
11 nature of the discussions within the Transformer
12 Working Committee? I assume you mean the
13 subcommittee?

14 A. The subcommittee, yes.

15 Q. As to what they understood or members of
16 that Transformer Working Committee understood that
17 CIGRE was doing if I understand your last response
18 correctly.

19 A. CIGRE was in some respects just becoming
20 aware of the severity of the situation. As I
21 understood it, members within CIGRE were skeptical
22 of the existence of the problem. And yet they were
23 going to try to get a consensus amongst the European
24 PCB manufacturers and users regarding a responsible
25 approach that they could collectively take that fit

1 the European situation.

2 Q. Did you learn at any point from
3 September 1971 until adoption of ANSI standard C107
4 or approval rather of ANSI C107 in January 1974
5 whether CIGRE had in any way addressed the issue of
6 mineral oil contamination by PCBs?

7 A. Not specifically, no.

8 Q. Had you heard anything generally as to
9 that issue of PCB contamination of mineral oil as
10 addressed by the CIGRE organization or group?

11 A. In a general way I was made aware that
12 their problems regarding the handling and use of
13 PCBs in electrical manufacturing equipment were
14 virtually identical to those experienced by the
15 American manufacturers and users of the electrical
16 equipment.

17 Q. You just used the term handling and
18 use. Is the term -- Would the term disposal also
19 apply as to the same problems CIGRE was having as to
20 the American manufacturers and users?

21 A. Yes.

22 Q. Did I cut you off on your last answer?

23 A. No.

24 Q. Okay. I'm sorry. You mentioned the
25 name of Edward Raab, R-a-a-b, a number of times

1 yesterday and I don't think I asked this question.
2 If I did, I'm sorry. Do you recollect your last
3 contact with Mr. Raab?

4 A. As best as I can recall, Mr. Raab
5 attended a PCB meeting in St. Louis in 1974. I
6 believe that is the last time I personally met and
7 spoke with him prior to his retirement from General
8 Electric.

9 Q. When you say a PCB meeting, you mean a
10 meeting of the Transformer Subcommittee in
11 connection with C107?

12 A. No, this was a meeting called for by
13 Monsanto to which we invited customers and service
14 company representatives and government people. Sort
15 of a symposium on PCBs to discuss the state of
16 knowledge that existed at that time.

17 Q. And my terminology, would it be an
18 update as to where you all had come since
19 approximately 1968 or '69?

20 A. Yes.

21 Q. To 1970?

22 A. That's a good way to describe it.

23 Q. Okay. Are there any written -- Strike
24 that.

25 Were there any written materials

1 generated as a result of that symposium or in
2 anticipation of the symposium?

3 A. There were -- There were some documents
4 regarding the arrangements concerning a meeting and
5 the invitations to attend the meeting and there was
6 also a set of minutes of the meeting published and
7 sent to the participants and to anyone else who
8 might be interested and requested those.

9 Q. If I were interested in getting a copy
10 of the meeting minutes, do you know who would be in
11 possession of those minutes presently?

12 A. Well, I don't know but I would try
13 Monsanto's legal department.

14 Q. Okay. Did you head up that symposium in
15 1974?

16 A. No.

17 Q. Do you know who did?

18 A. The chairman of the symposium was the
19 business group director, Mr. Howard Bergen,
20 B-e-r-g-e-n.

21 Q. Okay. Do you know if there was a
22 mailing list to advise prospective attendees
23 advising them of this upcoming symposium?

24 A. I don't recall seeing a list.

25 Q. But notwithstanding, you do feel secure

1 that Raab attended the symposium?

2 A. Oh, I'm certain of that, yes. In fact,
3 I think he was one of the spokesmen or one of the
4 active participants.

5 Q. That was going to be my follow-up
6 question. Do you know to what extent Raab
7 participated in the symposium?

8 A. Oh, I don't know how to quantify it.

9 Q. Well, I would say to the extent of the
10 subject matter if he had any specific areas that he
11 addressed.

12 A. Well, he spoke primarily on the ANSI
13 working committee that he chaired as well as made
14 comments regarding his involvement with General
15 Electric activities.

16 Q. As part of symposium was there any --
17 anyone who addressed the issue specifically of PCB
18 contamination of mineral oil?

19 A. I don't believe that was addressed as a
20 specific item.

21 Q. Do you recollect whether the issue of
22 PCB contamination of mineral oil was addressed as
23 part of a larger subject matter by any one of the
24 speakers?

25 A. Mr. Raab when reviewing the ANSI

1 Transformer Committee's activities covered the areas
2 that were addressed in the final document that the
3 committee put out. And in there I recall he talked
4 about mineral oil containing PCBs and solvents
5 containing PCBs.

6 Q. Okay. As chairman of ANSI C107 were you
7 concerned with gaining a representational
8 cross-section of industry manufacturers and users of
9 PCB to sit on the committee?

10 A. Yes, definitely.

11 Q. Did you feel that the interests of the
12 utility industry was appropriately and adequately
13 served by the attendance of the Electric Light &
14 Power Group?

15 A. Yes. I had no reason to believe
16 otherwise.

17 Q. And as you look back on the years that
18 you served as chairman of C107, did you see the
19 representatives of the Electric Light & Power Group
20 as the nominated spokesmen for the utility industry
21 and to represent the utility industry concerns for
22 ANSI C107?

23 MR. SMITH: Objection to the form
24 for leading.

25 Q. (BY MR. GRANOFF) You can answer it,

1 sir.

2 A. Yes.

3 MR. GRANOFF: Let's mark this 381,
4 please.

5 (Said instrument was marked for
6 identification as Exhibit No. 381, 2-22-90, JMF.)

7 Q. (BY MR. GRANOFF) I'm going to show you
8 in a moment Exhibit 381 which is a composite
9 exhibit. The cover sheet is the first page of a --
10 of the minutes of the Transformer Subcommittee, I
11 believe, from February 23, 1971, but would you
12 please review this composite exhibit and all the
13 documents contained therein and see if you can
14 identify it, sir.

15 All right?

16 A. Yes, I have looked through this exhibit
17 and find it to be a mixed collection of documents,
18 some of them dated mid-1970 on to -- through
19 February 23, '71. These documents reflect
20 recommendations, status reports on the PCB issue
21 prior to the organization of ANSI C107.

22 MR. SMITH: In their entirety
23 they're all prior?

24 THE WITNESS: They're all prior.
25 These are -- It appears to me that this is an

1 attempt to pull together all the information
2 available in order to support a recommendation for
3 the formation of such a committee.

4 MR. SMITH: In other words,
5 everything there does appear to relate to what
6 eventually became the ANSI committee?

7 THE WITNESS: That is correct.

8 Q. (BY MR. GRANOFF) I'd like to direct you
9 to what is Bates stamped 142249, a letter dated May
10 5, 1970, for signature by E. L. Raab, R-a-a-b, to a
11 Mr. looks like E. H. or B. H. Reynolds in London,
12 England, and I'll have to share this with you, Mr.
13 Papageorge; it's the only copy I have this morning.

14 I know that photocopy is not the best
15 quality, but do you know Mr. Reynolds?

16 A. I have heard of Mr. Reynolds. I have
17 never met the man to my knowledge.

18 Q. And in what connection have you heard of
19 Mr. Reynolds?

20 A. Mr. Raab had mentioned him in his
21 reports to the committee, he mentioned contacting
22 Mr. Reynolds.

23 Q. And let me just read for the record that
24 on the top of this letter there is, I'll read it
25 verbatim: Subject: CIGRE, C-I-G-R-E, Study

1 Committee No. 15, Working Group WG/02, "Askarels".
2 That's an accurate representation as to what's on
3 the top of this letter?

4 A. Yes.

5 Q. And the name CIGRE now seems to be
6 consistent with your recollection of a European
7 group that was involved with the evolving PCB issue?

8 A. That is correct.

9 Q. Circa 1970?

10 A. Yes.

11 Q. Attached -- Strike that.

12 The last paragraph of Mr. Raab's letter
13 to Mr. Reynolds reflects that activities of the what
14 looks to me to be IEC Subcommittee 10B was attached
15 to the letter. Are you familiar with the letters
16 IEC?

17 A. No, I am not.

18 Q. Would you be more familiar with the name
19 International Electrotechnical Commission?

20 A. No.

21 Q. Now starting with Bates stamp 142251
22 there is an eleven-page document and the title of it
23 is PCB - Uses in Askarel for Electrical Industry.
24 You would agree with that heading for that document?

25 A. Yes.

1 Q. Okay. Are you familiar with an entity
2 or manufacturer known as Prodalec, P-r-o-d-a-l-e-c?

3 A. Yes.

4 Q. And who is Prodalec?

5 A. That's a French company that makes -- at
6 least a part of it makes chemicals.

7 Q. Are you aware whether Prodalec circa
8 1970 was manufacturing PCBs?

9 A. Yes.

10 Q. Did Monsanto do business with Prodalec
11 for purposes of PCBs?

12 A. We had -- I don't know that I would
13 necessarily call it business. We communicated and I
14 personally met with their representative in Europe.

15 Q. And who was their representative that
16 you met with?

17 A. I think his last name was Mr. Jay.

18 Q. Okay. As best you could, could you read
19 what is in handwriting three lines above the heading
20 of this eleven-page document?

21 A. I'll try.

22 Q. Yes, I know the photocopy is not the
23 best.

24 A. Lecture given by Mr. P. Jay of TME
25 Prodalec Company at a un -- at a university in --

1 Q. Sweden?

2 A. -- Sweden in 1970.

3 Q. I only suggest Sweden. Does it appear
4 to be Sweden?

5 A. I can see S-w-e-d. S-w-e-d would
6 indicate Sweden to me.

7 MR. SMITH: Among other things.

8 Q. (BY MR. GRANOFF) You had met with Mr.
9 P. Jay, J-a-y?

10 A. Yes, I had.

11 Q. In what respects had you met with Mr.
12 Jay?

13 A. There was a group of Monsanto
14 representatives of which I was a member that went to
15 Europe in March of 1970 and part of our trip
16 included meeting with representatives of the
17 European PCB manufacturers. Mr. Jay attended that
18 meeting in Brussels representing the French PCB
19 manufacturers.

20 Q. Have you had a sufficient opportunity to
21 review this eleven-page report, PCB - Uses in
22 Askarel for Electrical Industry? Have you had an
23 opportunity --

24 A. -- I --

25 Q. To the extent I'd like to -- I'll give

1 you an opportunity to answer that question. Have
2 you ever seen that eleven-page report before?

3 A. I saw it many years ago and recently I
4 glanced at it.

5 Q. Okay. Under what circumstances did you
6 first see that report? And as a matter of
7 reference, did you see it when you met with the
8 European PCB manufacturers in March of 1970?

9 A. I don't associate it with our meeting.
10 It seems to me I was aware of this document because
11 Mr. Benignus of Monsanto gave me a copy and this was --
12 this was after the European trip so it was in 1970
13 after March of 1970. That's as close as I can come.

14 Q. Try another time reference, was it after
15 March of 1970 yet before the adoption of the C107
16 standard in January 1974?

17 A. Yes.

18 Q. Was it closer to March of '70 or closer
19 to January of '74?

20 A. It was closer to March '70.

21 Q. Okay. There are a couple of references
22 in this report I'd just like to review with you, if
23 I could. I don't mean to take anything out of
24 context here so whatever opportunity you need to
25 read this document please do so, but there is a

1 reference on Page 6 of this report, there is no
2 Bates stamp associated with it but just Page 6 of
3 this report, that reads as follows and please follow
4 it with me: Without having exactly the same
5 characteristics as a new material, the regenerated
6 askarel for transformers offers the same guarantees
7 for use.

8 That's a fair and accurate reading of
9 that paragraph?

10 A. Yes.

11 Q. Can you tell me, do you have an
12 understanding or back when you first saw this report
13 what did you understand the term regenerated askarel
14 to mean?

15 A. There are occasions in the -- either the
16 manufacture of a transformer unit or in the
17 servicing of a unit in which the askarel does not
18 meet the specifications required of it to make it
19 the proper fluid. It's lacking some
20 characteristic. If the contamination which caused
21 this off specification characteristic is slight,
22 there are procedures that can be taken to renovate
23 this oil and attempt to bring it back up to high
24 quality. This is --

25 MR. SMITH: When you say oil, do

1 you mean askarel?

2 A. Askarel. Transformer oil. Okay. It's
3 askarel. Oil can be treated in some cases so that
4 it becomes acceptable again and this is a common
5 practice in the industry in an attempt to
6 economically keep the costs down, of course, and
7 also to -- when the PCB issue came up it's another
8 way to reduce the amount of disposal material.

9 So when they talk about a regenerated in
10 Europe askarel, they're talking about a retreated
11 askarel that's acceptable for reuse.

12 Q. (BY MR. GRANOFF) Did Monsanto have a
13 separate phraseology for what the European called
14 the regenerated askarel?

15 A. Yes, we didn't use the word
16 regenerated. If we did use a word the most common
17 type would be recycled.

18 Q. How about the term reclamation or
19 reclaimed?

20 A. Reclaimed, that's even better. Yes,
21 reclaimed askarel.

22 Q. And would the nature of the reclamation
23 of the askarel or regeneration depend upon the
24 source of contamination of that askarel? Is that
25 vague?

1 A. Yes, it would.

2 Q. So my question is not vague then?

3 MR. SMITH: I object to the form of
4 the question.

5 A. Not as I understand it.

6 Q. (BY MR. GRANOFF) Okay, fine. Thank
7 you.

8 All right. And let me be more specific,
9 askarel or certain supplies of askarel I think you
10 testified could become off specification which would
11 require a regeneration or reclamation, correct?

12 A. Sure.

13 Q. Was one of the potential sources of an
14 off specification askarel supply mineral oil
15 contamination?

16 A. Yes.

17 Q. To your knowledge was the off
18 specification of askarel, the existence of that
19 known to the manufacturers such as General Electric
20 and Westinghouse?

21 A. Yes.

22 Q. And can you put a time frame as to how
23 long the existence of off specification of askarel
24 supplies had been known throughout the industry
25 beginning with Monsanto and down through -- and to

1 the manufacturers? Let me just use that.

2 MR. DAVIDSON: Are you referring to
3 off specification askarel that becomes less than top
4 quality through use?

5 MR. GRANOFF: I wasn't specifying
6 because of use and I don't know if it's necessarily
7 just use which creates the off specification.

8 MR. DAVIDSON: Well, presumably new
9 askarel fluid is not off spec. And it would become
10 so either by use -- through usage and deterioration
11 or by contamination which would require it to be
12 reclaimed. I'm trying to understand exactly what
13 you're referring to by off spec.

14 MR. GRANOFF: Well, I'm just using --
15 I'm using Mr. Papageorge's term.

16 Q. (BY MR. GRANOFF) As I understand, off
17 spec is there is a supply of askarel which simply is
18 not up to par; is that correct, sir?

19 A. That's right.

20 Q. All right. And again, let me try to
21 repeat the question and if you have a problem with
22 it, Mr. Papageorge, please let me know but can you
23 give me a time frame as to Monsanto's awareness and
24 your knowledge of the manufacturers' awareness that
25 off specification askarel was a fact?

1 MR. DAVIDSON: Well, excuse me for
2 interjecting myself again. The fact that askarel
3 fluid would become contaminated or deteriorated in
4 use is probably something that's been known since
5 the first time it was ever used because it lasts a
6 long time and it didn't last forever in top notch
7 condition so it can be contaminated in use or it can
8 be contaminated by -- or it could be deteriorated by
9 arcing. There are lots of things that could cause
10 it to become off spec.

11 MR. GRANOFF: Okay. But I'm not
12 really going down that road.

13 MR. DAVIDSON: But you're implying
14 that there's some sort of supply of off spec that
15 was being produced by Monsanto.

16 MR. GRANOFF: Okay. Well, then I
17 hear your concerns and I'll try to --

18 MR. DAVIDSON: Well, when askarel
19 fluid blended to specifications of an equipment
20 manufacturer left Monsanto's plant it was to spec.

21 MR. GRANOFF: Okay.

22 MR. DAVIDSON: It was tested by us
23 and it was tested by them. If it didn't meet it,
24 they sent it back.

25 MR. GRANOFF: Okay. Let me then

1 try to reword the question.

2 MR. SMITH: They sent it back if it
3 was off spec?

4 MR. DAVIDSON: Yes. We tested it
5 and they tested it, and if they didn't like it it
6 came back.

7 Q. (BY MR. GRANOFF) For what period of
8 time do you understand that the manufacturers knew
9 that a supply of askarel or supplies of askarel
10 could become off spec due to its use in an
11 electrical equipment unit?

12 A. It's my understanding that that's a
13 potential that was always considered from the first
14 day they used PCBs back in 1929.

15 Q. And what is your level of awareness as
16 to more specifically when the manufacturers became
17 knowledgeable to the fact that mixture of mineral
18 oil -- Strike that. Strike that.

19 What is your level of awareness as to
20 when the manufacturers were aware that a mixture of
21 mineral oil into PCBs or PCB supply would create an
22 off specification?

23 A. It's my understanding that this goes
24 back into the '30s.

25 Q. And what's the basis for your statement

1 that it goes back into the '30s?

2 A. It was common knowledge within
3 Monsanto's research department of the concern that
4 customers had for the fire-resistant capabilities of
5 the askarels and the loss of that fire resistance
6 should mineral oils be introduced into the system
7 primarily by accident as distinguished from someone
8 who didn't know better pouring mineral oil into a
9 transformer.

10 As I understand it, the question of how
11 much mineral oil in a transformer would be required
12 to reduce its fire resistance was studied quite
13 extensively. I don't have the documents personally
14 but there are studies done by Underwriters
15 Laboratory regarding this issue, the ratio of
16 mineral oil to askarel and what's the critical
17 concentration level.

18 That's really all I can recall regarding
19 mineral oil and transformer askarel oil. It is not
20 a very light subject. It was an important subject
21 and constantly on the minds of those who were in
22 this business.

23 Q. In the business of manufacturing the
24 electrical equipment which had PCBs in it?

25 A. As well as servicing the equipment and,

1 of course, using it because if the unit doesn't meet
2 the fire resistance properties it's just not
3 appropriate for that installation.

4 Q. Is there any particular committee,
5 whether it be an ASTM committee or any other
6 committee, that addressed the issue of how much
7 mineral oil contamination was allowable with an
8 askarel designed unit?

9 A. I'm not aware of any specific
10 committee. I do know the manufacturers individually
11 were very concerned about it. That's the extent of
12 my understanding.

13 Q. Can you be more specific as to which
14 manufacturers voiced concerns over the years as to
15 this issue?

16 A. All of them, General Electric,
17 Westinghouse, McGraw-Edison, Moloney Electric,
18 Allis-Chalmers.

19 Q. RTE?

20 A. On and on.

21 Q. RTE?

22 A. RTE, yes.

23 MR. SMITH: Kuhlman.

24 Q. (BY MR. GRANOFF) Kuhlman, Kuhlman
25 Company, Kuhlman Power?

1 MR. SMITH: Kuhlman Corporation.

2 A. I've heard of them but they're very
3 small. They were a factor but not a big one.

4 MR. SMITH: Speaking of factor, how
5 about Factory Mutual Research, are you familiar with
6 that name?

7 THE WITNESS: Yes. Yes. Factory
8 Mutual. I personally don't know of any direct
9 involvement of Factory Mutual with transformers.
10 That doesn't mean it didn't occur. I don't know
11 about it.

12 Q. (BY MR. GRANOFF) Excuse me. For a
13 matter of clarification, do you recall Kuhlman
14 Company or Kuhlman Corporation having a level of
15 awareness and concern as to the mixture of PCB -- of
16 mineral oil with PCBs?

17 A. I have personally never spoken to a
18 representative of the company. I can't speak to
19 that. I don't have any information.

20 Q. Okay. Let me draw your attention back
21 to the memo on PCBs from the -- one of the European
22 representatives and ask you to read the last
23 sentence on Page 6, last two lines and it's one
24 sentence.

25 A. You wish me to read it out loud?

1 Q. Yes, please.

2 A. The only case for which regeneration is
3 impossible is that when an askarel is accidentally
4 contaminated by mineral oil.

5 Q. Assuming that this statement is correct,
6 why is it impossible to reclaim or regenerate
7 askarel which has been contaminated by mineral oil?

8 MR. SMITH: Objection for lack of
9 foundation.

10 A. Mineral oil and askarels co-dissolve so
11 intimately that there is no practical way to
12 separate the two. Distillation has been tried and
13 it doesn't do it. They're -- There is no known way
14 to separate them.

15 (Deposition stood in temporary recess.)

16 (The requested portion of the record was
17 read by the Reporter.)

18 Q. (BY MR. GRANOFF) The -- Strike that.

19 Your statement that there is no known
20 way to separate mineral oil and askarel or mineral
21 oil and PCB should I say? PCB?

22 A. Both are correct.

23 Q. Okay.

24 A. Either mineral oil and PCB or mineral
25 oil and askarel.

1 Q. Is that based upon your training as a
2 chemical engineer?

3 A. That is correct.

4 Q. And as well is it based upon your
5 knowledge and experience with Monsanto Company from
6 approximately 1951 until you retired in 1986?

7 A. Yes, that's also correct.

8 Q. Okay. In your meeting with Mr. Jay or
9 the other representatives of the European PCB
10 manufacturers in I believe you said March of 1970,
11 was the issue of disposal discussed?

12 A. Yes.

13 Q. And to what extent?

14 A. The disposal into sewer systems and
15 rivers and streams was discussed as being
16 objectionable. The disposal into dump sites or
17 landfills that were near riverbanks and all were
18 mentioned I recall. I recall specifically the Rhine
19 being mentioned.

20 Q. Excuse me. Was it objectionable
21 activity voiced by the European manufacturers or by
22 you and the American representatives?

23 A. Well, the Monsanto representatives
24 pointed out that this was objectionable because of
25 the easy entry into the environment. There were

1 some representatives of the European PCB
2 manufacturers that readily concurred with that.
3 There were, of course, some that at that point in
4 time were quite skeptical as to whether really this
5 was a problem or not. So all of us had something to
6 say about it, some agreeing, some not.

7 Q. Did you personally have this one meeting
8 in March of 1970 with the European manufacturers or
9 were there follow-up meetings?

10 A. There were follow-up meetings of the
11 manufacturers in Europe I personally could not
12 attend, but they did continue meeting on occasion.
13 Some frequency, I don't recall how often but they
14 did meet.

15 Q. The March 1970 meeting, do you recall
16 the other American attendees?

17 A. There were no other, that's why I used
18 the word Monsanto representatives.

19 Q. Okay.

20 A. Since Monsanto was the only commercial
21 producers of PCBs at that time.

22 Q. Do you recollect in your conversations
23 with Mr. Raab whether he ever attended meetings with
24 the European manufacturers of PCBs?

25 A. I don't recall Mr. Raab meeting with the

1 manufacturers of PCB. It seems that, yes, he did
2 meet with manufacturers of transformers that used
3 PCBs, and it seems that it was really under the
4 CIGRE auspices or sponsorship that these meetings
5 took place.

6 Q. Do you know what CIGRE -- I guess we
7 called that an acronym, but do you know what CIGRE
8 stands for?

9 A. I don't recall. I used to know.

10 Q. Okay. I ask you to look at on Page 8 of
11 this report the sentence which begins with in
12 conclusion all the way through in the environment
13 and if you would read that verbatim, please.

14 A. In conclusion, for the case of askarels
15 in transformers, the end users are pushed for
16 technical and economical reasons to avoid any form
17 of disposal of this material in the environment.

18 Q. All right. What is your understanding
19 as to the term end users as it is used in this
20 report?

21 A. That's the owner of the transformer who
22 uses it on his site, his facilities.

23 Q. As a matter of definition, would it
24 include a European utility?

25 A. Yes.

1 Q. Okay. What would be the technical and
2 economical reasons to avoid any form of disposal of
3 askarels into the environment based upon this report
4 and your previous familiarity with this report?

5 A. By technical they are referring really
6 to the environmental impact of PCBs on the
7 environment. By economic, they are referring to the
8 potential for the cost of cleanup or the cost of
9 penalties and fines that might be imposed and
10 they're also referring to the potential for a ban
11 against the use of that material which could result
12 in serious economic impact.

13 Q. Was it your impression that the United
14 States government was ahead of the European
15 governments or the consortium of European
16 governments in connection with protecting the
17 environment on the area of PCBs?

18 A. I would suggest that the United States
19 government was ahead of some of the European but
20 behind some European. Specifically, the
21 Scandinavian countries, they took action regarding
22 limiting use of PCBs quickly and in terms of
23 relative timing, Sweden and Denmark in particular,
24 whereas Germany and Italy and Spain were reluctant
25 to take action. England and France were a little

1 bit behind the United States.

2 Q. And was it your impression that American
3 industry was ahead of European industry in
4 connection with the evolving PCB environmental
5 issue?

6 A. That is my impression, yes.

7 MR. GRANOFF: Okay. Just off the
8 record.

9 (Discussion was held off the record.)

10 Q. (BY MR. GRANOFF) Directing your
11 attention back to Exhibit 368 which was marked
12 yesterday, I believe it was a letter authored by Mr.
13 Olson of Monsanto advising the electrical equipment
14 manufacturers of the evolving PCB issue; is that
15 correct?

16 A. That is correct.

17 Q. And as part of this letter, and I think
18 if you turn to the last sentence or two of that
19 letter, Page 2 of that letter, Monsanto was not
20 going to be directly contacting the purchasers of
21 the electrical equipment but recommended that the
22 equipment manufacturers contact the users?

23 A. That is correct.

24 Q. Okay. Were you made aware whether any
25 of the electrical equipment manufacturers took Mr.

1 Olson's suggestion and contacted the end users as to
2 this evolving PCB issue?

3 A. It's my understanding that all of them
4 contacted their customers with this information.

5 Q. When you say all of them, what do you
6 mean by that term?

7 A. All of Monsanto's customers who
8 purchased PCB-type transformer fluids for use in
9 transformers that they manufactured.

10 Q. Okay. Let me try some manufacturers'
11 names. General Electric, would that be one of the
12 manufacturers?

13 A. Yes.

14 Q. Westinghouse?

15 A. Yes.

16 Q. Allis-Chalmers?

17 A. Yes.

18 Q. McGraw-Edison?

19 A. Yes.

20 Q. RTE?

21 A. Yes.

22 Q. Central Moloney?

23 A. Yes.

24 Q. Wagner Electric?

25 A. Yes.

1 Q. Coopers Industries?

2 A. I don't recall Coopers Industries.

3 Q. Okay. Pennsylvania Transformer?

4 A. Yes.

5 Q. Okay. Have you ever seen any of the
6 letters from the electrical equipment manufacturers
7 to the end users?

8 A. I have seen two that I recall.

9 Q. And which letters do you recall seeing?

10 A. A General Electric letter and a
11 Westinghouse letter, copies of.

12 Q. Do you recall the dates or approximate
13 dates of the General Electric or Westinghouse letter
14 to the end user?

15 A. Middle of 1970.

16 Q. 1970?

17 A. 1970, yes.

18 Q. Okay, thank you. Did either General
19 Electric or Westinghouse review the drafts of these
20 letters before they were issued with you?

21 A. They both. One reviewed it --
22 Westinghouse reviewed it over the telephone with me,
23 read it to me. General Electric through Mr. Raab
24 showed me a rough draft double-spaced version for my
25 comments, review.

1 Q. In connection with Westinghouse, do you
2 recall your -- the contact in regards to this letter
3 to the end users?

4 A. Yes, it was a -- gosh -- John starts
5 with an R.

6 Q. Let me see if I can help you.

7 A. John starts with an R. I can't recall
8 it at the moment. He was the person designated in
9 Westinghouse to be my contact regarding PCB
10 matters. Risington, R-i-s-i-n-g-t-o-n, something
11 like that.

12 Q. Was he located in Pittsburgh at that
13 time or at one of the plants, Sharon or South
14 Boston?

15 A. I believe it was one of the plants. I'm
16 tempted to say Sharon.

17 Q. Okay.

18 A. He was active in this for less than a
19 year and he retired. He was the person that called
20 me.

21 Q. The letters, these letters that you
22 mentioned now that went out, you understand went out
23 from G.E. and Westinghouse, Allis-Chalmers,
24 McGraw-Edison, all the manufacturers that I've
25 mentioned in my question a couple minutes ago, did

1 you understand that these letters were being sent to
2 the equipment manufacturers' electric utility
3 customers?

4 A. Yes.

5 MR. GRANOFF: Two pages, please
6 mark it.

7 (Said instrument was marked for
8 identification as Exhibit No. 382, 2-22-90, JMF.)

9 Q. (BY MR. GRANOFF) I'm going to ask you
10 to identify Exhibit 382, which for everybody is a
11 two-page letter undated on General Electric
12 letterhead with Bates stamp -- I have one Bates
13 stamp on the front page, 142264.

14 Could you identify this exhibit, please,
15 sir?

16 A. This is a letter entitled open letter to
17 electric utility customers. The letterhead is
18 General Electric Company out of Roanoke, Virginia.
19 There is no author, signature, or designation on
20 it. There is no date. It addresses the concern for
21 environmental pollution by askarel fluids.

22 Q. Does the letter address any notification
23 that General Electric received from Monsanto as to
24 this evolving PCB issue?

25 A. In the third paragraph, the second

1 sentence.

2 Q. What is the reference? And you can read
3 it verbatim.

4 A. I will read it verbatim. General
5 Electric is in receipt of a letter from Monsanto
6 expressing its concern and a copy is attached for
7 your information.

8 Q. Okay. Exhibit 382, as it appears, does
9 this look like the proposed G.E. draft reviewed with
10 you by Mr. Raab?

11 A. It does.

12 Q. Does Exhibit 382 as it appears to you
13 today look like the letter that was sent by General
14 Electric to its electric utility customers circa
15 mid-1970?

16 A. I don't know that I'm in a position to
17 comment directly on that. The letter I saw was
18 designed to be suitable for utilities as well as
19 industrial plants like automobile plants or hotels,
20 motels, commercial buildings. The intent was to
21 then modify it slightly to appeal to a particular
22 type customer, but the main body of the letter in
23 essence was identical for all of them.

24 Q. Okay. Do you recollect whether
25 Westinghouse and the other manufacturers that we

1 have identified in our last series of questions also
2 sent letters to electric utility customers advising
3 of the evolving PCB issue and the notification that
4 each respective manufacturer received from Monsanto?

5 A. That is my understanding.

6 Q. Okay. Let me just go through a couple
7 of names with you, if I can, as to manufacturers and
8 see if you can identify these names. A Mr. J. L.
9 Fisher with Kuhlman Electric Company?

10 A. I don't recall Mr. Fisher.

11 Q. Let me before I even take any more
12 names, are you aware of a group which was meeting
13 contemporaneous with the C107 Committee called the
14 NEMA Ad Hoc Committee on Transformer Oil Crisis,
15 Transformer Section?

16 A. That was the precursor group before the
17 ANSI group was formed? That's my understanding.

18 Q. Okay.

19 A. That -- That group was a NEMA committee
20 appointed to advise NEMA how to approach this
21 particular issue.

22 Q. Which particular issue, the PCB issue?

23 A. The PCB issue, yes.

24 Q. When C107 was formed is it your
25 understanding that the Ad Hoc Committee on the

1 Transformer Oil Crisis continued to meet to address
2 their own separate issues?

3 A. I was not aware that they were -- they
4 continued to be active. Was this PCB/askarel issue
5 committee?

6 Q. Well, I'll clarify it and if you need to
7 withdraw your answer or modify your answer I didn't
8 mean to take a shot in the dark here.

9 MR. GRANOFF: But let's mark this,
10 please.

11 (Said instrument was marked for
12 identification as Exhibit No. 383, 2-22-90, JMF.)

13 Q. (BY MR. GRANOFF) Let me show you what
14 has been marked as Exhibit 383. This is three pages
15 Bates stamp 142271. I'm missing 142272 but there is
16 142273 and 142274, but I think as long as we have
17 the first page then I think you'll be able to answer
18 my questions on it. And it is minutes of the Ad Hoc
19 Committee on Transformer Oil Crisis, Transformer
20 Section, October 1974.

21 Could you take a look at these
22 documents, please, and see if you can identify.

23 A. This exhibit is a copy of minutes of a
24 meeting of the Ad Hoc Committee on Transformer Oil
25 Crisis, Transformer Section, dated October -- the

1 meeting was October 2, 1974.

2 Q. Now, now that I've given you a document
3 which reflects this committee do you want to modify
4 or withdraw your previous answer as to your
5 familiarity with that group?

6 A. Yes, I do. I thought you were referring
7 to the NEMA committee that was addressing the PCB
8 issue. This particular committee is addressing the
9 mineral oil shortages that occurred in the '70s.

10 Q. Which was the NEMA committee addressing
11 the PCB issue?

12 A. I don't have the list in front of me,
13 but it was a group of about six representatives of
14 NEMA that -- that document, that exhibit we had
15 before with all the preparatory statements and
16 justification for the formation of a standard
17 setting committee, that is the group that
18 deliberated using this information.

19 Q. Would that be the NEMA Committee on Use
20 and Disposal of Askarel?

21 A. Yes. I believe that is the title they
22 used, yes.

23 Q. So the NEMA Committee on the Use and
24 Disposal of Askarel is not per se the C107
25 Committee?

1 A. That is correct.

2 Q. Okay. Thank you. I didn't mean to
3 confuse you on it.

4 You knew Mr. H. R. Rowe from
5 McGraw-Edison in 1970 or 1971, did you not?

6 A. Yes.

7 Q. And do you know what his position with
8 McGraw-Edison was?

9 A. I don't recall it any longer.

10 Q. And Mr. Rowe was a member of the NEMA
11 Committee on Use and Disposal of Askarel which was
12 the forerunner of the ANSI C107 Committee?

13 A. That is correct.

14 Q. You knew Mr. Reinhardt, W. C. Reinhardt?

15 A. I did.

16 Q. In 1970?

17 A. Yes.

18 Q. And Mr. Reinhardt was a member of the
19 NEMA Committee on Use and Disposal of Askarel which
20 was the forerunner of the ANSI C107 Committee?

21 A. That is correct.

22 Q. Who was -- Strike that.

23 You knew Mr. D. E. Allen of
24 Allis-Chalmers, 1970?

25 A. Yes.

1 Q. And Mr. Allen served as a member of the
2 NEMA Committee on Use and Disposal of Askarel prior --
3 which was the forerunner of the ANSI C107 Committee?

4 A. Yes.

5 Q. And what was Mr. Allen's position with
6 Allis-Chalmers, do you know?

7 A. I don't recall it anymore.

8 Q. And do you recall Mr. Reinhardt's
9 position with Moloney Electric?

10 A. Yes.

11 Q. What was it?

12 A. I recall Mr. Reinhardt.

13 Q. I'm sorry?

14 A. I don't recall his position.

15 Q. Okay. I think there's a letter here
16 somewhere from Mr. Reinhardt. Do you recall Mr.
17 Reinhardt as manager of research and development at
18 Moloney Electric? And I reference Exhibit No. 369.

19 A. That letter that I composed reminds me
20 of his position at that time.

21 Q. So the answer is?

22 A. Manager of the research and development
23 for Moloney Electric Company.

24 Q. Mr. Reinhardt?

25 A. Correct.

1 Q. Thank you.

2 (Said instrument was marked for
3 identification as Exhibit No. 384, 2-22-90, JMF.)

4 Q. (BY MR. GRANOFF) I'll ask you to
5 identify, if you can, what has been marked as
6 Exhibit 384. It's two pages Bates stamped 148199,
7 148200. Can you identify this exhibit, please,
8 sir?

9 A. The exhibit consists of two pages both
10 with Monsanto letterhead. The top page is dated
11 July 27, 1977, and it shows the name and address of
12 Mr. -- well, Mr. J. L. Cooper, Florida Power & Light
13 Company, 6001 Northwest 70th Avenue, Miami, Florida,
14 33166.

15 The second page is a copy of a letter
16 signed by Mr. James A. Alley who at that time was
17 industry specialist dielectrics for Monsanto
18 Company. The letter is addressed to dear customer,
19 no date.

20 Q. And the gist of the letter, sir?

21 A. The gist of the letter is that the
22 recipient of the letter is being informed that as of
23 August 31, 1977, the incinerator at Monsanto would
24 no longer be available to destroy waste, askarels
25 and PCBs, and it goes further to refer to the ANSI

1 standard, C107 standard, and reminding the recipient
2 that there were two companies in the business of
3 incineration that they could contact.

4 Q. Have you ever seen this letter before by --
5 authored by Mr. Alley?

6 A. I had seen it, yes.

7 Q. Now in connection with the use of the
8 terminology in the letter PCB waste, is it your
9 understanding that by that term it was meant to
10 include --

11 MR. SMITH: Objection to the
12 leading.

13 Q. (BY MR. GRANOFF) -- any supply of
14 mineral oil which may be contaminated with PCBs?

15 A. It would include mineral oil with PCBs,
16 yes.

17 Q. Have you ever met J. L. Cooper from
18 Florida Power & Light?

19 A. I don't recall meeting him, no.

20 Q. Do you recollect the name James, Jimmy,
21 or J. L. Cooper from Florida Power & Light?

22 A. Very vaguely, but not associated with
23 anything specific.

24 Q. Let me try then to help you out. I
25 don't know if I'll be able to or not, but I'd like

1 you to assume that J. L. Cooper, James Cooper, Jimmy
2 Cooper, same person, served as supervisor of the
3 Miami Florida Power & Light Equipment Repair Center
4 in the period of approximately 1975 to 1980. Does
5 that help you as far as identifying Mr. Cooper?

6 MR. SMITH: Objection to the form
7 of the question. It mischaracterizes the record.

8 MS. BERKOWITZ: Join in that
9 objection.

10 Q. (BY MR. GRANOFF) Go ahead.

11 A. I just -- I just don't recall.

12 Q. While you may not recall Cooper
13 specifically, do you recall any conversations with
14 Cooper over the phone?

15 A. The only recollection I have is the
16 name, but I can't associate it with either a
17 telephone call or a personal contact or meeting him
18 at a meeting. I cannot relate him to anything
19 specific.

20 Q. All right. Nevertheless, do you
21 associate the name J. L. Cooper with Florida Power &
22 Light?

23 A. Yeah. Yeah.

24 (Said instrument was marked for
25 identification as Exhibit No. 385, 2-22-90, JMF.)

1 Q. (BY MR. GRANOFF) I'll ask you to
2 identify in a moment what's been marked as Exhibit
3 385, which is two pages Bates stamp 148511, 148512,
4 and if you could identify, if you can, sir.

5 A. This exhibit consists of two pages
6 entitled Florida Power & Light Materials Returned to
7 Monsanto for Incineration and it consists of four
8 columns showing dates, location, material name, and
9 pounds. It's showing different types of
10 PCB-containing material, the source of that
11 material, the date arrived, and the amount of
12 material.

13 Q. Is it your understanding that Exhibit
14 385 reflects a compilation of the PCB waste material
15 sent exclusively from Florida Power & Light to
16 Monsanto for incineration from 1971 through March of
17 1976?

18 A. Yes.

19 Q. Now, as you indicated there is the
20 heading of material name or the column under
21 material name and there are different
22 identifications under material name and let's go
23 through them specifically. The term Aroclor, what
24 is your understanding as to what was meant by the
25 term Aroclor?

1 MR. SMITH: Objection to the form
2 of the question. You haven't established his
3 foundation for interpreting this particular
4 document. If you're asking him to tell what Aroclor
5 is, you did that already.

6 MR. GRANOFF: Okay. I'll try to
7 help everybody out then.

8 Q. (BY MR. GRANOFF) Do you know who
9 compiled the document which is marked as Exhibit
10 385?

11 A. I don't know the individual
12 specifically.

13 Q. Well, do you know who that individual
14 represents or what company he or she worked for?

15 A. It's someone in Monsanto's legal
16 department --

17 Q. All right. Do you know --

18 A. -- compiled this.

19 Q. Sorry. Do you know what documents were
20 relied upon in devising this compilation?

21 A. The plant receiving this material kept a
22 log in which entries were made as shipments were
23 received from many sources and on that log they
24 would include these four items listed on this
25 document.

1 Q. To your knowledge was the term Aroclor
2 used by the shipper of the waste or the receiver of
3 the waste?

4 A. The material name was taken off of the
5 bill of lading prepared by the shipper.

6 Q. Thank you. In connection with the
7 different identifications of material name and the
8 different ones that appear on this list are Aroclor,
9 PCB askarel, askarel, PCBs --

10 MR. SMITH: Therminol.

11 MR. GRANOFF: I'm getting there.

12 Q. (BY MR. GRANOFF) -- and Therminol,
13 first of all do you know what Therminol is?

14 A. Yes, I do.

15 Q. What is it, sir?

16 A. Therminol is Monsanto's trade name for a
17 PCB liquid used in heat transfer systems.

18 Q. And in particular, would you know what
19 heat transfer systems it was used in?

20 A. Oh, there are all kinds.

21 MR. DAVIDSON: At Florida Power &
22 Light?

23 Q. (BY MR. GRANOFF) Well, just generally
24 and then I'll --

25 A. -- They go from breaking ovens to rubber

1 vulcanizing equipment to all kinds of industrial
2 equipment.

3 Q. Had you heard in the years that you were
4 chairman of C107 that equipment repair centers had
5 facilities with heat transfer units which were used
6 to dry coils and cores of transformer units?

7 A. Yes.

8 Q. In connection with that type of
9 facility, would Therminol be used in the heat -- as
10 part of the heat transfer unit?

11 A. It could be, yes.

12 Q. By the use of the different terms
13 Aroclor, PCB askarel, askarel, PCBs, or Therminol,
14 was there any way -- Strike that -- was there any
15 distinction there that showed that the material was
16 one hundred percent PCB or a mineral oil
17 contaminated with PCB?

18 MR. SMITH: Objection for lack of
19 competency to explain what the shipper apparently
20 wrote.

21 MS. BERKOWITZ: Could you repeat
22 the question, please?

23 (The requested portion of the record was
24 read by the Reporter.)

25 A. There is no way to make that

1 distinction.

2 Q. (BY MR. GRANOFF) Do you know the --
3 Strike that.

4 Was there a specific Monsanto employee
5 who was the contact person for utilities in the
6 period of 1971 to 1976 in connection with the
7 receipt of waste PCBs for incineration?

8 A. There was no one person.

9 Q. It was a department or a division?

10 A. There was -- There were several people
11 at the plant that could be contacted depending on
12 the time of day and the shift and the like. In the
13 home office of St. Louis there were people who
14 represented the shipping distribution function, the
15 people who could help arrange for truck movements
16 and the like and could send labels and instruct the
17 person asking for the information just how to go
18 about this.

19 So I would suggest that there -- at
20 least six people could have been involved at any one
21 day, and there was a turnover in personnel so there
22 were many people potentially in a period covered
23 here of five years or so.

24 Q. Fair enough. Thank you. Do you
25 recollect when Monsanto first made, and I may have --

1 you may have responded to this yesterday, but do you
2 recall when Monsanto first made its incinerator
3 available for waste PCBs?

4 A. In middle to latter part of 1970 it was
5 announced to our customers that we were constructing
6 and planned to operate an incinerator and if they
7 had any waste they could ship it to Monsanto and we
8 would hold it in inventory until the unit was placed
9 in service.

10 So I would suggest that about September
11 or so of 1970 that was known to customers.

12 Q. And by customers do you mean utilities?

13 A. If that utility was on a list of our
14 customers that we had informed previously about the
15 PCB issue.

16 Q. And the record -- compilation rather of
17 Exhibit 385 indicates that the first materials
18 returned for incineration by Florida Power & Light
19 to Monsanto was October 5, 1971?

20 MR. SMITH: Object to the form of
21 the question which presumes that what is listed
22 first on the piece of paper existed first in time
23 which is subject to somebody else's compilation of
24 this list which was not done by this witness, so I
25 object for lack of that foundation.

1 MS. BERKOWITZ: I join in that
2 objection.

3 A. Yes.

4 Q. (BY MR. GRANOFF) Okay.

5 (Said instrument was marked for
6 identification as Exhibit No. 386, 2-22-90, JMF.)

7 Q. (BY MR. GRANOFF) I'm going to show you
8 what has been marked as Exhibit 386. This is a
9 letter -- Strike that -- this is an interoffice
10 memorandum or correspondence from Florida Power &
11 Light from a gentleman named D. or Dennis Chow dated
12 February 26, 1982, and has been previously marked I
13 believe at Mr. Chow's deposition as Exhibit No. 21.
14 I'll show it to you and ask you if you've ever seen
15 that letter before.

16 MR. SMITH: That file memo you
17 mean?

18 Q. (BY MR. GRANOFF) Yes, Exhibit 386.

19 A. I don't recall ever seeing this letter,
20 memorandum.

21 Q. Fair enough. Let me just run some of
22 the names by you from Florida Power & Light and see
23 if you have had any contact with these gentlemen. A
24 James Killingsworth?

25 A. No.

1 Q. Patrick Lavelle?

2 A. No.

3 Q. Dennis Chow?

4 A. No.

5 Q. J. W. Molyneaux?

6 A. No.

7 Q. Aimee or Aimee Stein?

8 A. No.

9 Q. Bill or William Thue?

10 A. I don't recall him. We talked about him
11 yesterday, but --

12 Q. You recall his name as a member of the
13 C107 Committee yesterday?

14 A. Yes.

15 Q. William Thue?

16 A. Yes.

17 Q. Okay. Now, there is a reference in Mr.
18 Chow's letter, I'm not going to ask you to agree
19 with it or disagree with it, but here's the
20 statement: Around 1975, FPL became aware that
21 oil-filled transformers may be contaminated with
22 PCBs through testimony by General Electric and
23 Westinghouse to the EPA. If you want to read along
24 that with me.

25 My question is do you recollect that

1 representatives of G.E. or Westinghouse gave or
2 offered such testimony to the EPA in 1975 that
3 oil-filled transformers may be contaminated with
4 PCBs?

5 A. Yes, there was such testimony.

6 Q. Do you recall the circumstances to the
7 extent was this a hearing or rule making in
8 Washington D.C.?

9 A. Well, there was a rule making activity
10 under way within EPA at the time. Also, there were
11 hearings conducted by a committee.

12 Q. A congressional committee?

13 A. An EPA committee.

14 Q. Excuse me.

15 A. Headed my Dr. Martha Sager relating to
16 toxic pollutants. General Electric participated in
17 both of these. I recall a document, both General
18 Electric and Westinghouse, but at the moment I don't
19 recall whether that document was used at the hearing
20 or was submitted in response to a rule making.

21 Q. How did you become aware that General
22 Electric and Westinghouse presented at some sort of
23 EPA meeting or hearing information that oil-filled
24 transformers may be contaminated with PCBs? And I'm
25 talking circa 1975.

1 A. Oh, I got a copy of their statement.

2 Q. In other words, you received a copy of
3 their written statement that was to be submitted to
4 the EPA group?

5 A. Yes.

6 MS. RUMAGE: I'm sorry, is this
7 Westinghouse?

8 THE WITNESS: Both.

9 MS. RUMAGE: Both.

10 Q. (BY MR. GRANOFF) Did any other
11 manufacturers make presentations to the EPA circa
12 1975 in connection with oil-filled transformers that
13 may be contaminated with PCBs?

14 A. Not that I recall, no.

15 Q. Do you recall written submissions by any
16 of the other transformer manufacturers which joined
17 in the statements by General Electric and
18 Westinghouse that -- circa 1975 that oil-filled
19 transformers may be contaminated with PCBs?

20 A. I do not recall any.

21 Q. Do you recall the identity of the
22 spokesmen for either General Electric or
23 Westinghouse making the presentation to the EPA
24 circa 1975 that oil-filled transformers may be
25 contaminated with PCBs?

1 A. Seems to me the spokesman for General
2 Electric was Stewart Richel. I believe that's
3 R-i-c-h-e-l.

4 Q. Is he an attorney?

5 A. An attorney. Spokesman for
6 Westinghouse, I can't recall who that was.

7 Q. You did not attend these particular
8 meetings or hearings, did you?

9 A. Yeah, I was present.

10 Q. I'm sorry. Okay. Never make
11 assumptions. Sorry.

12 A. I do not recall the Westinghouse
13 spokesman.

14 Q. Was Mr. Richel's testimony or statements
15 made under oath?

16 A. I don't believe so, no.

17 Q. And do you recollect whether the
18 Westinghouse spokesman was under oath?

19 A. No. None of us were under oath.

20 Q. Did you make a presentation to this EPA --
21 at this EPA hearing or rule making in 1975?

22 A. Yes, I participated in both.

23 Q. In both what?

24 A. I sent my comments to the EPA regarding
25 rule making and I spoke before the committee headed

1 by Dr. Sager.

2 Q. Did Mr. Richel review his comments with
3 you before he actually gave his presentation to the
4 EPA?

5 A. Well, he let me see a copy of his
6 comments. I did not get the opportunity to comment
7 and offer suggestions for any change.

8 Q. And do you recall as part of Mr.
9 Richel's comments that you reviewed that the issue
10 of PCB contamination of mineral oil transformers was
11 addressed?

12 A. Yes, it was in there.

13 Q. Did Mr. Richel or the Westinghouse
14 representative indicate in their presentations how
15 long this had been an issue with each respective
16 manufacturer?

17 A. I don't believe that was covered, no.

18 Q. So in what aspect was the issue of PCB
19 contamination of mineral oil transformers addressed
20 by the respective presentations?

21 A. Of course I don't remember the exact
22 words.

23 Q. Sure.

24 A. But I do remember the intend was to
25 familiarize those at the hearing and those setting

1 the rule making in EPA with a better understanding
2 of where PCBs might be found and how potential
3 mishandling, spills, and the like could end up in
4 waterways and thereby contribute to the presence of
5 PCBs in the environment. The intend was to
6 familiarize the audience with these potentials.

7 Q. Now, at the time Mr. Richel and the
8 Westinghouse representative made their
9 presentations, do you recollect whether the utility
10 industry was represented to the extent that there
11 was an observer on behalf of the utility industry?

12 A. I -- I don't recall who was all there.
13 There was a roomful, big roomful of people. I don't
14 remember all, no.

15 Q. Do you remember whether Mr. Lengefeld or
16 Mr. Onishi or Mr. Cawley attended any of those
17 hearings?

18 A. I do not.

19 Q. Those hearings or -- Strike that.

20 The presentations by Mr. Richel and the
21 Westinghouse representative, do you recall whether
22 those are transcribed or recorded? Were they
23 transcribed or recorded?

24 A. No, they were not. Copies of the
25 presentation were given to the chairman and members

1 of the committee and the individual then read from
2 the document.

3 Q. Okay. Do you recall the name of the
4 chairman at that time?

5 A. Dr. Martha Sager.

6 Q. I'm sorry, excuse me.

7 MR. GRANOFF: I'm going to punt to
8 somebody else.

9 MR. SMITH: I'll be glad to begin
10 immediately. If anyone wants to take a break, I'll
11 be glad to take a short one.

12 (Deposition stood in temporary recess.)

13 CROSS-EXAMINATION

14 BY MR. SMITH:

15 Q. I'm Richard Smith. I represent Florida
16 Power & Light, Mr. Papageorge.

17 I want to address the testimony that you
18 recall and try to get as much precision as you can
19 recall about the circumstances of that testimony
20 which was just covered before we broke concerning
21 testimony by G.E. through Mr. Stewart Richel and
22 through some representative of Westinghouse.

23 Now, you mentioned that there was a rule
24 making activity in EPA and also hearings conducted
25 by Martha Sager for EPA. Do you recall whether this

1 testimony was given in both of those proceedings or
2 is it your testimony that it was one or the other?

3 A. It's that -- I can't recall specifically
4 at which of these two situations the testimony was
5 offered. I -- I believe, but I'm not real certain,
6 that they were offered at Mrs. -- Dr. Sager's
7 hearings because I recall the -- the reading of the
8 information as distinguished from a mailing into a
9 rule making and my office getting a copy.

10 So I lean primarily to the testimony
11 before Dr. Sager's committee but it at the same time
12 could have been the rule making. I'm not certain.

13 Q. Okay. The rule making that you
14 considered to be one of the possible places
15 concerned what type of a rule?

16 A. This was EPA's attempt to establish
17 acceptable limits of a given set of chemicals which
18 were referred to as toxic pollutants and this was
19 related to presence in water, natural waterways.

20 Q. Okay. Was this rule making conducted
21 pursuant to some statutory authority?

22 A. Yes.

23 Q. Do you recall which act or statute this
24 followed from? Was it, for example, TSCA or what is
25 customarily referred to as TSCA or was it a water

1 quality act or anything else you recall?

2 A. TSCA was not yet enacted. It was
3 related to water quality act and referred to the
4 toxic pollutants portion.

5 Q. Okay. To the best of your recollection
6 that rule making related to the Federal Water
7 Pollution Control Act?

8 A. Yes.

9 Q. Do you know if rules were promulgated as
10 a result of this rule making activity on or about
11 the time that it took place?

12 A. Not on or about that time. Several
13 years later I understand something was promulgated.

14 Q. Okay. Was Dr. Sager's -- were Dr.
15 Sager's hearings or hearing related to toxicity
16 studies?

17 A. Toxicity studies were -- The results of
18 toxicity studies were offered to support positions
19 taken by various parties in establishing the
20 standards, but I would not say that the hearings
21 were limited only to toxicity studies.

22 Q. Can you help me understand any
23 differentiation between the purpose of the rule
24 making activity and the Sager hearing?

25 A. I understand the Sager committee was

1 advisory to EPA. It had no authority at all in
2 establishing rules whereas the rule making process
3 is conducted by representatives of EPA who were
4 assigned the task of coming up with appropriate
5 rules.

6 Q. EPA had at all times during the
7 existence of ANSI C107 a representative on that
8 committee, did they not?

9 A. Yes.

10 Q. Did that representative on the ANSI
11 committee take part in either this rule making
12 activity or the Sager hearing?

13 A. He was not present at the hearings.
14 Whether he took part in the rule making it would
15 have had to have been sort of behind the scenes back
16 at EPA. I don't know what role he took there.

17 Q. Okay. And by he are you referring to
18 Mr. Hood?

19 A. Well, there was a designated
20 representative but at times alternates would be
21 sent, so whoever that alternate was I do not know
22 what he did back at the office in Washington.

23 Q. Okay. Now, Mr. Granoff asked you in his
24 questions as to the timing of this testimony whether
25 it was circa 1975. Can you give me to the best of

1 your recollection the time that this testimony was
2 given by reference to any method to place it in
3 time, calendar or another event happening or
4 something of that nature?

5 A. As best as I recall, the interest in
6 establishing a toxic pollutant standard that
7 included PCB, among other chemicals, was first
8 announced in the Federal Register -- my memory is
9 somewhat vague -- it seems to me about 1973 and
10 continued on and off through '74 and it may well
11 have spilled over into '75.

12 But it was a multi-month kind of
13 activity with notices in the Federal Register and
14 hearings and opportunity to submit information. I
15 wish I could come up with a more specific date but
16 it covered a span of many months.

17 Q. Could it have been in 1976 given the way
18 the matter continued from time to time?

19 A. Could it have been '76?

20 Q. Yes, sir.

21 A. Oh, certainly, and even beyond that.

22 Q. It could have been 1977?

23 A. Yes, because the promulgation didn't
24 occur until the '80s of the rules as I understood
25 them. So there were people in EPA continuously

1 involved with this effort with the changing of
2 personnel through the period.

3 Q. Given that situation, what today would
4 be your best recollection of the likely year in
5 which you heard this testimony given by Stewart
6 Richel? If you have to explain it could be one year
7 or the other, that's fine.

8 A. 1974 I would guess.

9 Q. Okay.

10 A. The best guess I can give now.

11 Q. Okay. But it could have been later or
12 earlier possibly?

13 A. It could have been '75. I know it
14 wasn't after '75.

15 Q. Okay.

16 A. I'm certain of that.

17 Q. Okay.

18 A. '73 was a little early. I don't think
19 Mr. Richel was assigned those responsibilities in '73
20 yet.

21 Q. Now, you said that you got a copy of
22 their statement, referring to the G.E. and
23 Westinghouse witnesses; is that correct?

24 A. Yes.

25 Q. You also said that you did not believe

1 that their testimony or their reading perhaps of
2 their statement was transcribed; is that correct?

3 A. That's my recollection, yes.

4 Q. How do you account for the fact that you
5 received a copy, is that because you were a
6 participating speaker?

7 A. No, I don't know that the fact I was a
8 speaker influenced that. General Electric
9 individuals had worked closely with me on all these
10 PCB matters and I suspect they felt a gesture of
11 courtesy to hand me a copy of the document before we
12 went into the hearing room.

13 Q. Okay.

14 MS. RUMAGE: I'm sorry, I didn't
15 mean to interrupt the questioning. I just wanted to
16 be clear so I can follow the rest. This hearing, is
17 this the EPA hearing?

18 MR. SMITH: It's not clear
19 according to the witness which of the two
20 occurrences this was in. It was in one of the two.

21 MS. RUMAGE: Okay, because I got a
22 little confused. Thank you.

23 THE WITNESS: Yes.

24 Q. (BY MR. SMITH) Would the date on that
25 copy of their statement that you've received be the

1 best evidence of the time of its presentation?

2 A. Yes.

3 Q. Did you keep a copy of their statements?

4 A. At the time, yes.

5 Q. Was it placed in a file or files that
6 you maintained having to do with your duties in
7 following the PCB issues?

8 A. Yes.

9 Q. Were those files turned over to your
10 successor when you ceased having those duties?

11 A. Yes.

12 Q. Can you give us today the name of a file
13 in which this particular document was originally
14 placed by you?

15 A. The file was very likely designated as
16 EPA - toxic pollutants.

17 Q. Now, to the best of your recollection
18 what was stated by the Westinghouse or G.E. witness
19 with respect to the circumstances by which mineral
20 oil transformers were or might be contaminated with
21 askarels?

22 A. I don't remember that specific at all.

23 Q. Okay. Do you remember that the issue
24 itself was spoken by them?

25 A. I recall that the potential for PCBs to

1 be present in mineral oil was there.

2 Q. In the testimony or in your knowledge
3 generally?

4 A. No, in the testimony, in the
5 presentation.

6 Q. Okay.

7 A. And I recall that because the speakers
8 were trying to, as I indicated earlier, trying to
9 educate let's say the members of the committee on
10 the various sources of PCBs and this was one of them
11 that they were told about.

12 Q. Okay. Now, can you tell me whether what
13 they described was described as a potential for such
14 contamination or the existence of such contamination
15 being a possible point source for release to the
16 environment?

17 A. They described it as a potential for
18 happening. They did not try to quantify the
19 frequency or the amounts.

20 Q. Did they explain that in their
21 manufacturing plants they had discovered that in the
22 manufacturing process there had been some
23 contamination of askarels -- I'm sorry, some
24 contamination of mineral oil with small quantities
25 of askarels?

1 A. They did not.

2 Q. Mr. E. L. Raab at some time prior to
3 1974 did explain that situation to you with respect
4 to the Pittsfield plant, did he not?

5 A. Yes.

6 Q. And Mr. Harry Sheppard employed by
7 Westinghouse explained the same thing to you with
8 respect to Westinghouse facilities, did he not?

9 A. Yes.

10 Q. Did Mr. Reinhardt from Central Moloney
11 ever explain to you the same situation of
12 cross-contamination in manufacturing?

13 A. I don't recall any such discussion with
14 Mr. Reinhardt.

15 Q. In your tour of the Pittsfield plant at
16 one time, was the potential for cross-contamination
17 ever pointed out to you by reference to piping,
18 filters, valves, any mechanical apparatus?

19 A. The potential by the time I saw it in
20 1970 had been virtually removed, but I was shown how
21 they had special couplings for the piping from the
22 tank -- railroad tank car to the storage tanks as an
23 example of how they avoid emptying the wrong tank
24 car into the tanks.

25 Q. And did Mr. Raab explain to you at some

1 time how their Rome, Georgia facility had been
2 constructed so that operator error in utilizing
3 piping and so forth could not have resulted in
4 cross-contamination?

5 A. I don't know that it was Mr. Raab that
6 told me this. It could well have been, but
7 certainly somebody from G.E. and it could well have
8 been from the Rome, Georgia plant was the one who
9 told me this.

10 Q. Do you remember the names of any of your
11 contacts at the Rome, Georgia plant?

12 A. No, but if I hear it it will come to
13 mind quickly. I just at the moment cannot recall
14 it.

15 Q. I want to focus on the type of statement
16 that you were told by Mr. Raab and Mr. Sheppard, the
17 statement about cross-contamination in a
18 manufacturing facility, and what I would like to
19 find out is whether or not you recall anyone
20 advising you from any other manufacturer of
21 transformers of the same type of incident in their
22 facilities. I'll go through a list of --

23 MR. GRANOFF: Let me just object to
24 the form to the extent that I think Mr. Papageorge
25 has testified in the past that this

1 cross-contamination or the potential for it occurred
2 in manufacturing facilities as well as service
3 centers.

4 Q. (BY MR. SMITH) Well, let me ask you the
5 names of some manufacturers and see if you recall
6 any people who told you the same type of
7 explanation. Anyone from Kuhlman?

8 A. No.

9 Q. Anyone from Allis-Chalmers, either
10 William J. Hanna, A. S. Lindway, or E. A. Goodman?

11 A. I just do not recall a specific comment
12 other than the general understanding or something
13 that's as natural as breathing in that business,
14 they were very sensitive that in those plants where
15 both mineral oil and askarels are used they must be
16 extremely careful that they don't mix them. That's
17 the general message I got.

18 Q. And you understood that to be the
19 situation in pretty much all of the transformer
20 manufacturing facilities?

21 A. Yes. Yes. Uh-huh.

22 Q. Do you recall anyone from McGraw-Edison
23 such as John Lappe or James Douglas explaining that
24 to you?

25 A. Not in any detail as to what happened

1 when and under what conditions, no.

2 Q. Do you recall anyone from RTE
3 Corporation such as a Mr. Nelson or a Mr. Banalstein
4 explaining that to you?

5 A. No.

6 Q. Did any of these individuals who may
7 have been employed at Central Moloney mention this
8 to you, a Mr. Knowles, K-n-o-w-l-e-s?

9 A. No.

10 Q. Mr. Neldon, N-e-l-d-o-n?

11 A. No.

12 Q. Mr. Patillo, P-a-t-i-l-l-o?

13 A. No.

14 MS. RUMAGE: I didn't hear the
15 answer for RTE.

16 MR. SMITH: He recalls no one.

17 MR. GRANOFF: He didn't recall
18 anyone.

19 MS. RUMAGE: Okay.

20 Q. (BY MR. SMITH) I believe you told me
21 that Mr. Reinhardt -- with respect to Mr. Reinhardt
22 of Central Moloney you don't recall him advising you
23 of that situation in particular?

24 A. Of any specific incident is what we're
25 talking about?

1 Q. Yes, sir.

2 A. No, no one did.

3 Q. And by no one you mean no one from
4 Central Moloney?

5 A. Correct.

6 Q. Did anyone from a transformer
7 manufacturer advise you that they had had to take
8 remedial action because of an existing contaminated
9 stock of askarel in their facility which had been
10 contaminated with trace amounts of --

11 A. -- No.

12 Q. I'm sorry. Strike that.

13 Did anyone inform you on behalf of a
14 transformer manufacturer that they had a stock of
15 mineral oil which had been contaminated with trace
16 amounts of PCBs?

17 A. No.

18 Q. Did anyone who worked in a service shop,
19 and by that I mean a transformer service shop,
20 regardless of whose shop it was advise you of events
21 of cross-contamination in their service shop?

22 A. No.

23 Q. Is any knowledge that you have that
24 there was cross-contamination, in fact, in
25 transformer service shops or repair shops based on

1 what persons unknown related to you from time to
2 time over the years?

3 A. I don't understand the question.

4 MR. GRANOFF: Objection as to form.

5 Q. (BY MR. SMITH) Okay. Let me go through
6 it piece by piece.

7 Is it your recollection that you believe
8 that there had been contamination of mineral oil by
9 askarels in service shops at any time?

10 A. Yes.

11 Q. And now I mean to differentiate the fact
12 of that from the potential for that. Would your
13 answer be the same that you believe there had been
14 events of cross-contamination in these service
15 shops?

16 A. I was not told specifically the date,
17 the item, the company but I was made aware. In
18 fact, this is reflected in Monsanto's trade
19 literature on askarels that contamination did occur
20 and the proper way for handling that contaminated
21 material.

22 MS. RUMAGE: You mean oil?

23 THE WITNESS: Oil or vice versa.

24 The askarel's contaminated. It can go either way.

25 Q. (BY MR. SMITH) In what trade literature

1 is that covered, in Monsanto's trade literature?
2 Can you give me a generic reference or a type of a
3 reference that you're remembering?

4 A. There was in Monsanto a publication that
5 referred to the handling of askarels in the
6 electrical equipment industry. As I recall this
7 publication was on occasion updated through the
8 years. I'm trying to recall the exact title. The
9 word askarel is in it.

10 Q. I'm showing you something which I will
11 cause to be marked which for the record appears to
12 be a Bulletin No. IC/FF-38. Is that such a
13 document, sir?

14 MR. GRANOFF: Well, objection as to
15 form. You mean that particular document, you're
16 asking whether that particular document has
17 information as to cross-contamination or is that the
18 form that the document took?

19 Q. (BY MR. SMITH) My question is is this a
20 piece of trade literature of the type to which
21 you're referring?

22 (Discussion was held off the record.)

23 A. This is a typical of the type of
24 bulletin I'm talking of. This, however, is I'm
25 going to say prepared about 1974 after the ANSI

1 Committee. There are versions prior to that, but
2 this is the latest version.

3 MR. SMITH: Okay. Miss Reporter,
4 please mark for identification next in order this
5 document.

6 (Said instrument was marked for
7 identification as Exhibit No. 387, 2-22-90, JMF.)

8 Q. (BY MR. SMITH) I've caused to be marked
9 as Exhibit 387 a document bearing Bates numbers PSA
10 1137 through 1164 labeled Transformer Askarel
11 Inspection & Maintenance Guide, Monsanto. Is
12 Exhibit 387 a piece of trade literature prepared by
13 Monsanto concerning inspection and maintenance of
14 askarel transformers?

15 A. Yes.

16 Q. And by its internal references to the
17 ANSI guideline, can you determine from it that it
18 was produced after January 1974?

19 A. Yes.

20 Q. Okay. And was this the last version of
21 your trade literature concerning the handling of
22 askarel transformers?

23 A. I cannot tell if this is the last
24 version. There might well be one more.

25 Q. Okay. I could not find a date on this

1 one and I don't know whether you could do that or
2 not by knowing where it might be found in the small
3 print. Do you know what the date is?

4 A. There is nothing here to indicate the
5 date. I do not know.

6 Q. Please turn to the next to the last
7 page. The next to the last page is Bates No. 1163
8 and I note in the small print at the bottom of the
9 page there is a sentence which in essence says that
10 this document relates to askarel and to no other
11 component of the transformer; is that correct?

12 MR. CLAYMAN: Objection to the
13 form. Perhaps we should just read the statement.

14 MR. GRANOFF: Join.

15 Q. (BY MR. SMITH) Let me withdraw that
16 question and ask you does this document state on the
17 Page 1163 as Bates number, among other things, that
18 nothing herein shall be construed as applying to
19 other than askarel insulation. Data and maintenance
20 suggestions herein do not apply to the other
21 components of the transformer?

22 A. That is correct.

23 Q. By that reference did Monsanto intend to
24 convey to the reader that it was not addressing the
25 issue of mineral oil but only askarels?

1 MR. GRANOFF: Objection, lack of
2 foundation.

3 MS. BERKOWITZ: Join in the
4 objection.

5 MS. RUMAGE: Join.

6 MR. CLAYMAN: Join.

7 A. That would not make sense to the people
8 reading this document.

9 Q. (BY MR. SMITH) Okay.

10 A. The mineral oil would not be a component
11 in an askarel transformer.

12 Q. Correct.

13 A. The reference to components here refers
14 to the sealants used, the gaskets, the plastic
15 blocks, the units that separate the components
16 within, the cotter coil, and so on inside the
17 transformer.

18 Q. I have looked through this document and,
19 of course, invite you to do so to the extent
20 necessary to answer this question, if you can. Does
21 this document address the issue of mineral oil
22 contaminated with askarel in a transformer?

23 A. I'd have to read the document. I don't
24 recall.

25 Q. Well, before you do that let me tell you

1 where I'm coming from. I thought that you had
2 testified that there were pieces of trade literature
3 produced by Monsanto which spoke to the issue of
4 mineral oil contaminated by askarels; is that
5 correct?

6 A. That is correct.

7 Q. Okay. Can you tell me if this Exhibit
8 387 is a version of that type of trade literature or
9 was the trade literature you've told me about given
10 some different subject, description, or title?

11 MR. GRANOFF: Objection; compound,
12 vague.

13 A. The subject, the title of this document --
14 this bulletin appears to be similar to the title of
15 previously issued bulletins.

16 Q. (BY MR. SMITH) Okay.

17 A. I recall reading in those bulletins, and
18 it could well be this one as well, references to
19 askarels having mineral oil present and the
20 difficulty in reclaiming and using that material.
21 It could well be in this document. I could have
22 read it in the previous issues. I don't recall just
23 where I saw that.

24 Q. Okay. Now I understand that you are
25 describing the subject matter of askarel

1 contaminated with oil. My next question is do you
2 recall the subject matter of the converse, that is
3 to say oil contaminated with askarels, being raised
4 in a Monsanto publication?

5 A. Not in a Monsanto publication, no.

6 Q. Did you ever personally conduct any
7 studies to analyze the degree of permanence of the
8 family of Aroclor chemicals?

9 A. I personally?

10 Q. Yes, sir.

11 A. No.

12 Q. Did you ever personally participate in
13 the running of gas chromatography or mass spectra --

14 MS. RUMAGE: Graphic?

15 Q. (BY MR. SMITH) -- spectrometric I think
16 it is analyses of PCB samples?

17 A. No.

18 Q. I'm putting before you Exhibit 368, the
19 letter of Monsanto dated February 18, 1970. Are
20 some of the trade names represented in this letter
21 trade names that were used in Great Britain?

22 A. Yes.

23 MR. GRANOFF: Time frame, please?

24 Q. (BY MR. SMITH) As of about 1970, did a
25 unit of Monsanto sell an askarel formulation which

1 had a trade name of Pydraul, P-y-d-r-a-u-l?

2 A. Pydraul is not an askarel.

3 Q. Which of the products listed on this
4 letter were ones manufactured or formulated by
5 Monsanto for sale in England at the time of this
6 letter?

7 A. The Aroclors, both 1254 and 1260; and
8 the Pydrauls, P-y-d-r-a-u-l; and I believe, although
9 I'm not very certain, Turbinol.

10 Q. Were these products or some of them
11 formulated to an electrical equipment manufacturer
12 specification?

13 A. No.

14 Q. These were Monsanto's own products?

15 A. Yes.

16 Q. Do you recall today the names of any
17 British transformer manufacturers to which Monsanto
18 sold these products in the early 1970s?

19 A. I can only recall two of them and I
20 don't have their full official names. There's the
21 Philips Company, P-h-i-l-i-p-s, and the Siemens
22 Company, S-i-e-m-e-n-s. There are others, but I do
23 not recall them by name.

24 Q. Did a unit of Monsanto ever formulate to
25 these companies' specifications an askarel fluid by

1 the name of Pyratene, P-y-r-a-t-e-n-e?

2 A. I don't know.

3 Q. Did Monsanto ever formulate to a
4 European electrical equipment manufacturer
5 specifications any askarel fluids?

6 A. I understand they did.

7 Q. Do you recall any of the trade names of
8 them?

9 A. I do not.

10 Q. At the bottom of the letter marked
11 Exhibit 368 is the statement PCBs with a chlorine
12 content of less than 54 percent have not been found
13 in the environment and appear to present no
14 potential problem to the environment.

15 Was that statement correct to the best
16 of your knowledge as of February 1970?

17 A. Yes.

18 Q. Did the accuracy of this statement later
19 come to be modified or changed in any way?

20 A. Yes.

21 Q. How did it change?

22 A. It was found that samples of
23 particularly water and soil and sediment taken near
24 the point of discharge, the analyst could detect the
25 PCBs with chlorine content less than 54 percent.

1 Q. Can you give me a rough approximation of
2 how much later than February 1970 that situation was
3 detected?

4 A. Within a year.

5 Q. Okay. Was that in the Hudson River or
6 do you know a particular place where that was
7 discovered?

8 A. The Hudson River was certainly one of
9 them but I -- I don't recall if it was that early
10 yet. There was evidence of materials being found in
11 the Great Lakes. There was also evidence of
12 material found down in the Gulf of Mexico.

13 MR. GRANOFF: Excuse me. Was that
14 within a year or so of February 1970?

15 THE WITNESS: That is correct.

16 MR. GRANOFF: Okay. I'm sorry.

17 Q. (BY MR. SMITH) Does this reference in
18 the letter to PCBs with a chlorine content of less
19 than 54 percent mean to exclude Aroclor 1260 and
20 Aroclor 1254 because they had a content of greater
21 than 54 percent?

22 A. Exclude from what?

23 Q. My question is does Aroclor 1254 have a
24 chlorine content of less than 54 percent?

25 A. No.

1 Q. Okay. And Aroclor 1260 has a content of
2 chlorine higher than 54 percent, does it not?

3 A. That is correct.

4 Q. Okay. Aroclor, is there an Aroclor
5 1242?

6 A. Yes.

7 Q. And the Aroclor 1242 had a chlorine
8 content of less than 54 percent, did it not?

9 A. Yes.

10 Q. Did you ever visit any -- Did you ever
11 visit any transformer repair facility or operation
12 undertaken by the Union Electric Company in St.
13 Louis?

14 A. No.

15 Q. Did you ever discuss with any
16 representative of the Union Electric Company their
17 practices, if any, in working on transformers?

18 A. I don't recall any discussion that
19 focused on their practices.

20 Q. Did you ever receive any reports
21 secondhand from other Monsanto employees who
22 described the operations of any electrical utility
23 with respect to repairing of transformers?

24 A. No.

25 Q. Is any information that you have

1 concerning the potential for cross-contamination of
2 utilities, of utilities' transformers during repairs
3 by those utilities, based on what you have picked up
4 in conversations with people in the ANSI
5 subcommittee over the years?

6 A. Primarily, yes.

7 Q. And can you recall the identity of any
8 of those persons?

9 A. I'd almost have to name all the members
10 of the panel, the working group.

11 Q. Okay.

12 A. As discussed around a table similar to
13 this one.

14 Q. Okay. Would that group of individuals
15 that you were -- that you have described include
16 people on the list of ANSI C107 members that follows
17 the foreword to the ANSI guidelines which we've
18 marked as Exhibit 378?

19 A. Yes, it would.

20 Q. Okay. Do you remember any particular
21 conversation with a person who actually was the
22 employee of a utility as opposed to a manufacturer
23 or a government entity?

24 A. No.

25 Q. I noticed in Exhibit 370, which is

1 labeled Monsanto's PCB Program by W. B. Papageorge,
2 a reference on Page 10 I'd like you to look at.

3 A. I have Page 10.

4 Q. At the top of Page 10 there is your
5 statement to the effect that: "This summer our
6 hopes of control in the heat transfer business
7 vanished when we found that a user of PCB did not
8 appreciate the problem, did not maintain his
9 equipment and created the recent chicken, egg, fish
10 meal problem."

11 Who was that?

12 A. That was a fish meal sterilizing
13 operation. I'm trying to recall the name that it
14 operated under. Something like Eastern Terminals
15 Company. East Coast Terminals Company.

16 Q. Where were they located, if you recall,
17 in reference to a state?

18 A. In North Carolina.

19 Q. Is that when you first met Mr. Davidson?

20 MR. DAVIDSON: Probably first met
21 my firm, not me.

22 A. No, he's a little too young for that.

23 Q. (BY MR. SMITH) Do you know what they
24 had done that led to the problem?

25 A. Yes, I do.

1 Q. What was that?

2 A. They had a piece of equipment through
3 which fish meal was transferred at the same time it
4 was being heated to temperatures that would
5 sterilize the fish meal. The heat source around
6 this equipment in the jacket that was built around
7 the containing device was a heated PCB mixture
8 called Therminol. A leak developed in that system
9 where the hot oil entered the fish meal and rather
10 than shut down the system and repair the leak this
11 company chose to proceed and continue making fish
12 meal contaminated with PCBs. That fish meal was an
13 ingredient in chicken feed and that's how the
14 chickens and eggs got involved.

15 Q. All right. And is the reference here to
16 "the heat transfer business" a reference to those
17 mechanical systems by which heat is transferred to a
18 product in the course of manufacture or processing?

19 A. Yes.

20 Q. It does not have reference to a
21 dielectric fluid usage, does it?

22 A. No.

23 Q. Did the Monsanto incinerator when it
24 operated between the early '70s to 1977 take only
25 liquids or did it take some solids in the form of

1 capacitors?

2 A. No, only liquids.

3 Q. Okay. Are you aware of any deliveries
4 by anyone of mineral oil contaminated with minute
5 quantities of PCBs to the incineration facility at
6 Monsanto?

7 MR. GRANOFF: Objection as to the
8 form, vagueness. Use of the term minute has no
9 definition.

10 MR. CLAYMAN: I join in that
11 objection.

12 Q. (BY MR. SMITH) I'll change my question
13 to include askarels -- I'm sorry, mineral oil with
14 any quantity of askarels or PCBs in it.

15 A. I am aware of liquids that were
16 flammable that were sent to the unit for destruction
17 and these liquids contained PCBs. At the moment I
18 don't specifically recall the designation being
19 mineral oil as distinguished from diesel fuel as
20 distinguished from mineral spirits and so on.

21 Q. I believe you had testified that you had
22 made certain persons aware that if there was an
23 accidental contamination of mineral oil by PCBs
24 Monsanto would be willing to take that for
25 incineration, correct?

1 A. That is correct.

2 Q. And you had some concerns at the time I
3 believe that people might deliberately spike their
4 mineral oil in order to qualify for your
5 incinerator; is that correct?

6 A. That is correct.

7 Q. Did that situation ever happen to your
8 knowledge; that is, where someone deliberately
9 contaminated their mineral oil so that they could
10 avail themselves of paying you three cents a pound
11 to burn it up?

12 MR. GRANOFF: Objection, calls for
13 speculation.

14 A. I'm not aware of any deliberate
15 contamination.

16 Q. (BY MR. SMITH) Showing you my copy of
17 Exhibit 372, which was marked yesterday and consists
18 of a Monsanto letterhead form letter I believe, this
19 document was not produced with a page on the front
20 of it bearing an address label to Florida Power &
21 Light or anyone else. Can we assume from the
22 absence of such an addition to this piece of paper
23 that Monsanto has no way of knowing to whom this
24 letter was mailed?

25 A. Oh, I don't know that I can assume

1 that. There may well be somewhere in the files a
2 list of the companies that received this letter.

3 Q. Okay. Well, I note that some of the
4 exhibits we've looked at today and yesterday had
5 pieces of paper on the front which had an address
6 label for Florida Power & Light; is that correct?

7 A. That is correct.

8 Q. And do you know who compiled that
9 exhibit in such a way; that is, who put the label
10 page on top of the form letter page?

11 A. No, I do not.

12 Q. Do you know what instructions the person
13 who compiled that exhibit was given in order to put
14 it together?

15 A. No, I wouldn't know that.

16 Q. Okay. Do you know if Monsanto during
17 the time you were in charge of the PCB issue kept in
18 its records a copy of each letter sent to a customer
19 with a sheet on top of it having that customer's
20 address? I'm trying to determine whether this
21 exhibit is something that was extracted from the
22 files as it's been kept for twenty years or whether
23 this is something that has been put together more
24 recently than that, if you know.

25 A. The practice when these letters

1 initially were sent is to have a copy of this letter
2 and affixed to it was a copy of all the addressee
3 labels that were prepared prior to removal and
4 placing them on the envelope that would be as many
5 pages as required to accommodate all the
6 recipients. That collection of documents,
7 addressees plus a sample of the letter, was to be
8 retained in the sender's files forever.

9 Q. Okay.

10 A. That was the instructions given at that
11 time.

12 Q. Did you give those instructions?

13 A. No, it was given by the Monsanto
14 attorneys to the business group director who in turn
15 passed it on down to all those reporting to him.

16 Q. Okay. Do you know whether or not one of
17 these other exhibits that we've seen that had the
18 apparent copies of labels attached to the front is
19 one that had addresses for other recipients obscured
20 for the purpose of responding to the subpoena to
21 Monsanto? I reference particularly items or
22 Exhibits 377 and 376.

23 A. Yes. I would --

24 Q. To your recollection an item such as
25 Exhibit 376 as kept in Monsanto's files, were all of

1 these apparent address slips shown on the front ones
2 that had addresses written but they've simply been
3 removed now?

4 A. That is my understanding of what we're
5 seeing here.

6 Q. Okay. On Exhibit 377, which is a letter
7 of February 28, 1972, and consists of two copies of
8 that letter, one addressed to purchasing agent, one
9 to plant engineer, are the addresses on the front of
10 this exhibit meant to correspond to one for the
11 plant engineer letter and one for the purchasing
12 agent letter?

13 A. That is right.

14 Q. And can you tell from looking at this,
15 the first page of Exhibit 377, whether or not
16 Monsanto had different addresses for a plant
17 engineer or a purchasing agent at Florida Power &
18 Light?

19 A. I can't tell from this document. In
20 some cases they had one for each, in some cases they
21 sent to one address with attention to plant
22 engineer, attention to purchasing agent, or
23 attention plant manager, whatever appeared to be
24 appropriate. Sometimes if the name was known the
25 individual's name would be shown.

1 Q. Okay.

2 A. When the name was not known, the title
3 would be shown.

4 Q. Okay. The reason I ask is I wonder if
5 you can help me understand any meaning you can
6 attribute there to the handwritten words same --
7 well, excuse me. Same but P.O. Box 650, no
8 address. Is that --

9 A. -- I -- I don't know how to interpret
10 that. I don't know whose handwriting this is and I
11 don't know when it occurred. At the time of the
12 date of the memo or some other time, I don't know.

13 Q. That's what I would like to see if I
14 could find out was whether or not that was something
15 put together for the purpose of complying with the
16 subpoena in this case or is that a reflection of
17 what the files contained back at the time in 1972 or
18 so?

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

20 Q. Okay.

21 MR. DAVIDSON: Mr. Smith, let me
22 just make a point of clarification. I don't think
23 it really makes a lot of difference, but these
24 documents were not produced in response to a
25 subpoena.

1 MR. SMITH: Okay.

2 MR. DAVIDSON: They were
3 voluntarily produced in response to a letter.

4 MR. SMITH: Okay. That's fine.

5 Q. (BY MR. SMITH) I'd like to ask you to
6 take a look at the guidelines that were marked as
7 Exhibit 378 and if I may I'd like to look over your
8 shoulder.

9 MR. GRANOFF: Do you have the
10 original there?

11 MR. SMITH: I have the original. I
12 found that our Xerox copies last night were missing
13 the pages that were numbered internally 19, 20, and
14 21. Here it is.

15 Q. (BY MR. SMITH) I want to ask you a
16 question about that. Could you turn to Appendix B.

17 A. I have it.

18 Q. Is Appendix B a statement of analytical
19 procedures and laboratory service organizations?

20 A. It is.

21 Q. Are the descriptions of analytical
22 procedures ones which Monsanto prepared?

23 MS. RUMAGE: I'm sorry, which one
24 are we looking at?

25 MR. SMITH: Appendix B to the

1 guidelines which begins on Page 20.

2 A. These appear to be a copy of Monsanto's
3 procedure, yes.

4 Q. (BY MR. SMITH) Okay. Is the first
5 procedure under Section B3 one for the analysis of
6 PCBs in air?

7 A. Yes.

8 Q. Okay. Is the procedure discussed later
9 on under a different section a procedure for the
10 determination of PCBs in water, soil, and
11 bio-organisms?

12 A. I see on Page 31 the section of the
13 article entitled B4, Analysis of Water and Sediment
14 for PCBs. I do not see any reference to organisms.
15 However, it's my understanding that the procedure
16 for sediments could apply to organisms.

17 Q. Okay. Let me direct your attention
18 towards the -- I'll withdraw that.

19 On Page 31 at the end of the Section B3
20 concerning air samples there is a sensitivity
21 statement, is there not?

22 A. Yes.

23 Q. And is that sensitivity statement which
24 references a concentration of two ppb the same
25 sensitivity statement that is set forth in your

1 letter of January 19, 1972, to Mr. Raab and Mr.
2 Pozefsky concerning PCB analytical sensitivity?

3 A. Yes.

4 Q. By comparing the sensitivity statement
5 in the guidelines with the sensitivity statement
6 referenced as the Monsanto basis in your letter from
7 1972, can you tell us whether or not this
8 sensitivity analysis going to two ppb was one
9 related to air, water, sediments, or oil?

10 A. It applies to all.

11 Q. It applies to all, okay. Is there any
12 portion of the appendix to the ANSI guidelines which
13 gives an analytical procedure for testing a sample
14 of oil for the presence of PCBs?

15 MR. DAVIDSON: Mineral oil?

16 MR. SMITH: Mineral oil, yes, sir.

17 A. Not specifically entitled so, no.

18 Q. (BY MR. SMITH) Okay. Was there any
19 reason why air and water and sediments were included
20 in the ANSI guideline appendix but not mineral oil?

21 MR. GRANOFF: Objection,
22 foundation.

23 A. The group was oriented toward impact on
24 the environment, so sediments, water, and air fit
25 nicely in that concept.

1 Q. (BY MR. SMITH) Okay.

2 A. The reference to mineral oil was not
3 made because it didn't seem to fit in that.

4 Q. Okay. Does the beginning of Appendix B
5 list some laboratories where PCB analysis could be
6 obtained as of the time of the promulgation of the
7 ANSI guidelines?

8 A. Yes.

9 Q. And that includes entities named Carus,
10 C-a-r-u-s, Chemical Corporation, Limnetics, Inc.,
11 and Gollob, G-o-l-l-o-b; is that correct?

12 A. That is correct.

13 Q. It does not include Monsanto there as a
14 laboratory source for analysis, does it?

15 A. That is correct.

16 Q. Okay. Turning to Appendix A of the
17 guidelines, this concerns sources of disposal
18 services, does it not?

19 A. Correct.

20 Q. And Monsanto is listed as one of the
21 disposal service locations, is it not?

22 A. Yes.

23 Q. And in addition, there are several
24 others, correct?

25 A. Correct.

1 Q. Two of those are named Nuclear
2 Engineering Company, are they not?

3 A. Yes.

4 Q. And were they a radioactive waste
5 disposal contractor licensed by the Atomic Energy
6 Commission?

7 A. Some of their operations did involve
8 nuclear waste, yes.

9 Q. Okay. Do you recall whether or not you
10 ever told anyone who called you for information that
11 by reference to this Nuclear Engineering Company PCB
12 disposal should be treated like radioactive waste?

13 A. No.

14 Q. Do you know Mr. A. L. Rickley?

15 A. Yes.

16 Q. Was he an employee of Doble Engineering
17 who participated in the ANSI subcommittee?

18 A. Yes.

19 Q. In the ANSI committee?

20 A. Yes.

21 Q. Is his company one which has for years
22 engaged in testing and analyses of transformer
23 liquids?

24 MR. GRANOFF: Objection, vagueness.

25 A. Yes.

1 Q. (BY MR. SMITH) Did you ever have any
2 discussions with him as to his company's abilities
3 at any time in terms of sensitivity of analysis for
4 PCBs in mineral oil?

5 A. We had at least one discussion.

6 Q. Can you place it in time within any
7 framework of years?

8 A. It was before the ANSI committees were
9 formed. I would suggest it was late '70, 1971 time
10 frame.

11 Q. Did that conversation include a
12 discussion of Doble's then ability to test mineral
13 oil for PCBs?

14 A. I don't know that he specifically
15 mentioned the media in which they were trying to
16 detect PCBs. He was aware that analytical
17 methodology was much more sophisticated than
18 anything they'd done up to that point and he was
19 very interested in finding out from Monsanto what
20 kind of equipment it would take and what kind of
21 training and how long would the learning curve
22 take. This kind of discussion did take place and I
23 was left with the impression that he was going to go
24 back and set up his own laboratory at that time.

25 Q. Did he ever inform you of any plus or

1 minus standard of accuracy by which they were
2 capable of detecting PCBs against a mineral oil
3 background sample?

4 A. No, he did not.

5 Q. You testified yesterday that you became
6 aware during the ANSI committee meetings that
7 certain users of PCBs were sending equipment to
8 scrap dealers because of discussions had in your
9 presence. Is that correct?

10 A. That is correct.

11 Q. And did those discussions make you
12 conclude that that was a common practice?

13 A. Yes.

14 Q. Were those discussions that you had with
15 Mr. Raab from Westinghouse -- G.E.?

16 A. I'm sorry, the discussion was with the
17 committee rather than a single individual.

18 Q. I appreciate that this is something that
19 you described in general terms. I'm wondering
20 whether or not you can identify any speaker that you
21 connect up with that impression you got.

22 A. Well, Mr. Raab as committee chairman was
23 definitely a leader in this discussion and he is the
24 one that more or less orchestrated the topics and
25 would make opening remarks, introduce the topic, so

1 I do associate him with virtually all topics
2 discussed. As to the other participants, no single
3 person seems to stick out.

4 Q. I'm just wondering if you can recall a
5 specific story or something that was related by a
6 particular person in this topic area that stuck in
7 your mind.

8 A. There were no specific incidents
9 described. It was just a generalization of this
10 kind of thing is out there or could be out there,
11 how do they address it for purposes of establishing
12 standards.

13 Q. I'd like to again return to the
14 guidelines that you have before you there as Exhibit
15 378. Is it your belief that the word askarel as
16 used in the guidelines always was intended to have
17 the meaning inclusive of mineral oil contaminated
18 with askarel?

19 A. The double use of the word askarel there
20 confuses me where you said there's askarel, mineral
21 oil with askarel.

22 Q. Let me rephrase that. Is it your belief
23 that the word askarel as used in the guidelines was
24 intended by the preparers of the guidelines to
25 include mineral oil containing any quantity of PCBs?

1 A. Yes.

2 Q. And so wherever askarel is used in these
3 guidelines, it should be understood by the reader to
4 have that meaning, correct?

5 A. That was the intent, yes.

6 Q. Okay. Would you turn to Paragraph 2.1,
7 which is on the internal Page 7 of the guideline, I
8 believe. Do you see the subhead General there?

9 A. Yes.

10 Q. And it begins by stating the term
11 "askarel" generally describes a broad class of
12 nonflammable synthetic chlorinated hydrocarbon
13 insulating liquids, etc., does it not?

14 A. That's right.

15 Q. Now the usage of the word askarel in
16 that sense could not have been intended to be
17 inclusive of mineral oil contaminated by PCBs, could
18 it?

19 A. Not in that sense.

20 MR. GRANOFF: Objection,
21 argumentative.

22 A. That is correct.

23 Q. (BY MR. SMITH) And in the next
24 paragraph following right below that begins askarels
25 consisting of or containing polychlorinated

1 biphenyls have been used in many applications for
2 more than forty years, as used in that sentence,
3 part of which I've read, the word askarels is not
4 used in the sense to apply to mineral oil containing
5 PCBs, is it?

6 A. That is correct.

7 Q. So there are places in the guidelines,
8 are there not, where the word askarel sometimes
9 includes or was intended to include mineral oil
10 contaminated with PCBs and sometimes the word
11 askarel was not intended to have that meaning; isn't
12 that correct?

13 A. No, askarels are askarels.

14 Q. Okay.

15 A. Whether they're present in the unit at a
16 hundred percent of their original formulation or
17 present as a cupful in fifty gallons of mineral oil,
18 the askarels are still there. It's a cupful.

19 Q. Right.

20 A. And the intent of this is look at that
21 cupful and use this guideline to handle properly
22 that cupful no matter what else is associated with
23 it. That was the intent.

24 Q. Well, was there any articulation in the
25 guidelines that it is known that from time to time

1 mineral oil in transformers contains some quantities
2 of PCBs?

3 MR. GRANOFF: Objection as to the --
4 other than what was described yesterday in the
5 disposal section which specifically mentions PCBs
6 and mineral oils being mixed, other than that
7 section?

8 MR. SMITH: No, not other than that
9 section. Anywhere.

10 MR. GRANOFF: Well, that's one
11 place.

12 MR. SMITH: Well, you're not
13 testifying and if you were I think I'd have to
14 cross-examine you pretty carefully about that last
15 misconception.

16 MR. GRANOFF: Go ahead.

17 A. I haven't read this document for over
18 fifteen years thoroughly, but I do recall reference
19 to the disposal of liquids of different kinds that
20 contained the PCBs.

21 Q. (BY MR. SMITH) All right. That's the
22 one in --

23 MR. GRANOFF: 4.1.6.

24 Q. (BY MR. SMITH) -- 4.1.6.2.1 at Page 15,
25 correct?

1 A. 4.1.6.2.1, yes.

2 Q. Yes, sir. This referred to liquids by
3 way of a brief title, does it not?

4 A. Yes.

5 Q. And it goes on to introduce its thought
6 by saying liquids containing PCBs requiring disposal
7 may consist of and it lists three things, correct?

8 A. That is correct.

9 Q. And the first thing is PCBs contaminated
10 with mineral oil, right?

11 A. That is correct.

12 Q. And the second thing is mineral oil
13 contaminated with PCBs?

14 A. Correct.

15 Q. And then the third thing is
16 nonreclaimable askarels, askarels from spills and
17 sumps and so forth; is that correct?

18 A. Yes.

19 Q. Okay. Now, at other places throughout
20 the guidelines with respect to Plant Housekeeping,
21 4.2.1?

22 A. I see that.

23 Q. Or Askarel Filling Area, 4.2.1.1, the
24 references there are to askarels per se and not oil
25 contaminated with PCBs or PCBs contaminated with

1 oil; is that correct?

2 MR. GRANOFF: Objection,
3 argumentative. Misstates and mischaracterizes
4 previous testimony.

5 A. I don't at the moment see any specific
6 reference to oil. I do see reference to waste
7 fluids containing askarel not suitable for reuse.

8 Q. (BY MR. SMITH) Is that in 4.2.1, Plant
9 Housekeeping?

10 A. No, I see it under 3.3.4 on Page 11.

11 Q. That's the capacitor guidelines?

12 A. Yes, that is capacitor.

13 Q. All right. I think I want to try to
14 focus on the transformer guidelines but if you need
15 to make reference to capacitors that's fine.

16 A. I was in the wrong section. I'm sorry.

17 MR. GRANOFF: What's the question?
18 Is there a question pending?

19 MR. SMITH: No.

20 Q. (BY MR. SMITH) Let me ask you this: In
21 4.2.1, Plant Housekeeping?

22 A. I found it.

23 Q. In that section is the reference to
24 askarel and askarel spill intended to advise the
25 reader or make the reader understand that it is a

1 reference to include mineral oil contaminated with
2 PCBs?

3 MR. DAVIDSON: Do you understand
4 the question?

5 A. I don't think I understand your
6 question. Would you mind repeating it?

7 Q. (BY MR. SMITH) By way of background to
8 my question, I understood you to say in reference --
9 in an answer to Mr. Granoff's questions from time to
10 time that at certain points in these guidelines,
11 specifically the Section 4 on transformer
12 guidelines, references to askarel per se were meant
13 to include oil contaminated with PCBs?

14 A. Yes.

15 Q. And my question, and we could go through
16 it piece by piece, but generally what I'm trying to
17 determine is is the reader supposed to detect that
18 by knowing that the word askarel as used in certain
19 of these subsections necessarily includes mineral
20 oil contaminated with PCBs?

21 MR. GRANOFF: Objection. Calls for
22 Mr. Papageorge to climb into the mind of the
23 reader.

24 MS. BERKOWITZ: I join in that.

25 Q. (BY MR. SMITH) I'm really asking for

1 what you believe was intended in the preparation of
2 the language.

3 A. The intent was that in those activities
4 which involved the -- the use, the proper use of
5 askarels, the practice in the industry would dictate
6 what specifications that askarel must meet to result
7 in proper use. Under those conditions, mineral oil
8 contaminated with askarel would not apply, that
9 section would not apply.

10 When it came to those sections that says
11 what do I do with this askarel that I cannot longer
12 use, it is a waste, I have it and I've got to do
13 something responsible with it, then we expect the
14 reader to read up what can I do with it, can I send
15 it to Monsanto for burning, can I send it to someone
16 else, can I bury it in a landfill. Under those
17 conditions then the mineral oil with that
18 contamination, askarel, falls under that category of
19 proper disposal of this waste. It was intended that
20 the reader would arrive at that knowing he had some
21 askarel on his hands to get rid of in spite of the
22 bulk of it being mineral oil.

23 Q. Turning to the last section of the
24 transformer guidelines 4.2.3.6, Transformer
25 Disposal, at Page 17?

1 A. I see it.

2 Q. Was it intended there that use of the
3 word askarel or askarel-filled or askarel-soaked was
4 meant to include mineral oil filled transformers
5 which had any concentration of PCBs in them?

6 MR. GRANOFF: Objection, asked and
7 answered.

8 A. That was the intent.

9 Q. (BY MR. SMITH) Okay. Why wasn't it --
10 Why was it not stated that the ultimate disposal of
11 a mineral oil trans -- filled transformer
12 contaminated with PCBs should be disposed in this
13 manner in addition to the words askarel-filled
14 transformer?

15 A. I guess in hindsight maybe we should
16 have had a section that says accidental
17 contamination of mineral oil and how to handle it,
18 but at the time the accidental contamination was
19 looked upon as an infrequent occurrence and the
20 people in charge had to make some decisions and they
21 should be led or guided by these standards.

22 Q. Would you please turn back to Page 16
23 and the general section numbered 4.2.2 at the top of
24 the page, Transformer Labeling.

25 A. 4.2.2?

1 Q. Yes, sir. Do you see that one?

2 A. I don't see the reference to labeling.
3 I see an in-service transformer. Way up there I see
4 it now, yes.

5 Q. The general heading is Transformer
6 Labeling?

7 A. Yes.

8 Q. And then there are subsections below
9 that, correct?

10 A. I see that, yes.

11 Q. And the subsection at 4.2.2.1 is a
12 reference to the labeling of new transformers that
13 contain PCBs; is that correct?

14 A. That is correct.

15 Q. Was that meant to include new mineral
16 oil filled transformers which somehow in the
17 manufacturing process came to contain any amount of
18 PCB?

19 A. That was not the intent of this, no.

20 Q. Okay. At the time of the consideration
21 of the ANSI guidelines the situation was known, was
22 it not, that in the manufacturing process at some
23 point in time there had been cross-contamination?

24 A. Yes, but I was also led to believe that
25 the new unit would not be shipped with contaminated

1 virgin new liquid in it.

2 Q. Did anyone lead you to believe that the
3 manufacturers in the years '72, '73, '74 ran
4 analyses of mineral oil in their transformers to
5 determine if there was any amount of PCBs included
6 within them before shipment?

7 A. They didn't determine the PCBs.

8 Q. Well, I'm sorry.

9 A. When they order the material according
10 to some specifications, it's considered to contain
11 so many -- so much percent PCBs.

12 MR. DAVIDSON: Wait a minute.
13 Let's clarify he's talking about mineral oil.

14 Q. (BY MR. SMITH) I'm talking about
15 mineral oil transformers and that's where I started --

16 A. -- I got confused then.

17 Q. You told me that you understood that
18 something that was contaminated would be tested and
19 not shipped. You weren't talking about mineral oil
20 filled transformers, you were talking about
21 askarel-filled transformers?

22 A. I was going back to this transformer
23 labeling and calling for a label that indicates PCBs
24 are present in the unit.

25 Q. Right.

1 A. And your question had to do with --

2 Q. Did that apply to mineral oil filled?

3 A. Mineral oil units contaminated with PCB,
4 it was my understanding from participating in all
5 these discussions that no responsible manufacturer
6 would ship a new transformer and knowingly --
7 knowing that PCBs are present in the oil.

8 Q. Okay. But did any of them advise you
9 that they were testing products ready for shipment
10 to guard against that accidental misadventure?

11 A. No, they did not.

12 Q. Okay. Look down to Subsection 4.2.2.2,
13 In-Service Transformers?

14 A. Uh-huh.

15 Q. Did that intend to advise the reader
16 that transformer manufacturers should send labels
17 warning of the presence of PCBs for all mineral oil
18 transformers manufactured in the past and now in
19 service which contained or could have contained some
20 amount of PCBs?

21 A. No.

22 Q. Okay. If this relates to in-service
23 transformers it would relate to transformers which
24 had already been put into operation by the end user,
25 would it not?

1 A. Yes.

2 Q. Okay. Did this guideline for issuing
3 decals for transformers in service only relate to
4 the transformers which were designed to include
5 askarels as opposed to mineral oil transformers?

6 A. Yes.

7 Q. All right.

8 (Deposition stood in temporary recess.)

9 Q. (BY MR. SMITH) I want to return to the
10 transformer guidelines at the Transformer Labeling
11 Section 4.2.2. The first subsection pertains to new
12 transformers that contain PCBs, correct?

13 A. That is correct.

14 Q. And the second subsection refers to
15 in-service transformers that contain PCBs; is that
16 correct?

17 A. That is correct.

18 Q. How was the reader -- How was it
19 intended that the reader understand that these
20 labeling guidelines referred only to askarel
21 designed transformers and not to mineral oil filled
22 transformers that contained any amount of PCBs?

23 A. Certainly from the wording of in-service
24 transformers he wouldn't know that.

25 Q. He would not know that?

1 A. He would not know that, no.

2 Q. Okay. But as to the new transformers,
3 according to your recollection at that time new
4 transformers as far as you were aware didn't contain
5 oil contaminated with PCBs; is that correct?

6 A. That was not the intent.

7 Q. All right. By reason of the phone call
8 just a moment ago I got some more names of people
9 that I'd like you to see if you recall. Was there
10 on the ANSI subcommittee a Mr. R. Allen or -- I'm
11 sorry -- D. E. Allen from Allis-Chalmers?

12 A. Yes. Yes.

13 Q. Was there on the ANSI committee a Mr.
14 H. R. Rowe from McGraw-Edison?

15 A. Yes.

16 Q. Was there on the ANSI committee or
17 present at any of its meetings while you were
18 chairman a Mr. J. C. Rissinger, R-i-s-s-i-n-g-e-r,
19 from Westinghouse?

20 A. Rissinger. I believe Mr. Rissinger had
21 retired before the committee was formed so he was
22 not present.

23 Q. Okay. With respect to these people, Mr.
24 Allen, Mr. Rowe, Mr. Rissinger, do you recall any
25 comments they made to you on the topic of the

1 introduction of PCBs into mineral oil in their
2 manufacturing facilities at any time? I'm
3 specifically trying to go back to that topic that
4 you mentioned in connection with Mr. Raab and so
5 forth to see whether or not you recalled any of
6 these individuals may have commented to you on that
7 topic.

8 A. I don't recall any such discussion with
9 those individuals.

10 Q. Okay. Did you become aware at some
11 point in time in 1976 or 1977 that the electrical
12 equipment manufacturers sent letters to their
13 customers advising that mineral oil filled
14 transformers might contain some quantities of PCBs?

15 A. No, in that period of time I was no
16 longer intimately involved with PCBs. I do not
17 recall hearing or seeing anything relating to that.

18 MS. BERKOWITZ: Could you read that
19 question again?

20 (The requested portion of the record was
21 read by the Reporter.)

22 MS. BERKOWITZ: Thank you.

23 Q. (BY MR. SMITH) Please look at a copy of
24 Exhibit 376. I'll show you my copy but I believe --
25 Well, here's the original right in front of you.

1 This exhibit includes a form letter on Monsanto
2 letterhead dated April 1972 and makes reference to a
3 representative of a government pollution control
4 agency contacting Monsanto for information. This
5 was a letter that you were involved in preparing
6 and, in fact, you signed, did you not?

7 A. That is correct.

8 Q. What governmental pollution control
9 agency is referred to here?

10 A. EPA, Federal EPA.

11 Q. Okay. Did this agency ask for
12 information concerning PCB sales nationwide?

13 A. Yes.

14 Q. At the end of the -- Well, in the third
15 paragraph it says he asked for names and addresses
16 of PCB customers in his area and then the next
17 sentence says something about discharge from sewage
18 treatment facilities in his area. Can you tell me
19 what area was referred to?

20 A. All right. The initial request was
21 nationwide.

22 Q. Yes.

23 A. And then he limited to the area covered
24 by the Kansas City office of EPA, and at the moment
25 I don't recall how many states that involves. But

1 it's that district.

2 Q. Okay. Is it a fact that when you sent
3 this letter to people on your customer list you did
4 not limit it to that Kansas City area but tried to
5 cover your entire list?

6 A. That is true.

7 Q. Just out of a concern to be prudent on
8 your part?

9 A. Well, there was every indication that it
10 was going to be nationwide eventually.

11 Q. Did it ever -- Did EPA ever obtain this
12 information on a nationwide basis from Monsanto?

13 A. Not on a nationwide, no.

14 Q. Did they come back sort of customer by
15 customer from time to time or area by area?

16 A. No, they -- the Kansas City office came
17 back in 1975 and we gave it to them. Other than
18 that, I don't -- I'm not aware of any other similar
19 request.

20 Q. All right. Please look at Exhibit 380.
21 Does this exhibit appear to reflect minutes of
22 ANSI's process of reviewing the 1974 guidelines for
23 the purpose of revising them?

24 A. That's my understanding reading this
25 document, yes.

1 Q. Please look at the page numbered at the
2 bottom Page 3 and also has Exhibit B-4 on it?

3 A. I found it.

4 Q. Do you see that Paragraph No. 8 at the
5 top?

6 A. I do.

7 Q. It states, and I quote: Transformer
8 Rebuild & Service Testing. There may be something
9 obscured between the word service and testing. And
10 it goes on to say: Present guidelines deal with
11 manufacturing plants where PCBs may be handled in a
12 separate facility. This section should include
13 repair shops where both oil- and askarel-filled
14 units may be handled in the same facility, and
15 special handling procedures may be required to avoid
16 contamination of oil-filled units.

17 Is that a correct statement of that
18 language there?

19 A. It is.

20 Q. Is this a reference, as you understand
21 it, to revising the Plant Housekeeping portion of
22 the guidelines?

23 MR. GRANOFF: Well, let me just
24 offer an objection to the extent that at the time
25 these minutes were promulgated I believe Mr.

1 Papageorge has testified he was no longer chairman
2 of C107, but you can certainly proceed to answer,
3 Mr. Papageorge.

4 A. I have no way of knowing what section of
5 the guideline this would have been --

6 Q. (BY MR. SMITH) Okay.

7 A. -- included.

8 Q. Did you understand that as to the 1974
9 ANSI guidelines that they just dealt with
10 manufacturing plants in the sense of excluding
11 repair shops?

12 MR. GRANOFF: Objection,
13 argumentative.

14 A. I don't know that the intent was to
15 exclude repair shops. The emphasis was admittedly
16 on the manufacturing plants, but keep in mind many
17 of the major manufacturers also operated extensive
18 service shops throughout the country. I recall the
19 discussion made about these smaller contract
20 services. It was believed at the time by the group
21 present that this should not be too big a problem
22 and somehow the guidelines would get disseminated
23 and it could be responsibly handled. I can only
24 conclude that that decision was not adequate and the
25 committee decided to address it specifically during

1 the revision period.

2 Q. (BY MR. SMITH) That apparently,
3 according to these words here, the committee decided
4 to word more expansively the areas in which special
5 handling precautions should be taken?

6 A. Yes.

7 MR. GRANOFF: Excuse me. Was C107
8 ever revised following its adoption in 1974?

9 MR. SMITH: You must have ESP.

10 Q. (BY MR. SMITH) Was it revised?

11 A. I was led to believe it was revised. I
12 personally have not seen a copy.

13 MR. GRANOFF: And I do have ESP,
14 that's correct.

15 Q. (BY MR. SMITH) Were you ever led to
16 believe that it was -- that the guidelines were
17 rescinded at some point in time earlier than their
18 normal five-year lifetime?

19 A. I have not heard that.

20 Q. Did you have any understanding that as a
21 normal protocol ANSI guidelines were to be called up
22 for review at the end of every five-year period?

23 A. Yes.

24 Q. But you do not know if the 1974 ANSI
25 guidelines were in effect in 1979?

1 A. I do not.

2 MR. GRANOFF: Without revision?

3 MR. SMITH: With or without

4 revision.

5 MR. GRANOFF: Excuse me.

6 Q. (BY MR. SMITH) Your answer would be the
7 same?

8 A. I do not.

9 Q. I noticed on the second page of this
10 exhibit that it states that the location of this
11 Transformers Subcommittee meeting was at EPA
12 headquarters. Noting that, do you recall that any
13 of your ANSI committee meetings when you were
14 involved ever took place at EPA facilities?

15 A. No, it did not.

16 Q. Do you know if subsequent to you
17 stepping down from chairman of the committee that
18 subcommittee meetings or committee meetings of the
19 ANSI group took place at EPA facilities?

20 A. Not until I saw this document the other
21 day.

22 Q. Do you have an attendance roster as part
23 of this exhibit which is Exhibit No. 380?

24 A. I do.

25 Q. Do you see the name about eight names

1 down the roster of Ed Gladbach and reading next to
2 it representing Los Angeles Water and Power?

3 A. I see that, yes.

4 Q. Do you know -- Did you know Mr. Gladbach
5 and do you know whether or not he was from Los
6 Angeles Water and Power?

7 A. I do not know Mr. Gladbach.

8 Q. Okay. Are the members of the ANSI
9 committee that voted on the approval of the
10 guidelines those individuals listed at the bottom of
11 the foreword and onto the next page?

12 A. Yes.

13 Q. Were the working groups for transformers
14 and capacitors during your chairmanship composed of
15 subsets of these individuals or larger groups of
16 people?

17 A. These individuals served on either one
18 or the other committee.

19 Q. Okay. And there were not other
20 additional people who were not committee members of
21 ANSI but did work in the subcommittees?

22 A. Yes, there were visitors in a sense,
23 observers. There were also individuals brought in
24 by the members, a part of their staff back at the
25 home office, to help them.

1 Q. All right.

2 A. Everyone was invited to participate in
3 the discussions whether they were official members
4 or not, but when it came time to vote and arrive at
5 a consensus only the members of the committee had
6 that right.

7 Q. I just wondered if there was ever
8 anything like a roster of the subcommittees back in
9 the '72, '73, '74 time period that you recall?

10 A. Well, there were -- the rosters in a
11 sense were the mailing lists of minutes that these
12 subcommittees would on occasion issue that would
13 show who attended a meeting in a given area at a
14 given date.

15 Q. Okay. Did Monsanto ever receive any
16 mineral oil samples to test for PCBs from any
17 electrical equipment manufacturer?

18 A. Not to my knowledge.

19 Q. When you first began getting up to speed
20 in early 1970 and continued on thereafter, did you
21 keep any log or written record of PCB spill
22 incidents?

23 A. No.

24 Q. Did you keep any log or written record
25 of cross-contamination incidents?

1 A. No.

2 Q. Is there any written -- Would there be
3 any written record today at Monsanto, if it has been
4 kept, of what you learned about the potential for
5 cross-contamination of mineral oil with PCBs?

6 A. I don't -- I don't know of any.

7 MR. SMITH: Mark that, please.

8 (Said instrument was marked for
9 identification as Exhibit No. 388, 2-22-90, JMF.)

10 Q. (BY MR. SMITH) I'm showing you what I
11 have caused to be marked as Exhibit 388 consisting
12 of two copies labeled Purchase Order, Florida Power &
13 Light Company, and two pages that have previously
14 been marked as a separate exhibit concerning or
15 labeled Florida Power & Light, Materials Returned to
16 Monsanto for Incineration. These are Bates numbered
17 PSA 1695 through 1698.

18 Do you know if the first two pages of
19 Exhibit 388 are copies of purchase orders which
20 Monsanto found pertaining to Florida Power & Light
21 Company in its files when it voluntarily produced
22 records to Pepper's Steel?

23 A. That is my understanding, yes.

24 Q. Okay. Is the date of the first purchase
25 order on the front of this exhibit September 1970?

1 A. Yes.

2 Q. Does this purchase order appear to
3 reflect the payment and shipping instructions for
4 the delivery of scrap PCBs or askarels to the
5 Monsanto incinerator?

6 A. Yes.

7 Q. Does the second purchase order appear to
8 reflect the same instructions with regard to payment
9 and shipping?

10 A. Yes.

11 Q. Do these appear to be copies of
12 purchasing or payment records maintained by the
13 Monsanto Company in the ordinary course of its
14 business?

15 A. Yes.

16 Q. Was it Monsanto's practice in the years
17 between 1970 and 1976 to maintain copies of all the
18 purchase or payment documentation concerning
19 shipments of PCB waste to its incinerator?

20 A. Yes.

21 Q. Do you remember that prior to the
22 adoption of ANSI guideline -- the ANSI guidelines in
23 1974 that an official standards proposal was
24 circulated by ANSI?

25 A. A proposal was circulated by NEMA.

1 Q. Okay. Was the proposal circulated by
2 NEMA called an official standards proposal?

3 A. Yes.

4 Q. I assure you this is not a memory test
5 but I'm just looking for anything that may or may
6 not stick out in your memory. Do you recall if
7 there was any memorable change from the wording of
8 the NEMA official standards proposal to the ANSI
9 guidelines as adopted?

10 MR. GRANOFF: Let me object because
11 now you're making it a memory quiz. I think it's
12 unfair unless you show Mr. Papageorge the two
13 documents simultaneously.

14 Q. (BY MR. SMITH) I'll be glad to. I
15 don't mean to suggest that there would be any change
16 whatsoever. I'm looking to see if there's anything
17 in your memory that sticks out in particular.

18 A. Nothing that I would call significant
19 was changed in the document.

20 MR. SMITH: Can we mark this?

21 MR. GRANOFF: Do you want it? If
22 you want to.

23 MR. SMITH: Well, you objected.

24 MR. GRANOFF: That may be true, but
25 I'm not going to object as far as your marking it.

1 MR. SMITH: I don't think it's
2 important.

3 MR. GRANOFF: I agree.

4 Q. (BY MR. SMITH) Do you recall as you sit
5 here today any discussions with anybody from Florida
6 Power & Light Company other than the calls you
7 recalled having with a Mr. Fair?

8 A. I do not.

9 MS. BERKOWITZ: I'm sorry, what was
10 the answer to that?

11 MR. GRANOFF: He does not remember
12 any other calls or any other persons other than
13 Fair.

14 THE WITNESS: I do not.

15 Q. (BY MR. SMITH) Do you recall receiving
16 any written communication from anyone at Florida
17 Power & Light Company concerning PCBs at any time?

18 A. No, I do not.

19 MR. SMITH: No further questions.
20 Thank you.

21 THE WITNESS: Thank you.

22 (Deposition stood in temporary recess.)

23 (Said instrument was marked for
24 identification as Exhibit No. 389, 2-22-90, JMF.)

25 MR. SMITH: Back on the record.

1 Q. (BY MR. SMITH) Do you have before you
2 the document I have caused to be marked as Exhibit
3 389?

4 A. Yes, I do.

5 Q. Exhibit 389 is a letter on Monsanto
6 letterhead consisting of two pages followed by a
7 noted two page document on Monsanto letterhead.
8 Together they are PSA 1445 through 1448.

9 Have you seen this letter before, sir?

10 A. I have.

11 Q. Were you involved in the writing or
12 preparation of this letter?

13 A. No.

14 MR. CLAYMAN: Is it dated?

15 MR. SMITH: It's dated February 4,
16 1972; I'm sorry.

17 Q. (BY MR. SMITH) Were you consulted at
18 all with respect to the decision to write and to
19 send this letter?

20 A. No.

21 Q. Were you advised by -- Did you
22 understand within Monsanto that this letter had gone
23 out to anyone from Monsanto?

24 A. Yes.

25 Q. To whom was this letter sent, if you

1 know?

2 A. It was sent to purchasers of PCB-type
3 products that manufactured electrical equipment and
4 used those products in that equipment.

5 Q. Okay. Would that include G.E.,
6 Westinghouse as examples?

7 A. Yes.

8 Q. Okay. Did the letter that was sent out
9 include as one of its attachments a proposed
10 indemnification agreement such as is attached here
11 at 1447 and 1448?

12 A. Yes.

13 Q. Okay. Do you know if those were entered
14 into between Monsanto and any electrical equipment
15 manufacturers?

16 A. Yes.

17 Q. To the best of your knowledge did every
18 manufacturer which purchased these products from
19 Monsanto enter into such an agreement?

20 A. Not all of them, no.

21 Q. Did Monsanto continue to sell dielectric
22 fluids to any manufacturer who did not enter into
23 such an agreement regarding indemnification?

24 A. They did not.

25 Q. Does this Exhibit 389 appear to be a

1 copy of the record generated and maintained by
2 Monsanto in the course of its regular business?

3 A. Yes.

4 Q. Were these records kept and maintained
5 by Monsanto to keep track of its communications with
6 electrical equipment manufacturers regarding the
7 issue of PCBs?

8 A. That's one purpose, yes.

9 MR. SMITH: No further questions.

10 Thank you.

11 MR. DAVIDSON: Next?

12 CROSS-EXAMINATION

13 BY MS. NELSON:

14 Q. Mr. Papageorge, my name is Elizabeth
15 Nelson. I represent Lloyds and some other companies
16 in the London insurance market and I just have a
17 couple of questions, very brief questions for you.

18 In Exhibit 370, which was your -- I
19 think your opening statement at the ANSI meeting in
20 September of 1971, on Page 6 of that at the very
21 bottom or the very last paragraph on that page.

22 A. What page?

23 Q. Page 6 of that statement.

24 A. I have it.

25 Q. The third to last line, other major uses

1 include the use in hydraulic fluids which are fire
2 resistant, what kind of fluids specifically were
3 those hydraulic fluids?

4 A. These are fluids sold under the trade
5 name Pydrauls and used in such equipment as air
6 compressors and hydraulically operated conveyor
7 systems in say the die casting business where hot
8 metals are handled and where a fire-resistant fluid
9 is required in the event of a rupture of the high
10 pressure lines to prevent fires and explosions.

11 Q. Thanks. I'd like to refer to the letter
12 that you had written to Mr. Raab and Mr. Pozefsky.
13 I think it's in 375. I think it was January 17th,
14 1972, on sensitivities?

15 A. I recall it. I have it.

16 Q. Did Monsanto work with the FDA or USDA
17 in sharing technology in developing these testing
18 methods?

19 A. Yes. The chemists from both
20 laboratories were in very close contact with each
21 other.

22 Q. Did the FDA or the USDA ever ask
23 Monsanto to conduct tests for them or do the
24 analyses for them? Well, my question comes from
25 some of the FDA standards that are mentioned or

1 guidelines are lower than FDA testing sensitivity
2 apparently is and I was just wondering if Monsanto
3 would actually do testing for them.

4 A. We did not do testing as it might be
5 indicated as a routine matter. We did -- Our
6 laboratory shared samples and they compared the
7 results in an attempt to fine tune their procedures
8 so that both laboratories came up with the same
9 answers. That's the extent of the testing we did
10 for FDA.

11 Q. I think you may have answered this, but
12 the medium of the sample didn't impact at all on the
13 degree of the sensitivity, milk or fish or mineral
14 oil or water, testing for PCBs in any of them it
15 didn't?

16 A. No, the chemists learn how to extract
17 the PCB out of the medium to the point where the
18 sensitivity for detection was virtually the same for
19 all samples.

20 Q. Did Monsanto ever make mineral oil and
21 produce mineral oil?

22 A. No.

23 Q. So you had no personal -- Monsanto had
24 no experiences with this cross-contamination or
25 problems of cross-contamination itself, it would

1 just be you know this through discussions in the
2 committee?

3 A. True. I don't want to mislead. I am
4 not aware of any transformers used by Monsanto might
5 have been contaminated. I don't know that. Other
6 than that, Monsanto has no specific experience
7 regarding mineral oils.

8 MR. NELSON: Okay. As I said I
9 would be brief, Jim Walker would be very
10 disappointed with me, but that's all I have. Thank
11 you.

12 MR. CLAYMAN: I guess I'll go next.

13 CROSS-EXAMINATION

14 BY MR. CLAYMAN:

15 Q. Mr. Papageorge, my name is Landon
16 Clayman and I represent The Home Insurance Company.

17 A. All right.

18 Q. I believe you testified that you were
19 not involved in the production of PCBs until you
20 were at the Anniston plant; is that correct?

21 A. That is correct.

22 Q. Is that the first time you worked with
23 PCBs?

24 A. No. Maybe we ought to compare notes
25 regarding the use of the word production. To me

1 that means actually creating PCBs from a
2 manufacturing process. Then my answer was correct
3 in that it happened in Anniston, Alabama.

4 Q. Did you work with PCBs prior to that
5 time?

6 A. Yes.

7 Q. Okay. And what work was that?

8 A. Well, in every case it was supervisory
9 type of activity. My first exposure was as a
10 maintenance superintendent of the electricians in
11 the plant that serviced electrical equipment.

12 Q. Is that in the 1957-'59?

13 A. That is correct.

14 Q. Is it fair to say Monsanto is in the
15 business of producing and selling chemicals?

16 A. That is their primary business, yes.

17 Q. They have other lines of business as
18 well?

19 A. Yes.

20 Q. Okay. And when did Monsanto begin
21 manufacturing PCBs?

22 A. They purchased a company in 1934, as I
23 recall, that was manufacturing PCBs and had
24 established a market then.

25 Q. I'm sorry, what date was that?

1 A. 1934.

2 Q. Did Monsanto ever discontinue the
3 production or manufacture of PCBs?

4 A. Yes.

5 Q. When was that?

6 A. 1977.

7 Q. And why did it stop producing PCBs?

8 A. The customers informed Monsanto that
9 they thought they had found with some trade-offs let
10 me call it, some less desirable characteristics but
11 they were still suitable replacements for PCBs and
12 their manufacturing lines were ready and adaptable
13 to these substitutes.

14 Q. Okay. Do you recall when in 1977 the
15 production stopped?

16 A. Production stopped in July of 1977.

17 Q. The customers you referred to, are these --
18 were these limited at this time to the -- in July of '77
19 to the manufacturers of electrical equipment?

20 A. That is correct.

21 Q. Well, am I correct in understanding that
22 over the years PCBs had various uses or applications
23 beyond use in electrical equipment?

24 A. That is correct.

25 Q. Okay. And then over time some of these

1 applications ceased?

2 A. Yes.

3 Q. And then at one point the only
4 application was in electrical equipment; is that
5 correct?

6 A. That is correct.

7 Q. When did that -- What was that point?
8 Was there a specific date that you can pinpoint?

9 A. That was early 1972 when the indemnity
10 agreements were drawn.

11 Q. I believe yesterday you mentioned use in
12 heat transfer equipment?

13 A. Yes.

14 Q. And use of PCBs in plasticizers?

15 A. Yes.

16 Q. And those uses ceased by early 1972; is
17 that correct?

18 A. The plasticizer use was terminated in
19 August of 1970. The heat transfer use was
20 terminated in 1971.

21 Q. Okay. Were there any uses or
22 applications other than plasticizer, heat transfer,
23 and electrical equipment?

24 A. Yes.

25 Q. What were those?

1 A. Hydraulic fluids, carbonless copy paper,
2 and the term plasticizers is rather broad in that
3 they were used as ingredients in some special rubber
4 materials, caulking sealants, paints, varnishes.

5 Q. But those uses come under the umbrella
6 of plasticizers?

7 A. Yes.

8 Q. Now, with reference to the hydraulic
9 fluids, were PCBs ever used in hydraulic fluids that
10 would be used in automobiles, trucks, or other forms
11 of transportation?

12 A. No.

13 Q. And when did the PCBs stop being used in
14 hydraulic fluids, if you know?

15 A. We finally terminated the last
16 formulation in about April of 1971.

17 Q. Okay. And how about carbonless copy
18 paper, when did you stop -- when were PCBs --

19 A. -- About that same time.

20 Q. Same time?

21 A. Uh-huh.

22 Q. Were -- Was there any connection between
23 the termination of the use of PCBs in these
24 different products? That is, what was the reason
25 for no longer using PCBs in heat transfer equipment?

1 A. We found that the heat transfer systems
2 were difficult to maintain leakproof and there were
3 ways to design around the fire problem, so we chose
4 to arbitrarily say that we will no longer have these
5 materials and refuse to sell them anymore.

6 Q. Okay. So in plas -- in heat transfer
7 equipment then it was a decision by Monsanto that
8 caused PCBs to no longer be used in that equipment;
9 is that correct?

10 A. That's right. That's true of all of
11 these uses.

12 Q. Of all of these uses?

13 A. Yes.

14 Q. And is it fair to say that environmental
15 concerns were what prompted Monsanto to decide to no
16 longer sell PCBs to manufacturers of these different
17 products?

18 A. Definitely. Yes.

19 Q. In your statement to the ANSI
20 committees, Exhibit 370, there is a reference to on
21 Page 11 --

22 A. -- Page 11?

23 Q. Page 11.

24 A. I have it.

25 Q. -- to meetings before Senator Phillip

1 Hart's committee and I presume is October of 1971.
2 Do you recall whether these meetings took place in
3 October of '71?

4 A. I don't recall October. This reminds me
5 that they were held in August. I see what you
6 mean. You mean the resumption?

7 Q. Correct.

8 A. Let me think. I don't think so, no.

9 Q. Okay. Did you ever testify before this
10 committee?

11 A. No.

12 Q. Okay. Did you ever testify before any
13 congressional committees with regard to PCBs?

14 A. Yes.

15 Q. Which committees and when did you
16 testify, please?

17 A. I testified before a committee in the
18 House of Representatives. It was a subcommittee of
19 the -- I don't recall the total title of that
20 committee, but it had something to do with merchant
21 marine and the committee chairman was a
22 representative from Massachusetts, as I recall.

23 MR. GRANOFF: Studds.

24 A. Studds, that's it. Representative
25 Studds.

1 Q. (BY MR. CLAYMAN) And when was that
2 testimony?

3 A. The best I can recall, 1974.

4 Q. What did you testify about before that
5 subcommittee?

6 A. Very much like is in this Exhibit 370,
7 what PCBs are, where they're used, what Monsanto's
8 actions were regarding limiting sales and why we
9 perceived the need in the electrical application as
10 being quite critical and the hopes that substitutes
11 could eventually be found and that general area.

12 Q. Okay. Do you know whether any
13 representatives from the transformer manufacturers
14 industry testified before that subcommittee?

15 A. I don't recall.

16 Q. Were you present at these hearings at
17 times other than during your own testimony?

18 A. Yes.

19 Q. So you witnessed other persons
20 testifying before the subcommittee?

21 A. Yes.

22 Q. Were there any representatives from
23 utility companies testifying that you can recall?

24 A. I don't recall any.

25 Q. I take it you don't recall that a Mr.

1 Raab or Raab testified?

2 A. No, I don't.

3 MR. DAVIDSON: Are you referring to
4 the '74 hearings?

5 MR. CLAYMAN: Yes.

6 MR. SMITH: I think he's not.
7 Aren't you talking about --

8 MR. GRANOFF: Studds' committee.

9 MR. CLAYMAN: Subcommittee,
10 congressional subcommittee hearings.

11 MR. DAVIDSON: That I believe was
12 in '74.

13 Q. (BY MR. CLAYMAN) I think the pending
14 question is whether you recall Mr. Raab or Raab from
15 General Electric testifying before the congressional
16 subcommittee?

17 A. I do not recall Mr. Raab testifying.

18 Q. Did you ever testify at any other time
19 before a congressional body, committee?

20 A. No.

21 Q. Were you present during the August 1971
22 meetings or hearings that are referred to at Page 11
23 of Exhibit 370?

24 A. I believe I was in the audience. I did
25 not participate.

1 Q. Do you recall who did participate during
2 the time you were present?

3 A. I don't recall the individuals involved
4 but I do remember that EPA representatives were
5 present and made presentations before the
6 committee.

7 Q. Do you remember whether representatives
8 of any of the transformer manufacturer companies
9 were present and testifying?

10 A. No, I do not.

11 Q. This document at Page 11 refers to your
12 expectation that Monsanto would be either invited to
13 testify or might choose to ask to be invited to
14 testify with regard to hearings in October. I take
15 it from your testimony that you or Monsanto was not
16 present at any further hearings of this committee?

17 A. I don't -- The best I recall is that
18 they never did take place. Monsanto was not invited
19 and no meetings took place is my recollection.

20 Q. Could you briefly explain to me how PCBs
21 are manufactured?

22 A. I'll try. We start with two basic
23 ingredients, one is commonly known chlorine. It's
24 the same material that's used to sterilize swimming
25 pools and so on. That's a gas at normal atmospheric

1 conditions. The other ingredient is benzene, which
2 many of you may have heard of it. It looks an awful
3 lot like a colorless gasoline, a solvent.

4 The chemist, if you want to picture it,
5 graphically represents benzene as a hex, as a
6 hexagon. The corners of each hexagon represent the
7 location of carbon, so there's six carbons on the
8 hexagon and attached to each carbon is a hydrogen.
9 That is benzene. Under pressure and high
10 temperature, two hexagons join point to point
11 releasing the hydrogen that occupied that one
12 position so we now have twelve carbons, two rings
13 with the hydrogens. That material is called
14 biphenyl.

15 I hope I'm clear here. It's kind of
16 hard to do it without -- Under normal conditions,
17 atmospheric conditions such as exist in this room,
18 that material looks like solidified candle wax. In
19 manufacturing the PCB, we take this solid material
20 and heat it and get a tank full of molten material
21 and bubble chlorine through it for a fixed number of
22 hours and you keep it agitated. The chlorine
23 randomly connects itself to each of those carbon
24 positions around these two benzene rings from one
25 chlorine -- every time it connects itself it

1 releases a hydrogen which joins with another
2 chlorine and makes a gas called hydrogen chloride
3 that's removed from the process.

4 After a given number of hours, a certain
5 mixture of PCBs is obtained and that mixture is the
6 one sought for after years of experience we've
7 learned after X hours you will get so much chlorine
8 in that mixture and it will equal one of the
9 Aroclors, A-r-o-c-l-o-r, either a 1242 or a 1254 or
10 those numbers that we've discussed earlier.

11 That mixture then is distilled and the
12 virtually crystal clear liquid becomes the PCB that
13 is sold. The residue is a black tar that had other
14 applications. It was not referred to as a PCB.

15 Does that help?

16 Q. Yes, that's very helpful. So I take it
17 then that the -- you have a recipe which would tell
18 you how many hours to keep this pot on the stove in
19 order to reach certain levels of these different
20 Aroclors you've mentioned previously?

21 A. That is correct.

22 Q. Is that correct? Okay. And then the
23 longer you keep it -- the chlorine bubbling through
24 the tank the higher the number; in other words, on
25 the Aroclor?

1 A. That is correct.

2 Q. Okay. Now, the crystal clear liquid
3 which is produced after the distillation, is that
4 liquid at room temperature?

5 A. Yes.

6 Q. Okay.

7 A. It looks when it's very pure an awful
8 lot like baby oil. It's about that consistency and
9 may be a little thicker for the higher chlorinated
10 ones.

11 Q. And the mixture you referred to, are you
12 talking about the proportion of chlorines per
13 biphenyl in any particular mixture? I don't make
14 myself clear I'm afraid. Say the PCB can include
15 from one chlorine per biphenyl up to ten?

16 A. Correct.

17 Q. Okay. In say Aroclor 1260 would there
18 be a higher percentage of the -- of ten chlorines
19 per biphenyl than the one chlorine per biphenyl?

20 A. No, those are the two extremes. It
21 would be the one and the ten are very small in 1260
22 so they reach a peak. The peak occurs at about six
23 chlorines and you have a higher percentage of five,
24 six, seven, and eight in the 1260 than you do in
25 1254, then 1254 has more of those than the 1242. So

1 you peak at a different point.

2 Q. Okay. Do each of these different six,
3 seven, and eight have a different name? Would you
4 call them anything different?

5 A. Well, if we were referring to the
6 specific chemical as a family of chemicals you'd
7 call those hexachlorobiphenyl or pentachlorobiphenyl
8 or heptachlorobiphenyl, and within each of those
9 families you designate the position around these
10 rings that the chlorine occupies.

11 Q. Theoretically if you keep the chlorine
12 bubbling through the tank a certain number of hours
13 you'd end up with ten per each biphenyl?

14 A. That is right, and ten chlorobiphenyl is
15 a solid. It's the mixture that's a liquid and each
16 of these PCBs if pure are solids also. It's the
17 mixture that's the liquid.

18 Q. Now, the crystal clear liquid you
19 referred to, with reference to that liquid is the
20 PCBs -- is that the form of the PCB that you would
21 sell to manufacturers?

22 A. If they ordered a PCB, that's what they --
23 under the Aroclor label that's what they would get.

24 Q. I'm a little confused. I thought
25 Aroclor was an askarel which was PCBs that had been

1 combined with other ingredients?

2 A. No. It's the other way around. Askarel
3 is a term used in describing liquid which contains
4 PCBs plus other ingredients. The principal other
5 ingredient is chlorinated benzenes.

6 MR. SMITH: Is that described to a
7 certain extent in this exhibit about askarels?

8 THE WITNESS: It should be, yes.

9 MR. SMITH: The specs for the
10 different chlorines?

11 THE WITNESS: That's right.

12 Q. (BY MR. CLAYMAN) Now you referred
13 yesterday to a clear or amber liquid. Are we
14 speaking about the -- Is that the same crystal clear
15 liquid you referred to today?

16 A. The blends that are referred to as
17 askarels are more likely to be slightly yellowed to
18 amber because of the other ingredients that are
19 added.

20 Q. Do askarels have a distinctive scent?

21 A. I think they do, yes.

22 Q. Do the Aroclors have the same scent?

23 A. No, they have -- the askarels'
24 predominant scent to me are the chlorobenzenes which
25 are much more volatile. But the odor of PCBs to me

1 is different from the odors of the askarel blend.

2 Q. Now is it true that PCBs do not occur
3 naturally in the environment?

4 A. To the best of my knowledge.

5 Q. As far as you know they're a synthetic
6 product?

7 A. Yes.

8 Q. Now, you testified yesterday concerning
9 the testing program that Monsanto embarked on in the
10 late '60s and early '70s when it first learned about
11 the potential of PCB being in the environment. Did
12 that program involve studies to attempt to determine
13 how PCBs were finding their way into the
14 environment?

15 A. No, there was no program that was
16 designed to establish that. It was just assumed
17 that it got into the environment through water
18 systems or through vaporization out stacks and
19 through improper disposal.

20 Q. Did Monsanto ever investigate what
21 practices were causing this escape into the
22 environment?

23 A. No.

24 (Discussion was held off the record.)

25 Q. (BY MR. CLAYMAN) I'm sorry, did you --

1 A. -- Your question indicated to me that
2 Monsanto had a formal extensive study established
3 for determining how PCBs get into the environment.
4 Monsanto did not sponsor such an extensive study but
5 there were individual cases and the one I mentioned
6 earlier about the PCBs getting into fish meal, that
7 was a study of a specific isolated incident. That
8 kind of thing did take place.

9 We were relying an awful lot on the
10 government agencies making their studies regarding
11 presence in birds, presence in fish, and what the
12 pathways were and what they referred to as
13 biomagnification, how the concentration increased.
14 The longer the creature was exposed to a given
15 environment, those were all government studies that
16 were under way and we believe that they were better
17 qualified to do such a study than we were.

18 Q. But you did conduct studies, didn't you,
19 to determine whether PCBs, in fact, were in the
20 environment?

21 MR. SMITH: Monsanto or Mr.
22 Papageorge?

23 MR. CLAYMAN: No, Monsanto.

24 MR. DAVIDSON: I think you're
25 having a little problem with studies, with the term

1 studies.

2 Q. (BY MR. CLAYMAN) Well, let me just ask
3 whether Monsanto investigated whether, in fact, PCBs
4 were found in the environment?

5 A. On a limited basis we were able to
6 obtain some samples of material and we analyzed for
7 PCBs in those samples. It was not a very extensive
8 program to establish and pinpoint. We were able to
9 determine that in a general way it is possible for
10 PCBs to be in the environment. And we -- as I said
11 earlier, we relied on other laboratories that were
12 better equipped to do such a study.

13 Q. With regard to the samples that Monsanto
14 tested, however, what kinds of samples are you
15 referring to?

16 A. Our laboratory looked at water samples
17 from various streams and lakes, they looked at soil
18 samples, sediment especially, the bottom of lakes
19 and so on. It looked at some fish tissue that was
20 sent to us by various laboratories.

21 Q. Okay.

22 A. Those are just some of the examples of
23 the kinds of things that were sent to us and we
24 looked at.

25 Q. Okay. Thank you. I take it you've been

1 deposed about PCBs in the past?

2 A. Yes, I have.

3 Q. How many times have you been deposed?

4 A. Well, I have not kept a score sheet. I
5 think a couple dozen times.

6 Q. I just want to run through a few
7 exhibits, Mr. Papageorge. No. 367 that you
8 identified yesterday, is this a document that's kept
9 in Monsanto's records?

10 A. Yes.

11 Q. It's kept in their records in the normal
12 course of business?

13 A. Yes.

14 Q. In the second to last paragraph, Page 3,
15 it states that in the functional fluids market we
16 have carried out a program for several years for the
17 reclamation of used PCBs to avoid disposal of these
18 valuable materials.

19 I hope I'm not being repetitive. What
20 is the functional fluids market?

21 A. This was the marketing group within
22 Monsanto that sold liquid chemicals that are used in
23 industry to perform some function such as the
24 dielectric fluid in the transformers, the fluid in a
25 compressor, or the fluid in a heat transfer unit.

1 Those -- That group was referred to as functional
2 fluids group.

3 Q. So is it your understanding then that
4 for several years prior to the date of this letter,
5 which is March 3rd, 1969, Monsanto was involved in a
6 program for reclaiming used PCBs that were used in
7 transformers?

8 A. No, this is primarily heat transfer and
9 hydraulic fluids.

10 Q. Okay.

11 A. Which require less rigid specifications
12 than transformers.

13 Q. Okay. Let me show you -- it might be
14 easier to do this in a group -- 368, 369, 372, 373,
15 374, and Exhibit 375 the pages with the Bates stamps
16 PSA 1664 through 1667 but apparently 1666 is
17 missing, 376, 377, 384, and then the last document
18 which was 389. Have you had a chance to look at
19 these as I've been handing them to you, Mr.
20 Papageorge?

21 A. I have.

22 Q. Are these all documents that are
23 maintained by Monsanto in its records in the regular
24 course of business?

25 A. Yes.

1 Q. With regard to Exhibit 370, was that
2 also maintained in Monsanto's records as far as you
3 know?

4 A. Yes.

5 Q. Did you keep personal notes of the ANSI
6 meetings you attended?

7 A. No.

8 Q. With regard to Exhibit 368, is that
9 before you?

10 A. I have it.

11 Q. Do I understand correctly that there was
12 a similar letter prepared which was sent to
13 purchasers of PCBs other than transformer
14 manufacturers?

15 A. Yes.

16 Q. But that other letter is not included in
17 the documents that have been presented to you over
18 the last several days, is it?

19 A. I have not seen it here, no. You're
20 right.

21 Q. Okay. As I understand your testimony,
22 it was almost identically worded for the entire
23 letter except for the last paragraph?

24 A. Yes, sir.

25 Q. Okay. When you assumed the position of

1 manager in environmental control at Monsanto, as I
2 understand it that was a newly created position?

3 A. Yes.

4 Q. How many people did you have working for
5 you when you first took that position?

6 A. Part-time secretary.

7 Q. So it was just you?

8 A. Just me, yes.

9 Q. So Mr. Graham and -- did not actually
10 work for you?

11 A. That is correct.

12 Q. And I believe there was a Mr. Grant or --

13 MR. SMITH: Bryant.

14 Q. (BY MR. CLAYMAN) -- Bryant, he did not
15 work for you?

16 A. Mr. Bryant did not report to me, no.

17 Q. Why did Monsanto build the incinerator
18 that you've referred to?

19 A. We were aware of the need for the
20 disposal of liquid PCB products that could not be
21 reclaimed. We were concerned that disposal of
22 liquid in landfills could pose problems because
23 liquid is mobile as compared to solid wastes. We
24 could not find an incinerator, a commercial
25 incinerator, that could destroy the PCBs totally.

1 But we felt that we should look into the potential
2 for incineration and provide that service because
3 there was no one else to do it. So we arranged and
4 had one constructed for us.

5 Q. Why in January of 1972 did Monsanto
6 limit the sale of askarel fluids to customers who
7 had signed the indemnity agreements, if you know?

8 A. I can only share with you my
9 understanding as it was described to me. One was
10 the sincere belief within Monsanto that the
11 continued use of PCBs in electrical equipment was
12 essential since no fire-resistant alternative was
13 available. In order to avoid any arbitrary bans on
14 the use of these materials, we had to make certain
15 that the use of these materials was very carefully
16 controlled and responsibly done so. One way to get
17 effective control is to make certain that the top
18 managers in our customers' companies were aware of
19 the situation and one way to get that attention is
20 to have them sign a document that holds the supplier
21 harmless.

22 So really the primary driving force
23 behind that agreement was to get attention of top
24 management and at the same time there's no denying
25 it is to insulate Monsanto in the event some

1 careless act beyond its control creates a legal
2 situation that Monsanto just can't handle or can't
3 control.

4 Q. Who related this to you?

5 A. This was related to me by an attorney in
6 Monsanto.

7 Q. Okay. Do you know why the NEMA
8 committee decided to attempt to address the PCB
9 problem through ANSI?

10 A. Yes, I do. NEMA is an organization that
11 represents the manufacturers of the electrical
12 equipment. In order to get a broader participation
13 and eventually a broader dissemination, it was
14 decided that going to ANSI was the proper way to go
15 because ANSI also has connections with the
16 International Standards Institute. By going to ANSI
17 we were able to gather under this one organization
18 representatives such as from Monsanto, for example,
19 and from the power and utilities people, from the
20 government, from the service companies like Doble
21 Engineering and so on.

22 So the intent was two-fold: One is to
23 get a broader participation; the other is to get
24 broader circulation, distribution.

25 Q. You testified yesterday about the

1 concern that mineral oil might be spiked with PCBs
2 in order to gain entrance to the Monsanto
3 incinerator and then today you mentioned that you
4 know of no specific instances of this having
5 happened. Why was there this concern?

6 A. Well, first of all, the unit as designed
7 had a given capacity. We wanted to reserve that
8 capacity for the true problem, which is destroying
9 unusable PCB liquids. We also priced the charge to
10 make it a break-even operation, so it made it a very
11 attractive, economical way to dispose of burnable
12 liquids and flammables. We didn't want anyone to be
13 abusing that opportunity because it diluted our
14 ability to cope with all the true PCB liquids and at
15 the same time we didn't want to be saddled with an
16 economic problem where people were getting a cheap
17 service when we really didn't intend it for that.

18 Q. Was it your understanding that it was
19 less expensive to dispose of the fluids through the
20 Monsanto incinerator than through other methods?

21 A. That's my -- Yes, sir. Three cents a
22 pound at that time was a very attractive price.

23 Q. You mentioned that John Rissington or
24 Rissington?

25 A. Rissinger.

1 Q. Rissinger?

2 A. Yes.

3 Q. Was the Westinghouse person designated
4 to be your contact in regard to PCBs; is that
5 correct?

6 A. In early 1970, yes.

7 Q. When -- Between 1970 and 1977 or during
8 the time that you were working in the environmental
9 area in PCBs concerns, did each of the manufacturers
10 have a designee that you would deal with?

11 A. Yes, there was one person in each of the
12 most active companies. Not everybody participated
13 equally. There was always one person that I knew
14 would be the proper contact.

15 Q. Okay. And after Rissinger at
16 Westinghouse who was the designee for Westinghouse?

17 A. We mentioned him the other day. Starts
18 with an R. No, no, no. Not an R. His name escapes
19 me at the moment.

20 Q. How about General Electric, who was the
21 contact there?

22 A. General Electric it started off as Mr.
23 Raab for transformers and Mr. Pozefsky for
24 capacitors. Later it became Dr. Simon, Ed Simons,
25 S-i-m-o-n-s, and then it became Stewart Richel,

1 R-i-c-h-e-l.

2 Q. How about Allis-Chalmers?

3 A. Was that Mr. Allen as I remember?

4 MR. SMITH: D. E. Allen.

5 A. I believe that's the name of the
6 individual.

7 Q. (BY MR. CLAYMAN) Who was the contact
8 person at McGraw-Edison?

9 A. If I hear it I'll remember it. It
10 doesn't come to mind right now.

11 MR. SMITH: H. R. Rowe.

12 A. Rowe.

13 Q. (BY MR. CLAYMAN) RTE?

14 A. I don't remember him.

15 MR. CLAYMAN: Off the record just a
16 second.

17 (Discussion was held off the record.)

18 Q. (BY MR. CLAYMAN) How about at Central
19 Moloney, was there a contact person that you recall?

20 A. Yes. Reichert, isn't it? Mr.
21 Reichert.

22 Q. Reichert?

23 A. R-e-i-c-h-e-r-t, Reichert.

24 MR. SMITH: There's a letter to him
25 I think in the exhibits, whatever his name is.

1 Q. (BY MR. CLAYMAN) I'm not sure that this
2 was asked but I just want to cover it. Did you ever
3 visit any Florida Power & Light facility?

4 A. I did not.

5 MR. CLAYMAN: Thank you, Mr.
6 Papageorge. No more questions.

7 (Deposition stood in temporary recess.)

8 CROSS-EXAMINATION

9 BY MS. BERKOWITZ:

10 Q. My name is Sheryl Berkowitz, and I will
11 be as brief as possible.

12 Now you have testified that General
13 Electric had certain experiences in Pittsfield in
14 the early days where they made some wrong
15 connections and then based on these experiences they
16 designed their Rome, Georgia facility so as to
17 permit the same mistakes not to happen. Were you
18 referring to a specific incident in Pittsfield that
19 you had heard about or were you just generally
20 referring to that you had heard there was a problem
21 with this?

22 A. I understood that in the early
23 experiences of G.E. in the use of PCB transformer
24 fluids they underwent some situations where
25 contamination did occur and they learned from that

1 experience. At no time did Mr. Raab and others with
2 G.E. mention any specific transformer or date or
3 customer when they described the incident but they
4 described it as something that did occur and they
5 did all they could to avoid reoccurrence.

6 Q. And do you have any idea as to when this
7 may have happened, the time frame?

8 A. In the '30's and '40's is my
9 understanding.

10 Q. Do you have any idea as to whether or
11 not these contaminated transformers were sold?

12 A. I was under the impression that they
13 were not sold as contaminated units.

14 Q. Are you aware of any specific
15 experiences of this cross-contamination at
16 Westinghouse?

17 A. Not specific situations, no.

18 Q. Are you aware of any specific
19 experiences at any transformer manufacturer?

20 A. No.

21 Q. Sir, you had testified that you spoke
22 with Tom Fair at FP&L several times on the phone
23 during the time frame 1971 to '74; is that correct?

24 A. That is correct.

25 Q. And you had testified that you spoke

1 about, among other things, keeping him up to date on
2 the PCB situation?

3 A. Yes.

4 Q. Do you recall as to whether you spoke to
5 Mr. Fair about mineral oil contamination by PCBs?

6 A. No, I do not.

7 Q. Do you have any knowledge as to whether
8 Mr. Fair knew that mineral oil transformers were
9 contaminated with PCBs at the time you spoke with
10 him?

11 A. No, I do not.

12 Q. Do you recall specifically when in 1975
13 the EPA rule making proceedings took place? And
14 these are the ones that you had testified about
15 earlier.

16 A. The what making proceedings?

17 Q. The rule making proceedings and
18 hearings.

19 A. When? Your question was when in '75?

20 MR. DAVIDSON: Since the toxic
21 effluent standards, is that what you're referring
22 to?

23 Q. (BY MS. BERKOWITZ) I'm referring to the
24 rule making and the proceedings and then the EPA
25 hearings with Dr. Sager at the EPA in '75, yes.

1 A. I can't pinpoint the time of the year
2 that it happened. I just can't associate it with
3 any specific month. I just don't recall.

4 Q. And do you recall when -- You don't
5 recall either the rule making proceeding or the
6 hearing itself? I am assuming these were two
7 separate proceedings?

8 A. That is correct.

9 Q. You can't recall if it was in the
10 beginning of 1975?

11 A. I would say that it was more likely the
12 earlier part of '75 and perhaps continued into the
13 early summer.

14 Q. Were these two proceedings, did they
15 occur around the same time?

16 A. Roughly so, yes.

17 Q. Do you know if these were Sunshine
18 hearings?

19 A. I don't know that the word was used but
20 it was open to the public. Anyone could stop by and
21 observe and listen.

22 Q. Okay. Were members of electric
23 utilities informed of these meetings and
24 proceedings, do you know?

25 A. That I don't know. I do not know.

1 Q. So you do not know whether or not any
2 members of electric utilities were specifically
3 invited to this meeting?

4 A. That is correct.

5 Q. Was there a publication -- Was there a
6 notice -- Strike that.

7 Was there notification of these
8 proceedings published in the Federal Register?

9 A. Yes.

10 Q. You may have been asked this, but do you
11 know if anyone from Florida Power & Light ever
12 attended any of these meetings?

13 A. I do not recall any.

14 Q. You had testified that you received
15 statements that were presented at these proceedings
16 prior to the proceedings. Do you recall as to if
17 you had ever sent any of these statements out to
18 anyone?

19 A. No, I do not believe I shared those with
20 anyone other than within Monsanto.

21 Q. And who would you have sent these to in
22 Monsanto?

23 A. They would be sent to the marketing
24 individuals, the research people, the manufacturing
25 people, the business director, of course. Those are

1 examples of the types of people that would have
2 received it.

3 Q. Would you have sent these to any
4 officers of Monsanto?

5 A. No.

6 Q. Okay. And concerning any of the
7 materials that you may have received at any of these
8 meetings or proceedings, would you have sent that
9 out to anyone else besides at Monsanto?

10 A. No.

11 Q. You had previously testified about Warf,
12 W-a-r-f, Wisconsin Alumnae Research Institute, that
13 that was a lab that could detect PCBs in mineral oil
14 in 1974; is that correct?

15 A. Yes.

16 Q. Were they actually testing mineral oil
17 for PCBs at that time?

18 MR. GRANOFF: Let me just object.
19 I think it mischaracterizes. I think it may have
20 been as early as 1972, but just note my objection.

21 MR. SMITH: I join in the objection
22 because I'm not sure that it was testified to about
23 oil samples but what's your best memory?

24 A. The Warf Institute Laboratory had the
25 capability of analyzing for PCBs in any type sample,

1 which includes in mineral oil base. Whether or not
2 they analyzed mineral oils for PCB I have no way of
3 knowing.

4 Q. (BY MS. BERKOWITZ) What about the lab
5 in Knoxville, Tennessee, you had previously
6 testified that they had a capacity to analyze for
7 PCBs as well?

8 A. Yes, they did.

9 Q. Okay. So that would include a capacity
10 to analyze mineral oil for PCBs?

11 A. Yes.

12 Q. And do you know if they actually did the
13 testing of mineral oil for PCBs?

14 A. I do not know.

15 Q. And the same questions concerning the
16 lab in Memphis, the Woodson-Tenant Labs, do you
17 recall or do you know whether or not they ever
18 tested mineral oil for PCBs?

19 A. I do not know if they did or not.

20 Q. But did they have the capacity to test?

21 A. Yes.

22 Q. And this is a clarification of your
23 previous testimony. You had testified, and correct
24 me if I'm wrong, that the definition of an end user
25 is the owner of a transformer who uses it on his

1 site; is that correct?

2 A. Yes.

3 Q. Could an end user also be someone who
4 owned a transformer but -- but did not use it on his
5 own site?

6 MR. DAVIDSON: That's not using
7 it.

8 A. Are you talking about a spare unit
9 that's in the warehouse to be used in an emergency
10 or --

11 Q. (BY MS. BERKOWITZ) No. I'm talking
12 about someone who owned a transformer and used it
13 but they did not use it on their own site, they used
14 it on someone else's site.

15 A. Oh.

16 MR. GRANOFF: I'll object because
17 it's vague. Maybe Mr. Papageorge knows what you
18 mean but could you give an example?

19 Q. (BY MS. BERKOWITZ) I could give an
20 example. Do you not know what I mean by that?

21 A. I have to confess some ignorance here in
22 terms of --

23 Q. Fine. Let's say an electric utility
24 that owned a transformer and used the transformer in
25 the course of a business but the transformer was not

1 used on a site that they owned, it was used -- they
2 just had permission to use a transformer at a
3 particular location. Would that electric utility be
4 considered an end user as well?

5 A. Yes.

6 Q. I'm going to refer you back to Exhibit
7 385.

8 A. I have it.

9 Q. This is also a clarification of your
10 testimony concerning this particular exhibit. Now
11 you had testified that no distinction could be made
12 concerning the terms that are listed on this exhibit
13 as to whether the terms PCB, askarel, Therminol
14 related -- Strike that.

15 You had testified that there could be no
16 distinction that could be made concerning the terms
17 that are listed on this exhibit as to whether they
18 meant that the material returned to Monsanto was,
19 for example, askarel or PCBs, et cetera or whether
20 they were PCBs contaminated with mineral oil or
21 mineral oil contaminated with PCBs; is that correct?

22 A. Essentially so. What I meant to
23 indicate is that by reading this list I personally
24 cannot tell you whether any of these shipments was
25 predominantly mineral oil with a little bit of

1 askarel or vice versa or no mineral oil at all.

2 Q. So, sir, your testimony as to not being
3 able to make a distinction related just to what you
4 saw on this particular exhibit, on this particular
5 list; is that correct?

6 A. Yes. That's what the question was
7 about, yes.

8 Q. Okay. Were you able to distinguish
9 material meaning -- I'm not meaning you, I mean
10 anyone at Monsanto that was receiving the material,
11 were they able to distinguish the material that was
12 returned to Monsanto as to whether it was PCBs,
13 askarel, or mineral oil contaminated with PCBs or
14 PCBs contaminated with mineral oil?

15 MR. SMITH: Objection to the form
16 of the question. It is calling for speculation and
17 lack of foundation.

18 A. The practice at the plant is such that
19 there is no need to analyze and specifically
20 determine the material. Therefore, I don't know
21 that anyone was in a position to characterize a
22 particular shipment as to what materials were in
23 it.

24 Q. (BY MS. BERKOWITZ) So was the material
25 returned ever tested or sampled upon receipt by

1 Monsanto?

2 A. Not to my knowledge.

3 Q. Do you know if this material was ever
4 tested or sampled prior to being sent over to
5 Monsanto?

6 A. That I do not know.

7 Q. Do you know if there was ever any
8 indication from the entities that were shipping
9 these materials back to Monsanto as to whether these
10 materials were PCBs, askarels, or mineral oil
11 contaminated with PCBs or PCBs contaminated with
12 mineral oil?

13 A. I don't know that I understood the
14 question. Any indication on the part of the
15 shipper?

16 Q. Yes.

17 A. No. The only indication that Monsanto
18 got was the documentation on the shipping papers and
19 the documentation on the label, and the label in
20 most cases was supplied by Monsanto and the label
21 was already preprinted as this material contains
22 polychlorinated biphenyls and be careful how you
23 handle it and the like.

24 So I don't know how else to answer your
25 question. There is no other way that we could tell

1 whether the drum was predominantly mineral oil or
2 predominantly askarel.

3 Q. The drum would have been opened at the
4 Monsanto site though; is that correct?

5 A. Yes.

6 Q. Would there be a way that you could
7 distinguish what was contained in these drums based
8 on smell?

9 A. No. I don't know of any.

10 Q. Would there be a way that you could
11 distinguish what was contained in these drums based
12 on the color or the texture of the liquid contained
13 in the drums?

14 MR. GRANOFF: Objection;
15 speculation, lack of foundation.

16 MR. SMITH: Join.

17 Q. (BY MS. BERKOWITZ) Do you know if there
18 was a way that one could tell the contents of these
19 drums based on the texture of the liquid or the
20 color of the liquid contained therein?

21 MR. SMITH: Repeat objection.

22 MR. GRANOFF: Join.

23 A. The waste oils eventually all are a
24 brownish color and very difficult to distinguish one
25 type from another visually. The only way to really

1 distinguish is to take samples and tie up valuable
2 instruments in a laboratory and time and come up
3 with a sophisticated answer for a problem that
4 really doesn't deserve that kind of attention, so
5 the material is just dumped into a tank, pumped into
6 the incinerator, and burned. No attempt was made to
7 identify specifically each and every drum that
8 arrived.

9 MS. BERKOWITZ: I have no further
10 questions. Thank you for your time.

11 THE WITNESS: Thank you.

12 CROSS-EXAMINATION

13 BY MS. RUMAGE:

14 Q. Mr. Papageorge, my name is Sarah
15 Rumage. I just have a couple of questions for you,
16 one of which is a follow-up question to the ones you
17 were just asked by Miss Berkowitz.

18 When Monsanto received waste products,
19 contaminated products for incineration from its
20 customers, did it ever -- did it ever evaluate any
21 of those products as unsuitable for incineration?

22 A. There was no formal test made regarding
23 suitability for incineration. The incinerator was
24 of such a design, keep in mind we were burning a
25 material that was perceived to be nonflammable, so

1 it was a very high tech unit so it was perceived
2 that the only problem that we could probably have
3 would be with severe water contamination which would
4 prevent the unit from operating properly. As long
5 as a water layer was not visible, two layers, oil
6 and water, the material was assumed to be
7 incineratable and introduced into the system.

8 Q. Okay. Since you brought up oil and
9 water, I did want to ask you some questions about
10 that and if they sound silly or uneducated I'm
11 sorry, I'm not a chemist, and I ask that you explain
12 them to me in layman's type of terms.

13 Let me just start out with some general
14 questions about PCBs and askarel. When you say PCB
15 fluid and askarel, are you talking about the same
16 thing? I don't mean to belabor the point, but can
17 you use those terms interchangeably?

18 A. In some applications they are
19 interchangeable.

20 Q. Okay. If you have -- If you have a
21 transformer, could you use the terms interchangeably
22 to refer to what goes into the transformer?

23 A. For some transformers that is true.

24 Q. For which transformers would that be
25 true?

1 A. There are some transformers that are
2 filled with an askarel.

3 Q. All right.

4 A. Which is a hundred percent PCB.

5 Q. Okay. That would be just the PCBs
6 themselves in a liquid form, in a liquid state?

7 A. That is right. That is right.

8 Q. Okay.

9 A. Although the drum may be labeled
10 Inerteen with some numbers or Pyranol with some
11 numbers, the contents is a hundred percent Aroclor
12 1242. So there you can use the words
13 interchangeably, PCBs, askarel.

14 Q. Okay.

15 A. However, any askarel that has anything
16 in it other than PCB you cannot really call it a PCB
17 any longer, it is an askarel which is a blend of at
18 least three ingredients.

19 Q. What would these ingredients be?

20 A. It's PCB plus chlorinated benzene plus
21 an inhibitor to prevent the material from
22 decomposing. It's a chlorine scavenger. I don't
23 want to confuse you, but it's a minor amount of
24 material that's added to stabilize the material.

25 Q. Okay. All right. Would it be fair to

1 refer to -- And I'm not talking about the hundred
2 percent liquid PCB, I'm talking about the other type
3 of fluid. Would anyone commonly refer to that as an
4 oil? Does it have oil-like characteristics?

5 A. Yes, in the industry it's all referred
6 to as transformer oil.

7 Q. Okay.

8 A. Whether it's mineral oil or PCB, the
9 words in the trade are interchangeable.

10 Q. All right. And these questions may
11 appear to be a little off the track but I'm going to
12 bring the two things together. It will just help me
13 prepare the later questions better.

14 When you talked earlier about PCBs in
15 river water and streams and lakes, you said that you
16 would test the sediment for evidence of PCBs. Is it
17 fair to say that that's because PCBs are heavy?
18 Could they be described that way, would that be a
19 fair statement?

20 A. That is very appropriate. PCBs are
21 heavy than water. They do sink in water.

22 Q. Okay. If there is -- If askarel or a
23 PCB -- a fluid containing PCBs, such as this oil we
24 were talking about, the second type, if that were
25 mixed with mineral oil, what would happen?

1 A. Under what conditions what would happen,
2 just mixing?

3 Q. Yes, that it's just in the little
4 transformer can and someone has mixed the oils.

5 A. They would blend --

6 MR. SMITH: Object for the record
7 for lack of foundation for this answer.

8 A. The two liquids would blend very well.
9 They're compatible. With time it would be a uniform
10 mixture of the two inside this transformer.

11 Q. (BY MS. RUMAGE) Okay. Is it fair to
12 say -- Is it scientifically accurate to say that oil
13 with PCBs in it is heavier than regular mineral oil?

14 MR. SMITH: Object to the form for
15 lack of foundation.

16 A. No, I can't quite say that. It depends
17 on the amount of PCB present.

18 Q. (BY MS. RUMAGE) Okay.

19 A. If the amount is low, the oil will
20 maintain its characteristics and be lighter than
21 water and will float. As the PCB content keeps
22 increasing, you cross over eventually where the
23 weight -- let's call it the specific gravity is what
24 it's called changes to where it's greater than water
25 and it will sink.

1 Q. Okay. Not to correct you, but you're
2 using water. If I said water I misspoke myself. If
3 it's in mineral oil would it go to the bottom?

4 A. No, they would blend perfectly.

5 Q. They would blend.

6 A. There is no separation.

7 Q. Okay. So you couldn't -- you couldn't
8 see the difference say if I poured a glass, it
9 wouldn't be as though, you know, the mineral oil
10 would be on top?

11 A. If you did it very, very carefully
12 without stirring it you could see it for a while but
13 if the unit is working and it's heated and
14 convection currents are set up eventually a mixing
15 takes place and you look in there and you can't tell
16 where the oil is and where the PCBs are. They are
17 all uniformly blended.

18 Q. Okay. Let's say that it has been an
19 operational unit and for some reason the unit goes
20 out of operation and it is allowed to sit for a
21 period of time. Would there be a separation?

22 A. No.

23 Q. Okay. You also spoke about PCBs'
24 vaporization from stacks. Could you tell me how
25 that's caused?

1 A. That occurs at very high temperatures,
2 temperatures that exceed roughly four hundred
3 degrees Fahrenheit. That's a rough number but it's
4 high. And it also occurs in many systems where a
5 vacuum is drawn on the equipment to be able to
6 perform a function at lower temperatures so as you
7 draw the vacuum and discharge it out the other end
8 PCB vapors are included in that discharge.

9 Q. Does it ordinarily occur in
10 nonindustrial type situations?

11 MR. SMITH: Volatilization?

12 MS. RUMAGE: Yes.

13 A. Not to an appreciable amount. These are
14 closed systems. They do breathe a little bit but
15 we're talking now transformers?

16 Q. (BY MS. RUMAGE) Yes.

17 A. I would suggest that it would be a
18 little bit a stretch of the definition that they do
19 volatilize freely, no.

20 Q. Okay. When you said that Monsanto had
21 an incinerator to incinerate PCB, how hot would that
22 incinerator have to get? What temperature would it
23 have to reach in order for the PCB to be
24 incinerated?

25 A. It had to be over eighteen hundred

1 degrees Fahrenheit.

2 Q. Okay.

3 A. That's the minimum temperature.

4 Q. All right. And by incineration could
5 you just tell me exactly what you mean? What
6 happens when the PCB is incinerated?

7 A. All right. They are totally destroyed
8 to the ultimate chemical entities that no longer can
9 deteriorate. For example, you end up with carbon
10 dioxide, that takes care of the carbon that's
11 present in PCBs; you end up with water, that takes
12 care of some of the hydrogen; and you end up with
13 hydrogen chloride, that takes care of some of the
14 hydrogen and the chlorine that was there
15 originally. Those three chemicals are very stable.

16 The water vapor just goes out the stack,
17 carbon dioxide goes into the atmosphere. The
18 hydrogen chloride is scrubbed, as it is called, with
19 water sprays and made hydrochloric acid.

20 Q. Okay. If you just heated PCBs say in an
21 oven -- and I know that PCBs are designed to
22 withstand heat, to contain heat -- what would happen
23 to them, anything?

24 A. Depending upon the temperature. If you
25 stay below this four hundred degree number all you

1 will have there is a container of hot PCBs. Once
2 you approach this higher temperature you're going to
3 find a more intense vaporization so you can -- you
4 might even actually see wisps of vapor coming off
5 that container and, of course, at that point the
6 odor will be much more obvious because it is
7 volatilized.

8 Q. Okay. Now, I'm going to ask you a
9 question, and it may sound kind of silly but I just
10 want you to bear with me.

11 If I took a canister out of a
12 transformer that had either askarel or PCB
13 contaminated oil in it and let's say I heated it so
14 that whatever moisture and residue was in the
15 canister appeared to evaporate to me, not being a
16 scientist, and then I took it out of the oven and
17 say I left it outside and it rained, would it --
18 would it be fair to say that there would be PCBs
19 left in the bottom and these PCBs would be absorbed
20 by the rainfall and go wherever the rainfall took
21 them?

22 MR. SMITH: Let me object.

23 MS. RUMAGE: I'm sure you will.

24 MR. SMITH: Lack of foundation and
25 calling for speculation. I think it's a vague

1 question.

2 MS. RUMAGE: He's a scientist and I
3 don't think this is involving speculation. I'm
4 going --

5 MR. SMITH: Answering your question
6 is whether he's a scientist or not because of a
7 great lack of underlying components.

8 Q. (BY MS. RUMAGE) I just want you to --
9 you can still answer my question.

10 A. Well, I'll try if I understand it. You
11 mentioned having a canister.

12 Q. Right.

13 A. Of liquid which contains oil and PCBs?

14 Q. Let's say PCB contaminated oil.

15 A. The two are together?

16 Q. Right.

17 A. Picture this. It's a well-blended
18 mixture.

19 Q. It would be a canister from a
20 transformer just like we've been talking about.

21 A. I'm not familiar with the expression
22 canister.

23 Q. A can. A container.

24 A. Dipped into the transformer and got some
25 of the liquid, is that what you're describing?

1 Q. You would have broken the transformer
2 down and you're left with nothing but the container
3 which holds the fluid.

4 A. Yes.

5 Q. And you took that container and you
6 heated it.

7 A. All right. You heated it, okay.

8 Q. And let's say you were left with a
9 residue, what a layman would consider to be a
10 residue, at the bottom.

11 A. Tarry kind of material?

12 Q. I'm sorry?

13 A. Residue, is it tarry or is it whatever
14 is left after heating?

15 Q. Whatever is left after heating.

16 MR. SMITH: May I have a continuing
17 objection to the vagueness and lack of foundation
18 for this witness as the witness and counsel grope
19 for the issue?

20 MS. RUMAGE: Your continuing
21 objection is noted, but I think you know exactly
22 what I'm talking about and --

23 MR. SMITH: I assure you I don't.

24 MS. RUMAGE: Fine.

25 A. As I understand it now we have the

1 original transformer body, the case.

2 Q. (BY MS. RUMAGE) Right.

3 A. And then it is a liquid that is still
4 there after previous heating. Now I don't know what
5 kind of heating we're talking about here. Is it two
6 hundred degrees, is it the temperature of boiling
7 water or is it above that?

8 Q. Whatever it is it would be less than --
9 it would be far less than an incinerator. The
10 purpose of heating would just be to evaporate
11 moisture off the unit.

12 A. To drive off water?

13 Q. Right.

14 A. All right. So we're sitting here now
15 with the oil or a liquid from which water vapor has
16 been removed. Your question?

17 Q. If you took that can and placed it
18 outside in the rain and the rain fell into the can.

19 A. Okay.

20 Q. Let's take one question first. Would
21 the PCBs left in that can combine with rainwater?

22 MR. GRANOFF: Well, I'm just going
23 to object. It is pure, rank speculation. You've
24 got atmospheric conditions that can't be all taken
25 into consideration, so note my objection.

1 MS. RUMAGE: Fine.

2 A. The amount of water is very important in
3 this illustration. If it's just a little bit of
4 water the chances are that that body of liquid may
5 well have absorbed it and you can't see two layers.
6 I'm talking about a little bit. If there's much
7 more water the water will tend to layer out. If the
8 main body of the original liquid is oil based, the
9 water will go to the bottom. If the main body of
10 that liquid is PCB based, the water will stay on
11 top.

12 With time or with agitation to speed up
13 the time required, some of the PCBs and I would
14 suggest other chemicals that are present in that oil
15 will find their way into the water layer, but PCBs
16 are not highly soluble so the amount there will be
17 extremely low.

18 Does that help?

19 MR. GRANOFF: Move to strike. With
20 all due respect, Mr. Papageorge, we're just talking
21 in a vacuum here and we really have no basis for any
22 of the response to that question.

23 MR. SMITH: Join.

24 Q. (BY MS. RUMAGE) Although you yourself
25 have testified that you never visited Florida Power &

1 Light, did any of your field representatives visit
2 Florida Power & Light to your knowledge?

3 A. Not to my knowledge.

4 Q. Did you undertake while you were at
5 Monsanto or were you aware of any studies that
6 others might have undertaken at Monsanto regarding
7 using PCB contaminated mineral oil in askarel
8 transformers?

9 A. I'm not aware of any such studies.

10 Q. Did you ever hear that that was done by
11 people who owned transformers?

12 A. I have not.

13 Q. When you first became aware of the
14 problem of contamination of mineral oil, did there
15 ever come a time when you or anybody at Monsanto
16 thought that PCBs because they were heavier might be --
17 that it might be possible to filter PCBs out of
18 contaminated mineral oil say through a paper filter?

19 MR. SMITH: Objection to the
20 portion calling for what other people thought.

21 Q. (BY MS. RUMAGE) Any other scientist at
22 Monsanto. Was that ever tried?

23 A. Well, the statement you made about PCBs
24 being heavier, yes, they are heavier but with oil
25 they are perfectly miscible. So there is no

1 settling out in oil as distinguished from water and
2 PCBs.

3 Q. So is it fair to say that if you tried
4 to -- if you poured PCB -- if you poured PCB
5 contaminated oil through a paper filter that the
6 PCBs would just go straight through the --

7 A. -- Wherever the oil goes PCBs will go.

8 Q. Okay. And I apologize if you've already
9 answered this question; I just wanted to be certain
10 as to the point in time. What year did you first
11 become aware of mineral oil contamination by PCB
12 problems with transformers?

13 A. I don't know that I can point to a
14 specific year. Sometime during the period between '65
15 and '70 when I was close to the PCB/askarel
16 manufacture and shipping and exposed to the
17 marketing and end use of PCBs in electrical
18 equipment. I was made aware of the potential for
19 mineral oil and PCBs being mixed, but at that point
20 in time in the context of mineral oil affecting the
21 fire resistance of an askarel transformer, the
22 concern was oriented to a different kind of
23 problem. That was my first awareness of the
24 potential for mixing and the negative effects of
25 such mixing.

1 Q. Okay. My notes indicate that yesterday
2 you stated to the effect that it was recognized as
3 being an industry-wide problem, the industry was
4 familiar with the problem of mineral oil
5 contamination. Can you tell me when you came to
6 that conclusion, what year?

7 MR. SMITH: I object to the form of
8 the question insofar as it's not clear what industry
9 problem you're dealing with.

10 Q. (BY MS. RUMAGE) The electric industry,
11 the utility industry.

12 MR. SMITH: Which one? Same
13 objection. Also as to competency.

14 Q. (BY MS. RUMAGE) You can still answer.
15 As to your own personal knowledge.

16 A. The problem of mineral oil mixed with
17 PCB-type transformer oils was known to the industry
18 in terms in the early years beginning in the '30s,
19 '40s, '50s and on and well-known in the industry as
20 to the negative effect on the performance of the
21 equipment. The problem of such a mixture as it
22 relates to environmental concerns came to a head in
23 my -- as far as I was concerned in the early '70s
24 when the PCB environmental issue arose and was
25 reemphasized when the Transformer Working Committee

1 addressed this particular item in preparing the ANSI
2 standards.

3 Q. All right. Now, I just want to go back
4 to the indemnification agreement. I know you've
5 been questioned extensively about that. I just have
6 a couple questions for you.

7 Could you tell me what year that letter
8 was first drafted?

9 MR. DAVIDSON: If you know.

10 A. I saw a draft which I cannot tell you
11 was the first draft, but I saw a draft in late
12 December of 1971.

13 Q. (BY MS. RUMAGE) Okay. You testified
14 that in your opinion Monsanto's concern for the
15 environment had a lot to do with the drafting of
16 that letter. My question is was there any specific
17 incident that caused that letter to be drafted to
18 your knowledge?

19 A. Not to my knowledge, no.

20 Q. Was -- I just have to ask, were there
21 any specific incidents or series of incidents that
22 caused that letter to be drafted?

23 A. Not to my knowledge.

24 Q. Okay. You mentioned that there were
25 problems in Pittsfield in the '30s and '40s. Were

1 there any problems in Pittsfield that came to your
2 attention with PCB contamination from 1970 to the
3 drafting of this letter?

4 A. No, not that I know of.

5 Q. Okay. Are you familiar with what in the
6 industry is called the Yushow incident?

7 A. Yes.

8 Q. Could you tell me what year that
9 incident occurred?

10 A. 1968.

11 Q. Can you tell me what happened to your
12 knowledge?

13 A. As I understand it, in Japan there was a
14 distillation unit for distilling oil extracted from
15 rice bran to be used as a cooking and salad oil.
16 This distillation was brought about by using a heat
17 transfer system which used a PCB as a source of
18 heat. There was a leak that developed in the system
19 so the PCBs got into the rice bran oil. That oil
20 was sold to the general public and those individuals
21 who consumed the oil, either in their -- their food,
22 developed various health symptoms.

23 Q. What type of health symptoms?

24 A. There was the typical nauseas, the skin
25 eruptions, the disease called chloracne. There were

[]
1 reported some infants were born with a pigmentation,
2 a darker color, which I am told cleared up in a few
3 months.

4 Q. Do you know whether there were any
5 follow-up studies done on the people who had adverse
6 health problems?

7 A. It's my understanding that there were
8 extensive follow ups, that they're still being
9 observed.

10 Q. Okay. To your knowledge -- When did you
11 come to know of the Yushow incident?

12 A. When I reported in 1970 for my new
13 assignment.

14 Q. Okay. Did that have any effect on your
15 opinion as to the -- as to the effects of PCBs in
16 the environment, whether or not they might be more
17 harmful than you originally thought?

18 A. Well, it certainly raised some questions
19 regarding what made these individuals sick. It's my
20 understanding that since then it's been determined
21 that there were other contaminants in that oil that
22 caused the illnesses, not PCBs.

23 Q. Okay. You mentioned before there was a
24 fish meal contamination?

25 A. Yes.

1 Q. Could you tell me what year that was?

2 A. 1970.

3 Q. Did that have anything to do with Holly
4 Farms?

5 A. Yes.

6 Q. Could you tell me briefly what role
7 Holly Farms played?

8 MR. DAVIDSON: Let me object. I'm
9 a little confused as to what issue in your lawsuit
10 you're questioning him about now.

11 MR. GRANOFF: Join.

12 MR. DAVIDSON: What relevance it
13 has. I'll make that objection for what it's worth.

14 MR. GRANOFF: Or materiality.

15 MR. DAVIDSON: We've been pretty
16 far afield with a number of questioners, and I don't
17 mean to be jumping on you, Sarah.

18 MS. RUMAGE: I'll be glad to tell
19 you where I'm going.

20 MR. DAVIDSON: With what Monsanto
21 did and when, which I don't see as relevant to this
22 examination.

23 MS. RUMAGE: I'd just like to note
24 for the record I feel I'm being put under some time
25 pressure here because people have announced they

1 have flights to take out.

2 I have a few more questions and I will
3 tell you exactly where I'm going with these
4 questions. It has to do with the 1971
5 indemnification letter and I asked if there were any
6 incidents that might have precipitated the need at
7 Monsanto to prepare such a letter and send it out to
8 customers and I'm going to ask you about incidents
9 that I think might have some bearing on whoever was
10 making decisions at Monsanto, Mr. Papageorge
11 included, as to why that letter was written.

12 MR. DAVIDSON: He answered your
13 question saying no as to the best of his knowledge.

14 MS. RUMAGE: Fine. But he is aware
15 of these incidents so I'm going --

16 MR. DAVIDSON: So are we all.

17 MS. RUMAGE: Fine.

18 Q. (BY MS. RUMAGE) Can you answer my
19 question?

20 A. I forget the question.

21 Q. Just briefly how was Holly Farms
22 affected?

23 A. Holly Farms is in the poultry and egg
24 business. They had purchased poultry feed which
25 contained contaminated fish meal. They observed

1 that some of their flocks were laying eggs that
2 weren't hatching. I recall that as one of the
3 symptoms. They traced that back to the feed and to
4 eventually the presence of PCBs, which was
5 eventually traced back to this heat exchange system.

6 Q. Do you happen to know if any lawsuits
7 arose out of any of these incidents against
8 Monsanto?

9 A. Holly Farms filed a lawsuit against
10 Monsanto, yes.

11 Q. Do you know of any other incidents that
12 resulted in lawsuits prior to the drafting of this
13 letter in or about 1971?

14 A. Lawsuits prior to '71?

15 Q. Against Monsanto involving PCB
16 contamination.

17 A. I don't remember any lawsuits filed
18 before the indemnity agreement was designed.

19 MR. DAVIDSON: Other than Holly
20 Farms.

21 A. Holly Farms is the only one.

22 MS. RUMAGE: I have no further
23 questions. Thank you.

24 MR. GRANOFF: I have one or two
25 questions.

1 MS. BERKOWITZ: I have about two
2 questions after that.

3 REDIRECT EXAMINATION

4 BY MR. GRANOFF:

5 Q. You identified that you appeared before
6 the Studds subcommittee in Washington?

7 A. Yes.

8 Q. Do you recall members of any utility
9 industry or manufacturing industry which also made
10 presentations before the Studds subcommittee?

11 A. I recall one. This was the -- a
12 committee that was formed to work on PCB matters
13 under the auspices of the EIA. I think that's the
14 Edison Institute or Electrical Institute of
15 America. Anyway, represents --

16 Q. EEI?

17 A. No, EIA.

18 MR. SMITH: Could it be the
19 Electronics Industry?

20 A. Electronics Industry Association, that's
21 right. This is an industry group that represents
22 manufacturers of electronic equipment, television
23 sets being one example.

24 Q. (BY MR. GRANOFF) Do you recollect the
25 name of W. Samuel Tucker as a participant before the

1 Studds subcommittee?

2 A. W. Samuel Tucker. No, that doesn't ring
3 a bell.

4 Q. Does the name W. S. or Samuel Tucker,
5 can you relate that name to a Florida Power & Light
6 representative who in the past has given testimony
7 to the Studds subcommittee, the same one that you
8 testified in front of?

9 A. I just don't recall that one.

10 MR. GRANOFF: Okay. Thank you.

11 RECROSS-EXAMINATION

12 BY MS. BERKOWITZ:

13 Q. Three very quick questions.

14 Mr. Papageorge, at the time you found
15 out, you personally found out, that mineral oil was
16 contaminated with PCBs did you share that
17 information with anyone at Monsanto?

18 A. I discussed the matter with individuals
19 in Monsanto but it turns out they knew about it --
20 more about it than I did.

21 Q. Who did you discuss the matter with?

22 A. Mr. Paul Benignus, Dr. Ralph Munch, Dr.
23 Bill Richard in research.

24 Q. Who is Dr. Ralph Munch?

25 A. M-u-e-n-c-h. M-u-n-c-h, I'm sorry.

1 Q. And who is he?

2 A. He was a research chemist in Monsanto.

3 Q. Okay. Did you ever discuss this with
4 anyone else at Monsanto?

5 A. I believe that's it, those three.

6 Q. Who was your superior, who was directly
7 above you, your supervisor or the person that you
8 reported to at Monsanto?

9 A. At what point in time?

10 Q. When you first found out about the PCB
11 contamination problem.

12 A. Mr. Howard Bergen.

13 Q. What was his title?

14 A. He's group director, functional fluids
15 group. I'm sorry, business director, functional
16 fluids group.

17 Q. And did you report this information to
18 him at the time you found out?

19 A. I mentioned it to him but he knew about
20 it.

21 Q. And who was his direct supervisor
22 directly above him?

23 A. Mr. John Mason.

24 Q. And what was his title?

25 A. Assistant general manager, organic

1 chemicals division.

2 Q. And do you know if Mr. Bergen told Mr.
3 Mason?

4 A. I do not.

5 Q. Did you tell Mr. Mason?

6 A. Did I tell Mr. Mason?

7 Q. Did you share that information with Mr.
8 Mason?

9 A. I don't think I did, no.

10 Q. Did you share this information
11 concerning the PCB contamination of mineral oil with
12 anyone in the electric utility industry either
13 formally by letter or informally?

14 A. No.

15 Q. And to your knowledge what was the
16 approximate extent of the PCB contamination of
17 mineral oil at the time you found out about this
18 problem?

19 A. Oh, I have no way of knowing.

20 Q. Was it a prevalent occurrence?

21 A. No, it was considered a -- as I
22 perceived, it was considered as a potential for
23 occurring that didn't happen often but it could happen;
24 therefore, the industry should be sensitive to it.

25 MS. BERKOWITZ: Okay. Thank you

1 very much.

2 (Witness excused.)

3

4 IT IS FURTHER STIPULATED AND AGREED BETWEEN
5 COUNSEL THAT THE DEPOSITION MAY BE SIGNED
6 BEFORE ANY NOTARY PUBLIC.

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ORIGINAL

I, WILLIAM B. PAPAGEORGE, do hereby state that I have read the foregoing questions and answers appearing in this transcript of my deposition, Volume II, Page 181 through and including Page 373; that this is a true and accurate (corrected) report of said answers given in response to the questions appearing herein.

William B Papageorge
WILLIAM B. PAPAGEORGE

C E R T I F I C A T E

[illegible]

Before me personally appeared
WILLIAM B. PAPAGEORGE to me known to be the person
described in and who executed the foregoing
instrument and acknowledged to and before me that he
executed the said instrument in the capacity and for
the purpose therein expressed.

WITNESS my hand and official
seal this 16th day of March, 1990.

JOSEPHINE S. NIBLOCK
Notary Public - State of Missouri
St. Louis County
My Commission Expires January 15, 1991

Josephine S. Neblach
NOTARY PUBLIC

My Commission Expires:

NOTARIAL CERTIFICATE

STATE OF MISSOURI)
) SS
COUNTY OF ST. LOUIS)

I, JUNE M. FUNKHOUSER, a
Registered Professional Reporter and Notary Public
in and for the County of St. Louis, State of
Missouri, duly commissioned, qualified and
authorized to administer oaths and to take and
certify depositions, do certify that pursuant to
Notice in the civil cause now pending and
undetermined in the United States District Court,
Southern District of Florida, entitled UNITED STATES
OF AMERICA vs. PEPPER'S STEEL AND ALLOYS, INC.,
FLORIDA POWER & LIGHT COMPANY, NORTON BLOOM, THOMAS
A. CURTIS, WILLIAM PAYNE, FLORA B. PAYNE and LOWELL
PAYNE; PEPPER'S STEEL AND ALLOYS, INC. and NORTON
BLOOM vs. FLORIDA POWER & LIGHT COMPANY; FLORIDA
POWER & LIGHT COMPANY vs. PEPPER'S STEEL AND ALLOYS,
INC., et al. and UNITED STATES FIDELITY AND GUARANTY
COMPANY, et al. was attended at the Adam's Mark
Hotel, 4th & Chestnut Streets, Suite 855, in the
City of St. Louis, State of Missouri, on the 22nd
day of February, 1990.

Keith, Mack, Lewis, Allison &
Cohen, 111 N.E. First Street, Suite 500, Miami,

1 Florida, attorneys for Pepper's and Bloom, by Mr.
2 Loren S. Granoff.

3 Peterson & Bernard, 707
4 Southeast Third Avenue, P.O. Drawer 14126, Fort
5 Lauderdale, Florida, attorneys for Pepper's and
6 Bloom, by Mr. Donald J. Fann.

7 Coll, Davidson, Carter, Smith,
8 Salter & Barkett, P.A., 3200 Miami Center, 100
9 Chopin Plaza, Miami, Florida, attorneys for Florida
10 Power & Light Company, by Mr. Richard C. Smith.

11 Baker & McKenzie, 701 Brickell
12 Avenue, No. 1600, Miami, Florida, attorneys for Home
13 Insurance Company, by Mr. Landon K. Clayman.

14 Thornton, David, Murray, Richard
15 & Davis, P.A., 2950 S.W. 27th Avenue, Suite 100,
16 Miami Florida, attorneys for Home Insurance Company,
17 by Ms. Sheryl E. Berkowitz.

18 Rivkin, Radler, Dunne & Bayh,
19 EAB Plaza, Uniondale, New York, attorneys for USF&G,
20 by Ms. Sarah A. Ramage.

21 Mendes & Mount, Three Park
22 Avenue, New York, New York, attorneys for Lloyds, by
23 Ms. Elizabeth A. Nelson.

24 Smith, Helms, Mulliss & Moore,
25 300 N. Greene Street, Suite 1400, P.O. Box 21927,

1 Greensboro, North Carolina, attorneys for the
2 deponent and Monsanto Company, by Mr. Gerard H.
3 Davidson.

4 The witness, WILLIAM B.
5 PAPAGEORGE, being of sound mind, came before me, was
6 duly sworn to testify the truth, the whole truth and
7 nothing but the truth in the case aforesaid,
8 thereupon testified as is shown in the foregoing
9 transcript, said testimony being by me reported in
10 stenotypy and caused to be transcribed into
11 typewriting under my supervision; that the foregoing
12 pages correctly set forth the testimony of the
13 aforementioned witness, WILLIAM B. PAPAGEORGE,
14 together with the questions propounded by counsel,
15 and remarks and objections of counsel thereto, and
16 is in all respects a full, true, correct, and
17 complete transcript of the questions propounded to
18 and the answers given by said witness; that the said
19 testimony, so transcribed, was subscribed to by him
20 in the _____ of _____, State of
21 Missouri, on the _____ day of _____, 1990.

22 I further certify that I am not
23 of counsel nor attorney for either of the parties to
24 said suit, nor related to, nor interested in any of
25 the parties or their attorneys.

1 WITNESS my hand and notarial
2 seal at St. Louis, Missouri, this _____ day of
3 _____, 1990.

4 My Commission Expires: June 24, 1991.
5
6
7

8 REGISTERED PROFESSIONAL REPORTER and
9 NOTARY PUBLIC in and for the County
10 of St. Louis, State of Missouri.
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DEPOSITION CORRECTION SHEET

WILLIAM B. PAPAGEORGE, VOLUME II

In re: Pepper's Steel, et al. vs. Florida Power & Light, et al.

Upon reading the deposition and before subscribing thereto,
the deponent indicated the following changes should be made:

	<u>Page No.</u>	<u>Line No.</u>	<u>Original changed to read/reason</u>
1)	224	25	They go from baking ovens --- (Incorrect word)
2)	253	16	---, the copper coil, --- (Incorrect word)
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			
11)			
12)			
13)			
14)			
15)			

William B Papageorge
Deponent

Subscribed to before me this 16th day of March 1990

JOSEPHINE S. NIBLOCK
Notary Public - State of Missouri
St. Louis County
My Commission Expires January 15, 1991

Josephine S. Niblock
Notary Public
County of St. Louis
State of Missouri

My Commission expires: