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Descripton Notes Contain testimony of Ellen Sibergeld and references to Binghantom State Office Building.

1 UNITED STATES DISTRICT COURT

2 SOUTHERN DISTRICT OF WEST VIRGINIA

3 AT CHARLESTON

4 ----------x

5 JAMES R. BOGGESS, : CIVIL ACTION 81-2098-265

6 HAROLD GRANT, : CIVIL ACTION 81-2098-277

7 GENE WILSON THOMAS, : CIVIL ACTION 81-2504-93

8 LONNIE HURLEY, : CIVIL ACTION 82-2566

9 JOHN H. HEIN, : CIVIL ACTION 82-2569

10 JUNE B. MARTIN, and : CIVIL ACTION 83-2119

11 CHARLES E. FARLEY, JR., : CIVIL ACTION 83-2207

12 Plaintiffs, :

13 vs. : July 17, 1984

14 MONSANTO COMPANY, : VOLUME 19

15 a Delaware corporation, :

16 Defendant. :

17 ----------x

18 TRANSCRIPT OF PROCEEDINGS

19 JURY TRIAL

20 BEFORE THE HONORABLE JOHN T. COPENHAVER, JR.

21 UNITED STATES DISTRICT JUDGE

22 AND A JURY

23

24

25

1 APPEARANCES:

2 FOR THE PLAINTIFFS: W. STUART CALWELL, JR., ESQUIRE
3 OTIS MANN, ESQUIRE,
4 JOHN SKAGGS, ESQUIRE, and
5 HARVEY PEYTON, ESQUIRE
6 Calwell, McCormick & Peyton
7 26 Charleston National Plaza
8 Charleston, West Virginia 25301
9
10 FOR THE DEFENDANT: CHARLES M. LOVE, III, ESQUIRE
11 ROGER TOMPKINS, ESQUIRE, and
12 RICKLIN BROWN, ESQUIRE
13 Bowles, McDavid, Graff & Love
14 Post Office Box 1386
15 Charleston, West Virginia 25325
16
17 FOR THE DEFENDANT: DAVID F. SNIVELY, ESQUIRE
18 Monsanto Company
19 800 N. Lindbergh Boulevard
20 St. Louis, Missouri 63167
21
22
23
24
25

1 COURT REPORTERS: BARBARA A. STEINKE, RPR, CM
2 500 Quarrier Street, Room 5416
3 Charleston, West Virginia 25301
4 and
5 HEYWOOD WAGA, RPR, CM
6 THOMAS F. RUNFOLA, RPR, CM
7 Waga & Spinelli
8 405 Northfield Avenue
9 West Orange, New Jersey 07052
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1 Tuesday Morning Session
2 July 17, 1984
3 9:00 o'clock a.m.
4 - - - - -
5 THE COURT: Good morning. Please be
6 seated.
7 MR. TOMPKINS: Good morning, Your Honor.
8 THE COURT: The Court notes it received
9 Monsanto's response at 9:05 for that which was
10 supposed to have been filed by noon on yesterday to
11 the Plaintiffs' motion to comply with the order to
12 turn over the raw data of the Suskind morbidity
13 study.
14 MR. LOVE: I am very disturbed about that.
15 We were told yesterday when it was delayed, as you
16 know, it was in the typewriter at 1:45 and would be
17 furnished during the day. My Clerk waited until 6:15
18 for it last night. We have a 9 o'clock hearing
19 scheduled for it and you waltz in with it at 9:05.
20 I am very unhappy about that course of conduct, and
21 I don't want that to occur again. I don't have time
22 to read these things on the spur of the moment.
23 This time was set so that the Court can give this
24 some consideration instead of forcing it on the
25 Court at the last minute. I don't want it to happen

1 again.

2 Have you had an opportunity to read that

3 response, Mr. Calwell?

4 MR. CALWELL: Yes, Your Honor, I have

5 read most of it.

6 THE COURT: Is there any prospect as

7 suggested in the last paragraph, that the parties

8 can agree on some phases of this?

9 MR. CALWELL: I suppose that would be

10 possible, Your Honor, but the problem with that

11 procedure is that it just seems to cause further

12 delay because we never really get closure. You know,

13 for example, in one of the responses to one of Dr.

14 Conibear's questions about 15 examined persons

15 without records, Mr. Love's response notes that,

16 "in addition, persons identified from the 1949 TCP

17 incident and others who were terminated prior to

18 1955 or were salaried employees could have been

19 examined without work records."

20 Well, could have been examined doesn't

21 tell us anything. We need to know whether those

22 persons were examined or not, with or without work

23 records. I think what Dr. Conibear is trying to

24 point out through this exercise is that those kinds

25 of representations that may be or this would explain

1 why you don't have some of those are too soft. We
2 need to have some hard answers as to who was
3 examined, who wasn't, what records were used and
4 what records weren't. I think that's the essence of
5 the problem that she has with the materials that
6 were turned over to her.
7 So, in terms of being able to work
8 something out on an informal basis, the kinds of
9 things we end up with are answers like that. Well,
10 it could have been, or maybe he did rely on that but
11 maybe he didn't.
12 What we are trying to get the Court to do
13 is to set some particular rules for compliance with
14 this request for the raw data, so that we get either
15 an admission from Monsanto that there are no more
16 records or that Dr. Suskind did not in fact rely on
17 certain records, or that certain records do in fact
18 exist that we have not as yet received. It is the
19 same way with the numbers that Dr. Conibear is
20 concerned about. We need to know the exact numbers
21 of persons that were considered, the exact number of
22 persons that were invited to attend and that kind of
23 thing. We are almost past working this out. We
24 just need to have some kind of a response that we
25 can rely on that will answer these questions

1 definitively so that we can rely on it when Dr.
2 Conibear testifies about the study. It leaves us in
3 an untenable position for cross examination when you
4 put evidence on that can be explained away because
5 we haven't had solid answers from Dr. Suskind or
6 Monsanto about the essence of the raw data. We need
7 to know precisely what was looked at and what wasn't.
8 We need to know the exact numbers. I think that's
9 the problem in general that Dr. Conibear is
10 confronting as she goes through these materials.
11 THE COURT: Thank you. Do you have any
12 response, Mr. Love?
13 MR. LOVE: Your Honor, I think that our
14 written response covers the matter well. It would
15 suggest to me that the only way Mr. Calwell is going
16 to get the answers that he wants as to what Dr.
17 Suskind relied upon is to take his deposition. We
18 have offered him the deposition on a number of
19 occasions. He has declined, at least at this
20 juncture, to take advantage of that. We simply can
21 tell the Court and Mr. Calwell what we gave Dr.
22 Suskind. What he relied upon is in his own mind. I
23 believe he testified here earlier that he paid no
24 attention to what the work histories of these people,
25 that he relied upon his own work history that he

1 took from them when he interviewed them. I am
2 confident that he will testify to that in this
3 courtroom.
4 In any event, we made the effort to give
5 him everything that we have. They are now asking us
6 to organize it and review it for them to the extent
7 that they don't have information or even if we
8 believe they do have it, we will try to supply it to
9 them again in order to avoid any other difficulty in
10 the matter. I don't know that there is much else
11 that can be said about it.
12 THE COURT: The Plaintiffs are entitled
13 to know what it was that was furnished and what it
14 was Dr. Suskind relied upon. The question simply is
15 how to go about getting it. Insofar as that which
16 Monsanto furnished is concerned, it seems to me that
17 the deficiencies that have been referred to, and I
18 haven't had an opportunity to consider this fully by
19 any means, but it does seem to me that the
20 deficiencies referred to by Dr. Conibear ought to be
21 supplied by Monsanto. My thought that perhaps it
22 might be helpful if the parties met in advance, for
23 it seems to me it is going to take the Court some
24 time to go through this in order to satisfy itself
25 that each of those items for which a request is

1 being made are appropriately required by Monsanto.
2 Once being satisfied of that, I expect Monsanto to
3 furnish the information.
4 Before reaching that point, I think it
5 would be preferable if the Court did make an effort
6 this evening to try to work out that which remains
7 to be furnished in the hope that much, if not all,
8 of the area can be resolved. If it isn't, then we
9 simply have to go to hearing on it, presumably
10 tomorrow. I'll simply say that the Court has
11 determined that the Plaintiffs receive what it is
12 that was furnished to Dr. Suskind by Monsanto and
13 what Dr. Suskind used.
14 Now, let me ask whether or not it would
15 be advisable for the parties to plan to meet when we
16 close today to see if you can go over these items
17 point by point and try to work them out.
18 MR. LOVE: That's fine, Your Honor.
19 MR. CALWELL: I think that's fine, Judge.
20 THE COURT: All right. Let's plan on
21 that, then, and you can report to me tomorrow
22 morning as to the result.
23 The Plaintiffs have filed a motion for
24 protective order limiting the time allowed for
25 Defendant's deposition of Dr. Carnow. There is no

1 response of which I'm aware to the motion in writing.
2 MR. LOVE: That's correct, Your Honor.
3 THE COURT: If you would respond now.
4 MR. LOVE: Your Honor, Mr. Calwell --
5 this was the subject of some discussion last week.
6 Mr. Calwell told me, I believe Friday afternoon,
7 that he thought Dr. Conbear would be available on
8 Monday --
9 THE COURT: Dr. Carnow?
10 MR. LOVE: I'm sorry -- Carnow would be
11 available on Monday, the 16th of July; Tuesday, the
12 17th of July, from 2 to 5; Wednesday, the 18th of
13 July, from 2 to 5; Thursday, all day, that's the 19th
14 of July; Friday, the 20th of July, all day; and the
15 following week, Monday, the 23rd of July, all day;
16 Tuesday, the 24th of July, all day; and skipping to
17 Friday, the 27th of July, all day; and Monday, the
18 30th of July, all day; Tuesday, the 31st of July,
19 all day.
20 So that represents approximately eight or
21 nine days. We are doing the best we can to get
22 through these depositions, Your Honor, and hopefully
23 we can do it within the time that is presently set
24 aside, assuming, of course, that Dr. Carnow complies
25 with those times and is, in fact, available. I

1 don't know what else to say about it. We will do
2 the best we can and I hope we can get through them.
3 THE COURT: The motion indicates that one
4 of the problems that may arise from the fact that
5 several different counsel among defendant's counsel
6 are conducting the examination and are plowing the
7 same ground over and over again as a result. I
8 wonder whether or not if there is any validity to
9 that suggestion, that some --
10 MR. LOVE: Your Honor, I --
11 THE COURT: -- that some better
12 organization could be had so that someone who is
13 experienced and skilled in the particular area on
14 which Dr. Carnow is being examined could conduct the
15 balance of the examination.
16 MR. LOVE: Your Honor, I understand what
17 the Court is addressing and I suspect that there is
18 some duplication as to what's going on, but I think
19 it is a matter of necessity, in view of the fact
20 that we have had to use different people. As the
21 Court is well aware, I brought this matter to its
22 attention in February of this year, and suggested
23 that if certain evidence was going to be admissible,
24 we ought to get cracking on it right away and
25 commence these depositions. For one reason or

1 another, we were unable to start them again until
2 basically. Shortly before the trial started.
3 THE COURT: In any event, it doesn't
4 excuse duplication unless there is some sound reason
5 that would necessitate it, I suggest to you now that
6 we are in July. The fact is that there have been
7 several counsel, including yourself, who conducted
8 these examinations, and I wonder now if you can't
9 settle upon one of these individuals who can
10 expeditiously conclude them and let one person do it.
11 MR. LOVE: Your Honor, I can't settle on
12 one, but I can on two.
13 THE COURT: All right, if you can do it
14 with two of those who have had experience with Dr.
15 Carnow in this particular subject matter.
16 MR. LOVE: That's what we plan to do.
17 That's what we have done for the past week.
18 THE COURT: Apparently that ought to be
19 of some value in moving more expeditiously.
20 Now, if that's the case, do you share the
21 notion that that may obviate the duplication that's
22 taken place as suggested in the motion?
23 MR. LOVE: Yes, Your Honor.
24 THE COURT: And if that's done, will that
25 then permit you to conclude, if you go at a rate

1 that is commensurate with that which has been your
2 experience, in an eight or nine day period for the
3 rest of these, some, 80 Plaintiffs?
4 MR. LOVE: It will be very close, Your
5 Honor, as to whether we can complete it or not. I
6 would hope that we can.
7 THE COURT: Well, let me ask whether, Mr.
8 Calwell, that sounds, to terminate on a sufficiently
9 hopeful note, that we need do nothing further about
10 it? What do you think?
11 MR. CALWELL: Of course, our concern,
12 Your Honor, is that these depositions get wrapped up
13 so that we have no problems with putting Dr. Carnow
14 on and introducing his testimony. So it is
15 essential that this bit of discovery get out of the
16 way prior to the time that we put Dr. Carnow on the
17 stand and we anticipate that he should be taking the
18 stand around the first of August.
19 THE COURT: When is the last date here on
20 that list, Mr. Love?
21 MR. LOVE: The 31st day of July.
22 THE COURT: Well, it looks as though
23 that's going to be manageable. The only thing I can
24 suggest to you is that if you see, after you are
25 midway through this process, it is not going to work,

1 then renew your motion and the Court will undertake
2 them, at that time, to establish some more severe
3 guidelines by order work, but it looks as though it
4 is going to work out. I am inclined at the moment
5 to leave it where it is.
6 MR. CALWELL: Very good, Your Honor.
7 THE COURT: Let me ask if there is
8 anything further?
9 MR. CALWELL: Nothing for the Plaintiffs,
10 Your Honor.
11 MR. LOVE: We have nothing, Your Honor.
12 THE COURT: Of the balance of these
13 exhibits that are being read into the record, have
14 the parties reviewed them to see whether or not
15 there is some areas that can be deleted? Yesterday
16 it was suggested that the Nitrosamine matter was not
17 pertinent to this action, and so it was omitted in
18 one area. Can it be omitted throughout?
19 MR. PEYTON: Yes, Your Honor. At the
20 present time Mr. Tompkins and I are reviewing them
21 for proposed deletions which would delete a
22 substantial parts of many of these exhibits with
23 Nitrosamines and solid wastes. It may take about
24 five minutes.
25 THE COURT: Well, it would be worth that

1 time. Let me ask you whether or not the reference
2 to the Nitrosamines -- what is it?
3 MR. LOVE: Nitrosamines.
4 THE COURT: What in the world is that?
5 MR. CALWELL: It is a very deadly
6 substance that occurs as contaminants in many of the
7 products that Monsanto manufactured at Nitro,
8 specifically, with reference to certain chemicals in
9 the rubber industry, and has been the subject of
10 some inquiry by many governmental regulatory
11 agencies to determine the levels of these
12 contaminants that occur in the plant.
13 MR. LOVE: It is also commonly found in
14 bacon, Your Honor.
15 THE COURT: But it's not a process in
16 this case.
17 MR. CALWELL: Your Honor, unfortunately
18 it is not.
19 THE COURT: Can the Jury be told to
20 disregard that particular area in these exhibits
21 through this witness?
22 MR. CALWELL: I would think so.
23 THE COURT: I am including by that all
24 the deposition exhibits of this particular witness.
25 MR. CALWELL: I think Mr. Love made some

1 reference to that in front of the Jury yesterday.
2 THE COURT: He did as to one item. That
3 was not read. That was as to an exhibit we were
4 approaching and not the others. I am asking whether
5 or not the Jury can be directed to disregard that
6 reference throughout the exhibits of this witness.
7 MR. CALWELL: Yes, the nitrosamines, we
8 have no problem with that.
9 THE COURT: Is that agreeable, Mr. Love?
10 MR. LOVE: Yes, Your Honor.
11 THE COURT: You gentlemen need five
12 minutes, you say?
13 MR. PEYTON: Yes, Your Honor.
14 THE COURT: We can have the Jury in at
15 that time.
16 MR. TOMPKINS: If we can have ten minutes,
17 we can go mark my copy or we can have Harvey read
18 from the stand to read such and such a page. If
19 Your Honor, please, it might be easier to give us
20 five more minutes, and I don't have any problem so
21 far. Just mechanics.
22 THE COURT: Which is going to be the most
23 expeditious way of doing it?
24 MR. TOMPKINS: I think to mark it
25 beforehand.

1 THE COURT: What are you going to do, put
2 on the screen the whole thing but simply read the
3 portion that's pertinent?
4 MR. TOMPKINS: That's right, Your Honor.
5 THE COURT: That's fine. Then we will
6 tell the Jury to be another ten minutes.
7 (Recess taken at 9:35 in the forenoon)
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1 (The following proceeding were held in open court
2 with the jury present.)
3 THE COURT: Good morning, please be
4 seated.
5 THE JURY: Good morning.
6 THE COURT: Let me ask if those first 20
7 exhibits or first 19 exhibits, whichever they were,
8 have been marked now. Are they ready to be offered?
9 MR. CALWELL: No, they have not as yet,
10 your Honor.
11 THE COURT: Are we ready? Ladies and
12 gentlemen of the jury: Let me mention to you that
13 the parties have undertaken to reduce the reading
14 material remaining in this deposition by eliminating
15 certain portions of the exhibits that are to be read
16 into evidence by the witnesses depositions to be
17 taken where those matters are not pertinent to our
18 inquiry.
19 There will be flashed up on the screen
20 the entirety of the exhibit, as I understand it, but
21 in the reading the parties will be skipping over
22 that part which is deemed not pertinent by them.
23 They have done that by agreement. And in addition
24 to that, I should mention that's the reason we were
25 late getting started this morning, while they were

1 completing that process. I knew you wouldn't mind
2 once I told you the reason.
3 Let me mention to you also that with
4 regard to the other exhibits that have already been
5 received into evidence in connection with this
6 deposition of Mr. Holzapfel, there is reference on a
7 number of occasions to the topic any nitrosamines or
8 nitrosamino, I can't recall whether that word is
9 also used from time to time, and the parties have
10 agreed that the jury may disregard the reference to
11 that particular item throughout those exhibits.
12 They being the ones that we have already received in
13 evidence in accordance with this witness. Otherwise,
14 those exhibits are to be treated by you as relevant
15 and pertinent to the issues in the case for such
16 value as you find them to have.
17 Now, then, let me ask if there is
18 anything further?
19 MR. PEYTON: I don't believe so, your
20 Honor.
21 MR. TOMPKINS: No, your Honor.
22 THE COURT: You may continue.
23 EXAMINATION OF FREDERICK HOLZAPFEL
24 (By deposition) (Continued)
25 BY MR. PEYTON:

1 Q. Continuing from yesterday, Mr. Holzapfel.
2 "I would hand you what's been marked Plaintiffs'
3 Deposition Exhibit 78, consisting of four pages,
4 would you identify that, sir?
5 A. Yes, I can identify it.
6 Q. Plaintiffs' Deposition Exhibit 78 purports to
7 be a document authored by Dan R. Bishop on July 27,
8 1979, and the subject is Nitro Health Study Task
9 Force, Minutes of Meeting, July 27, '79; is that
10 correct?
11 A. That is correct.
12 Q. And would you read the pertinent parts of those
13 minutes to the jury, sir?
14 A. Next meeting, Friday August 3rd, 8:30-10:30 a
15 A-331-N.
16 1. Items discussed. (a) Nitro Plant
17 Mortality Study. Meyer reported the study will be
18 submitted for publication to the Journal of
19 Occupational Medicine as soon as Dr. Suskind
20 approves the text, hopefully next week. It is
21 anticipated that it will be accepted for publication
22 about four weeks later, for the October issue, and
23 that once it is accepted, we will be free to issue a
24 summary news release.
25 (b) Selikoff activities. Meyer reported

1 on conversations both he and Dr. Suskind had with
2 Selikoff. Selikoff indicated to Suskind he will
3 probably not issue the Nitro report until the Vertac
4 study is ready, most likely in the fall.
5 Selikoff told Meyer he will be prepared
6 to talk to Monsanto in a couple of weeks regarding
7 the future schedule for reviewing his data. He also
8 mentioned that he will start sending letters to
9 employees who participated in his study in the same
10 timeframe.
11 Selikoff was quoted in a recent AP
12 article on his Vertac study as saying 'complications
13 arose in the Monsanto study because of a great
14 variety of chemicals were made at the plant.' A
15 copy of this article and transcripts of two NBC TV
16 news accounts on the Vertac study are attached.
17 (c) Suskind study. Meyer reported that
18 Suskind has already started sending letters to
19 employees in his study who either requested letters
20 or who have any medical problems which suggest
21 follow-up. Meyer is going to ask Suskind for a
22 summary of the things he has found thus far for our
23 review and preparation.
24 (d) OSHA. Parr suggested that OSHA may
25 well show up at the plant gate to conduct an

1 inspection as a result of the letters being sent to
2 employees. Scott will tighten up his housekeeping
3 activities and explore with his industrial hygienist
4 the advisability of taking wipe samples in
5 anticipation of an OSHA visit.
6 (e) Nitro hazardous waste report.
7 Eckhardt Committee. Callis reviewed a draft of a
8 summary of the above report developed by Ron Condray.
9 Condray has reviewed this summary with plant
10 personnel and will issue a final summary report next
11 week.
12 (h) Legislative activities. Westendorf
13 shared with the task force a successful evergreen
14 program format employed by Mound Facility to keep
15 employees, the news media and officialdom informed
16 of its activities and described how this pays off
17 during a crisis.
18 McCarville has already briefed key
19 Washington office contacts on the status of the
20 Nitro project and will brief the staffs of Senators
21 Randolf and Byrd as well as Congressman Slack while
22 he is in Washington next week. The purpose will be
23 to insure that these important legislative contacts
24 are not blind-sided should Selikoff go public while
25 in in Congress is in August recess.'

1 Q. Now, sir, I will hand you what's been marked
2 Plaintiff's Deposition Exhibit 79, consisting of two
3 pages, and ask if you can identify that?
4 A. Yes, I can.
5 Q. You are familiar with that document, sir?
6 A. Yes.
7 Q. Plaintiffs' Deposition Exhibit 79 purports to
8 be a document from J. R. Condray, dated July 30,
9 1979. The subject is Nitro hazardous waste,
10 Eckhardt questionnaire. It's to C. F. Callis and
11 you are one of the distributees, is that correct?
12 A. That's correct.
13 Q. Who is Mr. Eckhardt?
14 A. Congressman. Chairman of the sub-committee.
15 Q. On hazardous waste?
16 A. On Hazardous waste.
17 Q. Would you read to the jury the text of that
18 memo?
19 A. 'The Nitro Plant supplied Congressman
20 Eckhardt's subcommittee on hazardous waste with
21 three basic types of information;
22 1. General information about the Nitro
23 Plant and its waste disposal practices.
24 2. Information about disposal sites used
25 by the Nitro Plant from 1950 to-date.

3. Information about waste haulers used by the Nitro Plant from 1950 to date.

Much of the information is based on best guess estimates. The reason for using estimates is tied to the fact that plant records beyond 1966 were destroyed in compliance with the Monsanto record retention policy and corporate insistance that don't know is not a satisfactory response. The plant feels fairly confident that all disposal sites, eight, used since 1950 have been identified, seven off site, plus the plant on site facilities, which was identified as a single facility. The exact periods of time the sites were used is not well established for each. The major area of uncertainty is the quantity and composition of the waste disposed of before 1966.

The Eckhardt questionnaire dealing with the disposal sites required an identification of present, not present, or don't know for each of 58 components (generic) or characteristics listed on the form. The Nitro Plant completed a disposal site questionnaire for each of the eight sites used. The rationale used for identifying the composition of the Nitro materials disposed of at the site and included in the group of 58 was:

1 Present - Records indicate the presence
2 of the material in our waste or firsthand knowledge
3 indicates the material was a product, raw material,
4 or impurity known to be used at the plant and could
5 have been disposed of at one of the sites.
6 Not present - No firsthand knowledge that
7 the material was ever used at the plant.
8 Don't know - Material known to be used at
9 the plant, but low probability of waste disposal or
10 don't know if used at plant.
11 The information supplied to the Eckhardt
12 Committee has been extracted from the questionnaire
13 and reorganized in a more readable form. (Copies
14 enclosed.) Where we have indicated a generic
15 material is present in the waste (herbicides, amines,
16 et cetera) an identification as to the specific
17 chemical involved has been developed for Monsanto's
18 internal use. The specific identities of the waste
19 will help in developing responses to potential
20 inquiries that may develop as a result of the
21 Eckhardt study.'
22 Q. I would like to hand you what's been
23 marked as Plaintiffs Deposition Exhibit No. 60 and
24 ask if you can identify that?
25 A. Yes.

1 Q. It purports to be a document authored by
2 yourself, dated August 6, 1979, the subject being
3 Nitro Health Study Task Force, minutes of meeting,
4 August 3, '79, is that correct?
5 A. That's correct.
6 Q. And the text at page one indicates, 'Attached
7 please find minutes of 8-3-79 of Nitro Health Study
8 Task Force Meeting. Next meeting Friday, August 10,
9 '79, 8:30 a.m. is that correct?
10 A. That's correct.
11 Q. And pages two and three consist of the
12 minutes, correct, and four?
13 A. That's correct.
14 Q. Would you read to the jury the text found on
15 pages two, three, and four, of Plaintiff's Exhibit
16 80.
17 2. Suskind study. Allocation of costs.
18 R. L. Bishop, MIOC controller, advised that he had
19 received NAPC agreement to bill them for Suskind's
20 charges in connection with the study he is making.
21 3. Suskind studies - Follow-up to
22 employees. Dr. Suskind's office has advised the
23 Nitro Plant nurse that they were contacting the
24 physicians of 12 employees. The nurse is getting
25 many inquiries from those examined concerning the

1 results.

2 The group recommends that feedback be

3 provided to all employees as soon as possible. Dr.

4 Gaffey will discuss this with Dr. Roush to determine

5 who in DMEH will contact Dr. Suskind.

6 Possible approaches to be considered

7 include: a. A letter from Dr. Suskind's office to

8 each employee examined. May be a form letter but

9 individually addressed.

10 b. A letter from the plant manager to the

11 employees examined. (Draft to be attempted by D.

12 Bishop, H. Gaffey after discussions with Suskind.)

13 c. Group meetings at Nitro.

14 4. Selikoff study, feedback to employees.

15 No indications at plant that any employee has been

16 contacted by Selikoff.

17 5. Mortality study. Will be submitted

18 for publication next week and will take at least

19 four weeks before we know whether it has been

20 accepted for publication. Dr. Gaffey will furnish a

21 draft to Dan Bishop. Must be sure not to publicize

22 prior to publication. Need further discussion as to

23 how and when to use and publicize data to maximum

24 advantage, i.e., group meetings of employees at

25 Nitro, letter from plant manager to home, news

1 release to Charleston papers, et cetera.

2 6. Housekeeping campaign. Scott reports

3 intensified efforts to get and keep plant in best

4 shape for sudden EPA/OSHA inspection. Holzapfel to

5 follow-up during visits 8-8- and 9.

6 9. Dow dioxin hazards. Copy of

7 statement from quarterly report to stockholders

8 attached. Sample of extreme position taken.

9 'In 1976 at Seveso, Italy the worst

10 exposure of a human population to TCDD occurred as a

11 result of a plant accident. There has been no

12 evidence of birth defects or any other serious

13 injury except some burns and typical cases of skin

14 acne, which have since healed."

15 10. Lemonade. Some questions have been

16 raised about our past practice of supplying lemonade

17 to employees to prevent formation of kidney stones.

18 This was done during the manufacture of Sopanok,

19 which has been discontinued.

20 11. Dioxins. Possible presence in other

21 Nitro products. M. Godt has prepared a memo, to C.

22 F. Callis, dated 7-25-79, listing possibilities.

23 Holzapfel will review with Scott, Galloway and Dolin

24 and recommend further tests, if appropriate.

25 12. Dioxins - wipe samples. Dr. Callis

1 has suggested that if OSHA and EPA were called in as
2 a result of some employee's response to a news
3 article or letter from Suskind/Selikoff they would
4 probably insist on taking wipe samples. Holzapfel
5 will discuss with plant, establish logical sites,
6 i.e., plant lunch room, M&F lunch room, M&T
7 structure, and arrange to take sample analysis.
8 Condray to be involved.
9 13. Dioxin. Review publication in
10 Sciquest, ACS publication, A useful and relatively
11 unbiased summary in clear language. Sample - 'The
12 central problem in the controversy (over 2,4,5-T) is
13 whether unequivocal proof of a cause and effect
14 relationship between use of the chemical and a
15 harmful result is required before a product is
16 banned or whether probable cause of harm is
17 sufficient.' Copy attached - suggested as addition
18 to briefing manual.
19 Q. Let me hand you what's been marked as
20 Plaintiffs' Deposition Exhibit 81, which purports to
21 be a memo from Dan R. Bishop, dated August 7, 1979,
22 the subject being revised Nitro position statement;
23 is that correct?
24 A. Yes.
25 Q. Would you read that short memo to the jury, sir?

1 A. 'Attached for your information is the revised
2 position statement we intend to go with as our first
3 line of defense when Dr. Selikoff issues his report.
4 Please destroy the previous statement
5 dated July 13 and replace it with this version.'
6 Q. Now, handing you what's been marked Plaintiffs'
7 Deposition Exhibit 82, which consists of three pages,
8 can you identify that?
9 A. Right.
10 Q. 82 consists of three pages and is
11 apparently authored by yourself and dated August 20,
12 1979. The subject being Nitro health study task
13 force, minutes of 8-17; is that correct?
14 A. Correct.
15 Q. Would you read those minutes, parts of those
16 minutes, to the jury?
17 A. 'Next meeting Friday, August 24, 8:30 a.m.,
18 room A331N.
19 1. Chloracne/WGK - Dr. Honchar of NIOSH
20 called F. Meyer to determine whether she could visit
21 Monsanto discuss chloracne cases at WGK. Dr. Roush
22 will handle further discussion week of 8-20. Nitro
23 Health Study Task Force recommends that any study of
24 causal relationship between chloracne and WGK and
25 dioxins be kept completely separate from the Suskind

1 study at Nitro to avoid delay and confusing the
2 Nitro study. Meyer reported that he had discussed a
3 prospective health study at WGK with Dr. Suskind
4 about a month ago, and that Dr. Suskind had not
5 expressed any interest in conducting it, or
6 expanding the Nitro study to include it. Dr. Gaffey
7 and Meyer will attempt to deal with the question of
8 a WGK study, how, who, when, et cetera, the week of
9 8-20.
10 2. Mortality Study. Dr. Suskind has
11 suggested some changes in the draft of Monsanto
12 mortality study which we would like to submit for
13 publication in a reputable journal. Dr. Gaffey, and
14 possibly other DHEH personnel, will visit Suskind
15 the week of 8-20 in an effort to resolve differences
16 and to avoid further delay in publication. (Note,
17 we can't issue news release until after acceptance
18 of study for publication.)
19 3. Selikoff study at Vertac. Dr. Meyer
20 called Selikoff who reported that some 200 people
21 were involved in the Vertac study, that the cases
22 seemed more active than those at Nitro and that he
23 was still analyzing the Nitro data.
24 4. Feedback to employees from Suskind
25 examination. As part of visit to Suskind week of

8-20, Dr. Meyer will press for feedback to employees whose examinations have not revealed anything serious enough to warrant feedback to their physicians. See attached memo of 8-8 from O. Dolin for status report on health study. Holzapfel will determine whether Dr. Wallace (Nitro Plant doctor) has been contacted by any of the physicians who have been contacted by either Suskind or Selikoff.

7. Dr. Gaffey reported that he has examined the health histories of a group of people who had been exposed to 2,4,5-T versus a control group. The relative youth of the control group makes comparison difficult. Results not yet ready for publication.'

Q. I will hand you now what's been marked Plaintiffs' Deposition Exhibit 83, and ask if you can identify that?

A. Yes.

Q. Plaintiffs' 83 is a three page document apparently authored by yourself and dated August 24, 1979. The subject being minutes of Nitro Health Study Task Force Meeting of August 24, '79; is that correct?

A. Right.

Q. Could you read portions of those minutes

1 to the jury, please?

2 A. Next meeting Friday, August 31, 8:30 a.m., room

3 A331N.

4 2. Monsanto Mortality Study. Do not yet

5 have acceptance of our draft by Suskind. However, he

6 has promised to review next week. Meyer will

7 follow-up.

8 This study involved 121 people who were

9 both involved in the 1949 incident at Nitro and had

10 chloracne. Generally accepted as a sure sign of a

11 large dose of dioxins. Most of these are still

12 alive.

13 By contrast, the Carbide/University of

14 Pittsburgh study involved 819 deceased workers who

15 had been employed at its South Charleston Plant.

16 Carbide's study showed higher than normal incidents

17 of three types of cancer and led to the larger

18 40,000 man epidemiolgy study announced last week.

19 We must be prepared to differentiate

20 between the two kinds of studies, if our future news

21 release is to have credibility. Dr. Gaffey

22 explained that a study which included only deceased

23 employees would be expected to show more cancer than

24 a study of an entire group, living and dead, that

25 had been exposed to an incident such as ours in 1949.

3. Suskind study - Follow-up to employees. Dr. Suskind has advised Dr. Meyer that he will send a report on each patient examined to that man's personal physician and will send a letter to each man examined advising him that the file has been sent to his physician. We understand that the Monsanto medical community will receive a copy of the test results for that individual's medical file. Some confusion exists as to where this will be sent or when. Dr. Meyer will attempt to resolve, and will attempt to get a copy of the type of letter sent to each man examined.

4. Communication with Nitro employees. Task force agreed that we should either publish an article in the plant newspaper early next week, or have the plant manager send a letter to the home, dealing with two subjects.

a. The Carbide epidemiolgy study, point out that we are doing the same thing with our MEHI approach, started last year, and expect results early in 1980.

b. Suskind's feedback letter to those examined and their doctors.

Pierre Wilkins will work with Roy Scott on this Monday, 8-27.

1 5. Public attitude survey. See minutes
2 7-20 meeting. West Virginia Manufacturing
3 Association. Wilkins will follow-up to expedite
4 selection of firm to conduct survey.
5 6. Chloracne. The group agreed that we
6 should identify those employees hired since January,
7 1973 and examine their medical history to determine
8 how many, if any, cases of chloracne exist.
9 Presumably this group was not exposed to 2,4,5-T or
10 the equipment involved in its manufacturing. The
11 absence of chloracne should be construed as
12 indicating that any exposure to dioxins since 1973
13 is relatively harmless. Dr. Tillman and Judy Zack
14 will consider this recommendation and how to
15 implement it and report back. We may wish or need
16 to look for current or active chloracne in the next
17 round of annual physicals.'
18 Q. Mr. Holzapfel, looking at Plaintiffs'
19 Deposition Exhibit 84, can you identify that?
20 A. Yes.
21 Q. That is a two page document apparently authored
22 by F. C. Meyer and dated August 27, 1979, the
23 subject being phone discussions with Dr. Ray Suskind,
24 regarding Nitro Health Studies. Is that a proper
25 description of the document?

1 A. Yes.
2 Q. And would you read to the jury the text of that
3 memorandum.
4 A. '(1). He has the 1949 accident mortality
5 revised publication slated for Journal of
6 Occupational Medicine, and agrees it should go out
7 this week. He is reviewing it today and will call
8 later in the day to discuss it. I voluntered J.
9 Zack and William Gaffey, if necessary, to visit
10 Cincinnati for resolution of any problems which
11 cannot be handled by phone.
12 2. On the Nitro health study carried out
13 June 11 to the 18th, the following communications of
14 individuals results have been carried out or are in
15 the process:
16 (a) Fairly soon after the exams, for
17 several patients found to have symptoms needing
18 immediate follow-up, not necessarily related to work
19 exposure, phone contacts were made with the patients
20 physicians.
21 (b) For those patients, about 230, who
22 requested during the exam to receive results and who
23 signed a consent form, the results have been sent to
24 their physicians and a letter of confirmation to the
25 patients.

1 (c) This week and next, the other 200
2 plus patients, of the total 437 examined, will
3 receive a letter saying that their results are
4 complete. A consent form will accompany the letter
5 which they are asked to sign and return if they wish
6 the results sent to their physicians.
7 Sample copies of these letters will be
8 sent to me in St. Louis.
9 J. Suskind attended the earlier August,
10 interagency meeting in Washington on 2,4-D and
11 2,4,5-T, held by NIOSH, OSHA, NIEHS, etc., and
12 reported orally on the progress of the Nitro Health
13 Study.
14 Seitkoff reported but did not mention
15 Nitro except peripherally as indicated below. He
16 talked about the Vertac examinations as an example
17 of a clean 2,4,5-T exposure and further mentioned
18 his preliminary examination of workers handling
19 pentachlorophenol in a Weyerhauser wood treating
20 plant in Arkansas. In these latter employees he
21 examined b-cell and t-cell parameters related to
22 immune compentence and found changes of activity.
23 He mentioned he did not find such changes in Nitro
24 employees. This could presumably be explained by
25 the circumstances that none have been exposed for

1 the lasts seven to ten years.

2 Suskind was informed that Bill Gaffey

3 would contact him today concerning the data on PAB

4 exposed employees.

5 He is interested in Nitro people who are

6 deceased, have had bladder tumors or are under

7 surveillance so that he can cross check those

8 patients who indicated such status when examined and

9 can confirm mortality data reported in subsequent

10 studies. He has no interest in the total lists for

11 our other plants.'

12 Q. Now, handing you what's been marked Plaintiffs'

13 Deposition Exhibit 85, can you identify that?

14 A. Yes.

15 Q. It does, does it not, consist of a two page

16 document authored by Mr. R. M. Scott and dated March

17 17, 1980, the subject being minutes of meeting March

18 14, 1980 of Nitro Health Study Task Force?

19 A. That's correct.

20 Q. And would you read pertinent portions of those

21 minutes to the jury, please?

22 A. Next meeting April 16, 1980, 8:30 a.m.

23 Conference room, A-331 north.

24 1. Suskind status. A meeting among Bill

25 Gaffey, Judy Zack and Dr. Suskind is set for March

31, 1980. Suskind has indicated that the data might be, no promise, ready for preliminary review.

The first output from the Nitro mortality study, number two, is being reviewed. It covers deaths only on exposed versus non-exposed individuals who worked hourly employment since 1955. The scope is 800 people and 150 deaths with a hundred percent trace. Indications are that the mortality of exposed workers is okay compared to national averages. The non-exposed group shows a slightly high cardiovascular incident rate compared to national averages. The study will eventually be compared to incident rates in the Kanawha Valley but this comparison is not presently ready.

4. Communications. Articles on any nitrosamines for use at Nitro are still being prepared. They are to be completed as a set and then reviewed about Dan Bishop prior to use.

Information is being developed on several subjects for broad based use. The first relates to MEHI, what, why, have, et cetera, and should be ready for use shortly.

A white paper by Bishop on Agent Orange has been completed. Planning is underway for a general release to Monsanto employees but the

1 mechanism of release has not been selected.
2 Senator Cranston has begun hearings again
3 on Agent Orange. We can probably expect a lot of
4 activity in this area since 1980 is an election year.
5 Monsanto was approached by CBS Evening
6 News and asked to give Monsanto's view on the Agent
7 Orange controversy. We declined? We did send a
8 copy of the Agent Orange white paper.
9 Ed Light, local Charleston, West Virginia
10 environmentalist, appeared on March 10, 1980 before
11 the EPA hearing on airborne carcinogens.'
12 Q. Now, let me hand you what's been marked
13 Plaintiffs' Deposition Exhibit 86, and ask if you
14 can identify that document?
15 A. Yes.
16 Q. It appears, does it not, to be a memorandum
17 from William R. Gaffey, dated April 2, 1980, the
18 subject is visit to Dr. Raymond Suskind. And the
19 person to whom the memorandum was written was Dr.
20 George Roush. Would you read to the jury the text
21 of that memorandum, sir?
22 A. 'Judy Zack and I visited Dr. Suskind on the
23 afternoon of March 31. Our explicit agenda was to
24 review with him a draft report of our latest Nitro
25 mortality studies, which we did. Our implicit

1 agenda was to rattle his cage a bit with respect to
2 the statistical analysis of the Nitro physical
3 examinations, which I hope we did.
4 Since the draft report of the mortality
5 study was a preliminary one and the numerical
6 results are not yet firm, I will pass over it and
7 report on the statistical analysis of the
8 examination data.
9 In brief, Suskind estimates about an
10 another month before data entry is complete and
11 questions can be asked of the computer. They have
12 divided the data obtained into major subgroups or
13 modules. Entry of the following modules has been
14 completed: (1) Demographic data; (2) Laboratory
15 results; (3) Pulmonary function data; (4) Diagnostic
16 tests. Entry of other modules, in particular the
17 medical and reproductive histories, is not yet
18 complete.
19 However, when I asked you Dr. Suskind if
20 he would come to Nitro on May 9 and talk about the
21 study results, he agreed. I, therefore, believe the
22 one month estimate may have some validity.
23 Incidentally, he asked that Roy Scott call him up to
24 invite him officially and wondered if we should
25 invite Dr. Parkinson.

He volunteered some information about the Krummrich examinations, which I had hesitated to bring up lest it distract him in Nitro, since the Krummrich data are from a less elaborate examination of a smaller group he believes they may also already about a month.'

Q. I will hand you now what's been marked Plaintiffs' Deposition Exhibit 87, which is a four page document, I ask if you can identify that?

A. Yes.

Q. And is that a document which was authored by R. M. Scott under date of April 21, 1980, subject being minutes of meeting, April 18, 1980, Nitro dealth Study Task Force?

A. Yes.

Q. Would you read for the record the pertinent portions of the minutes of that meeting.

A. Next meeting May 16, 1980, conference room A331 north.

1. Suskind status. Judy Zack and Dr. Gaffey met with Dr. Suskind and Dr. Blair Smith in Cincinnati on March 31, 1980 to establish the status of the Nitro Health Study. Status report indicates that Dr. Suskind is still in the computer phase working with the data input. Dr. Suskind indicated

1 that he expected data input to be complete in about
2 a month and then the analysis efforts could begin.
3 The group discussed methods to consider
4 for improving the completion timing. Dr. Callis and
5 Fred Holzaptel agreed to review further with Mr.
6 Throdahl seeking assistance, done 4-18-80.
7 Dr. Gaffey had invited Dr. Suskind to
8 Nitro for the health center opening on May 9, 1980.
9 The group felt that this timing was too soon
10 considering study status. R. M. Scott was directed
11 to communicate with Dr. Suskind to reschedule a
12 Suskind visit to Nitro.
13 2. Monsanto study. Judy Zack reviewed
14 status of the Monsanto mortality study. The study
15 had been completed and preliminary review is
16 underway. The study covers a very broad base of
17 Nitro workers over an extended time period. Full
18 completion and report availability is expected
19 within the next month.
20 A decision will need to be made as to the
21 disposition of the Zack study re its publication and
22 involvement with the Suskind study. The proposal of
23 the NHSTF was for Zack to proceed with publication.
24
25

1 3. Chemical Week Article. Dan Bishop
2 reported on an April 9, 1980, Chemical Week article
3 which indicated a Selikoff study on Nitro employees
4 that would be done. Bishop will discuss with the
5 environmental editor of Chemical Week to understand
6 the reference.
7 Bishop reported on the multipart Agent
8 Orange feature to be aired on WOWK, Chicago,
9 beginning April 21, 1980.
10 13. EPA Communications. Phocian Park
11 indicated that he had established a communication
12 line to the EPA Associate Counsel on Toxic
13 Substances. Park discussed the sending of the Zack-
14 Suskind mortality study to the EPA and suggested to
15 Judy Zack that she might want to establish a
16 communication line with her counterpart related to
17 the study data.'
18 Q. I hand you now what has been marked Plaintiffs'
19 Deposition Exhibit No. 88 and ask if you can
20 identify that.
21 A. Yes.
22 Q. Plaintiffs' Deposition Exhibit No. 88 is a two
23 page document authored by R. M. Scott, plant manager
24 at Nitro, to Dr. Raymond Suskind, University of
25 Cincinnati Medical Center, Cincinnati, Ohio,dated

1 April 22, 1980, is that not correct?
2 A. Correct.
3 Q. Could you read the text of that letter to the
4 Jury, please.
5 A. 'Dear Dr. Suskind: During his March 31, 1980
6 visit at your office, Dr. William Gaffey indicated
7 to you the possibility of your visiting to Nitro
8 plant on May 9, 1980 in conjunction with the opening
9 of our new employee health center.
10 My prefrence would be to have you wait
11 until some time later, probably in June or July for
12 such a visit.
13 Anticipating the completion of the Nitro
14 health study, we have laid out a continuing
15 communication program as follows:
16 1. Industrial hygience program
17 communication beginning in April 1980.
18 2. Presentation to the Union Committee on,
19 a, Monsanto's Department of Medicine and
20 Environmental Health (Dr. Tillman); b. Epidemiology
21 in general, (Dr. Gaffey) these to be on May 9, 1980.
22 3. Summary review of health study
23 results in June/July, 1980 (Dr. Suskind).
24 Our goal is to build the foundation and
25 then begin to focus our communications by narrowing

1 the area until we reach your feedback on the health
2 study.
3 I hope that this approach meets with your
4 approval. I will look forward to your notification
5 of a readiness of communication related to the
6 health study and will schedule from there.'
7 Q. I hand you what's been marked now as
8 Plaintiffs' Deposition Exhibit 89, which consists of
9 four pages, and ask if you can identify that.
10 A. Yes.
11 Q. That's a document, sir, that's authored by R.
12 M. Scott, dated May 19, 1980. The subject is Nitro
13 Health Study Task Force, minutes of meeting of May
14 16, 1980; is that correct?
15 A. Yes.
16 Q. And would you read to the Jury the pertinent
17 portions of the minutes of that meeting.
18 A. "Next meeting: June 13, 1980, 8:30 a.m.,
19 conference room, A-331 north.
20 Item 2, Suskind status. Dr. Gaffey
21 indicated that he had no additional information on
22 the present status of the Suskind health study. Dr.
23 Gaffey indicated that he would follow up to secure
24 an updated status report. Messrs. Holzapfel and
25 Callis reviewed their discussion with Mr. Throdahl

1 related to ways of speeding Suskind's results. Dr.
2 Gaffey indicated that he would follow up on this
3 through Dr. Rousch.
4 3. Monsanto study. Dr. Gaffey indicated
5 that Judy Zack had completed a second pass at the
6 computer output for the Nitro mortality related to
7 all employees at Nitro since 1955. Completion is
8 expected with within a few weeks but Dr. Gaffey felt
9 that this would have to go through Dr. Suskind
10 before publication.
11 9. WCHS-TV series. WCHS TV, a CBS
12 affiliate, intends to do a three part series
13 entitled: Agent Orange, do we need to worry?
14 Airing is to be May 21, 22, 23, 1980. Orientation
15 will be, (a), the Vietnam veteran's concern, (b),
16 the present activity (hearings, legal actions, et
17 cetera), and (c), the health studies in progress.
18 Two additional items are worthy of
19 comment here:
20 a. In a follow-up interview of R. M.
21 Scott on 5/8/80, WCHS reporter told Scott in an
22 unsolicited comment that Monsanto was the only
23 industry in the area that had been willing to help
24 the news media and had been totally honest and
25 candid.

1 b. The news director for WCHS called
2 Scott on 5/9/80 to tell him that the three part
3 series was being planned.
4 A copy of Monsanto's 2,4,5-T white paper
5 has been provided to WCHS-TV.
6 12. West Virginia Department of Health.
7 A William Aaroe of the Industrial Hygiene Division
8 of the State Department of Health contacted Scott on
9 5/12/80 asking for a review of the various health
10 studies which were in progress. Scott handled this
11 by phone and offered to send Mr. Aaroe a copy of the
12 published mortality study and Monsanto's 2,4,5-T
13 white paper. Such will be sent on 5/19/80.
14 13. Charleston Lions Club. Scott will
15 speak to the Charleston Lions Club on 5/22/80.
16 Intended content will cover plant history, business
17 areas, business prognosis, the public opinion survey
18 and Monsanto's CFOL program. Questions related to
19 the 2,4,5-T or environmental concerns will be
20 handled as requested. Handouts will be the CFOL
21 booklet and the 2,4,5-T white paper if needed.
22 15. USWA, Dr. Parkinson. The group
23 discussed the desirability of involvement with Dr.
24 Parkinson of the United Steelworkers of America.
25 All are to consider this and be prepared to review

1 at the 6/13/80 meeting.'
2 Q. I hand you now what's been marked Plaintiffs'
3 Deposition Exhibit 90, sir, and ask if you can
4 identify that, please.
5 A. Yes.
6 Q. Is that document, Exhibit 90, a one page
7 document from Ernest Tillman, M.D., to yourself?
8 A. Yes.
9 Q. Dated June 5, 1980, with a copy to Roy Scott?
10 A. Right.
11 Q. Would you read that to the Jury.
12 A. 'You may recall that one of my assignments for
13 the Nitro Task Force was to make contact with
14 someone who could give us input on the advisability
15 of asking Dr. Parkinson to participate when Dr.
16 Suskind reports his study to our Nitro plant
17 population. I contacted Merle Bundy, M.D., Medical
18 Director for the United States Steel Corporation,
19 because he has had extensive contact with Dr.
20 Parkinson. Dr. Bundy is a long standing friend of
21 Dr. Roush and I am quite convinced that Dr. Bundy
22 would tell us the truth.
23 Dr. Bundy's immediate reaction was that
24 he would encourage us to have Dr. Parkinson
25 participate when the study is reported to our work

1 force. Dr. Bundy's experience has been that Dr.
2 Parkinson has been very supportive in many areas and
3 he reports him to be a tough but reasonable man.
4 There have been occasions when Dr. Parkinson could
5 have taken an adversarial role and done perhaps
6 irreparable damage to some of the medical programs
7 in the U.S. Steel Plants but elected rather to be
8 cooperative and helped to iron out the problems.
9 Dr. Parkinson has an associate, Mike
10 Wright, an industrial hygienist who frequently
11 accompanies him in his visits to steel plants, et
12 cetera. Mr. Wright is reported to be somewhat more
13 militant than Dr. Parkinson but still remains
14 reasonable in his approach. If Dr. Parkinson were
15 unavailable, and it is quite likely that he might
16 ask us to invite Mr. Wright in his place. Dr.
17 Parkinson might also ask to have Mr. Wright included
18 in the invitation.
19 On the basis of this conversation with
20 Dr. Bundy, I would recommend that we give strong
21 consideration to inviting Dr. Parkinson to join us
22 when Dr. Suskind reports his study and a
23 consideration be given to inviting Mr. Wright as
24 well. I would not anticipate that we would be
25 entering an adversarial position by doing this. On

1 the contrary, there may be considerable benefit in
2 having these gentlemen present when the time comes.
3 One caveat goes along with this recommendation. We
4 should extent the invitation to Dr. Parkinson as
5 early as possible so that he will not be there as a
6 result of a union invitation rather than as the
7 result of our invitation.'
8 Q. Hand being you what has been marked Plaintiffs'
9 Deposition Exhibit No. 91. Can you identify that?
10 A. Yes, sir.
11 Q. This document is authored by you, sir, and it
12 is to R. M. Scott, with a copy to E. Tillman, dated
13 July 2, 1980; is that correct?
14 A. Yes, sir.
15 Q. And could you read that document for the Jury's
16 benefit.
17 A. 'At one of our recent Nitro health study task
18 force meetings, we decided that Dr. Parkinson should
19 be invited to attend when Dr. Suskind reviews the
20 results of his study with us. We subsequently
21 decided that the invitation should be extend by Dr.
22 Rousch. I am enclosing a draft of the proposed
23 letter - Dr. Tillman is holding the original.
24 In our conversation this morning, we
25 reached the tentative conclusion that you should

1 invite union representatives to the presentation by
2 Dr. Suskind, presumably by extending the invitation
3 through Paul Shaffer and/or Larry Ratliff, with the
4 idea of including Messrs. Roussan, Wright and
5 Parkinson. We could enclose a draft of the letter
6 from Roush to Parkinson and indicate that we would
7 like to have Roush invite Parkinson directly if the
8 steelworkers had no objection.
9 Let's discuss on my 7/9-10 visit.'
10 Q. Now, let's look at Plaintiffs' Deposition
11 Exhibit No. 92, a one page document. And I ask you
12 to see if you can identify that?
13 A. Yes.
14 Q. That appears to be a document authored by Dan
15 R. Bishop, dated July 10; is that correct?
16 A. That's correct.
17 Q. And would you read to the Jury the text of that
18 document.
19 A. 'For your information. On Tuesday, July 22,
20 the medical facilities and benefits subcommittee of
21 the House Veterans Committee will hold hearings on
22 Agent Orange.
23 It's believed that Dr. Selikoff will
24 testify along with others sympathetic to the
25 veterans in what promises to be a witch hunt staged

1 for the news media. No one from industry has been
2 invited to testify.
3 ABC will have a 20/20 crew there and will
4 probably air something on July 24. I am planning to
5 attend the hearings as a spectator.'
6 Q. I hand you what's been marked Plaintiffs'
7 Deposition Exhibit 93. Can you identify that?
8 A. Yes.
9 Q. Plaintiffs' 93 is a one page document authored
10 by Dan R. Bishop, dated July 25, 1980, the subject
11 was House Agent Orange Hearing, is that not correct?
12 A. That's correct.
13 Q. And would you read that document to the Jury,
14 please.
15 A. 'For your information, the hearings of the
16 House Veterans Committee were predictable and dull.
17 Monsanto was not mentioned but Dow caught quite a
18 bit of flak.
19 Dr. Suskind did not testify. He pulled
20 out at the last minute, apparently realizing that he
21 was about to get involved in. Dr. Epstein, in his
22 usual rapid fire style, indicted the phenoxy
23 herbicides and dioxin, calling TCDD the most potent
24 synthetic carcinogen known to man, and a powerful
25 teratogen and mutagen which causes multisystem

1 chronic effects.

2 Doctors Stellman, a husband and wife team

3 from New York, were introduced as epidemiological

4 experts and proceeded to collaborate Epstein's

5 charges.

6 Congressman Daschle (D-S.D.), see

7 attached news release, went after Dow, as did

8 Epstein. They both said Dow had done a study in

9 '77-78 of the wives of 300 2,4,5-T workers and have

10 never published the results, charging a cover up.

11 The hearings wound up with a parade of

12 Vietnam veterans taking turns describing the horrors

13 that have befallen them and their families since

14 being exposed to Agent Orange.

15 Additional hearings will be scheduled.

16 There was nothing on 20/20 last night.'

17 Q. I hand you what's been marked Plaintiffs'

18 Deposition Exhibit 94, and ask if you can identify

19 that, sir.

20 A. Yes.

21 Q. And is Plaintiffs' Deposition Exhibit 94, which

22 consists of four pages, a document authored by R. M.

23 Scott dated August 4, 1980, subject being Nitro

24 Health Study Task Force, minutes of meeting, August

25 1, 1980?

1 A. That's correct.
2 Q. And would you read for the ladies and gentlemen
3 of the Jury the minutes of the meeting of August 1,
4 1980.
5 A. 'Task Force organization. Mr. Holzapfel
6 proposed that with Scott's transfer and his pending
7 retirement, Dr. Callis assume the Chairmanship of the
8 Nitro Health Study Task Force. Dr. Callis agreed.
9 H. M. Galloway was appointed to replace
10 Scott as the Nitro representative. Mr. Holzapfel's
11 replacement will be selected at a later time.
12 Future meetings will be called by Dr.
13 Callis as required.
14 Suskind status. The status of Dr.
15 Suskind's work appears unchange, still in progress.
16 Monsanto does not have new or recent information on
17 completion timing. The group recommended that Dr.
18 Roush send a letter to Dr. Suskind requesting an
19 update. This should precede the planned trip by Dr.
20 Roush to Cincinnati for a face-to-face review with
21 Dr. Suskind. Barney Wander will prepare a draft
22 letter for Dr. Rousch.
23 Dr. Parkinson and USWA. Scott indicated
24 that he had discussed an invitation to Dr. Parkinson
25 for a Suskind review of his health study with USWA

1 representative Larry Ratliff. Ratliff fully
2 supported the invitation.
3 Scott and Tillman reviewed the draft
4 letter by Roush to Dr. Parkinson and agree on
5 content. Tillman will now follow-up with Dr. Roush.
6 Scott also indicated to Ratliff that he
7 would provide invitations to Dr. Suskind's review
8 for Paul Shaffer (Nitro union President), Larry
9 Ratliff (USWA staff representative), Paul Rusen
10 (district director), and Mike Wright, USWA
11 industrial hygienist.
12 The entire basis of discussion was an
13 invitation to attend when Dr. Suskind presented a
14 review of his study -- not that he was about to do
15 so.
16 Zack study. Dr. Gaffey indicated that a
17 final report was being written and should be ready
18 within two weeks. Dan Bishop proposed to have a
19 press release ready by September 1, 1980.
20 Throdahl visit. The Throdahl visit to
21 Nitro on September 12, 1980 was reviewed. Dr.
22 Callis indicated that he would like to review the
23 final agenda as it is published about August 15,
24 1980. Items for consideration to present were as
25 follows: PCRA preparation, status/challenge. Media

1 relationships. PAB widow status. Orphan landfills,
2 D'Appolonia work, general environmental update.
3 Cyst analysis. Callis will look for
4 recent info on degradation of dioxin in fatty tissue.
5 Nitro people are available for analysis but Dr.
6 Suskind is still working on procedures.'
7 Q. I will hand you now, Mr. Holzapfel, what has
8 been marked as Plaintiffs' Deposition Exhibit No. 95,
9 and ask if you can identify that, sir.
10 A. Yes.
11 Q. And is that exhibit a two page document, sir,
12 authored by Clayton F. Callis on December 1, 1980,
13 the subject being Nitro Health Study Task Force,
14 minutes of meeting of November 21, 1980?
15 A. Right.
16 Q. And would you read to the Jury those portions
17 of the minutes of that meeting.
18 A. "Public relations activity. W. R. Brooks was
19 interviewed on Channel 8 in Charleston re industrial
20 hygiene progress at the plant.
21 Owen Dolin has handled several media
22 contacts on the mortality study.
23 Max Galloway has been the plant contact
24 on odor problems.
25 Employee deaths. Harry Honaker died

1 November 10 and Ralph Adkins on November 11. Death
2 Certificates will be obtained. Both of these people
3 were on the PAB program.
4 Access to medical records. There has been
5 no employee response to date as a result of the new
6 regulations on access to medical and exposure
7 records.
8 Confrontation training. Dave Fraser, new
9 plant manager, the first week of December Dave
10 Fraser, the new plant manager, is scheduled for the
11 Ryan training the first week of December.'
12 Q. Now, sir, I have a few other questions that I
13 want to ask you, and we can conclude.
14 I think you stated at various times that
15 you were responsible for the health of the men at
16 Nitro; is that correct?
17 A. Yes.
18 Q. All right. Were you familiar with any of the
19 world literature of the dioxin literature concerning
20 any of the symptoms and complaints that can be
21 caused by dioxin poisoning?
22 A. Yes, after a while.
23 Q. Pardon me?
24 A. Yes, after a while.
25 Q. After a while?

1 A. Yes. The question of when is important.
2 Q. All right. During the manufacture of 2,4,5-T
3 and its contaminant, dioxin, from 1949 to 1969?
4 A. No.
5 Q. All right. Do you know any of the symptoms
6 that are shown by the literature of dioxin systemic
7 poisoning?
8 A. Only chloracne.
9 Q. Let me give you the following list of symptoms
10 and ask if you have any knowledge during your work
11 being in charge of the health of these men, if you
12 are familiar with any of these symptoms?
13 First of all, from '49 to '69, did you
14 know or have any knowledge that fatigue, persistent
15 cough, sore throat and nausea, upset stomach,
16 dizziness, light headedness, sleep difficulty,
17 sleepiness, exhaustion, red face causing burning and
18 numbness, shortness of breath, breathing problems,
19 dark urine, urinatin frequency, urination urgency,
20 blood in the urine, runny nose, nose bleeds, eyes
21 that water and become irritated, loss of vision,
22 aching joints, leg pain, extremities numb and
23 tingling, nervousness, anxiety, ear problems, loss
24 of hearing, kidney difficulty, low sex drive,
25 diarrhea, loss of memory, loss of attention, loss of

1 concentration, lumps, lypomas, skin rashes, cancer,
2 weight gain, weight loss, depression, personality
3 change, Peyronie's disease, high blood pressure,
4 chest pains and headaches, during that period of
5 time from '49 to '69, did you know or have any
6 knowledge that dioxin systemic poisoning could cause
7 those symptoms or complaints on an individual?
8 A. No.
9 Q. Did you ever learn that any of these symptoms
10 that we have just talked about can be caused from
11 dioxin?
12 A. I read the allegations.
13 Q. Allegations of what, sir?
14 A. That those symptoms were caused by dioxin in
15 the various literature.
16 Q. What literature did you consult?
17 A. I would have to refresh my memory from the
18 minutes of the Nitro Task Force meetings, but there
19 was comprehensive study, I think, put out by the
20 Department of Agriculture.
21 Q. The next question is, sir, did you ever tell
22 any of the men that these things that you found in
23 that literature can be caused from dioxin?
24 A. No.
25 Q. From 1949 up until the time that you retired.

1 A. By the time I was associated with Nitro, it no
2 longer manufactured the chemical in question.
3 Q. The question is, did you ever tell the men,
4 written or oral, that the literature indicated that
5 these symptoms can be caused by dioxin systemic
6 poisoning?
7 A. I did not because there was no reason to do so.
8 The chemical was no longer being manufactured.
9 Q. Did you ever, either in writing or orally,
10 cause communique to the workers at Nitro, that
11 damage can be caused from dioxin poisoning to the
12 following systems: The skin, liver, reproductive
13 organs, genitourinary system, immune system,
14 musculoskeletal, central and peripheral nervous
15 system, lungs, gastrointestinal system, metabolism,
16 endocrine or blood system?
17 A. No, those were unsupported allegations and the
18 chemical 2,4,5-T was no longer being manufactured at
19 Nitro during the time I was in responsible charge.
20 Q. All right. Let me ask you this: During the
21 deposition numerous of the documents referred to the
22 relationship of Dr. Suskind and the Monsanto Company,
23 isn't that correct?
24 A. They referred to the use of Dr. Suskind and a
25 study which he proposed.

1 Q. All right. Is it your position and Monsanto's
2 position that Dr. Suskind is an independent
3 investigator in the real sense of the world, and
4 that this study was not controlled by Monsanto?
5 A. Yes, it is. He is one of the most independent
6 individuals I have ever had any encounters with.
7 Q. I hand you what has been marked --
8 A. And in support of that, we attempted repeatedly
9 to have him publish the results without any great
10 success.
11 Q. Do you know whether there was any problem with
12 the results?
13 A. No.
14 Q. I hand you what's been marked Plaintiffs'
15 Deposition Exhibit 96, which consists of four pages.
16 A. Yes.
17 Q. All right. The document purports, on pages 1,
18 2 and 3, to be a contract letter from Mr. George
19 Griffin from Monsanto Company, accepted by Frank
20 Cagnetti, Executive Director, the Medical Center
21 Fund of Cincinnati, and Dr. Raymond R. Suskind,
22 Director of the Department of Environment Health,
23 dated July 13, 1979. The recipient of the letter is
24 Mr. Frank Cagnetti, Executive Director, Medical
25 Center Fund of Cincinnati, 234 Goodman Street,

1 Cincinnati, Ohio.

2 Would you read the text of that letter

3 contract setting forth the terms to the Jury, sir.

4 A. 'Dear Mr. Cagnetti: This letter sets forth the

5 terms and conditions under which the medical center

6 fund of Cincinnati (fund) under the supervision of

7 Dr. Raymond R. Suskind and his staff will conduct a

8 clinical study involving approximately 500 past and

9 present employees of the Monsanto Company (Monsanto)

10 plant in Nitro, West Virginia (Study). The terms

11 and conditions of this agreement are as follows:

12 1. The study shall be conducted by Dr.

13 Raymond R. Suskind, who shall be the principal

14 investigator, in accordance with the attached

15 protocol captioned, 'A study of workers involved in

16 the manufacture of 2,4,5-T.'

17 2. The fund shall perform under the

18 principal investigator's supervision all of its

19 obligations under this agreement for a total fee

20 amount estimated in the attached caption budget

21 Monsanto study to be $122,526.00 ($90,000 of which

22 has been paid by Monsanto to the fund) and shall

23 submit a statement for services rendered and an

24 itemized accounting of expenses incurred during each

25 quarter within ten days after the end of such

1 quarter, it being agreed that the final 10 percent
2 of the fee amount shall be paid to the fund only
3 after Monsanto receives the final report of the
4 study. Upon receipt of said report, Monsanto will
5 also pay the fund for reasonable expenses connected
6 with its performance under this agreement actually
7 incurred by the fund above the estimated budget
8 amount for the expense upon submission by the fund
9 and approval by Monsanto of an itemized account of
10 expenses for which payment is sought.
11 3. Monsanto will provide the principal
12 investigator with all the data from death
13 certificates, hospital and other clinical records
14 Monsanto has regarding the health status of past and
15 present employees of Monsanto's plant at Nitro, West
16 Virginia, who were exposed to the 2,4,5-T process
17 from 1948 to 1969 and to the materials involved in
18 the 1949 runaway reaction described in the attached
19 protocol.
20 4. Monsanto will also provide the
21 principal investigator with copies of all work
22 histories and medical records it has for the
23 individuals covered by the study. The principal
24 investigator and his staff shall provide Monsanto a
25 preliminary report of the findings of the study upon

1 completion of a proper analysis of the data. The
2 contents of the preliminary report will be discussed
3 with Monsanto and a final report of the study will
4 be then prepared by the principal investigator for
5 publication. The scientific conclusions and
6 judgments arising out of the study shall be the sole
7 responsibility of the principal investigator. The
8 principal investigator will notify Monsanto prior to
9 any verbal or written release to the public
10 concerning the results of the study.
11 5. The fund is and shall perform this
12 agreement as an independent contractor and, as such,
13 shall have and maintain complete control over all of
14 its employees and operations. Neither the fund, the
15 principal investigator nor any other person employed
16 by the fund shall represent, act or be deemed to be
17 an employee, agent or representative of Monsanto.
18 6. The administrative aspects of this
19 agreement for Monsanto shall be under the direction
20 of Dr. George Roush.
21 7. Upon receipt of a reasonable request
22 by Monsanto during the study and for five years
23 after Monsanto receives the final report of the
24 study, the fund and the principal investigator shall
25 cooperate with Monsanto, and such cooperation shall

1 not be unreasonably withheld, regarding questions or
2 inquiries by third parties to Monsanto relating to
3 the study, and the principal investigator shall on a
4 mutually acceptable basis with Monsanto: (a)
5 Testify at and participate in proceedings in which
6 Monsanto may be involved, and (b) execute and
7 provide affidavits or similar statements regarding
8 matters relating to the study.
9 8. The letter, together with a
10 confidentiality letter agreement dated July 18, 1979,
11 between Monsanto and the Institute of Environmental
12 Health, Kettering Laboratory (Kettering) shall
13 constitute the entire agreement with respect to the
14 study and cancel and supersede all prior
15 negotiations, dealings and agreements, whether oral
16 or written, regarding the study and may not be
17 modified unless done in writing signed by the fund
18 and Monsanto regarding this letter agreement and
19 Monsanto and Kettering regarding the confidentiality
20 agreement.
21 If the above terms and conditions are in
22 order, it is requested that the fund and the
23 principal investigator indicate their acceptance and
24 agreement to the above terms and conditions by
25 executing and dating this letter in duplicate at the

1 places indicated below and returning one of the
2 signed duplicates to Monsanto.'
3 Very truly yours, Monsanto Company, by
4 George Griffin, title illegible. Accepted and
5 agreed to this 18th day of July, 1979, Medical
6 Center Fund of Cincinnati, by Frank Cagnetti, title,
7 Frank Cagnetti, Executive Director. Accepted and
8 agreed to this 18th day of July, 1979, by Raymond
9 Suskind, title, director, Department of
10 Environmental Health.'
11 Q. Next, sir, on Page 4 of Plaintiffs Exhibit 96,
12 would you read the document which apparently comes
13 from Nitro Now, your company paper, starting with,
14 'A note from Dr. Suskind to all Monsanto employees',
15 and ending with, 'Raymond R. Suskind, M.D.'?
16 A. 'A note from Dr. Suskind to all Monsanto
17 employees: I am encouraged by the response to the
18 invitation to participate in the University of
19 Cincinnati Health Study which I will conduct at
20 Putnam Health Center beginning on June 11.
21 Obviously, the more people who participate, the more
22 complete and scientific the study can be. For this
23 reason, I would encourage those who have not yet
24 responded to participate.
25 The physical exam involved in this study

1 will be a complete and thorough one, and will not
2 duplicate previous studies in which you may have
3 been involved. The site chosen for the examination
4 was designed for medical purposes. Your exams are
5 being scheduled in such a way that they should not
6 require more than two hours of your time.
7 I would like to take this opportunity to
8 stress again that my responsibility is to the
9 individual worker/patient and no one else. This is
10 an independent study conceived and conducted by
11 doctors at the University of Cincinnati. Monsanto
12 is involved only in financing the study and working
13 out the details of scheduling the examinations.
14 Their objective, like ours, is to determine possible
15 health effects due to 2,4,5-T and its contaminants.
16 Raymond R. Suskind, M.D.'
17 MR. PEYTON: Your Honor, that concludes
18 the deposition of Mr. Holzapfel.
19 THE COURT: We need the documents to cull
20 the material that wasn't needed. I think we have
21 two hours, and down to one hour as a result. Let me
22 ask if there is anything further at the moment or
23 are you ready to go forward with your next witness?
24 MR. CALWELL: Yes, we are, Your Honor.
25 THE COURT: Before we do recess, is there

1 any objection to receipt in evidence of Plaintiffs'
2 exhibits 148 through 166?
3 MR. LOVE: Those are the ones we have
4 been through this morning, Your Honor. We have no
5 objection.
6 MR. PEYTON: We would move those into
7 evidence at this time.
8 THE COURT: They are received in evidence.
9 It would be welcome to have those first 20 marked
10 and acted upon when we return.
11 If there is nothing further, then we will
12 resume in 15 minutes.
13 (Recess taken at 10:55 in the forenoon)
14 MR. CALWELL: We call Dr. Ellen
15 Silbergeld, Your Honor. John, will you go get her.
16 Doctor, will you step right here.
17 E L L E N K O V N E R S I L B E R G E L D,
18 having been called as a witness for the Plaintiffs,
19 SWORN, testified as follows:
20 DIRECT EXAMINATION
21 BY MR. CALWELL:
22 Q. Would you state your name, please.
23 A. My name is Ellen Kovner Silbergeld.
24 Q. And where do you live, Dr. Silbergeld?
25 A. In Baltimore, Maryland, at 22 East Mount Vernon

1 Place.
2 Q. And what is your occupation or business?
3 A. I am a toxicologist.
4 Q. Before we talk about your employment and your
5 qualifications and so forth, I wanted to hand you a
6 copy of your most recent curriculum vitae to help
7 jog your memory on some of these things. All right?
8 A. Yes.
9 MR. CALWELL: Can you hear?
10 JUROR NO. 6: No. I think the mike just
11 needs to be lowered and possibly brought back a
12 little bit. Okay. I think the lowering might help.
13 Thank you.
14 Q. Dr. Silbergeld, would you tell the Jury briefly
15 what your education is.
16 A. Yes. I received a Bachelors degree from Vassar
17 College in 1967, and from 1968 to 1972 I attended
18 Johns Hopkins University, receiving a Ph.D. in 1972.
19 Q. And what is your Ph.D. in?
20 A. Environmental engineering sciences.
21 Q. What is that, as a field or science?
22 A. It is a combination of civil engineering and
23 toxicology at Johns Hopkins.
24 Q. Does Johns Hopkins University award a Ph.D. in
25 toxicology?

1 A. No, it does not.
2 Q. What is the relationship, if any, between the
3 degree that you have and a Ph.D. in toxicology, if
4 indeed there is such a degree awarded someplace?
5 A. Some schools do indeed award such degrees.
6 Essentially the degree requirements of my department
7 were the same in terms of the types of courses and
8 the requirement for original research.
9 Q. I see. What types of courses did you take in
10 connection with your Ph.D. work?
11 A. Courses in biology, biochemistry, physiology,
12 pharmacology, toxicology, statistics, epidemiology
13 and environmental fata analysis, and chemistry.
14 Q. How long did it take you to get a Ph.D.?
15 A. Four years.
16 Q. In the course of being awarded that degree, was
17 it necessary for you to do some dissertation or some
18 paper?
19 A. Yes, it was.
20 Q. And what was your dissertation?
21 A. My dissertation was on the effects of
22 organochlorinated insecticides, halogenated
23 hydrocarbons on fish in terms of physiology and
24 survivability of stress.
25 Q. How does that relate to your field of

1 toxicology?
2 A. It was a study of low level chronic toxicology
3 using fish as an indicator kind of organism.
4 Q. When you say low level chronic, what do you
5 mean by that?
6 A. These were levels of exposure below the levels
7 which would cause death or acute signs of
8 intoxication in fish or indeed in any other species,
9 and the exposure was for a fairly long period of
10 time.
11 Q. Is that what is meant by chronic?
12 A. Yes.
13 Q. And did you publish a paper on this?
14 A. I did.
15 Q. And was it necessary in the course of getting
16 your Ph.D. for you to defend that paper?
17 A. It was.
18 Q. And how do you do that? I hear people talk
19 about defending papers for a Ph.D. program. What
20 does that mean?
21 A. Well, at Johns Hopkins it means that a board is
22 brought together, that is a group of scientists from
23 within the university and outside Johns Hopkins, all
24 of whom read your thesis. That's the original
25 report of the research, and ask you any question

1 that they feel is appropriate on the substance of
2 that research or any related field. These
3 examinations are oral and usually take place for
4 about four to six hours.
5 Q. And what is the significance of defending the
6 paper in connection with ultimately being awarded a
7 Ph.D.?
8 A. The candidate has to make a successful defense.
9 That is, explain successfully to the Board of
10 Examiners all parts of the thesis and any other
11 topic related to science in order to receive the
12 degree.
13 Q. Upon receiving your Ph.D., did you begin
14 employment?
15 A. I did.
16 Q. I see on your curriculum vitae a chronology of
17 employment, and some of it apparently occurred
18 during a time that you were working on your Ph.D.;
19 is that correct?
20 A. That's right.
21 Q. In 1967, I see that you were an instructor,
22 California International Summer Program, at Upsala.
23 A. Upsala.
24 Q. Sweden. Could you tell the Jury what you were
25 doing in connection with that?

1 A. After receiving my Bachelors degree from Vassar,
2 I had been awarded a Fulbright fellowship for study
3 in England. I went over to Europe early in that
4 summer to take up a position teaching economics at
5 the University of Upsala, in Sweden.
6 Q. What is a Fulbright fellow? What is that?
7 A. That's a program run by the U.S. Government
8 which gives competitive awards for Americans to
9 study in foreign countries.
10 Q. And is that something that you had to apply for
11 or did you win it?
12 A. You are nominated by your college or university,
13 and then must be awarded it.
14 Q. And you were nominated by Vassar College?
15 A. That's right.
16 Q. In 1968 to 1970, I see that you were secretary
17 and program officer, National Academy of Sciences,
18 National Research Council, Washington D.C. First of
19 all, what is the National Academy of Sciences?
20 A. National Academy of Sciences is probably the
21 leading scientific body in this country. It
22 consists of almost eminant scientists and engineers
23 who are nominated for membership and using its
24 members and other experts performs a variety of
25 reviews, original research and consultations.

1 Q. Who does it counsel with?
2 A. It counsels all branches of Government and any
3 other organization which requests its counsel. For
4 instance, under the Safe Drinking Water Act, the
5 National Academy of Sciences reviews all the
6 toxicology data related to any substance which might
7 appear in drinking water.
8 Q. You were secretary and program officer for the
9 National Academy of Sciences, National Research
10 Council in '68 to '70. What were your duties in
11 connection with that job?
12 A. Well, after receiving a Fulbright fellowship to
13 study economics at the University of London, I
14 decided shortly into that program I really wasn't
15 that interested in economics, more in mathematics.
16 So I resigned that fellowship, came back to the
17 United States and took a job with the National
18 Academy of Sciences. In the summer of 1968, I was
19 accepted into the program at Johns Hopkins, in which
20 I received my Ph.D., but upon request of the
21 division director at the academy, I maintained my
22 position with them for the next two years on a
23 part-time basis, primarily to oversee the
24 preparation and publication of a variety of
25 manuscripts on issues related to environment.

1 Q. And what kinds of manuscripts are you referring
2 to? Were these scientific papers?
3 A. These were scientific books, essentially.
4 Q. In 1969 to '71, you were employed by the Center
5 for the Study of Responsive Law in Washington, D.C.
6 What was that about?
7 A. In the summer of 1969, a group of graduate
8 students and law students from all around the
9 country came together in Washington to look at how
10 well the Government was performing various
11 regulatory functions. I was part of the group
12 looking at what was going on in pollution control.
13 This was before there was an Environmental
14 Protection Agency, and indeed I think one of the
15 results of our research was the creation of the
16 Environmental Protection Agency in 1970.
17 As part of this job, continuing after the
18 summer of 1969, I was responsible for the
19 preparation of a book describing Federal efforts in
20 water pollution control.
21 Q. In 1972 to 1975, which would have been after
22 you received your Ph.D.; is that right?
23 A. That's right.
24 Q. You note here that you were a post-doctoral
25 fellow in environmental medicine and neurosciences

1 at Johns Hopkins University in Baltimore, Maryland.
2 What was that about?
3 A. Well, it is customary in science, after you
4 receive your Ph.D. degree, to go on to further
5 intensive research training, which merely marks the
6 transition of doing independent full-fledged
7 research known as a post-doctoral fellowship. And
8 these are competitive awards which were applied for,
9 and since my interests were definitely in the area
10 of toxicology and environmental medicine, I applied
11 to that department and was accepted as a fellow in
12 that department.
13 Q. What do you mean by independent research?
14 A. That is conducting original basic research on
15 issues of importance in the field to which you
16 receive funds out of the foundations, industries or
17 government. You are responsible for all aspects of
18 the study, including the design of the experiments,
19 carrying out the experiments, figure out what
20 results mean of the experiments, writing them,
21 presenting the results. Really, all aspects of the
22 research, including, in my case, supervising
23 graduate student and technicians were also involved
24 in research.
25 Q. What part, if any, does actual lab work or

1 bench work play in that?
2 A. Almost exclusively lab work and bench work. In
3 addition, I participated in teaching some courses in
4 the department, but that was really as a full time
5 bench work scientist.
6 Q. And what were the issues you were researching
7 during this period of time as a post-doctoral fellow
8 in environmental medicine?
9 A. My primary, effect of environmental chemicals
10 and some drugs in the nervous system.
11 Q. And what were some of the substances that you
12 were concerned with?
13 A. Parathion.
14 Q. What is that?
15 A. An organophosphate insecticide which act by
16 poisoning a certain part of the nervous system,
17 known as the colonergic nervous system.
18 THE COURT: I am having difficulty
19 hearing the witness. I think we should adjust the
20 microphone. Let's try that and see if it helps.
21 Turn the volume up slightly and see if that helps.
22 Please continue.
23 Q. You were telling us about an insecticide called
24 parathion, and its effect on the nervous system of
25 insects; is that correct?

1 A. No. It has effect on the nervous system of all
2 living forms as far as we know, including humans.
3 Q. Do you want to try "including humans" one more
4 time.
5 A. Parathion affects --
6 THE COURT: You can ask the question
7 again in a moment. The microphone, I believe, is
8 now too far away. Let's try that and see if you can
9 turn the volume up slightly. Just touch it slightly.
10 Ask that question again.
11 Q. Dr. Silbergeld, you were explaining to us what
12 some of the substances were that you were concerned
13 with during your time as a post-doctoral fellow in
14 environmental medicine and neurosciences at Johns
15 Hopkins. If you could start again, please.
16 A. Yes. One substance was parathion, which is an
17 insecticide active in the nervous system of both
18 insects, mammals, including human beings, and indeed
19 it is a very powerful tool for understanding the
20 nervous system.
21 Another substance is lead, which affects
22 the nervous system of children. Another substance
23 was mercury, another metal which affects the brain.
24 Another substance was carbon disulfide,
25 which colleagues in the department were looking at

1 very specific neurologic effects.
2 Another substance we investigated was
3 carbon monoxide, which at low levels also affect the
4 nervous system. And the range of drugs, ranging
5 from amphetamine to LSD to a variety of substances
6 of interest to various people in the department.
7 Q. Now, was this post-doctoral fellowship pursued
8 in connection with the field of toxicology?
9 A. Yes, it was.
10 Q. Perhaps this would be a good time for you to
11 tell the Jury generally what the field of toxicology
12 is.
13 A. Toxicology is the study of adverse effects of
14 substances or conditions on physiologic systems.
15 Q. And is that why you were studying all these
16 various substances and its effect on insects as a
17 post-doctoral fellow?
18 A. I was not studying the effects of any of these
19 substances on insects.
20 Q. Where did I get insects?
21 A. I think from parathion.
22 Q. Okay.
23 A. Some of the substances which unfortunately turn
24 out to be toxicologically important, that is they
25 affect human health, were originally designed to be

1 insecticides, that is targeted against insects.
2 Unfortunately for us, we are not that different from
3 insects, particularly with respect to our nervous
4 system. So many of those insecticides which are
5 highly useful for killing insects, also damage
6 people.
7 Q. In connection with your work then, as a post
8 doctoral fellow, would go with these substances,
9 what living organisms were you looking at in terms
10 of effects of these substances?
11 A. In most cases we were looking at mice and rats.
12 In some cases as well we studied humans who have
13 been exposed to some of these substances.
14 Q. And when you say you studied humans, how did
15 you do that?
16 A. Well, particularly in the last year-and-a-half
17 of my fellowship, when I was confronted with a
18 Kennedy Fellow in Sciences, I had access to and
19 indeed was expected to be in clinical research,
20 which was going on at Johns Hopkins University,
21 particularly in the area of lead poisoning.
22 Q. When you say clinical research, is there some
23 distinction to be made there between the bench work
24 and lab work that you talked about?
25 A. There is no real distinction. Clinical

1 research just means research in which people are the
2 direct subject, but many of the techniques and
3 certainly the questions that scientists ask in
4 clinical research as opposed to basic research are
5 the same.
6 Q. Did you actually see people when you were doing
7 this work?
8 A. I did.
9 Q. And what kinds of things would you do?
10 A. I would arrange for the collection of blood and
11 urine samples. I would observe children in some
12 specific programs we had to look at, behavior in
13 these children, discuss with physicians their
14 diagnosis and clinical condition, make suggestions
15 as to treatment and follow-up with these children,
16 present results to clinical conferences, teach
17 medical students on the subject of toxicology, and
18 prepare papers with clinical colleagues.
19 Q. And all of this was in connection with your
20 post-doctoral fellow work during the period '72 to
21 '75; is that right?
22 A. That's right.
23 Q. I see in 1975 you became assistant professor,
24 Department of Environmental Medicine, School of
25 Hygiene and Public Health, at the Johns Hopkins

1 University. Now, what did that job involve?
2 A. That job was the beginning of the ten year
3 tract or permanent faculty level position at Hopkins,
4 and I was nominated to that position and appointed
5 by the Dean at the same time as I was also being
6 recruited by the National Institutes of Health.
7 Eventually, as you can see from my resume, I
8 accepted the job at the National Institutes of
9 Health and resigned the appointment as Assistant
10 Professor.
11 Q. So that explains why the next job starts in
12 1975 to 1979?
13 A. That's right. Essentially the School of Public
14 Health was trying to keep me there as a faculty
15 member. Excuse me. But I felt it was time to move
16 on to a new job and get new experiences and research
17 these opportunities.
18 Q. So then for the period 1975 to 1979, it appears
19 that you were a staff fellow and head, Unit on
20 Behavioral Neuropharmacology, Experimental
21 Therapeutics Branch, NINDS, and I guess that's the
22 National Institutes of Health?
23 A. That's right, the National Institute of
24 Neurological and Communicative Disorders, which is
25 part of the National Institutes of Health.

1 Q. Before you explain what all that means, could
2 you tell the Jury what your duties and
3 responsibilities were as a staff fellow and head?
4 A. I was in charge of a group of about five
5 scientists and supporting technicians and students
6 within a clinical branch. That is a branch that was
7 devoted to the diagnosis and treatment of neurologic
8 diseases, and was responsible in that position for
9 designing, conducting and supervising the original
10 research and collaborating with my clinical
11 colleagues in the kinds of studies we have just been
12 talking about, of looking at people with specific
13 diseases, particularly those diseases that might be
14 associated with toxic substances.
15 Q. What is behavioral neuropharmacology?
16 A. It is a branch of pharmacology, and
17 pharmacology is really the flip side of toxicology,
18 and that is the study of hopefully beneficial
19 effects of substances on human physiology.
20 Behavioral Neuropharmacology is that branch of
21 pharmacology which looks at effects of drugs and
22 agents which affect the nervous system and produce
23 changes in behavior or other kinds of patterns in
24 animals and in people.
25 Q. In connection with this job as a staff fellow

1 with the NIH, what kinds of substances were you
2 looking at?
3 A. We were looking at a range of substances which
4 would produce animal models of human disease.
5 Because the purpose of research at NIH, scientific
6 research in general, is not to study the effects of
7 substances on animals, because of a concern about
8 animals, but only in so far as animals can tell us
9 something useful for helping humans or preventing
10 disease, improving health or treating disease when
11 it occurs.
12 So we developed a number of so-called
13 animal models by using well defined chemicals to
14 affect certain parts of the nervous system, and we
15 then tested some normal drugs which were being
16 introduced to treat certain human diseases.
17 Q. And were you involved in original hands on
18 research in that respect?
19 A. That was the responsibility of that position,
20 yes.
21 Q. And you actually touched the rats, and so forth?
22 A. I did indeed.
23 MR. LOVE: Your Honor, I don't believe
24 the answer is responsive to the question. He asked
25 what specific chemicals, I believe, she was involved

1 with. Rats, I believe.
2 MR. CALWELL: I did ask that.
3 Q. Would you tell the Jury, if you would, please,
4 Doctor, just some of the chemicals or substances
5 that you can recall that you were involved with.
6 A. We were involved with research on PCB's,
7 polychlorinated biphenyls.
8 Q. You might explain what a polychlorinated
9 biphenyl is to the Jury.
10 A. Polychlorinated biphenyl is a halogenated
11 hydrocarbon molecule of 3 rings with chlorines
12 attached to it. Excuse me. Two rings with
13 chlorines attached to it, bridged by a carbon bond
14 in the middle.
15 Polybrominated biphenyls, which are very
16 similar models except they have bromine instead of
17 chlorine attached to the rings, lead, manganese,
18 tanic acid, spartic acid, hydroxydopamine,
19 hydroxytryptamine, a range of other substances which
20 appear in my references.
21 Q. You say that the PCB's were halogenated
22 hydrocarbons?
23 A. That's right.
24 Q. Is that a family of substances?
25 A. It is.

1 Q. And do chlorinated hydrocarbons belong to that
2 group?
3 A. Yes. Halogenated hydrocarbon is just a broader
4 category which includes molecules which have
5 chlorine, fluorine, iodine or bromine attached to
6 them. Chlorinated hydrocarbons are just one type of
7 halogenated hydrocarbon.
8 Q. And is trichlorophenol a member of that family
9 of substances?
10 A. It is.
11 Q. And is dioxin?
12 A. It is.
13 Q. I see in 1979, it looks as though you were
14 promoted to Chief, Section on Neurotoxicology for
15 NINCDS at the National Institutes of Health. Is
16 that accurate?
17 A. That's right.
18 Q. What did promotion involve or what change in
19 duties did you have?
20 A. I moved from the part of the laboratory or
21 branch into being a laboratory Chief or director.
22 That is, I was now completely responsible for both
23 the administration and scientific basis of the work
24 going on in that laboratory. There were more people
25 working under my supervision, and I had complete

1 freedom then to design and carry out the type of
2 experiments which would relate to neurotoxicology.
3 Q. During the period of time that you were Chief
4 of the Section on Neurotoxicology -- and by the way,
5 what is neurotoxicology?
6 A. Neurotoxicology is that branch of toxicology
7 which studies specifically adverse effects of
8 substances on the nervous system.
9 Q. And what substances were you working with in
10 connection with this neurotoxicology?
11 A. Really, the same ones I described earlier, and
12 in addition, we began experiments on the effects of
13 sex hormones, synthetic or indogenous on brain
14 function.
15 THE COURT: I still am having difficulty
16 hearing the witness. You will have to repeat that.
17 We will have to have some help. While we are
18 waiting, would you read back the answer.
19 (Read by the reporter)
20 Q. Doctor, what were you required to do when
21 you were Chief of the section on neurotoxicology
22 regarding making diagnoses on people?
23 A. I was appointed as the representative of the
24 Institute to the Departmentwide Committee on
25 Toxicology, the Committee to Coordinate Toxicology

1 and Related Programs. And in that position I was
2 involved in the design and oversight of
3 epidemiological clinical studies on, for example,
4 polybrominated biphenyl exposure in Michigan, DDT
5 exposure in Indiana and a variety of other incidents
6 of clinical exposure.
7 Q. Were these people who had actually been exposed
8 to these substances?
9 A. That's right, and these were studies undertaken
10 by the Public Health Service of which NIH is part,
11 to determine the nature and extent of any health
12 effects in exposure to people. In addition, I was
13 called upon to respond to inquiries which came to
14 NIH related to cases of occupational or
15 environmental exposure in toxicology indicated
16 substances.
17 For instance, we had inquiry from the
18 Embassy of India about overdosing with malathion,
19 which is a chemical close to parathion, and there
20 was some discussion about the types of scientific
21 symptoms that were being seen in a group of people
22 who injested malathion by mistake.
23 Q. In the course of that you mentioned some people
24 that had been exposed in Michigan.
25 A. Yes.

1 Q. And what had they been exposed to?
2 A. Polybrominated biphenyls, which by mistake, had
3 been mixed into cattle feed, and then contaminated
4 dairy cows, milk, meat and chickens which were fed
5 from meat by products and other products of the cows.
6 It was an extensive, a very serious and extensive
7 environmental contamination in this country.
8 Q. And you actually saw the people that were
9 exposed to these substances?
10 A. No. We saw the medical records. We made
11 recommendations to the physicians who were examining
12 these people and we interpreted the findings of
13 these studies and wrote up final reports for the
14 Secretary of HHS.
15 Q. And did you make a diagnosis from these records?
16 A. We made a diagnosis in terms of describing the
17 types of toxicity these people had, yes. In
18 addition, as Chief of this section, I was called
19 upon to attend on clinical rounds at the clinical
20 center at NIH. That's the place at NIH where
21 patients are actually treated.
22 And I was called upon, part of the group
23 of scientists and physicians who went around and
24 inspected medical records on a daily basis, and
25 commented and discussed the progress of disease,

1 nature of diagnosis, and the type of treatment that
2 was being given.
3 Q. So there were actual patients involved in this
4 endeavor?
5 A. That's right. There was, for example, a group
6 of patients from Columbia who had very likely been
7 exposed to manganese, which had caused very serious
8 neurologic problems for these people. I was brought
9 in as a special expert because of my knowledge of
10 manganese.
11 Q. Now, your tenure as Chief of the section on
12 neurotoxicology lasted until 1981. Then I see in
13 1982, you became Chief Toxic Scientist Environmental
14 Defense Fund, Washington, D.C. First of all, what
15 is the Environmental Defense Fund?
16 A. The Environmental Defense Fund is a private
17 non-profit environmental group which is devoted to
18 policy and regulatory issues on environmental
19 protection.
20 Q. What are your duties with the Environmental
21 Defense Fund?
22 A. I direct the toxic chemicals program, which is
23 a group of scientists and attorneys doing research
24 on policy regulatory issues related to reducing
25 human and environmental exposure to toxic substances.

1 Q. What are the kinds of things that the
2 Environmental Defense Fund does?
3 A. It does a great deal of oversight of our
4 Federal programs which are designed to prevent toxic
5 exposure. For example, the Superfund Program, and
6 the Environmental Defense Fund has been involved
7 both from the very beginnings of that program in
8 presenting testimony before Congress and overseeing
9 what goes along with this kind of law for the last
10 four years, in assisting citizens, local public
11 health officials, state officials, with interpreting
12 problems and situations which involve exposure to
13 toxicology, being chemicals.
14 For example, we officially advised the
15 State of Vermont, the State of New York, the State
16 of Maryland, Pennsylvania, New Jersey and California
17 on specific incidents of human exposure and advice
18 on how to study these and what kind of decision to
19 reach in terms of preventing further exposure.
20 Q. What kinds of exposures are you talking about
21 in these various cases in these states?
22 A. Most of these exposures are not occupational,
23 and that is, they are usually at a much lower level,
24 much more subtle. They occur in connection, for
25 example, in communities that are involved in dump-

1 sites, Superfund sites around the country.
2 Q. What kind of substances are involved that are
3 identified as toxic in these incidents?
4 A. There are over 150 chemicals which have been
5 found in many of these sites. They range from
6 metals, solvents, chlorinated hydrocarbons, dioxin,
7 PCB's, ethanol. A whole range of very toxic and
8 dangerous chemicals.
9 Q. Now, is this your full time job at this time,
10 as Chief toxic scientist for the Environmental
11 Defense Fund?
12 A. No. Upon invitation of the Chief of the
13 Reproductive Toxicology Section at the National
14 Institutes of Health, I also serve as a guest
15 scientist in that section.
16 Q. What is a guest scientist?
17 A. A guest scientist at NIH is basically a
18 scientist who has all the rights and
19 responsibilities of a staff scientist, but is not
20 being paid by the Government.
21 Q. Well, what are the rights of a staff scientist?
22 A. To initiate and conduct original research, to
23 have access to the resources and support of the
24 institution conducting that research, to have access
25 to the facilities, such as the library and the

1 central statistical services and other types of
2 support services of NIH.
3 Q. What use do you make of your guest scientist
4 status with the National Institutes of Health?
5 A. I have been involved directly in bench research
6 on a variety of toxic substances, including dioxin,
7 the effects on reproduction. I participated in
8 presentation and writing of scientific articles with
9 colleagues there.
10 Q. I don't know whether I have asked you this or
11 not, but what is the National Institutes of Health?
12 A. The National Institutes of Health is the
13 Federal laboratory in biomedical sciences. It is
14 part of the Public Health Service in the Department
15 of Health and Human Services. It constitutes about
16 20 buildings in Bethesda, Maryland, and about 12,000
17 scientists in the biomedical areas.
18 Q. And that's part of the United States Government;
19 is that right?
20 A. That's right.
21 Q. And it is funded by the United States
22 Government?
23 A. Yes, it is.
24 Q. And you were invited to be a guest scientist?
25 A. That's right.

1 Q. How does one get invited to be a guest
2 scientist?
3 A. I'm not really sure. In my case, I was
4 contacted by the Chief have the section and asked if
5 I would join his research team because he knew of my
6 work on a variety of substances.
7 Q. I see that you have a number of other
8 professional appointments. I want to ask you about
9 some of those. The first one I see is you were a
10 consultant for the NSF Energy Program, 1974 to 1975.
11 What is the NSF Energy Program?
12 A. At that time the U.S. Government was very
13 concerned about diminishing supply of oil and was
14 looking into alternate new technologies of producing
15 energy, such as shale oil, coal gasification, many,
16 many projects which took place in West Virginia and
17 elsewhere. And there was a concern that this new
18 technology might generate toxic substances, and I
19 was a consultant specifically in an area of
20 assessing the potential toxicity of these new
21 technologies.
22 Q. And how did you receive this appointment? Did
23 you apply for it?
24 A. No. I was contacted by the National Science
25 Foundation.

1 Q. And what is the National Science Foundation?
2 A. It is a Federal agency which sponsors research
3 in all branches of science.
4 Q. Is it likewise a part of the United States
5 Government?
6 A. Yes, it is.
7 Q. And is funded by the United States Government?
8 A. Yes, it is.
9 Q. I see that between the years 1975 and 1980, you
10 were a member of the Nutrition Foundation, National
11 Committee on Food Additives and Hyperkanesis.
12 A. Yes.
13 Q. What was the National Committee on Food
14 Additives and Hyperkanesis?
15 A. Starting in about 1973, there was a hypothesis
16 proposed in this country that certain food additives,
17 notably the synthetic artificial food additives,
18 sweeteners, flavors, colors, might be provoking
19 behavior disorders in children. This is the
20 so-called Feingold Hypothesis, by Dr. Benard Goldberg,
21 which was in pediatricians, in attempting to help
22 these children who have these behavior disorders.
23 The Nutrition Foundation, which is an
24 industry supported private foundation brought
25 together a number of national recognized scientists

1 in the area of behavioral toxicology and nutrition
2 to look at the evidence for this particular
3 hypothesis and to make recommendations both to
4 pediatricians and for the food industry about what
5 to do if indeed these substances were neuroactive.
6 That is, they did affect the nervous system.
7 Q. And how is it that your training qualified you
8 to look at this problem?
9 A. As a neurotoxicologist, and one with specific
10 expertise in the area of behavioral toxicology.
11 Q. From 1977 to 1981 you were appointed as a
12 member of the US DHEW FDA Committee to coordinate
13 toxicology and related programs. First of of all,
14 what is the US DHEW FDA Committee
15 A. That's what's known as the Department of Health
16 and Human Services. It used to be known as the
17 Department of Health, Education and Welfare. This
18 is the committee I described earlier which provide
19 basic oversight of programs both clinical and
20 research which related to toxicology in those two
21 departments. That's the committee, for example,
22 which developed, ran, critically evaluated, made
23 recommendations about the PBB study in Michigan.
24 Q. Now, what did you call it, PBB?
25 A. Polybrominated biphenyls.

1 Q. And what was that problem about?
2 A. That was the contamination of animal feed which
3 led to the contamination of milk, meat and chickens.
4 Q. And how is it that you were appointed to this
5 committee?
6 A. I believe I was nominated by the directory of
7 the National Institutes of Health and then appointed
8 by the Secretary of HEW.
9 Q. What kind of work did you perform as a member
10 of this committee?
11 A. We reviewed ongoing research programs,
12 regulatory programs, particularly for the FDA, and
13 in a particular study, primarily clinical, on the
14 effects of toxic substances in human health.
15 Q. Were any papers produced as a result of this?
16 A. A number of guideline papers for the U.S.
17 Government, yes.
18 Q. And what use, if any, did the United States
19 Government make of the work that you performed?
20 A. It had a substantial impact on the funding of
21 basic research, and on recommendations within
22 agencies as to what kinds of toxicology they should
23 be doing.
24 Q. I see in 1977 and 1978, you were a member of
25 the US delegation of the joint U.S.-USSR Health

1 Agreement on Environmental Health. First of all,
2 how did you get that appointment, and secondly, what
3 was that about?
4 A. I was appointed to that by the director of the
5 National Toxicology Program who is authorized by the
6 Secretary of State to run this particular agreement.
7 The United States and the Soviet Union, from time to
8 time, signs specific exchange agreements to exchange
9 scientific or medical information. And at that time
10 we had an active agreement with the Russians to
11 exchange information on matters relating to
12 environmental health.
13 Q. Were you acting as a representative of the
14 United States at that time?
15 A. Yes, I was.
16 Q. And what, if anything, came out of your work
17 there?
18 A. Well, we made several trips to the Soviet Union
19 to investigate research projects ongoing there, and
20 we also hosted Soviet scientists when they came over
21 to the United States on reciprocal visits, and we
22 published some reports on the status of
23 environmental research in the Soviet Union.
24 Q. And were these reports, do you know if the
25 United States made use of these reports in any way?

1 A. Yes. They were extremely important because in
2 many cases the Soviet Union has very, very low
3 occupational and environmental standards. It is a
4 very open question as to whether they actually
5 enforce those standards. But their standards are
6 much lower than ours, and it was of great concern to
7 find out why they had set these standards so low.
8 Was there really sound epidemiologic or sound
9 scientific basis for this, and if so, should we
10 reexamine our own standards.
11 Q. With an eye toward lowering other standards?
12 A. Yes.
13 Q. Were any conclusions reached?
14 A. Yes, the report made on the work Russians were
15 doing on solvent exposure, which were human
16 experiments, and indeed the kind of experiments we
17 probably wouldn't do in this country for ethical
18 reasons, did indeed leave a major impact on the
19 Occupational Safety and Health Administration in
20 causing them to lower American standards.
21 Q. I see in 1978 you were appointed as a member of
22 the Society for Neuroscience Committee on Social
23 Issues. What was that about?
24 A. The President of the Society for Neuroscience,
25 which is a professional scientific committee I

1 belong to, asked me to join this committee which was
2 in power to look at any issue, scientific issue out
3 of the field of neuroscience, very broadly speaking,
4 which had kind of social or political implications.
5 For example, the use of monkeys in research. There
6 are many people that are quite concerned about the
7 way in which animals are being used in scientific
8 research. This is of great concern to
9 neuroscientists because of the kinds of experiments
10 we frequently do. And it is extremely important,
11 for instance, to avoid inflicting pain on animals
12 that are used. And this committee developed a
13 standard for this society on that subject.
14 Q. I see in 1982 you were appointed a member of
15 the OECD chemicals program, ad hoc expert review
16 committees on reproductive toxicity and
17 neurotoxicity. What was that about?
18 A. The OECD is the organization for Economic
19 Cooperation and Development. That's the largest
20 international training group that this country
21 belongs to, and basically includes all of the major
22 industrial countries of the free world. The
23 chemicals program is part of that group's and it is
24 designed to look at the export and import of
25 chemicals between countries in OECD.

1 We certainly, many of those countries,
2 have enacted laws regulating toxic chemicals, and
3 this committee was developed to establish test
4 guidelines for demonstrating whether or not a
5 chemical has toxicity on reproductive system or on
6 the nervous system. I was appointed by the
7 administrator of the Environmental Protection Agency
8 to be one of our Country's experts of a group of
9 three of our country's experts on these committees
10 to develop these guidelines.
11 Q. So on this membership you were one of three
12 persons representing the United States on this
13 committee; is that right?
14 A. That's right.
15 Q. What were some of the substances that you were
16 looking at?
17 A. We were not really looking at specific
18 substances in this work. What we were trying to do
19 was develop a testing system which companies,
20 countries, anyone who was concerned, could apply to
21 any chemical and find out whether or not it was
22 reasonably safe and should be allowed in the trade
23 to enter the country based on considerations of
24 reproductive or nervous system toxicity. The OECD
25 has developed a list of about 46 tests which were

1 applied to chemicals which countries trade among
2 each other, and these are two of these sets of tests.
3 Q. And was that the result of your work, a couple
4 of tests were developed and adopted?
5 A. I think we recommended a total of about six
6 tests. Now, the tests for neurotoxicity was
7 specifically designed to pick up the
8 organophosphate chemicals, that is chemicals like
9 parathion.
10 Q. That may be obvious, but generally tell the
11 Jury what use now is made of the work that you did
12 for the OECD.
13 A. These tests are now required for all companies,
14 such as Monsanto, who want to ship chemicals between
15 one country which is a member of OECD and another.
16 For example, if Monsanto wanted to sell chlorinated
17 phenols to Germany, they would have to provide
18 certification that these chemicals had been tested
19 with these thions. Otherwise, the German Government
20 could, if it wished, prevent that chemical from
21 entering Germany. So these are very serious
22 economic considerations for this country.
23 Q. I see in 1983, that you were a member of an
24 U.S. delegation to OECD expert meetings on existing
25 chemicals. Is that the same organization, OECD,

1 that you just talked about?
2 A. That's right. This chemicals group has now
3 developed a new project which is to look at the very
4 difficult issue of what to do about existing
5 chemicals. We were starting to get something of a
6 handle on how to test new chemicals so we can have
7 some assurance that we won't be creating new dioxins
8 of the future, we hope. But we have thousands of
9 chemicals that are in existence now, and very little
10 information on many of them.
11 Q. And you were appointed by who to be a member on
12 this particular delegation?
13 A. The administrator of the EPA.
14 Q. And has any work product come out of this
15 particular membership?
16 A. No. We are in the process of developing a
17 final report.
18 Q. I see in 1983, you were appointed as a member
19 to the Hazardous Waste Task Force and Hazardous
20 Waste Facilities Siting Board, State of Maryland.
21 How did you get that appointment and what is that
22 all about?
23 A. That appointment was made by the Governor of
24 Maryland, Harold Hughes, and is a state board and
25 task force looking into the problem of hazardous

1 waste in Maryland. The first part of this duty, the
2 task force duty, related to developing an overall
3 policy for the state in terms of how it was going to
4 manage hazardous waste that was generated by
5 industry in Maryland. And the second part was a
6 siting board, that is a board of people that would
7 certify that an existing site, landfill or an
8 incinerator met the requirements of the state and
9 could operate.
10 Q. How does your training as a toxicologist fit
11 into this membership on this particular board for
12 the State of Maryland?
13 A. Well, essentially the definition of a hazardous
14 waste depends upon its toxic effects, and the way in
15 which you have to handle the hazardous waste depend
16 highly upon its chemical nature, its persistence in
17 the environment and the safety with which it can be
18 handled.
19 Q. And was that the role that you played on that
20 particular committee?
21 A. Yes. I was the expert toxicologist for the
22 siting Board, the sole toxicologist.
23 Q. And at that particular time were you concerned
24 with any particular chemical or group of substances?
25 A. There was some concern about dioxin and 2,4,5-T

1 contamination in Maryland because of, I think, a no
2 longer existent FMC plant in Baltimore which had
3 been making 2,4,5-T. But most of our concerns were
4 with metals and solvents from ongoing industry, such
5 as Bethlehem Steel.
6 Q. In 1982 you were appointed a member of the
7 Governor's Blue Ribbon Panel a Binghamtom, New York,
8 State Office Building. What was that panel?
9 A. Well, that was in response to a real crisis
10 which developed in the State of New York after the
11 State Office Building in Binghamtom caught on fire.
12 In the process of that fire, some very large
13 transforme in the basement of the building which
14 contained PCB's, polychlorinated biphenols, also
15 caught on fire.
16 As a consequence of the fire, the PCB's
17 and the chlorinated benzenes which were inside the
18 transformers were converted into dioxins and furans.
19 They contaminated much of the building and a lot of
20 the environment. The building was shut down, it is
21 still shut, and there has been an exhaustive and an
22 incredible effort by the State to clean up the
23 building so that it is fit for use.
24 In response to a great deal of public and
25 scientific concern, the Governor of the State

1 appointed panel of experts to examine the full
2 implications of the event, the toxicologic concerns
3 and to develop standards for reentry. That is, to
4 determine when, if ever, that building could be
5 reopened. The main chemicals of concern were, of
6 course, the dioxins and furans.
7 Q. And again, if you would explain to the Jury how
8 it is your particular field of expertise fit into
9 the overall make up of the Blue Ribbon Panel on the
10 Binghamtom matter.
11 A. It was my expertise in toxicology as well as in
12 the specific area of toxicology known as risk
13 assessment. That is, the determination of the
14 potential health effects of exposure to toxic
15 substances based in large part on experimental
16 research and animal studies.
17 Q. And the risk that you were accessing at the
18 Binghamtom problem was what?
19 A. Primarily reproductive -- primarily the risk of
20 reproductive effects and cancer.
21 Q. And would that be in connection with any
22 specific work force or any particular population
23 that might have been exposed there?
24 A. Well, there were three groups of people. The
25 first group were the fire fighters and policemen who

1 went into that building while it was on fire and
2 immediately afterwards.
3 The second group were the workers who
4 were in the area and who went in afterwards to get
5 their possessions before the building was completely
6 sealed.
7 And this third group was the clean up
8 group who is in there right now trying to clean up
9 the building.
10 One of our duties, for example, is to
11 oversee the medical program which monitors these
12 workers, and make certain that no one is getting
13 undue exposure and that all kinds of measures are
14 taken to reduce or prevent any exposure to these men
15 while they are inside the building.
16 Q. Well, what kinds of things are being done to
17 protect these workers from exposure?
18 A. Essentially the building is sealed off now and
19 the air goes through several filter systems to go
20 into the building and out again. The filters are
21 changed very regularly. Anyone who works in that
22 building has to wear at least two, and frequently
23 three layers of protective gear with a completely
24 enclosed rebreathing apparatus. That is like a
25 scuba diver. Not just a filter over the mouth but

1 air supplied on a pack or through tubes from an
2 outside area.
3 In addition, all clothing is changed when
4 you enter the building, when you come out, and there
5 is a shower facility right there, and there is a
6 very elaborate system of locks and other ways to get
7 into that building.
8 Q. And all of this just because some dioxin was
9 released during a fire?
10 A. All of this because of concentrations of dioxin
11 in the air and amounts parts per trillion and parts
12 per quadrillion levels, yes.
13 Q. And in connection with your work on the
14 Governor's panel, did you determine or did you learn
15 what the levels of dioxin were in that building?
16 A. Yes. There has been very extensive sampling in
17 that building.
18 Q. And what levels were there?
19 A. It ranged, of course, from a relatively order
20 of parts per billion in the air immediately after
21 the fire, down to, the present time, under parts per
22 trillion, but still in excess of the guidelines
23 which we have established as being acceptable, not
24 safe, but acceptable for people to reenter that
25 building just for a workday basis.

1 Q. How does a part per trillion relate to one part
2 per million? Can you quantify that for the Jury
3 somehow?
4 A. A part per trillion is one millionth of a part
5 per million.
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1 BY MR. CALWELL:
2 Q. It's considered smaller?
3 A. Very much smaller.
4 Q. Now, I see in 1984 you were appointed a member
5 of the Center for Disease Control, New York State
6 Panel, on Love Canal. Now, first of all, what is
7 the Center for Disease Control?
8 A. The Center for Disease Control is part of the
9 Public Health Service, it's a federal agency. And
10 it's charged with examining environmental and public
11 health issues. They were, for example, the group
12 that went into Missouri and ordered the evacuation
13 of people from Times Beach.
14 Q. You were appointed I guess to be a member of
15 the New York State Panel on Love Canal. What was
16 that about?
17 A. That's essentially an issue very similar to the
18 Binghamton State Office Building. Love Canal is the
19 site of the first and still one of probably the most
20 famous or most infamous example of hazardous waste
21 escaping from an improper hazardous waste site by
22 Hooker Chemical of dioxins and other halogenated
23 hydrocarbons, insecticides, a whole range of toxic
24 substances have come out of the canal into people's
25 homes.

1 The question which is now before this panel is
2 can people ever move back to Love Canal, can we ever
3 call it habitable, and if so, what are our standards
4 for making that decision, because we are
5 accumulating at a kind of alarming rate a number of
6 places in this country where people have moved out
7 because their homes and neighborhoods are no longer
8 safe for them to live.
9 Q. And so the inquiry here is whether or not those
10 places will ever become safe again?
11 A. That's right.
12 Q. Can you explain to the jury how it is
13 that your specific field of toxicology would fit
14 into that scheme of things, why they would need an
15 expert toxicologist for that consideration?
16 A. The decision as to whether a place is safe or
17 acceptable for people to live in, to work in, or to
18 even to pass through is based primarily on potential
19 for -- the potential for toxic effects to result
20 from exposure to such substances. It's a very real
21 issue. For example, some scientists in the State of
22 New York just published a paper last week whether as
23 they took soil from Love Canal, ordinary dirt, and
24 fed it to some mice in a laboratory, and the mice
25 all came down with liver disease. Certainly you

1 wouldn't want your children or family, pregnant wife,
2 to live in such place. That is a very real concern.
3 Q. And how long have you been on this panel?
4 A. This panel has been in operation about three
5 months.
6 Q. How did you get appointed to that panel?
7 A. By the Director for the Center for
8 Environmental Health, which is part of the CDC,
9 Center for Disease Control.
10 Q. So in a sense you are representing the United
11 States Government on that job also?
12 A. Advising the United States Government and the
13 government of the State of New York.
14 THE COURT: Mr. Calwell, when you finish
15 the service on that particular item, we will break
16 for lunch.
17 MR. CALWELL: In fact, your Honor, that's
18 the last question on that particular item.
19 THE COURT: Ladies and gentlemen, we will
20 be in recess now for I think until 1:45. Let me ask
21 counsel whether or not there is anything that needs
22 to be taken up with you before you resume this
23 afternoon?
24 MR. CALWELL: Yes, there is a couple of
25 very brief matters that the court should pass on

1 that will affect the testimony.

2 THE COURT: Would you want to return at

3 1:30? Is that adequate time?

4 MR. CALWELL: Yes, that will be fine,

5 your Honor.

6 THE COURT: All right. Counsel return at

7 1:30 and we will resume, ladies and gentlemen, at

8 1:45.

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10 Thereupon, the luncheon recess

11 was taken at 12:15 o'clock p.m.

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1 ERRATA SHEET

2 I, BARBARA A. STEINKE, official court reporter for the
3 United States District Court, Southern District of West
4 Virginia, at Charleston, hereby certify that I have reviewed
5 the transcript prepared during the trial by Waga & Spinelli,
6 court reporters, and do hereby make the following corrections
7 to said transcript in the case of JAMES R. BOGGESS, et al.
8 v. MONSANTO COMPANY, dated July 17, 1984, Volume 19:
9
10 Page/Line
11 4581/4 insert "(The jury was not present)"
12 4581/14 "MR. LOVE:" to "Mr. Love,"
13 4586/1 "by" to "of"
14 4586/5 "Court" to "parties"
15 4589/2 "basically. Shortly" to "basically, shortly"
16 4591/3 delete "work" after "order"
17 4595/16 "witnesses depositions to be" to "witness'
18 depositions that's been"
19 4599/25 delete "in in" before "Congress"
20 4603/17 insert "A." at left-hand margin.
21 4614/22 "compentence" to "competence"
22 4615/1 "lasts" to "last"
23 4616/14 "cmparison" to "comparison"
24 4616/15 delete "any"
25 4616/18 "about" to "by"

1 4618/19 delete "you"

2 4619/3 "in Nitro" to "from Nitro"

3 4619/5 "already" to "be ready in"

4 4622/10 "prefrence" to "preference"

5 4622/16 "hygience" to "hygiene"

6 4624/8 delete "with" before "within"

7 4628/8 "Hand being" to "Handing"

8 4628/21 "extend" to "extended"

9 4630/20 "that he" to "what he"

10 4635/8 delete "Fraser, new"

11 4635/9 delete total of line 9

12 4636/19 "urinatin" to "urination"

13 4639/3 "world" to "word"

14 4645/19 "We need the documents" to "I would note that I

15 appreciate you going through those documents"

16 4645/20 insert "cut down what was really" after "we have"

17 4646/9 "welcome to" to "well if we could"

18 4651/22 "almost eminant" to "all the most eminent"

19 4652/15 "more" to "nor"

20 4658/8 "would go" to "working"

21 4660/21 "NINDS" to "NINCDS"

22 4660/24 insert "and Stroke" after "Disorders"

23 4663/1 "Rats, I believe" to "Perhaps I'm mistaken"

24 4664/20 "the part" to "being part"

25 4666/15 "in toxicology indicated" to "to intoxicating"

1 4667/22 "upon," to "to be"

2 4669/8 insert "on how to write this law" after "Congress"

3 4669/9 "goes along" to "went on"

4 4669/9 "this kind of law" to "the conduct of this law"

5 4669/13 "toxicology, being" to "toxic"

6 4672/4 "have the" to "of the"

7 4673/11 "Hyperkanesis" to "Hyperkinesis"

8 4673/14 "Hyperkanesis" to "Hyperkinesis"

9 4673/20 "Benard Goldberg" to "Ben Feingold"

10 4673/21 "which was in" to "and he went on to develop a diet whic

11 4673/21 insert "and parents have used" after "pediatricians"

12 4675/6 "directory" to "director"

13 4677/11 "other" to "our"

14 4680/19 "thions" to "guidelines"

15 4683/13 "transforme" to "transformers"

16 4684/17 "accessing" to "assessing"

17 4686/19 insert "high levels on the" before "order"

18 4689/22 "whether" to "where"

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21

22

23 11/17/94 Barbara A Steinke

24 Date Barbara A. Steinke, RPR, CM

25