UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

NEVADA POWER COMPANY, a Nevada Corporation, Plaintiff, vs. MONSANTO COMPANY, a foreign corporation; GENERAL ELECTRIC COMPANY, a foreign corporation; WESTINGHOUSE ELECTRIC CORPORATION, a foreign corporation; and DOES I-XXV, inclusive, Defendants.	CASE NO. CV-S-89-555-LDG (LRL)

DEPOSITION OF JAMES SPARKS NELSON, TAKEN BEFORE LEE ANN BIANCUCCI, R.P.R., A NOTARY PUBLIC IN THE STATE OF CONNECTICUT, PURSUANT TO NOTICE AND THE FEDERAL RULES OF CIVIL PROCEDURE, AT THE OFFICE OF BRANDON REPORTING SERVICE, 11-A CAPITOL AVENUE, HARTFORD, CONNECTICUT, ON JANUARY 25, 1993, AT 3:30 P.M.

Lee Ann Biancucci, R.P.R.
Brandon Reporting Service
11-A Capitol Avenue
Hartford, Connecticut 06106
(203) 549-1850

APPEARANCES:

For the Plaintiff:

RALPH A. BRADLEY, ESQ.
Jones, Jones, Close & Brown, Chartered
700 Bank of America Plaza
300 South Fourth Street, Suite 700
Las Vegas, Nevada 89101

DAVID S. McCREA, ESQ.
McCrea & McCrea
119 South Walnut Street
Bloomington, Indiana 47402

For the Defendant, Monsanto Company:

BRUCE FEATHERSTONE, ESQ.
Kirkland & Ellis
1999 Broadway, Suite 4000
Denver, Colorado 80202

For the Defendant, General Electric Company:

DAVID C. KIERNAN, ESQ.
JOSEPH G. PETROSINELLI, ESQ.
Williams & Connolly
725 Twelfth Street, N.W.
Washington, D.C. 20005

For the Defendant, Westinghouse Electric Corporation:

ROBERT J. TATE, ESQ.
27 Wellington Drive
Pittsburgh, Pennsylvania 15229

I N D E X

PLAINTIFF NELSON DEPOSITION EXHIBIT

(For Identification)

(Reporter's Note: Exhibit attached to original transcript)

(Deposition commenced at 3:30 p.m.)

JAMES SPARKS NELSON, Deponent, of 13 Fenway Road, Branford, Connecticut 06405, having first been duly sworn by Lee Ann Biancucci, R.P.R., a Notary Public in the state of Connecticut, was deposed, and stated as follows:

DIRECT EXAMINATION BY MR. McCREA

Q (By Mr. McCrea) Mr. Nelson, my name is David McCrea. I am from Bloomington, Indiana and I will be asking you questions this afternoon. If you do not understand the question, please advise me. If there is an objection to my question by your attorney, there are essentially three options at that point. I can withdraw the question, your attorney can instruct you not to answer, or you can simply inform me that you don't understand the question. But try to listen to the question and then retain your recollection of the question through the objections so you can eventually answer it.

What is your age?

A Seventy-two.
Q You have given us your residential address, but would you state it for the record again, please?
A Thirteen Fenway Road, Branford, Connecticut.
Q Are you retired?
A I am.
Q When did you retire?
A Eleven years ago.
Q What is your phone number at your residence?
A 481-8000.
Q Did you work for General Electric?
A I did.
Q Can you describe for us your education beyond high school?
A Bachelor of Science in engineering from Emory University in Atlanta, Georgia.
Q What type of engineering?
A My degree was engineering without modification; however, I majored in electrical and electronic engineering.
Q When did you start working for General Electric?
A In the spring of 1942.
Q You retired, sir, in what year?
A January 1st, 1982.
Q Who was your supervisor or should I say to whom did

you report at General Electric in 1969?
A J.F. McAllister.
Q What was his position with General Electric in 1969?
A He was a manager, product safety, for the corporate executive staff.
Q For what period of time had General Electric had a product safety manager before 1969?
A Well, whatever positions have that title in various operating plants perhaps, I don't know, they would have been at different dates. There was -- Did I say product safety? It was product quality was the proper title for McAllister. Is that what I said?
Q I am not sure. I thought you said product safety?
A Could I have that read back?
MR. FEATHERSTONE: He did say product safety if that helps out at all.
A I would like to correct that. McAllister's title was not product safety. It was product quality, and he had product safety specialists working under him.
Q (By Mr. McCrea) Where was Mr. McAllister's office located?
A It was in New York City.
Q Who were the product specialists -- product safety

specialists who worked under Mr. McAllister in 1969?

A Don Marquis; M-A-R-Q-U-I-S, and myself.

Q Where is Mr. Marquis at this date?

A I don't know.

Q What was his title in 1969?

A Consultant, product safety.

Q What was your title in 1969?

A I believe it was the same.

Q What education and training did you have in addition to your degree in engineering that related to product safety?

A My preparation for that position was a variety of experience in engineering and administrative positions. It was no formal course that specifically prepared me for that position.

Q Did you attend seminars through the years before 1969 which discussed product safety?

A I don't think so.

Q Did you conduct seminars before 1969 that concerned product safety?

A I don't think so.

Q What products did you oversee in 1969 with regard to safety?

A I have a little difficulty with the form of that

question.

Q Can you generally describe for us your range of duties in 1969?

A Yes. I was a consultant for product safety. It was my job to assist operating components in meeting their responsibilities for product safety, and this was done in a number of ways. Basically, we assured ourselves through an annual reporting framework that they had in place, the managerial tools necessary to do a good job in that area, and we also put them in touch with experts as appropriate or as needed to supplement their own resources in handling particular safety problems as they arose.

Q Were outside consultants employed by General Electric in the area of product safety?

A I can't answer that question. It's possible that individual departments did so from time to time.

Q Did you focus on the safety of workers employed by General Electric?

A No. That was beyond my scope.

Q Did you focus on the safety of individuals who purchased General Electric's products?

A No.

Q What was the focus?

A The focus was on the safety of the products themselves as used by their purchasers, consumers, and by the -- and by means of ultimate disposition, what happens when you throw them away, but when you say purchasers, I think of purchasing agents. There was no focus like that.

Q You have given a good explanation.

A Okay.

Q Did you design labels?

A No.

Q Did you formulate warnings?

A No.

Q Did you have any participation regarding communications to purchasers of your products?

A We are still speaking 1969?

Q Yes, sir.

A I would say in general, no.

Q Were those responsibilities undertaken by General Electric specifically to communicate information and warnings to purchasers of General Electric's products?

A Again, I have trouble with the breadth of that question because we had hundreds of operating components, each with their own responsibilities and product situations, and what was appropriate

for one in one set of circumstances would not be applicable to another, so when you say what did General Electric do, General Electric ran a multitude of business with responsible management for each one. That's the only thing I can say.

Q When did General Electric first use material safety data sheets for chemical products which it sold?

A May I ask a question?

Q Yes, sir.

A What do you mean by chemical products?

Q Any product that is manufactured by General Electric using constituent ingredients purchased from other sources.

A I don't know when material data sheets were first instituted.

Q Do you recall when you first became knowledgeable about material safety data sheets?

A Probably -- No, I can't recall when I did. No.

Q Did you ever participate in the preparation of a material safety data sheet?

A No.

Q Did you ever read a material safety data sheet while at General Electric?

A Yes.

Q You don't recall the specific first date?

A No, I am sorry.
Q Did you have a filing system in your office in 1969?
A Yes.
Q Where was your office located, what building, room number in 1969?
A It was in the -- Let's see. It was in Schenectady, New York in the building that formerly housed the radio station. I can't think of the name of it. It's the first building you come to upon entering the Schenectady plant. It's on your right.
Q When did you first learn about polychlorinated biphenyls or PCBs?
A Probably sometime before the date you are inquiring about.
Q How did you learn about PCBs?
A Well, for several years I worked in the capacitor department in Hudson Falls, New York.
Q What years did you work in the capacitor department at Hudson Falls?
A Let me think. That would have been about 1963, I think, or '4, along in there.
Q Describe your work in 1963 or 1964 in Hudson Falls as it related to PCBs?
A Well, I was manager of product planning and

marketing research, and it was my job to try to take care of the wants and needs of customers with technical developments coming out of our engineering section and this involved, in some cases, in the case of polymer capacitors a new dielectric system and it's in dealing with customer specifications, and specifications is too precise a word but interpreting customers' needs and comparing them with our technological strengths, it was in this light that I gained some familiarity with the various dielectric systems including PCB. Some capacitors didn't use any dielectric liquids at all but PCBs was one of the things that came into my purview in the course of that job.

Q Where did General Electric purchase PCBs in 1963?

A Monsanto.

Q What did you understand the toxicity of PCBs to be in respect to human beings in 1963?

A The LD50 as disclosed in our material data sheets was such as to indicate a low degree of toxicity.

Q Earlier you stated you were unfamiliar with material safety data sheets in 1969 as I recall your testimony?

A No, I did not say that. Excuse me. I said I could not recall when I first became familiar with

material safety data sheets.

Q So you were familiar with material safety data sheets in 1963 when you started your work at Hudson Falls?

A I am not sure I can confirm that. It seems reasonable, but I could have learned about the LD50 from various sources, but it's reasonable to suppose I did it by looking at a material safety data sheet. I certainly had a volume of these things in my office.

Q LD50 stands for what?

A The dose at which half the rats will die I think is the way I understand it.

Q What was your understanding of the dose that would result in the death of test animals in 1963, particularly rats?

A I understand it was high enough as to indicate a low degree of toxicity to mammalians. I couldn't tell you a number.

Q What was the source of your data for the LD50 to rats in 1963?

A I didn't have any such source. I gave you my understanding of what the LD50 means which is the question you asked me.

Q Where did that number come from?

A It came from the data sheet and from the literature from Monsanto, the description of their product.
Q You don't recall the specific numbers?
A No.
Q What else did you understand about the toxicity of PCBs in 1963?
A Well, I used to walk through the factory frequently where PCBs were in use, and the -- it was apparent that conditions were such as to provide general exposure of the work force -- of a large portion of the work force to PCBs and yet I observed no worry about that, no fear of it. This was in addition to the technical knowledge I had, this may be not daily but certainly frequent observation of people happily doing their work with soldering irons dipping into it and, you know, generally treating it as a material that didn't represent danger to them.
Q That was something which you observed?
A Uh-huh.
Q Did you have occasions to take purchasers through the plant who were interested in buying your apparatus?
A No.
Q Did purchasers tour the plant?

A I don't know.
Q You observed workers going about their work without worry?
A Uh-huh.
Q And working with PCBs?
A Yes.
Q And you described a process involving a soldering iron. Can you give us more detail about that, please?
A The last step in sealing a capacitor was to solder the terminal in place, the fill hole, to close it up at the end of treatment.
Q Did this involve the use of solder?
A Yes.
Q Did it involve heat?
A Yes.
Q Did it generate smoke?
A Not visibly.
Q Describe what exposure you observed about the worker? Were there fumes?
A I saw no fumes.
Q Was there an odor?
A Well, that's a little difficult to answer. Some people claim that PCBs are odorless. I think I can smell them.

Q Did you in fact smell them when you toured the plant and observed --
A I think so, yes.
Q Did General Electric submerge capacitors in ovens to impregnate the equipment?
A That depends on the product line involved.
Q Particularly the product line involving PCBs or pyranol?
A It depends again on the size and rating of the capacitor. There are different manufacturing processes for use for different ones.
Q Describe the warnings which General Electric issued to its workers in 1963?
A I can't do that.
Q Describe the protective clothing that the individuals doing the soldering wore?
A That's beyond my province.
Q Did you see him? Did you see the person doing the soldering?
A Well, yes, but I saw -- I don't recall noticing any protective clothing. You understand that's not my area of responsibility. Do you?
Q Whose area of responsibility would it be to address the issue of protective clothing?
A It would be the plant safety people.

Q But you observed no protective clothing?
A I am not -- I have no recall of observing any protective clothing. Be careful how you phrase it.
Q Identify the plant by its name, building number, location, where capacitors were filled with PCB oil by General Electric?
A There are two such plants, one at Hudson Falls, New York and one at Fort Edward, New York, a few miles apart.
Q Are those plants in existence today?
A I don't know.
MR. KIERNAN: If you know.
A I don't know.
Q (By Mr. Bradley) Did they have a building number? Did the plant at Hudson Falls which manufactured --
A The whole plant was devoted to that purpose, so I don't know what significance building numbers would have.
Q Did you keep files on PCBs?
A Not in that petition in Hudson Falls.
Q In 1969, did you keep files on PCBs?
A Yes.
Q Where were those files kept?
A In the office file cabinets.
Q Who organized the office file cabinets where the

PCB information was kept?
A My secretary under my direction.
Q Describe the filing system as it existed which was maintained by your secretary in 1969?
A I am afraid I can't at this date.
Q What categories of information did you file?
MR. FEATHERSTONE: We are talking about 1969?
MR. McCREA: Nineteen sixty-nine.
A Well, probably in 1969 there wasn't even a file that was specifically set aside for PCB information. Of course not enough evidence had come in at that date. I can only -- I can't tell you after all these years what the names of individuals of file folders were. Suffice it to say that I knew how to retrieve it when I needed it.
Q (By Mr. McCrea) When did you start your filing system for PCBs?
A I am not sure I ever had one by that name.
Q When did you begin filing documents that related to PCBs?
A I would say probably 1969.
Q When did you last file documents that related to PCBs?

A Late in 1981.
Q Where were those files located in 1981?
A In General Electric headquarters.
Q What is the name of the building, General Electric headquarters? What's the name of the building?
A It's General Electric Company.
Q What's the address?
A Fairfield, Connecticut.
Q What was the room number?
A I don't know.
Q What was the department?
A Product quality staff.
Q Who had access to the files in 1981 besides yourself that related to PCBs?
A No one. Virtually no one.
Q What volume of files did you have?
A Several file folders, I would guess.
Q Give us an estimate as to the number of pages or the length of the file or the number of drawers as best you can that existed in 1981?
A I can't think of a meaningful way to do that because the subject matter included reports of conferences and things of that sort. One report might be that thick (indicating).
Q You are indicating two or three inches?

A Yes. And -- What --
Q Did you have a file drawer full? Did you hav
file drawers? Did you have six cabinets? Giv
an idea.
A Let's say a file drawer.
Q Did you have an index for those files?
A We had -- Yes, we maintained a list of files so
that I could mark a letter on the file number so
and so and my secretary could put it there without
worrying where it belongs.
Q Where are the files today?
A I don't know.
Q Where would the index be today?
A It probably doesn't exist.
Q In 1969, did you prepare a document entitled, "PCB:
An Industry Problem?"?
A Yes, I did.
Q Who assisted you in the preparation of that
document?
A I obtained information from a number of sources,
but I had no assistance for the preparation of the
document itself.
Q Did you have a file associated with the source
material you obtained?
A Probably not.

Q Have you been deposed before regarding the document you prepared entitled, "PCB: An Industry Problem?"?
A Yes.
Q In what cases have you been deposed about that document?
A Perhaps my lawyers would care to answer that.
MR. KIERNAN: I don't know.
A I think it came up -- I don't know. I don't know really. I have been deposed before, but I don't know whether that document was in this case or that case, Pierce Packing.
Q (By Mr. McCrea) When was the Pierce Packing case filed?
A Eighty-two.
Q Were you deposed in the case entitled, "Independent Life Insurance Company versus General Electric"?
A I believe I was.
Q Do you recall when you were deposed in that case?
A No.
Q How many depositions have you given which have focused on PCBs?
A Three.
Q Do you have copies of those depositions at your residence?
A I have copies of two of them at my residence.

MR. McCREA: We would ask counsel that those be provided to you and then provide it to us.

MR. KIERNAN: Submit a request to me formally, and we will take it under consideration.

Q (By Mr. McCrea) Did you review those depositions before this deposition?

A I read through them last night, yes.

Q Sir, did you review the document, "PCB: An Industry Problem?" before this deposition?

A Yes.

Q What other documents did you review in addition to the two depositions and the document you authored entitled, "PCB: An Industry Problem?"?

A I can't think of anything of significance.

Q Were you asked to review those documents by the attorney for General Electric?

A No.

Q You did that on your own volition?

A I did that because I had been asked to come here to give a deposition, and I wanted to refresh my memory.

Q In addition to those two depositions and the document, you don't recall any other materials

which you read to refresh your memory?

A The question pertains to my recall, and I have to say no.

Q Let me hand you an exhibit and ask if you can identify it, and we need to have the court reporter mark it.

(Plaintiff Nelson Deposition Exhibit 1: Marked for Identification)

Q (By Mr. McCrea) Mr. Nelson, the court reporter has marked an exhibit and I believe it states Nelson 1; is that correct?

A Correct.

Q Take you time, review the exhibit and I will ask you if you can identify it.

(Pause)

Q At the lower right-hand corner it has Bates number 200383 and that number goes through to the last page which is 200389. Mr. Nelson, can you identify the exhibit?

A Yes.

Q Did you author the exhibit?

A Yes.

Q Does the exhibit have your name on page 6 at the

end, J.S. Nelson?
A Yes.
Q Dated October 30, 1969; correct?
A Correct.
Q Does it consist of six pages?
MR. FEATHERSTONE: No.
A Including the index, I believe it's seven pages.
Q (By Mr. McCrea) I stand corrected. Does it consist of seven pages?
A Yes.
Q This document is titled, "PCB: An Industry Problem?". Would you define "industry" for us?
A The term was chosen here to suggest that if there is a problem, it may involve more than one manufacturer. It may involve a whole industry, and the industry here would be the electrical manufacturing industry.
Q Does the word, "industry" include any other business entities, other than the manufacturing industry?
MR. KIERNAN: You are asking him at the time he drafted this report what he was -- what was in his mind in terms of the use of the word "industry"?
MR. McCREA: Correct.

MR. KIERNAN: If you know.

A Would you kindly repeat the question?

Q (By Mr. McCrea) Does "industry" incorporate any other business entities, other than the manufacturing segment?

A Logically it incorporates the whole electrical industry, but there is nothing specifically said in this document about -- Well, there is some -- It's electrical industry and by implication, all who are affected would include our suppliers and customers.

Q To whom was this document distributed?

A I don't know. I don't remember. I can tell you that as a minimum it went to my immediate superior, Mr. McAllister.

Q Who requested that you author this document?

A It was self-generated.

Q Was this document filed in your PCB file?

A I don't know. I don't know if I had a PCB file. I am not trying to be cute. I just don't know.

Q There is nothing on this document to indicate that it is a proprietary document. Do you know if in fact this was proprietary within General Electric on the date you authored it which is October 30, 1969?

A As far as I know, it was not considered proprietary

because the purpose of it was to stimulate inquiry to find out if there is an industry problem here, and the more knowledgeable responsible people that we could bring into the picture, the quicker we might begin to find some answers.

Q Did you generate documents on the subject of PCBs that were proprietary to General Electric?

A I have done so. Whether they are proprietary, I think -- Well, let me think about that. I don't know of -- Most of my output was in the form of communications and communications are not usually proprietary; they are usually designed to be the opposite, they are designed to communicate.

Q Do you recall if in fact you generated documents that were proprietary which addressed the subject of PCBs while employed at General Electric?

A Do you mean in the sense of containing information that we would not like our competitors to have or technically proprietary or what?

Q Information that you desired to keep confidential within General Electric?

A I don't believe so. I don't think of any.

Q You have the first cover sheet as an outline; correct?

A Yes.

Q You have six categories. The first category is Origin of Current Concern - Ecological Effects. What was the origin of the current concern?

A As stated in this paper, there appeared in 1969 reviews in Scientific American and then the San Francisco Examiner, about some scientific investigation made by a Dr. Risebrough of the University of California and that article stated that residues of pesticides and polychlorinated biphenyls were threatening the welfare of certain birds.

Q Did you -- Do you recall an individuals named Soren Jensen, first name spelled S-O-R-E-N, last name, J-E-N-S-E-N, a Swedish scientist?

A Yes, I have heard of him.

Q Did you read any reports of this Swedish scientist on the subject of PCBs?

A I can't recall whether I read any of his original articles or merely read reviews of them, but I know that he was writing on that subject.

Q What do you mean by ecological effects, this would be a concern with material entering the food chain, perhaps affecting the balance of nature? Directing your attention to page 1 which at the top, the first heading, "Origin of Current Concern -

Ecological Effects," in that first paragraph, you reference Dr. Robert Risebrough on line 3. Do you see that, sir?

A Yes.

Q Did you talk with Dr. Risebrough at the time you prepared this document?

A No, I didn't.

Q And that paragraph makes reference to a February 1969 West Coast newspaper article; correct?

A Yes, it does.

Q In that article there is reference to PCB, "Posed long-term threat to humans." Can you give us your understanding of what that meant?

A No.

Q In the first subparagraph or what we could perhaps refer to as the second paragraph on page 1, there is what you term a synopsis; is that correct?

A You state "The following is Nature's synopsis of Dr. Risebrough's paper"?

A Nature is a British magazine.

Q And the statement is made, "Polychlorinated biphenyls are widely dispersed in the global ecosystem and are powerful inducers of hepatic enzymes which degrade estradiol," and I am sure I didn't pronounce that right, e-s-t-r-a-d-i-o-l.

Did you research what that statement meant?
A This is a synopsis of Dr. Risebrough's paper and I know that in a general way what is meant by the statement made that hepatic enzymes are liver enzymes, and I have read discussions by those versed in this science which say that while there is some hepatic enzyme induction, there were no clinical effects observed.
Q Sir, what does this statement mean, "Powerful inducers of hepatic enzymes which degrade estradiol"?
A I don't know.
Q You didn't follow up on that one?
A I don't know. I don't recall what estradiol is.
Q The next sentence in this synopsis states, "Together with other chlorinated biocides," what is a chlorinated biocide?
A It would be a material that's chlorinated and that is capable of killing biological organisms.
Q Did you follow up on that one at all --
MR. FEATHERSTONE: I object.
Q (By Mr. McCrea) -- to determine what the reference was there, the specific chemicals?
A Well, --
MR. KIERNAN: Can you restate your

question? What is your question?

A I don't understand the question. What I am reporting here is the words of a magazine that reviewed Dr. Risebrough's paper. Now, are you asking me what Nature meant or what Risebrough meant, or what are you asking me?

Q (By Mr. McCrea) I am asking you what that is, chlorinated biocides, and you perhaps have answered it. My follow-up question --

A DDT.

Q Any others?

A I am sure there are others, but I am not knowledgeable in that area.

Q In the fourth and fifth sentences it make reference to "aberration in calcium metabolism." Can you explain what that means?

MR. FEATHERSTONE: I will object to the form of the question.

MR. KIERNAN: Again, Mr. McCrea, the document speaks for itself. It's obviously a quote of a quote. You are asking the witness for his understanding?

MR. McCREA: Right. What does aberration and calcium metabolism mean?

A What it meant and -- I am going to apologize, I am

not a scientist, but what it meant is birds were found to be producing eggs with very thin shells and the egg shell made of calcium. There is a calcium metabolism problem here.

Q (By Mr. McCrea) I notice you have a number of footnotes and those run from footnotes one, two, three and four on page 1, five and six on page 2, seven and eight on page 4. Do you have those documents to this day?

A No.

Q Are they in the possession of General Electric?

A I don't know.

Q In preparation for two previous depositions and in preparation for this deposition, have you made any inquiries of General Electric to see if those documents are on file?

A No.

Q And the third paragraph beginning, "These excerpts are representative of press coverage," in the second sentence, reference is made they were first identified in European birds by Swedish scientists. Do you know the date that that occurred?

A I don't believe the article stated -- This was a Gainesville, Florida, Sun of April 25th, and I don't know if they reported any information beyond

what is quoted here.

Q In the next paragraph, it states, "A team of University of California and Cornell University scientists has determined that PCBs are five times more powerful than DDT in hormone-destroying activity." Can you explain to us what that means?

A I can explain to you my purpose in quoting it.

Q All right, sir, do it.

A Well, these articles and reports were quoted with the purpose of calling attention to the developing concern that there could possibly be a problem with PCBs, and so I made no attempt to evaluate or understand in any depth what these people were saying. I am just putting them out as an exhibit, here is what people are saying, the idea being it would behoove us to look into this and see what is going on and what, if anything, needs to be done about it and that's the purpose for this paper, and that's the reason they were quoted.

Q In that same paragraph you state that PCBs "have been found in the milk of nursing mothers in Colorado and in marine life off California." Do you know the documentation on that finding that PCBs were in the milk of nursing mothers in Colorado?

MR. FEATHERSTONE: I object to the form of the question. He didn't say that, Mr. McCrea. As I read --

MR. McCREA: He --

MR. FEATHERSTONE: In this document you say --

MR. McCREA: You quote an excerpt. You're correct. This is not his statement. This is an excerpt that he is presenting to Mr. McAllister and others. My question, sir, --

A All this says to me is that someone is alleging this to be the case and if that's so, let's get on and find out if there is a problem.

Q (By Mr. McCrea) What research did General Electric undertake, if you know, with regard to that allegation that PCBs were found in the milk of nursing mothers in Colorado?

A I don't know.

MR. KIERNAN: Is your question specifically with regard to that specific issue, or is it with regard --

MR. McCREA: That specific issue.

A I am not aware of research that may or may not have been done into the question of nursing mothers.

Q (By Mr. McCrea) The next paragraph which you excerpt from the Gainesville, Florida, Sun, April 25, 1969, states that, "In vapor form these chemicals are highly toxic." Was that the position of General Electric?

A That was a statement made by a reporter of the Gainesville, Florida, Sun and I believe him to be in error here but, of course, "highly" is a somewhat subjective term. I don't think that adds a lot of significance to the statement that's in there. It does not represent a statement of General Electric. It's a statement of the Gainesville, Florida, Sun.

Q Then in that same paragraph, it states, "Monsanto Company spokesmen say only their scientists and sales executives are studying the problem." What communications did you have with Monsanto, if any, after you prepared this document on October 30, 1969 to determine the focus of their research?

A We had -- We have seen quite a bit of the results of Monsanto's research over the years into these questions of -- I have read a number of their technical papers on this subject, specifically about the time they are looking at here, 1969. Monsanto wrote to GE expressing a concern that, a

feeling perhaps, I should say, expressing a feeling on the part of Monsanto that they should know more about how much PCB might be getting into the environment, how much -- They know how much is used because they are the only producer but how much is incinerated, how much is carried to landfills, and questions of that sort. They are saying they would like to get their arms around this problem and know the fate of -- the ultimate fate of these materials better than they knew it at the time.

Q Did you pick up the phone and call Monsanto at about the time you did this paper or shortly after?

A I don't recall.

Q Did you correspond with Monsanto?

A I have had correspondence with Monsanto at various times on questions relating to PCBs, yes. I think -- I couldn't produce 20 years later chapter and verse.

Q With whom did you correspond?

A A number of different individuals.

Q Do you know their names?

A I think possibly I would name Papa George Wheeler, Phocion, P-H-O-C-I-O-N, Parks, but I am not sure whether he had any correspondence. I think probably not. And there were probably one or two

others, but those are some of the people whose names remain in my active file so to speak.

Q What was your purpose in communicating with Mr. Papa George?

A On what occasion?

Q On the subject of PCBs. What year, if you can --

MR. FEATHERSTONE: I will object to the foundation of the question. You haven't established what year, what conversations, whether they only had one purpose when they dealt with that before.

Q (By Mr. McCrea) What was your purpose in communication with Mr. Papa George about communicating about PCBs?

A I don't want to give you a trivial answer. We did direct Monsanto at one time to find out, this is an example, we wanted to find out to whom in General Electric they had shipped pyranol or PCBs at different times because we had no centralized record of that subject and they complied with that request. They told us where we had shipped it and I guess that was mentioned in this memorandum of how much material we used in -- That's a sample of the type of things I talked to them about.

Q Did you talk with Mr. Papa George --

A Excuse me. You are saying Papa George. I am not sure he is the one that gave me this material, but he is one point of contact that I know about.
Q You wrote Monsanto letters; correct, you corresponded with Monsanto?
A Yes.
Q Monsanto corresponded with you?
A Yes.
Q Where are those letters?
A I don't know -- I don't know if my files have been retained since I retired or not, so I can't answer that question.
Q When is the last time that you saw that correspondence?
A The last time I worked for G.E. was January 1st, 1982.
Q You haven't seen it since then?
A Certainly not in Monsanto's end of it.
Q Have you seen your end of it?
A Yes.
Q When?
A I have copies.
Q At your home?
A At my home.
Q How many documents do you have at your home?

A Just my letter books.
Q What is a letter book?
A A letter book is a redundant filing system, and it's for the convenience of the author of the letter to find quickly in a chronological basis a letter that he may have written on any subject, whatever.
Q How many letter books do you have at your home?
A One covering each year of my employment going back quite a number of years.
Q Are those in what type of binding, a three-ring binder?
A Yes.
Q What do they have on the outside?
A The year for which the letters were accumulated.

MR. McCREA: Counsel, we will be filing a request for that information as it relates to PCBs.

(Recess from 4:35 to 4:45 p.m.)

Q (By Mr. McCrea) Mr. Nelson, category 2 on page 1 is titled, "Toxicity, Fire and Other Health Hazards." In this section of your document, you make reference to the cautionary notes which GE

used for a long period of time regarding pyranol. Then on page 2 you described those precautionary notes. Is that a fair statement?

A Yes.

Q On page 2, you state, "Transformer pyranol can be handled in the same manner as mineral oil." Can you describe for us the toxicity of mineral oil as you understood it when you wrote this document?

MR. KIERNAN: Again, so the record is clear, the document contains a quote and as before, it's clear from the context of the document that it refers to a quote from company literature.

Q (By Mr. McCrea) I agree. Can you describe the toxicity of mineral oil as you understood it?

A I don't have any in-depth understanding of the toxicity of mineral oil.

Q Is that a precautionary note that was prepared by General Electric in which it is stated, "Transformer pyranol can be handled in the same manner as mineral oil," was that prepared by General Electric?

A Yes.

Q Did General Electric intend purchasers of pyranol to rely on that statement?

A If this was part of an instruction sheet that accompanied communications to customers regarding replacing pyranol, renewing it or drying the transformer, that sort of thing, it was intended as a communication to users of pyranol transformers, yes.

Q When you make reference to mineral oil, did General Electric at the same time that it manufactured and sold transformers which contained pyranol also manufacture and sell transformers which contained mineral oil?

A Yes. The ratio is something like 95 or 98 to one, the bulk of them being pyranol transformers. The transformers were used primarily in those locations where there was concern about possible fires so you would find a pyranol transformer in the basement of an office building, for example, or on the roof of it, whereas putting a mineral oil transformer in that same location would involve a degree of hazard, maybe not very great but greater than that of pyranol.

Q When General Electric stated, "Transformer pyranol can be handled in the same manner as mineral oil," is that referring to the individuals who would have occasion to make repairs of the transformers and

individuals who might have occasions to drain the oil from a transformer?

A That's my impression. I think the wording is to relate the subject to the experience of the typical electric utility or industrial customer transformer man, who is accustomed to handling mineral oil because that's what most of the transformers are, and so this was to let him know that he is not moving into unfamiliar terrain here. He can continue the good practices shown to work for mineral oil while he is using pyranol. That's what that means to me. I didn't write it. I am only quoting it.

Q The next sentence states that, "Although continued exposure to liquid pyranol may produce local skin irritation, cleanliness among workmen constitutes an adequate safeguard against such effects." Can you describe any other risks from the exposure to liquid pyranol on the skin, other than skin irritation that you knew existed in 1969?

A No, not then or later.

Q You also state, "As with most volatile materials, exposure to concentrated pyranol vapors in unventilated rooms should be avoided". Do you know what General Electric meant by an "unventilated

room"?

A I think they had no special meaning for it. A building where -- a room where there was not enough airflow to limit the concentration of the vapors.

Q What were your understandings of the effects -- health effects to be avoided by this particular statement that, "As with most volatile materials, exposure to concentrated pyranol vapors in unventilated rooms should be avoided"? What were the consequences?

A I am not a medical scientist, and I have no basis to elaborate on that statement. I was merely quoting it here for the purpose of scene setting, setting the stage for an understanding of this subject.

Q There is also a caution, "Hydrogen chloride gas is formed when pyranol is decomposed by an electrical arc." Do you know the significance of that?

A Yes.

Q What is that?

A Hydrogen chloride gas combined with water to form hydrochloric acid which is not a pleasant substance to have around so that's why this caution note appeared there. That's my understanding of it.

Q What about hydrogen chloride acid by itself without

being combined with water?

A Why do you ask that?

Q Just because I don't see any reference there to water.

A What I had in my mind when I said water was that the moisture in your lungs or in your eyes could make it unpleasant and very irritating if you were exposed to that gas.

Q Then the next paragraph makes reference to, "An inquiry received by Mr. John J. Ferry"; F-E-R-R-Y. Who is Mr. Ferry?

A At that time, he was a specialist in environmental health engineering in Schenectady.

Q What was his education on this date, 1969 or before?

A I don't know.

Q Is he still living?

A I don't know.

Q He made a communication to Ford Motor Company; is that correct? By he, I mean Mr. Ferry.

A Not precisely. He caused them to receive an answer, but he had the answer sent to them by the medium transformer department that's stated in this document incidentally.

Q That is incorporated by you as footnote 5; is that

correct?

A Yes.

Q Who is Mr. F.J. McCann; M-c-C-a-n-n?

A I don't know. He is a person who answered this letter.

Q He wasn't a General Electric employee?

A Yes, he is so identified here. Medium transformer department.

Q You don't know who that gentleman was or if he is still working for General Electric today?

A No, I am sorry.

Q Mr. McCann wrote a letter to Ford and you took excerpts from that letter and incorporated it into your document; is that correct?

A Yes. That's essentially correct.

Q The excerpts you incorporated include the material, pyranol, A50P524. What is that?

A That's the designation from General Electric's material identification system.

Q Is that the pyranol which was used in transformers manufactured by General Electric in 1969?

A Yes, some of them.

Q And it states the components to be trichlorobiphenyl, 80 percent. What is trichlorobiphenyl?

A That is a pyranol, a PCB with three chlorines in the molecule.
Q The second component is trichlorobenzene, 14.5 percent. What is trichlorobenzene?
A It's a chlorinated benzene, that's all I know.
Q The third component is tetrachlorobenzene. What is that?
A It's another chlorinated benzene with four chlorines instead of two or three.
Q The fourth component is diepoxide; d-i-e-p-o-x-i-d-e, scavenger, 0.125 percent. What is that?
A That is a chemical that is put in there to absorb or somehow clean up trace elements of contaminants that might have been in the fluid. It's a stabilizer, it stabilizes the dielectric. I can't tell you how it works because I am not a chemist, but I know that's why it's in there.
Q You have excerpted the material and the components. Then the third excerpt from Mr. McCann's letter is toxicity. Define, if you will, the word, "toxicity"?
A Toxicity means poisonous.
Q It says, "Ingestion - highly toxic"; is that correct?

MR. KIERNAN: Is that what the document says, is that what you are asking him?

MR. McCREA: Yes.

MR. KIERNAN: The document speaks for itself.

MR. McCREA: It has to get on the record.

MR. KIERNAN: Ask him if that's what the document states.

MR. McCREA: Let me take advice of counsel.

Q (By Mr. McCrea) Is that what the document states under "Toxicity: Ingestion - highly toxic?

A Yes, it does.

Q What data did Mr. McCann use to arrive at that information?

MR. FEATHERSTONE: Calls for speculation.

A I don't know.

Q (By Mr. McCrea) Did you discuss the letter which you incorporated into page 2 of your document with Mr. McCann or anyone else?

A No.

Q Next under "Toxicity," Mr. McCann states "Inhalation - moderate." What data, facts or

evidence were relied upon by General Electric, if you know, to make that communication to Ford Motor Company?

A I don't know.

MR. FEATHERSTONE: Calls for speculation.

Q (By Mr. McCrea) The third category under "Toxicity" is "Respiratory tract - moderate." What data, facts or evidence were relied on by General Electric to make that communication to Ford Motor Company?

A I don't know.

Q Underneath that listing of information, you have a threshold limit value, 0.5 to 1 mg/cubic meter. Can you explain what that means?

MR. KIERNAN: Again so the record is clear, you say "you have."

MR. McCREA: General Electric.

MR. KIERNAN: This document is obviously quoting a letter that was sent. The quote was not drafted by Mr. Nelson and when you ask the question that way, you seem to cast a different spin on it.

MR. McCREA: Right.

Q (By Mr. McCrea) You excerpt from the letter of

F.J. McCann to R.G. Anderson, Ford Motor Company, dated February 5, 1969 --

MR. FEATHERSTONE: I am going to throw in an objection. Everybody is misquoting it. The document says it was extracted. If that means quoted, it doesn't say that and if that means excerpted, it doesn't say it. It says extracted.

MR. KIERNAN: Thank you.

MR. McCREA: This is going to be a long evening.

Q (By Mr. McCrea) In the information below, it says, "Estimated threshold limit value, 0.5 to 1 mg/cubic meter as extracted from the letter of F.J. McCann, General Electric, to R.G. Anderson, Ford Motor Company, dated February 5, 1969." What does that mean?

A The estimated threshold limit value, which is sometimes abbreviated TLV, is another measure of toxicity, and the number means something to a person versed in that science, but I don't any longer remember the definition of TLV so I can't put a gloss on that.

Q Can you help us out with the milligram, what that is so a jury can understand it?

A It's a thousandth of a gram.
Q How many grams are there in an ounce?
A I don't know.
Q Approximately 30?
A I don't remember.
Q Then you have a category, "What products might be formed in the event of fire or abnormal temperature" as again extracted from the letter of Mr. McCann. You make reference to HCL and CO2, hydrochloric -- Help me out. What's HCL?
A Hydrogen chloride and carbon dioxide.
Q On down on the bottom of that page there is the statement, "Some people have sensitivity to pyranol such that their skin erupts in a rash upon exposure." Is that an extraction from the letter of Mr. McCann, or is that your own communication?
A I am sorry. I no longer remember.
Q Then it states, "When discovered in the factory, they are transferred to other lines of work and their symptoms disappear."
A I believe that is my own statement and no longer an extraction from the McCann letter.
Q Do you have any independent recollection of how this discovery took place?
MR. FEATHERSTONE: Which discovery?

Q (By Mr. McCrea) Discovery in the factory, that is, people with sensitivity to pyranol?
A This says when such condition is discovered, this could be reported by the individual and he could complain to his foreman, "Look, I have a rash on my arm."
Q Did the people at General Electric inform their workers in 1969 that some of them could be sensitive to pyranol and could get a rash and if they do, they should report it to the nurse?
A I don't know.
Q Did General Electric employ a dermatologist and have one on call at the plant?
A At what plant?
Q The plants that used pyranol.
A They had a medical doctor, but I don't know if they had a dermatologist. I guess I should say I don't know.
Q The next statement which appears on page 3 as the first complete paragraph states, "The broad class of materials we are dealing with here, polycyclic"; p-o-l-y-c-y-c-l-i-c, "aromatics contains known or suspected carcinogens." What is a carcinogen?
A A carcinogen is a subject I believe to promote the formation of cancers.

Q What is a known carcinogen?
A It's one that has ample documentation for its property of forming cancers as distinguished fro one that's merely thought of as a possibility.
Q When did you as the author of this document dated October 30, 1969 obtain the information about the known carcinogens in the broad class of materials we are dealing with here, polycyclic aromatics?
A I don't recall.
Q What are polycyclic aromatics? Let me ask this. Would that include back to page 2 trichlorobiphenyl?
A Yes, that would be one.
Q Would it include trichlorobenzene?
A I don't know. I am sorry. I am not a chemist. I am quoting some scientific friend of mine here in using this phrase.
Q Who provided that information to you about the known or suspected carcinogens in this broad class of materials?
A I can't say. I don't know whether it was from a paper I read at the time or whether it was from talking with one of our own in-house scientists. It could have been either one.
Q The next statement says, "This aspect has been

considered in the industrial hygiene or medical review of operations in at least one plant." What do you mean "this aspect"?

A The fact that this broad class of materials contains some carcinogens leads to the worry that perhaps PCBs as a member of that class could be themselves carcinogens so that the study of employees exposed to PCBs included a search for any abnormal incidents of a number of cancer cases.

Q Which plant are you referring to on page 3, paragraph 1?

A So far as I recall, it must have been a capacitor plant in Hudson Falls or Fort Edward.

Q Do you recall the industrial hygienist who undertook that particular effort?

A No.

Q Do you recall any medical personnel who undertook that particular effort?

A I don't.

Q The next category is category 3, "General Electric Usage, in this paragraph, you make reference to EMPIS. What does that stand for?

A Engineering Materials Properties Information Sheets.

Q You state there are seven different formulations of

pyranol. Can you help us with that? What does that mean? You have seven different combinations of components in the PCB -- in the pyranol -- excuse me?

MR. FEATHERSTONE: May I hear the question back, please?

MR. McCREA: Let me restate it if I can.

Q (By Mr. McCrea) It says there are seven different formulations of pyranol. Are you referring to seven different combinations of components?

A Well, pyranol is a GE trade name for an askarel fluid. Now, various pyranols were made with different Aroclors purchased from Monsanto Company, and then they would be blended with various diluents or constituents depending upon the properties needed for a particular application. That's why we only list three Aroclor numbers but seven pyranol numbers. Have I made myself clear?

Q Yes. The second to the last line of that first paragraph under section 3 makes reference to MTD. Does that stand for medium transformer department?

A It does.

Q Do I understand that they actually sold pyranol independently of the apparatus to customers?

A Yes. That's my understanding.

Q Did you ever visit any of your customers' transformer repair shops where they would have a failed transformer and bring it in for repair?
A No.
Q Did General Electric repair failed transformers from the field?
A I don't know.
Q The next paragraph is a list of departments assumed to be using pyranol and you have nine listed; is that correct?
A Yes.
Q The last one is service shops. Where were the service shops located?
A Various parts of the country.
Q What was the purpose of the service shop?
A To provide repair service for customers.
Q Did you visit any of these shops?
A I visited one, but I have forgotten why. I think it was not in connection with a transformer problem.
Q The third department listed is wire and cable department. What did they do in the wire and cable department at General Electric?
A They made some liquid-filled cables for high-voltage application, underground I think, and

that's -- You notice I put that with a question mark. I was speculating that they might be involved.

Q Was there some thought that pyranol may have been used in the wire and cable casing?

A Yes, that was the reason for listing them, but I don't know whether that was the case or not.

Q The next paragraph states, "Total usage has not been ascertained. The transformer departments have in recent years cut their relative use of pyranol, limiting it to cases where the non-flammability property is very important, such as indoor applications."

When did General Electric, as you state here, cut their relative use of pyranol, limiting it to cases where non-flammability is important?

A The latter part of the 1960's.

Q Can you be more precise?

A No.

Q Who made the decision at General Electric to limit or rather to cut the use of pyranol?

MR. KIERNAN: At what point in time are you asking?

MR. McCREA: At the time they did it here in the late sixties or whatever his

answer was.

Q (By Mr. McCrea) Who made that decision?

A The management of respective departments.

Q Who provided input to the managements of various departments which led to that decision?

A Their own people.

Q What data was provided to the management personnel which led to that decision?

A Are you calling for me to speculate on this?

Q No, sir.

A I will say no.

Q That's the perfect answer. If you don't know, you don't know.

How did this information come to you when you incorporated this into your document?

A I called somebody in the transformer department and asked them.

Q Do you recall who that was?

A No.

Q In parentheses, you state, "They are using aliphatic" a-l-i-p-h-a-t-i-c, "hydrocarbons, especially 10-C." What is 10-C?

A On my own copy I struck it out because it was an error. It's gone on my copy. 10-C is an industry designation for a mineral oil, hydrocarbon oil and

it is commonly used for the bulk of transformers.
Q Management made a decision to cut the use of pyranol and replace it with mineral oil?
MR. KIERNAN: Objection. That's not what the witness testified to.
A No. May I?
Q (By Mr. McCrea) Sure.
A What I see here is a market trend could have been influenced by economic considerations for whatever. Bear in mind that pyranol costs several times as much as mineral oil and --
MR. KIERNAN: You are speculating; aren't you?
A No.
Q (By Mr. McCrea) When you say it's an economic trend, you don't know if it was an economic trend; do you?
A What I am saying is that I see -- I was endeavoring to report here no case of where management made a decision, let's cut back on pyranol. This is simply, this is what happened. As the sixties moved into the seventies, it turns out that less pyranol was being used for reasons that I don't know.
Q You don't know if it was because of economic

reasons, i.e. pyranol costing more, you don't know that? It could be.

A No.

Q At the General Electric plant, Building Number 12 in Pittsfield, Massachusetts where they make what we will call pyranol transformers, did they use PCB as a heat transfer fluid to assist in drying out the phases?

A I don't know.

Q Do you understand what a heat transfer fluid is?

A I know that the role of -- The PCB and the transformer is an important part to transfer heat from the core to the outside through the cooling tubes and fins, but whether they use it in some manufacturing process, that's something completely foreign to my knowledge.

Q We can't overlap each other or she can't type it.

My question is, in the manufacturing of transformers by General Electric in Building 12 at Pittsfield or where ever else they were manufactured, was there a phase in the manufacture where the components were heated so as to eliminate all moisture?

A I think I am not knowledgeable enough in transformer manufacturing to answer such questions.

Q When you state that, "As a result of this trend, the power transformer department at Pittsfield uses pyranol in only about 5 percent of its units," you don't have any data for previous years?
A No.
Q Page 4, section 4, titled, "Disposal Practices," what was the source of your information for this section in your document?
A It had to be someone at Hudson Falls in the management of the capacitor department.
Q Do you know his name or her name?
A No, I don't recall at this date who I talked to.
Q You state that, "The industrial and power capacitor department purchases approximately 10 million pounds per year, of which 9 million pounds are accounted for." That information was given to you --

MR. FEATHERSTONE: Wait a minute. It says "-- are accounted for in terms of products shipped." Finish the sentence.

Q (By Mr. McCrea) "-- are accounted for in terms of products shipped." That information was provided to you by someone at Hudson Falls?
A Yes.
Q Then you describe what happens to the million

pounds that is not accounted for; correct?
A There is no million pounds not accounted for. There is a million pounds not accounted for in terms of product shipped.
Q I stand corrected. You explain what happens to the million pounds that wasn't shipped out, 200,000 pounds went back to Monsanto; correct?
A Yes.
Q Do you know when General Electric started shipping its PCBs back to Monsanto?
A No.
Q Are there any records or data that you know of that would document that fact?
A No.
Q Who at General Electric when you last worked there would be in the best position to document that particular information?
A Well, I would think the general manager of the components concerned could get you that answer, but I can't give you the name of any individual. I have been out of there eleven years.
Q Second paragraph, you state, "Badly contaminated material hauled away by a New Jersey scavenger (recommended by Monsanto)." Can you tell us who the New Jersey scavenger was that hauled away

800,000 pounds of PCBs?

A No.

Q Do you know who provided you the information?

A The same answer as before.

Q And you don't know who at Monsanto recommended this scavenger?

A No.

Q Can you help us out a little bit as to whether or not this scavenger paid for this material, or was it given to him so he could get valuable metals out of it? What is your knowledge today regarding the process that took place?

A I am sorry. I don't know.

Q If we had to locate that New Jersey scavenger, who would be in the best position to help us out on that?

A I would think Monsanto, they recommended the firm.

Q Well, you might be surprised. They might say it's somebody at General Electric. If we had to locate him, who would we go to?

MR. FEATHERSTONE: Do I need to object to that statement, Mr. McCrea, or is it going to be attorney colloquy on the record because if it's part of your question, I'm going to object to it.

MR. McCREA: I want to know how w
locate that person.
MR. KIERNAN: If you know.
A I don't know how you can locate him. I think I have already said that.
Q (By Mr. McCrea) You don't know the location where he operated, the New Jersey scavenger?
A Not beyond what's stated in New Jersey somewhere.
Q Do you know what the New Jersey scavenger did with the contaminated material?
A I don't.
Q Did it ever come up in any discussions at General Electric after 1969?
A Not in my presence.
Q Did General Electric ever express concern that there was 800,000 pounds that went to this scavenger in about the year 1969 and that might possibly be contaminating the environment?
MR. KIERNAN: Mr. McCrea, you are asking -- the question is if General Electric expressed any concern to Mr. Nelson?
MR. McCREA: Yes, sir.
A I think the answer is self-evident. This whole document is an expression of concern about PCBs.
Q (By Mr. McCrea) Just so I have an answer to my

question, after 1969 when you wrote this document, did anybody at General Electric ever express any concern about this 800,000 pounds of PCB getting out into the environment?

MR. KIERNAN: Objection. It doesn't say "getting out into the environment," Mr. McCrea. The document speaks for itself.

Q (By Mr. McCrea) Now you have to remember the question.

MR. KIERNAN: Do you want to ask a proper question, or do you want to try to put words in the document that are not already there? Let him ask a proper question. This is going pretty far afield and if you have a proper question, ask it.

MR. McCREA: That might not be a proper question, but I am going to ask it.

MR. KIERNAN: I am going to instruct him not to answer. It's not in the document.

MR. McCREA: If you are instructing him not to answer that question, I would like the court reporter to separately certify it to the U.S. District Court to get a ruling as to whether or not Mr. Nelson needs to answer the question.

MR. KIERNAN: That's fine, Mr. McCrea. If you want to ask a proper question, go ahead and ask it.

MR. McCREA: The judge may rule it's an improper question.

(Pause)

MR. McCREA: I am going --

MR. KIERNAN: Mr. McCrea, so the record is clear, what you are attempting to do is insert words into the witness' answer into the document that are not there. That's what I am objecting to. If you want to ask a proper question, you can. He is not required to accept your phraseology of "out into the environment."

MR. McCREA: I said, "Did they ever express concern."

MR. KIERNAN: Go ahead and ask your question again.

Q (By Mr. McCrea) Did anybody at General Electric after you authored this document ever express concern to you that some of this 800,000 pounds of PCB given to a New Jersey scavenger as contaminated material might be getting out into the environment?

MR. KIERNAN: Is your question limited

to PCB releases in general or just to this 800,000 pounds referred to in this one document for this year from this one plant? Is that what you are asking the witness?

MR. McCREA: The question is limited to the 800,000 pounds.

MR. KIERNAN: That's already identified as having been hauled away by a New Jersey scavenger. This is a 1969 document.

MR. McCREA: That is correct.

MR. KIERNAN: Your question is limited specifically to this 800,000 pounds?

MR. McCREA: That is correct. That's a lot of PCB.

MR. KIERNAN: Your characterizations are unnecessary. Please ask your question of the witness and if he knows, he will answer.

MR. McCREA: Do I need to ask it a third time?

MR. KIERNAN: You need to ask a proper question. You have mangled it three times.

MR. FEATHERSTONE: Some of us would like to go home tonight.

(Off the record conference)

(The last question was read by the court reporter)

MR. KIERNAN: With the same objections, Mr. Nelson, if you can answer it, go ahead.

A I would say that this was a small part of a broad question. Here we have some waste products that are turned over to the recommended scavenger, and it was certainly my hope that this document would generate a more pervasive and encompassing response than to start digging test wells around this scavenger's location. In other words, this was one piece of information among others in this document designed to stimulate interest in PCB and to make sure that they received appropriate managerial attention on the part of GE Company. That's why I wrote it. I didn't have a large audience. I didn't have people coming to me expressing outrageous pieces of it. The document served its purpose as the whole record shows of getting GE fired up on this subject, getting some activity, okay?

Q (By Mr. McCrea) That's a very detailed explanation. Unfortunately, it doesn't answer my

question. My question is, did anybody express concern to you about this quantity of PCBs escaping into the environment?

MR. KIERNAN: Objection. Escaping into the environment, Mr. McCrea? Where do you find that characterization in the record?

MR. McCREA: That it might possibly focus on somebody's attention that they have got a problem.

MR. KIERNAN: For the record, for the fifth time, it says "badly contaminated material hauled away by New Jersey scavenger, (recommended by Monsanto)." You may have your opinions as to what happened. I don't think anybody knows whether or not that material was effectively disposed of, incinerated, safely contained or whatever. You want to put a different spin on it and that's what I am objecting to. I think you are wasting time at this point.

MR. McCREA: I agree with you; nobody might agree as to what happened to it. That's why I am asking the question.

MR. KIERNAN: Ask a proper question, sir.

MR. McCREA: We will certify the question. You are instructing him not to answer?

MR. KIERNAN: I am not instructing him not to answer. I am telling you to ask a proper question.

Q (By Mr. McCrea) The question is, for perhaps the sixth time, did anybody at General Electric express concern to you that this quantity of PCB contaminated material consisting of 800,000 pounds might be getting out into and contaminating the environment?

A Any such expression of concern would be superfluous in that what this letter is doing is calling attention to this million pounds a year, so I think it's structuring an artificial hypothetical situation to think if somebody coming to me and saying, "What about this 800,000 pounds."

Q I want to know if they said that?

A Not that I remember.

Q Thank you.

A I hope we fixed that.

Q Continuing on, "Contained in scrapped small industrial units disposed in town dump, where daily burial is thought to be the practice, total waste

and scrap, approximately 60,000 pounds." Where is that town dump?

A I am not sure whether it's in Fort Edward or Hudson Falls but somewhere up there near the plants.

Q Was this information about the disposal practices in the year preceding 1969 i.e. 1968, or do you recall?

A I doubt if it was prepared with enough accuracy that you could tell whether it was 1968 or 1969. It's an informed estimate, an informed breakdown of what happens to the material.

Q Continuing on, you state, "At various times in the past, other disposal methods have been used, including sale to a manufacturer of insecticide." Who was the manufacturer of insecticide to whom General Electric sold its waste PCBs?

A I don't know.

Q When did General Electric sell its waste PCBs to a manufacturer of insecticide?

A I don't know.

Q What was the purpose of the manufacturer of insecticide buying PCBs?

MR. KIERNAN: Objection.

Q (By Mr. McCrea) If you know.

MR. KIERNAN: He is asking you if you

know the state of mind of the manufacturer the insecticide identified on page 4?

A He is asking if I know the technical reason, the purpose?

Q (By Mr. McCrea) Technical purpose?

A Just a good vehicle for carrying insecticide to its application.

Q How is it that PCBs are a good vehicle for carrying an insecticide for application?

A It has to do with physical properties like viscosity.

Q Explain to us the physical properties that make PCBs a good carrier for an insecticide?

A I am afraid I don't know. I know historically there were some sales of that sort. I presume they were a good carrier; otherwise, they wouldn't have been bought for that purpose.

Q If we --

MR. FEATHERSTONE: I move to strike the previous testimony as speculation.

Q (By Mr. McCrea) If we needed to locate that manufacturer of the insecticide who purchased waste PCBs from General Electric, who would we contact at General Electric to get that information?

A I don't know.

Q You don't recall the source of that information?
A No.
Q Do you know the amount of PCBs that was sold to the manufacturer of insecticide?
A No. Only what's stated here.
Q You go on to state, "At least one representative of the Monsanto Company was recommending its use, alone or in combination with mineral oils, as a road spray to allay dust"; is that correct?
A Yes. That's what's stated.
Q How was it that it was combined with mineral oils?

MR. FEATHERSTONE: Object to the form. It doesn't say that at all.

Q (By Mr. McCrea) Alone or in combination. Do you have any information on the reason that they would use PCBs for road dust control, why Monsanto would recommend that?

MR. KIERNAN: Again, if you know. This is really getting far afield.

A No, I don't want to speculate on that.
Q (By Mr. McCrea) That does reference a letter; does it not?
A Yes.
Q That would be footnote 7, "Letter from T.W. Oneson"; O-N-E-S-O-N, or Oneson, "Monsanto Sales

Representative, to V.R. Mulhall, Canadian General Electric Company Limited, Peterborough," dated November 12, 1968; correct?

A Yes.

Q You don't know where these letters are located at this time?

A No.

Q Then it goes on to say, "At Pittsfield, there has been some experimentation with a decomposition chamber which fires at 3,000 degrees Fahrenheit." Who was in charge of that, Mr. Thayer?

A I think he had a lot to do with this development. Whether he was in charge of it or not, I don't know the managerial structure that well.

Q Did they get it up and going?

A Oh, yes.

Q Did they burn PCBs in the decomposition chamber?

A Yes.

Q For what period of time?

A I don't know.

Q Do you know when it stopped?

A No.

Q Do you know why it stopped?

A I believe there was some question about EPA rules. This was -- The process that they developed at

Pittsfield was the one that pioneered the application of this kind of process to the destruction of PCB.

Q EPA didn't like it?

A But the government used it to destroy some Agent Orange, for example, under contract with GE and when it got to the actual rule making for disposal of PCBs, there were some technicalities that delayed the continued operation of that facility. Whether or not -- I don't know what happened, whether they resolved their difficulties with EPA or they continued to furnish it or what.

Q Is that decomposition chamber still in existence?

A I don't know.

Q Did you ever watch it operate?

A No.

Q You say, "The bulk of contaminated material is sold." To whom was it sold at Pittsfield?

A I don't know.

Q "At Rome," is that Rome, Georgia?

A Yes.

Q "Waste is buried on the company site." What did they do down in Rome, Georgia?

A They build transformers.

Q Then you state, "Although nearby neighbors have

shallow wells, no complaints have been registered." Now, how did General Electric communicate to the neighbors the information about the disposal of PCBs and alert them to be on guard against any complaints that might result from PCB contamination in the water?

MR. KIERNAN: Objection.

A I am not sure I understand the question.

Q (By Mr. McCrea) How did General Electric communicate to these nearby neighbors that there was PCB disposed on the Rome, Georgia site and that their shallow wells might involve some PCB contamination, or did they?

MR. KIERNAN: Objection. Do you have a proper question, Mr. McCrea? You are asking him whether or not General Electric did, or are you assuming shallow wells are contaminated? What is your question?

MR. McCREA: I am trying to find out what General Electric did as a good neighbor.

MR. KIERNAN: Ask a proper question and if Mr. Nelson knows, he can tell you.

Q (By Mr. McCrea) What did General Electric tell those people?

A I am afraid I don't know.

Q That is in reference to a letter from J.S. Anderson, RECO, to Mr. V.R. Mulhall; correct?
A Yes.
Q Dated December 20, 1968. Who is J.S. Anderson?
A Dr. Anderson was at that time a consultant in plant pollution control.
Q Who is V.R. Mulhall?
A I don't know.
Q Where is Mr. Anderson located today?
A CGE means Canadian General Electric.
Q Where is Dr. Anderson located today?
A I don't know. At that time, he was in Schenectady, New York, but that was many years ago.
Q Did you ever visit Rome, Georgia to eyeball that particular disposal of PCBs?
A No.
Q Your information comes from the letter?
A Yes.

MR. KIERNAN: For the record, it says, "Waste is buried on the company site." It doesn't say PCBs are buried there.

MR. McCREA: That's correct.

Q (By Mr. McCrea) Did they use PCBs at Rome, Georgia?
A I don't remember. I think so. I am not sure.

Let's just say I don't know.
Q And this section number 4, are you -- Are you focusing on PCBs on this section, or are you focusing on other chemicals?
A Section 4?
Q Section 4. Are you focusing on chemicals other than PCBs when you refer to waste? For instance, let's look at the third sentence of the first paragraph, "Waste is handled in the following manner." Are you referring to something other than PCBs up there?
A In answer to that question, those paragraphs all refer to the industrial and power capacitor department in New York State, and they have nothing to do with practices in Rome, Georgia.
Q Then paragraph 5, Questions To Be Answered, you state, "It is apparent from the above discussion that our knowledge of chlorinated diphenyl formulations and possible deleterious effects is not as complete as is desirable in today's climate of concern for maintaining and improving the quality of life in its environmental aspects with regard to worker protection and in terms of product safety." Is that your conclusion?
A Yes.

MR. KIERNAN: What is your question, is that what he stated at the time?

MR. McCREA: I asked if that was his conclusion.

A That is an introduction to my conclusion, okay?

Q (By Mr. McCrea) All right, sir. That was your thought?

A Yes.

MR. KIERNAN: I take it, Mr. McCrea, you don't want to read the rest of the conclusion. You want to read the sentence?

MR. McCREA: It's there in the document. I will be happy to read it. You mean starting with "Nevertheless"? How far?

MR. KIERNAN: Ask your next question.

MR. McCREA: I would be happy to read it.

MR. KIERNAN: I am sure you have read it before.

MR. McCREA: Let's read it for counsel.

Q (By Mr. McCrea) "Nevertheless, it is not responsive to suggest that other materials be substituted until all doubts are resolved. It must be remembered that virtually all applications of pyranol are the end product of intensive

research directed toward finding the best material for the application, that substitution would involve trade-offs, not only with performance factors and economic factors but with product safety considerations themselves, i.e. flammability and explosion possibilities."

What were the economic factors?

A The product cost.

Q Cost?

A Yes.

Q It would cost more; right?

A It costs something to change and process.

MR. McCREA: Would you like for me to read any more?

MR. KIERNAN: No. Do you have another question?

Q (By Mr. McCrea) Going to the next page, page 5, I am skipping over some of the paragraph but I would like to go to your quote of Dr. Risebrough. You say, "Dr. Risebrough has shown by direct intra-muscular injection that PCB has the capacity to produce sublethal physiological effects in birds." Where did that information come from?

A It's in the literature.

Q Is that referenced to any of the footnoted

information?

MR. KIERNAN: If it helps, the document says in the work previously cited. The document you are reading from, Mr. McCrea.

MR. McCREA: Which document is that?

Q (By Mr. McCrea) I don't think we need to spend time on it. You are quoting the document; correct? You are quoting from a document?

A Yes.

Q What is a sublethal physiological effect?

A Something that wouldn't kill you but it shows an effect. It makes a change.

Q More on that page, which would be a subindentation on the second full paragraph, you state, "Monsanto has a research program to identify the compounds reported to be PCB by the Swedish and California scientists." To whom are you referring when you state the Swedish scientists?

A Dr. Jensen and Risebrough.

Q Later on in that paragraph, it says, "Special emphasis is being paid to endocrinological"; e-n-d-o-c-r-i-n-o-l-o-g-i-c-a-l, "effects, mineral metabolism and reproductive physiology." Is that Monsanto that's paying attention to that?

A Yes.

Q What is meant by endocrin --
A Something that effects the endocrine glands.
Q Do you understand that, or are you just quotin that's referenced in document 1; correct?
A Yes.
Q That information would be obtained on document 1 which is, "From a statement by the Monsanto Company, St. Louis Missouri, 3-3-69"? Do I have that correct?
A Yes, I think. I am not sure if that's the same source.
Q On page 6, you make reference to European and Japanese suppliers. When you wrote this document on October 30, 1969, did you have information about the Yusho poisoning in Japan or the Japanese ate rice oil that was contaminated with PCBs that had high levels of PCDFs or furans in it?
A That is difficult for me to answer. I knew a lot of the Yusho incident at this time or shortly thereafter -- I don't know -- unless there is some internal evidence in this page which I haven't found yet that says I didn't know about it.
Q To your knowledge, Mr. Nelson, did anybody at General Electric have direct contact with the Japanese regarding the Yusho poisoning?

A Dr. Ed Simons and I both attended a meeting in Chicago where he reported on his results and said -- and that's where it came out, the contaminant PCDF came out at that meeting in Chicago. There may have been some scientist to scientist contact between others in GE and the Japanese, but the only contact I had was that rather tenuous contact of hearing him talk at a meeting.

Q Section 6, first paragraph, you make reference to a possible PCB rider onto an anti-DDT bill. What information did you have as of October 30, 1969 about legislation regarding PCBs that would be tacked onto an anti-DDT bill?

A I had no such information. This was pure speculation at the time.

Q By you?

A Yes.

Q Did you follow up on that in 1970 and '71?

A I noticed what happened to the DDT.

Q Are you aware of proposed legislation by Congressmen Ryan regarding PCBs in 1971 which would effectively had placed a ban on PCBs?

A Congressman Ryan from what state?

Q I think of New York or New Jersey. I am not sure which.

A I don't recall.
Q Do you know if General Electric actively lobbied against the passage of Congressman Ryan's bill?
A I can't answer that without -- Can you show me Congressman Ryan's bill?
Q I don't have it here.
A I don't think so.
MR. KIERNAN: It's difficult for him to answer if he said he didn't know what the bill is.
A I don't know what was in the bill.
Q (By Mr. McCrea) Are you aware of an organized lobbying effort by the industry with regard to proposed legislation to ban PCBs?
A At what time frame?
Q Nineteen seventy-one.
MR. KIERNAN: Objection also in terms of "the industry." What are you referring to?
MR. McCREA: Manufacturers of PCB like McGraw-Edison, Dow-Corning, Westinghouse, Monsanto. Those are not manufacturers of PCB?
A Manufacturers of equipment containing PCBs and the manufacturer of PCB is Monsanto Company.
Q (By Mr. McCrea) Are you aware of any organized lobby by the industry to oppose legislation that

would ban PCBs in 1971 and take it off the market?

MR. KIERNAN: Objection; vague and confusing but if you can answer the question.

A We were involved in correspondence with the EPA on each and every proposed rule making. EPA and FDA, whenever one of them proposed a rule on PCBs, we studied it and made recommendations about it and I am sure other industries, I believe other companies to some extent took similar action. Perhaps we were the most thorough. It -- '71, I can't think of any joint activity between companies which would have taken place. If it took place at all, it would be with the trade organizations. I would say no, I don't know of any such joint effort to oppose. The efforts mainly were to get a proper degree of recognition of the problems involved and for any limits that were proposed to be reasonable limits. This was the kind of thing --

Q (By Mr. McCrea) Did you ever visit a senator or a Congressman of the U.S. Congress to discuss issues relating to PCBs?

A No.

Q Did you ever talk to anybody, any political official about PCBs, whether it's a local health officer or an aide to the President of the United

States?

MR. KIERNAN: Can you clean the question up a little bit? Any political official, any governmental entity at any time at any place?

Q (By Mr. McCrea) Did you have any political contacts concerning PCBs, if so, tell us when and what took place?

MR. KIERNAN: Same objection to the term, "political contacts."

Q (By Mr. McCrea) Politicians, public servants?

MR. KIERNAN: Politicians and public servants, that's a broader category.

Q (By Mr. McCrea) Let's go with public servants. Have you ever had any contact with public servants regarding any matters --

A Are you including correspondence in your definition of contact?

Q Absolutely.

A I wrote letters of comment every time I thought there was a question they could use our help on.

Q That's in your files at home?

A Yes.

Q Did you visit with anybody, ever have lunch with anybody, sit down and talk to them about the problem?

A I don't recall that, no.

MR. KIERNAN: Mr. McCrea, so the record is clear, when you say anybody, who are you referring to? I still don't understand your question.

Q (By Mr. McCrea) Politicians, mayors, any elected officials.

MR. KIERNAN: Your question is restricted to any elected official?

Q (By Mr. McCrea) Any elected official, did you ever meet with them on an informal basis to discuss matters relating to PCBs?

A Specifically PCBs?

Q Right.

A No, I don't think so.

Q Do you know anybody that did from General Electric?

A We arranged for a visit by -- Let's see. I guess he was the -- I can't think of the man's responsibility but he was a -- No. I would have to say no. Sorry.

Q I realize it's getting kind of late, but I am about to finish.

Paragraph 2 under section 6, a proposed program, you suggest employment of an outside consultant.

A I did.
Q Was an outside consultant employed, Mr. Nelson?
A Yes.
Q Who was the outside consultant?
A Dr. Horace Gerard.
Q Is he a Ph.D. toxicologist or an M.D. toxicologist, if you know?
A I don't know.
Q What services did he provide to General Electric pursuant to his consultation agreement?
A Literature searches primarily.
Q Did you read the product which he produced?
A No.
Q Did he provide written materials to General Electric?
A Not to my recollection.
Q What did he do?
A He made verbal reports.
Q To whom?
A I don't know, but I think it's legitimate to suggest that it might have been Ed Deck, who was the man who engaged him. It was probably to him that he talked. This whole thing came to an unfortunate end when Gerard was killed in a plane crash.

Q So that was perhaps had he not had an untimely death, he would have --
A Perhaps there would have been a formal report.
Q Did anybody replace him as a consultant?
MR. KIERNAN: At any time?
Q (By Mr. McCrea) To follow up on the work he had commenced?
A We followed up on it in-house, a library of PCBs was created at corporate research and development.
Q Who was the medical doctor for General Electric who oversaw the workers exposed to PCBs in the 1960's and 1970's?
A Oversaw the study?
Q Oversaw their health.
MR. KIERNAN: I am not so sure I understand the foundation of your question. Are you referring to something in the document that's been marked as Exhibit 1?
MR. McCREA: No.
MR. KIERNAN: Is there some particular medical document you have in mind?
MR. McCREA: No.
A Is there some particular GE site that you have in mind?
Q (By Mr. McCrea) Hudson Falls capacitor

manufacturing plant, the Pittsfield, Massachusetts transformer manufacturing plant.

A I have met the gentleman, the doctor who at that time was a GE doctor at Hudson Falls. Unfortunately, I don't recall his name. At Pittsfield, I have no idea who it would have been.

Q Are you familiar with a format study done by a Professor David Wegman; W-E-G-M-A-N?

MR. KIERNAN: What's the date of that study?

MR. McCREA: Nineteen eighty-one.

MR. KIERNAN: Is there some publication you are referring to?

MR. McCREA: I am asking him if he is familiar with his work.

MR. McCREA: Started about '81.

A No.

Q (By Mr. McCrea) Do you know the name Professor David Wegman; have you ever heard it?

A I may have run across it, but I can't remember after all these years.

Q While you were employed at General Electric, did you learn at some point in time about a chemical called polychlorinated dibenzofuran?

A Yes.

Q What did you learn about it and when?
A Chlorinated -- I think it's chlorinated dibenzofuran. The other term may be quoted correct. As far as I know, this was a contaminant in some processes of manufacturing PCBs notably in the kanachlor; k-a-n-a-c-h-l-o-r, are produced in Japan which was involved in the Yusho incident, and that's the most important thing I know about it. That's a contaminant and in some process of manufacturing PCBs, it is not a contaminant in the Monsanto process except in very minuscule fraction, and I know further that tests on transformers have demonstrated that PCB transformers do not evolve PCB as they age, so that's about the extent of my acquaintanceship.
Q What is that data to which you just referred to testing of transformers shows no increased level of chlorinated dibenzofurans with age?
A It was reported to me by a representative of our corporate research and development operation in Schenectady.
Q When was that reported to you?
A I don't recall.
Q In a material safety data sheet from General Electric, dated May 1980 for Aroclor 1254, the

following statement is made, this is under section 9, Special Precautions and Comments. "PCBs and especially used PCBs can contain higher toxicity contaminants." Does that statement sound familiar to you? And I will be happy to show you the document.

A May I see it?

Q (Handing).

MR. TATE: Could you read the first part of that question back?

(The last question was read by the court reporter)

MR. KIERNAN: I don't want to mark this as an exhibit, but I will be happy to show you the document. It's the section 9, second page, the very last sentence.

MR. FEATHERSTONE: Can you read the whole question back?

(The last question was read by the court reporter)

(Pause)

A I don't see the statement.
Q (By Mr. McCrea) It's the very last sentence on the page.
A Oh, "And especially"? I don't know the providence of that last statement.
Q Do you know what General Electric is referring to when they say, "PCBs and especially used PCBs can contain higher toxicity contaminants"?
A I don't know the basis for that statement.
Q Let's take a five-minute break and then we will -- hopefully, I think I am through.

(Recess from 6:20 to 6:30 p.m.)

Q (By Mr. McCrea) Mr. Nelson, we are back on the record. What we are going to do is to show you documents, and they all have an exhibit number on them, and we will identify the exhibit number and we will simply ask you if that document is a General Electric document.
A Do you have a definition for a General Electric document?
Q A document that was prepared by General Electric, a document that was in the files of General Electric, that was sent to General Electric, that was

something that was authored or received by General Electric. I don't know what else you can say about it.

MR. KIERNAN: We have had a discussion off the record. Now perhaps it's time to put it on the record. Let me ask you first, where do these documents come from?

MR. McCREA: Pikeville, Kentucky.

MR. KIERNAN: Litigation in another case that's still ongoing?

MR. McCREA: Yes.

MR. KIERNAN: Another case that you are involved in?

MR. McCREA: Right.

MR. KIERNAN: A personal injury case against General Electric and other manufacturers?

MR. McCREA: You settled. You are out of it.

MR. KIERNAN: What you are asking Mr. Nelson, who had retired from General Electric eleven years ago, to authenticate this three-foot stack of documents you have over here?

MR. McCREA: Yes.

MR. KIERNAN: In this case you have submitted 900 requests for submissions to the Defendants.

MR. McCREA: Yes.

MR. KIERNAN: And the judge has ruled on these.

MR. McCREA: Yes.

MR. KIERNAN: It's my understanding that the Magistrate has restricted the number of requests for admissions upon Defendants' motion based on the fact that there were so many requests to admit. Is it now your intention to ask Mr. Nelson to admit all the documents the Magistrate ruled on that you could not submit requests to admit on?

MR. McCREA: Yes.

MR. KIERNAN: Do any of these documents have Mr. Nelson's name on it? Can you select those out to show them to the witness?

MR. McCREA: I just questioned him for four hours on one.

MR. KIERNAN: Do you have other documents with his name on them that you would like this witness to authenticate?

MR. McCREA: David, you are correct in

what you say, but I also want this record to show that in every case in which I have been involved, whether it's State Court or Federal Court, the judge has always encouraged the attorneys for the parties to sit down and authenticate documents as a courtesy to the court, and I think where we got off track was in not following up on that effort which I initiated with Bruce Featherstone and others while I was in Las Vegas but then we went our separate ways and couldn't follow up on it.

My proposal is to do exactly that as a courtesy to the court. The court really shouldn't have to wade through all this paperwork, and what we should do to accommodate the court is agree to meet at a designated time and place with appropriate secretarial staff, set up an agenda and authenticate documents, number documents, make sure that our document number 432 is the same as your document 432 and then get everything organized with respect to the documents, including attachments, exhibits to depositions which, if we don't get that sorted out, could create a very difficult administrative problem

for everybody, including the court. That's all I am proposing. I proposed that when I was in Las Vegas because that's the way I do things, and we will authenticate information for you. It's a two-way street. You authenticate information from us.

We have a set of documents which everybody agrees on. When you are looking at General Electric document number 10 we all agree that's General Electric document number 10, there's no confusion. When you are looking at some other voluminous document from our voluminous file, we all agree that's the document. Does it have four pages, no, it has five pages, we iron those problems out at that point in time. What about this notation that's entered on here. Let's redact it. Let's take it off. And we sit down and we just go through that whole procedure with a court reporter, with a secretary, whatever else, which I think would probably take two full days.

MR. KIERNAN: I think this issue has been visited once in this litigation. As I stated at the outset, I think the Magistrate

has already ruled upon it. The process you state is correct; I think there was an attempt earlier to compromise on a number of documents because you had submitted so many. This is the first time I heard of this proposal from you, and we were not advised of it prior to the deposition. I think it's unfair for any witness, particularly this witness, this late at night to dump these documents in front of him.

MR. McCREA: That's what I am trying to avoid.

MR. KIERNAN: If you want to propose something like that, go ahead and write a proposal to us and we will see if we can. I don't think any of these documents can be authenticated by Mr. Nelson. He obviously --

MR. McCREA: Will you agree in good faith to sit down with us and do just exactly that? It's not just authenticating documents but it's getting documents so that everybody knows exactly what the document is. It sounds simple but it's not.

MR. KIERNAN: My understanding is what happened is Plaintiff submitted so many

documents there was an effort to reduce the number.

MR. McCREA: What happened was that we didn't get together in Las Vegas because we just -- our times didn't coincide and then Paul felt that we had to do this because we didn't get together on the meeting, which is nobody's fault, it's not my fault, it's nobody's fault but we just didn't get together.

MR. KIERNAN: What I would propose, if you have specific documents for a specific witness such as the document used in the deposition here today, Nelson Deposition Exhibit 1, and you want to ask the witness to look at it to authenticate it, I am not going to object to that but I will object to asking a 72-year-old witness who last worked for GE eleven years ago to sit here and give his opinion on a stack of three-foot documents, you know I am going to instruct Mr. Nelson not to sit here and be put through that.

MR. McCREA: You can avoid that if you will agree to sit down and authenticate documents.

MR. KIERNAN: I think that process was already done. I was not involved in that --

MR. McCREA: You weren't. I didn't know you were in this case, all right?

MR. KIERNAN: If you will --

MR. McCREA: Are you from Williams & Connolly? They sent those other mean guys out there.

MR. KIERNAN: If you want to send a letter to us outlining your concerns and problems, we will get back to you.

MR. McCREA: I want an agreement to do it.

MR. KIERNAN: I am not going to put an agreement on it.

MR. McCREA: I don't think that's good faith.

MR. KIERNAN: You can say whatever it is. I think we are faced with a witness tonight who we are holding --

MR. McCREA: I want to do something simple, sit down and organize all these documents; all right? Now we have Nelson Exhibit 1, that isn't going to mean anything when we come to this trial, okay? That

document needs to be put in chronological sequence; otherwise, it's going to be chaos, okay? And that's not -- that is not going to make the judge happy.

MR. KIERNAN: I think we have at least resolved the issue for now, which is I am not going to permit Mr. Nelson to be held here all night and go through three feet of documents.

Based on everything we have said so far, do you have any other questions for Mr. Nelson?

MR. McCREA: Just a second, David. I don't like this. I am making a reasonable offer. It's totally reasonable. All I am asking you to do and counsel for Westinghouse and counsel from Monsanto is agree to meet and authenticate documents, period. That is a very reasonable offer. It will save your witness and save lots of other witnesses a lot of time and save us time and it's an accommodation to the court.

MR. KIERNAN: My stance is that's already been done here. There are 900 requests already submitted. I am not saying that cannot be done in the future. Why don't

you proposal this at some other time, other than the deposition of this witness. Why don't we move on.

MR. McCREA: Will you --

MR. KIERNAN: I am not going to agree to be bound by anything tonight, Mr. McCrea. That's the answer.

MR. BRADLEY: Are you going to instruct him not to respond to any questions regarding authentication of General Electric documents?

MR. KIERNAN: If they do not have his name on it, I am not going to hold the witness here for a three-foot stack of documents in light of the Magistrate's rulings in this case. I don't think it's fair to the witness.

MR. BRADLEY: My question is, are you going to instruct him not to answer?

MR. KIERNAN: If you have a document right now that has his name on it, --

MR. BRADLEY: Let's start with 452.

MR. KIERNAN: Does it have his name on it?

MR. BRADLEY: No.

MR. KIERNAN: Then I will instruct the witness not to answer and not to answer to any

of the documents. I am not going to hold him here.

MR. FEATHERSTONE: On behalf of Monsanto, I would like to say something -- two things. First of all, in response to the general offer from McCrea to sit down and talk about documents, I will respond to that but not in the context of this deposition since it's not my witness and not my documents we are talking about.

Second point is if we are going to put documents in front of the witness as we were about to do, I would appreciate it so that we can follow it somehow in the record that it have more than just an exhibit number, that it's got a date on it or a Bates number, you say what that is.

MR. McCREA: Bruce, that's exactly what can be accomplished if we all sit down because what you do is you have columns, exhibit numbers, Bates numbers, pages --

MR. FEATHERSTONE: Can we go off the record?

MR. McCREA: Yes.

(Off the record conference)

MR. TATE: In response to Mr. McCrea's statement as to a general invitation to all three Defendants here to participate in the proceeding which he is describing for authentication on behalf of Westinghouse, I think it's an inappropriate proceeding for us to address this issue for Westinghouse, and it is certainly something we are not prepared to discuss at this time.

MR. McCREA: You say it is appropriate?

MR. TATE: Inappropriate.

MR. KIERNAN: Do you have any further questions for Mr. Nelson?

MR. McCREA: Mr. Nelson, I have no further questions, and I think that we have gotten everything discussed that needs to be discussed and hopefully we can get this resolved and if you all would just go back to your clients, tell them what we have proposed and I think we should defer until some point down the line. I don't think we are at a point now where we can organize these documents for trial and down the line we take

all these depositions, it's going to be quite a job, that we agree to do it at that point.

MR. KIERNAN: Any questions?

MR. McCREA: Do I have your commitment that you will take this to your clients?

MR. KIERNAN: Yes.

MR. McCREA: And give us an answer promptly?

MR. KIERNAN: Yes, yes, I will take it to my client and get back to you.

CROSS EXAMINATION BY MR. FEATHERSTONE

Q (By Mr. Featherstone) Would you please look at the fourth page of Exhibit 1? It's actually a page that's numbered 3.

A Yes.

Q Mr. McCrea asked you about the first full paragraph at the top of that page, the one that talks about polycyclic aromatics. My first question to you is, this information in this paragraph came from either someone else or some document; is that correct? I am talking about the paragraph that begins, "The broad class of materials."

A Yes. The answer to your question is yes, it came

from somewhere else.

Q In 1969 and the time you wrote Exhibit 1, did you have any information that PCBs in particular were a known or suspected carcinogen?

A No.

Q Let me go to the next page then, the page that's marked number 4. Mr. McCrea asked you about footnote number 7 which is a letter dated November 12, 1968, in particular about that part of the document in the text where it talks about a representative of the Monsanto Company recommending its use alone or in combination with mineral oils as a road spray to allay dust. Do you know whether, in fact, General Electric of Canada used PCBs or sold PCBs for use as a road spray?

A I have no information that they did that.

Q Page number 6 of Exhibit 1, first full paragraph at the top talks about a letter from Mr. Scoville to a French company called Prodelec; do you see that?

A Yes.

Q Did General Electric do business with Prodelec for PCBs?

A I don't think so. I think our only source of PCBs was Monsanto. He was trying to get us in perspective on the question. Do you know Scoville?

Q No, I don't. I was going to ask you who he was and how he related to your job in 1969?
A Mike Scoville was managing engineer for the capacitor department at that time, and he didn't relate to my job at all.
Q He is identified in this document as product safety representative.
A Then he must have already been replaced. He was former managing engineer. At that time he was product safety representative of the industrial and power capacitor department. Off the record.

(Off the record conference)

A He could have been both.
MR. McCREA: Is that Scoville?
THE WITNESS: Yes.
Q (By Mr. Featherstone) Do you know whether he ever got a response from Prodelec from his inquiry?
A I didn't learn it if he did.
Q I have no further questions. Thank you.
MR. TATE: I have no questions.

REDIRECT EXAMINATION BY MR. McCREA

Q (By Mr. McCrea) Are PCBs a polycyclic aromatic?
A Is there a chemist in the house? I am led to believe they are.
Q Do you know which -- When you say, "The broad class of materials we are dealing with here, polycyclic aromatics contains known or suspected carcinogens," do you know to what specific chemicals the information -- the person who gave you that information was referring?
A I understand the question, and I don't know any examples -- I don't personally know of any examples of polycyclic aromatics that are carcinogens.
Q When you talk about, "The broad class of materials we are dealing with here," to what are you referring? Are you referring --
A Polycyclic aromatic.
Q Are you referring to that which you have discussed on the previous page, trichlorobiphenyl, trichlorobenzene?
A No. This statement stands alone.
Q Well, you say, "We are dealing with here." What are you dealing with?
MR. KIERNAN: Asked and answered.
A We are dealing with one example of the class of materials known as polycyclic aromatics, that one

example being the PCB family.

Q (By Mr. McCrea) Fine. Thank you.

MR. KIERNAN: Any further questions? Mr. Nelson, you have the right to read the transcript, and I would that you do that. Madam Court Reporter, if you would send the transcript to me, I will forward it on to Mr. Nelson for his review.

(Deposition concluded at 6:55 p.m.)

I, LEE ANN BIANCUCCI, R.P.R., duly commissioned and qualified in and for the State of Connecticut, do hereby certify that pursuant to Notice and the Federal Rules of Civil Procedure, there came before me on the 25th day of January, 1993, the following-named person to wit: James Sparks Nelson, who was by me duly sworn to testify to the truth and nothing but the truth; that he was thereupon carefully examined upon his oath and his examination reduced to writing under my supervision; that this deposition is a true record of the testimony given by the witness.

I further certify that I am neither attorney nor counsel for nor related to nor employed by any of the parties to the action in which this deposition is taken and further that I am not a relative or employee of any attorney or counsel employed by the parties hereto, or financially interested in this action.

IN WITNESS THEREOF, I have hereunto set my hand and affixed my seal this day of , 1993.

_____

Lee Ann Biancucci, R.P.R.

My Commission Expires:

April 30, 1997.

UNITED STATES DISTRICT COURT

DISTRICT OF CONNECTICUT

I, James Sparks Nelson, do hereby certify that the foregoing testimony given by me on January 25, 1993, is true and accurate to the best of my knowledge and belief.

_____ _____

Date James Sparks Nelson

At _____ in said County of _____, this _____ day of _____, 1993, personally appeared James Sparks Nelson, and he made oath to the truth of the foregoing answers by him subscribed.

Before me, _____, Notary Public.

My Commission Expires: _____.

CORRECTION SHEET

I, _____, do hereby certify that the following corrections and additions are true and accurate to the best of my knowledge and belief.

CORRECTION	PAGE	LINE	REASON

_____ _____
DATE James Sparks Nelson

At _____ in said County of _____, this _____ day of _____, 1993, personally appeared _____, and he made oath to the truth of the foregoing corrections by him subscribed.

Before me, _____, Notary Public.

My Commission Expires: _____

Lee Ann Biancucci, R.P.R.
Court Reporter
22 Elm Road
Cromwell, CT 06416
203-635-2607

February 1, 1993

David C. Kiernan, Esq.
Williams & Connolly
725 Twelfth Street, N.W.
Washington, DC 20005

Re: Nevada Power Company vs. Monsanto Co.
Case No. CV-S-89-555-LDG (LRL)

Dear Mr. Kiernan:

Enclosed along with your copy of the Depositions of Mr. Fessler and Mr. Nelson are the original signature pages and correction pages. Please arrange to have the witnesses read their depositions, sign the enclosed pages and return them to me for insertion into the original transcript.

Please be advised that the rules provide for 30 days from your receipt of the transcript for this to be accomplished.

Thank you.

Sincerely,

Lee Ann Biancucci, R.P.R.

cc: Ralph A. Bradley, Esq.
David S. McCrea, Esq.
Bruce Featherstone, Esq.
Robert J. Tate, Esq.

Enclosure

CORRECTION SHEET

(Page 1 of 2)

I, James Sparks Nelson, do hereby certify that the following corrections and additions are true and accurate to the best of my knowledge and belief.

PAGE	LINE	CORRECTION
12	5	"polymer" should be "power"
17	20	"petition" should be "position"
18	15	"individuals of file" should be "individual file"
35	22	"Papa George" should be "Papageorge"
36	4	"Papa George" should be "Papageorge"
36	13	"Papa George" should be "Papageorge"
36	16	"direct" should be "contact"
36	21	"we" should be "they"
36	25	"Papa George" should be "Papageorge"
37	1	"Papa George" should be "Papageorge"
40	13	"pyranol" should be "mineral oil"
57	8	insert "that" between "trend" and "could"

Feb 26, 1993
DATE

James Sparks Nelson
James Sparks Nelson

At Branford in said County of New Haven, this 26th day of February, 1993, personally appeared James Sparks Nelson, and he made oath to the truth of the foregoing corrections by him subscribed.

Before me, Patricia S. Anderson, Notary Public.

PATRICIA S. ANDERSON
NOTARY PUBLIC
MY COMMISSION EXPIRES MAR. 31, 1994

My Commission Expires: _____

Patricia S. Anderson

CORRECTION SHEET

(Page 2 of 2)

I, James Sparks Nelson, do hereby certify that the following corrections and additions are true and accurate to the best of my knowledge and belief.

PAGE	LINE	CORRECTION
58	11	"role of -- The PCB and" should read "role of PCBs in"
58	12	"an" should be "in"
81	1	"Ed Simons" should be "John Brown"
81	2	"he" should be "a Japanese scientist"
91	4	"providence" should be "provenance"

2-26-1993
DATE

James Sparks Nelson

At Branford in said County of New Haven, this 26th day of February, 1993, personally appeared James Sparks Nelson, and he made oath to the truth of the foregoing corrections by him subscribed.

Before me, Patricia S. Anderson, Notary Public.

PATRICIA S. ANDERSON
NOTARY PUBLIC
MY COMMISSION EXPIRES MAY 31, 1994

My Commission Expires:

PCB: AN INDUSTRY PROBLEM?

Outline

1. Origin of Current Concern - Ecological Effects
2. Toxicity, Fire and Other Health Hazards
3. General Electric Usage
4. Disposal Practices
5. Questions to be Answered
6. A Proposed Program

J. S. Nelson
Corporate Engineering
October 30, 1969

Some As
Exhibit
207

PCB: AN INDUSTRY PROBLEM?

1. Origin of Current Concern - Ecological Effects

Late in February, 1969, a West Coast newspaper carried a major feature about "a menacing new pollutant" found in the San Francisco Bay area. The article was based on marine life research carried out by Dr. Robert Risebrough of the University of California. The article stated that residues of pesticides (DDT and DDE) and polychlorinated biphenyl (PCB) were threatening the welfare of certain birds and posed long-term threat to humans.[1]

The following is Nature's synopsis of Dr. Risebrough's paper:[2]

> Polychlorinated biphenyls are widely dispersed in the global ecosystem, and are powerful inducers of hepatic enzymes which degrade estradiol. Together with other chlorinated biocides, such as DDT, they could account for a large part of the aberration in calcium metabolism which has been observed in many species of birds since the Second World War.

These excerpts are representative of press coverage:[3]

> PCB's are produced under the trade name Aroclor by Monsanto Chemical Company, St. Louis. They were first identified in European birds by Swedish scientists. They apparently are released into the atmosphere and waterways by vaporizing, from factory smokestacks, by discharge into rivers and oceans....
>
> A team of University of California and Cornell University scientists has determined that PCB's are five times more powerful than DDT in hormone-destroying activity. Like DDT, they are found throughout the environment and their quantities are increasing rapidly. They have been found in the milk of nursing mothers in Colorado and in marine life off California, as well as in European birds....
>
> What effects PCB's will have on man is not known, although in vapor form these chemicals are highly toxic....the federal government has not set tolerance limits....Monsanto Company spokesmen say only that their scientists and sales executives are studying the problem....

2. Toxicity, Fire and Other Health Hazards

Company literature has long contained cautionary notes on the handling of Pyranol (the G. E. registered trademark for chlorinated diphenyls). For example:[4]

---

1. From a Statement by the Monsanto Company, St. Louis, Mo., 3-3-69
2. "Polychlorinated Biphenyls in the Global Ecosystem", by Risebrough, Rieche, Peakall, Herman, and Kirven, Nature, Vol. 220, Dec. 14, 1968.
3. Gainesville, Florida, Sun, April 25, 1969
4. Instructions GEI-65080 (11-64 1M): Pyranol Insulating Liquid and Transformer Drying.

Transformer Pyranol can be handled in the same manner as mineral oil. Although continued exposure to liquid Pyranol may produce local skin irritation, cleanliness among workmen constitutes an adequate safeguard against such effects.... As with most volatile materials, exposure to concentrated Pyranol vapors in unventilated rooms should be avoided.

CAUTION—Hydrogen chloride gas is formed when Pyranol is decomposed by an electrical arc....

Early this year, an inquiry was received by Mr. John J. Ferry, Specialist-Environmental Health Engineering, Schenectady from an industrial hygienist at Ford Motor Company, as to the toxicity and fire hazard of transformer askarel. The following is extracted from the Medium Transformer Department's reply to the Ford questionnaire:[5]

Material: Pyranol A5CP524

Components: trichlorobiphenyl 80%
trichlorobenzene 14.5%
tetrachlorobenzene 5.5%
diepoxide scavenger 0.125%

Toxicity: ingestion — highly toxic
inhalation — moderate
respiratory tract — moderate

Skin Sensitizer: No.
Estimated threshold limit value: 0.5 to 1 mg/cubic meter.
Is material flammable? No.
What products might be formed in the event of fire or abnormal temperature? In an incinerator burner designed for the disposal of chlorinated solvents, the products of combustion will be HCL and CO_2.

In considering the question of flammability, it should be kept in mind that askarels are chosen for insulation applications partly because they are, "by definition", non-flammable liquids which, when decomposed by electric arc, evolve only non-explosive gaseous mixtures. Recently discovered exceptions have been reported, and Medium Transformer Department has at least temporarily abandoned the use of A5CP524, based on Aroclor 1242, in favor of the "classical" Aroclor 1254 (E-PIS A13B3B).[6]

Some people have sensitivity to Pyranol such that their skin erupts in a rash upon exposure. When discovered in the factory, they are transferred to

5. Transmitted with letter from F. J. McCann, Medium Transformer Department to R. G. Anderson, Ford Motor Company, 2-5-69.
6. See letters from G. G. Poulsen, Mgr.-Engrg., MDT to Glassanos Haywood, Pozefsky, and Deck, under dates of 5-27-69 and 8-5-69.

other lines of work and their symptoms disappear.

The broad class of materials we are dealing with here, polycyclic aromatics, contains known or suspected carcinogens. This aspect has been considered in the industrial hygiene or medical review of operations in at least one plant.

3. General Electric Usage

EMPIS specifications list seven different formulations of Pyranol. The basic material is chlorinated diphenyl purchased from Monsanto under the designation Aroclor 1254, Aroclor 1242, and Aroclor 1260. These are blended with other chlorinated aromatics, inhibitors, and scavengers to produce other askarels with different characteristics, all designated by the GE registered trademark, Pyranol. Product responsibility is assigned to the Medium Transformer Department, Rome, Georgia, presumably because MTD sells Pyranol to customers who fill their transformers or other equipment in their own shops.

The following is a list of departments assumed to be using Pyranol in the dielectric systems of products manufactured in-house:

Industrial and Power Capacitor Department
Specialty Transformer Department?
Wire and Cable Department?
Commercial Distribution Transformer Department
Lighting Systems Department?
Medium Transformer Department
Power Transformer Department
Canadian General Electric Company
Service Shops

Total usage has not been ascertained. The Transformer Departments have in recent years cut their relative use of Pyranol, limiting it to cases where the non-flammability property is very important, such as indoor applications. (They are using ~~aliphatic~~ hydrocarbons, especially one known as "10-C".) As a result of this trend, the Power Transformer Department at Pittsfield uses Pyranol in only about 5% of its units, and Residential Distribution Transformer Department, at Hickory, uses none.

No search has been made for non-dielectric applications of Pyranol. Such may conceivably include use as a hydraulic fluid (e.g. in aircraft or materials-handling systems); heat transfer applications; and as a plasticizer in the production of polymers used as adhesives, elastomers, or surface coatings.

The largest user is the Industrial and Power Capacitor Department, Hudson Falls, N. Y., which uses 10 million pounds per year — probably more than the rest of the Company, combined.

4. Disposal Practices

The Industrial and Power Capacitor Department purchases approximately 10 million pounds per year, of which 9 million pounds are accounted for in terms of products shipped. Waste is handled in the following manner:

Reclaimable material returned to Monsanto	200,000 lb./yr.
Badly contaminated material hauled away by a New Jersey scavenger (recommended by Monsanto)	800,000
Contained in scrapped small industrial units disposed in town dump, where daily burial is thought to be the practice	60,000
Total waste and scrap, approx.	1,060,000 lb./yr.

At various times in the past, other disposal methods have been used, including sale to a manufacturer of insecticide; in the recent past, at least one representative of the Monsanto Company was recommending its use, alone or in combination with mineral oils, as a road spray to allay dust.[7]

At Pittsfield, there has been some experimentation with a decomposition chamber which fires at 3000 F., but the bulk of contaminated material is sold; at Rome, waste is buried on the Company site. Although nearby neighbors have shallow wells, no complaints have been registered.[8]

5. Questions to be Answered

It is apparent from the above discussion that our knowledge of chlorinated diphenyl formulations and possible deleterious effects is not as complete as is desirable in today's climate of concern for maintaining and improving the quality of life in its environmental aspects, with regard to worker protection, and in terms of product safety. Nevertheless, it is not responsive to suggest that "other materials be substituted" until all doubts are resolved. It must be remembered that virtually all applications of Pyranol are the end product of intensive research directed toward finding the best material for the application; that substitution would involve trade-offs, not only with performance factors and economic factors, but with product safety considerations themselves — i.e., flammability and explosion possibilities.

While it is desirable to attain a better quantitative expression of the toxic effect of PCB and its various additives, and a better understanding of the flammability of degradation products, the most important question, long range, appears to be, "does industrial use of PCB represent a credible ecological threat?"

---

7. Letter from T. W. Oneson, Monsanto Sales Representative, to V. R. Mulhall, Canadian General Electric Co., Ltd., Peterborough, 11-12-68.
8. Letter, Dr. J. S. Anderson (RECO) to Mr. V. R. Mulhall, CGE, 12-20-68.

One circumstance which makes it difficult to answer the question of ecological effects is that PCB has not been found alone in any of the reported observations of nature, but always accompanied by larger quantities of DDT or DDE. In the work previously cited, Dr. Risebrough has shown, by direct intra-muscular injection, that PCB has "the capacity to produce sublethal physiological effects in birds" — but this is not the same thing as saying that it does, in fact, do so outside of the laboratory. Scientific examination of this question degenerated, at the Wisconsin hearings on DDT, into a shouting contest between partisans of conservation (who seem willing to ban any chemical, regardless of its otherwise beneficent results, if it is suspected of harm); the makers of insecticides (e.g., Shell Company); and the producer of PCB (Monsanto). The same witnesses have been quoted on both sides of the question. The reader may choose between the following statements, each attributed by the press to Dr. Risebrough:

(a) (PCB is) apparently playing a role in the decline of the peregrine falcon and it may have abetted the disappearance from the Gulf Coast of the brown pelican. (San Francisco Examiner, Feb. 25, 1969).

(b) Tests with eggs...showed mathematically by correlation with eggshell thickness that DDE and not PCB's were to blame. (Milwaukee Sentinel, May 13, 1969). Ironically, the second statement was made when Dr. Risebrough was called to the stand by the attorney defending the insecticide interests.

Should it be established that PCB is to blame for ecological damage, it remains to trace the transport mechanism and determine at least plausible sources and sets of conditions for propagation into the environment. Estimating from GE capacitor usage, total industry usage might be 20 to 40 million pounds, most of which ends up in closed systems from which dispersion is at a very low rate. This contrasts with much larger usage of DDT — 180 million pounds in 1963, 103 million pounds in 1967 — most of which is broadcast on the land and in the atmosphere.

> Monsanto has a research program to identify the compounds reported to be PCB by the Swedish and California scientists. This involves precise analysis of environmental samples of water, air, soil and wildlife, including metabolic studies. Also under way are studies to determine the biological effects of deliberate dosage of PCB's on fish, birds, and mammalian animals. Special emphasis is being paid to endocrinological effects, mineral metabolism and reproduction physiology.1
>
> As we become more pollution conscious, we wish to know what volume of unused Askarel is being buried, sewered or incinerated on the North American continent, particularly, and what hazards does it present. What degree of responsibility should Monsanto shoulder in this affair? Will it be necessary to diligently collect unusable Askarel, including Askarel-saturated fuller's earth, and develop techniques to destroy it? Should we return it to our factories for chemical decomposition? We must answer these questions soon. 7

The above quotations indicate Monsanto's concern with the ecological effects and state some of the questions to be answered. Monsanto is the only U. S. supplier, but additional information may be sought from European and Japanese suppliers. Prodelec, in France, is the principal continental source of PCB, and maintains a large toxicological laboratory. About three months ago, Mr. K. E. Scoville, Product Safety Representative of the Industrial and Power Capacitor Department, wrote to Mr. Pierre Jay, Manager-Dielectric Fluids Development for Prodelec, calling attention to the Risebrough research and asking for comments and further information. No reply has been received as yet.

6. A Proposed Program

The Company's stance on the PCB situation must take into consideration not only the need for technical assessment of hazards, but the need to guard against well-motivated but possibly needless or precipitate legislative action, e.g., to tack a PCB rider onto an anti-DDT bill.

As a first step, it is suggested that an outside consultant, with more freedom to operate than our own people, be engaged to sort through the conflicting evidence, touch base with the people doing the research at Monsanto, and give us his views as to whether the Company needs to do anything further at this time. This consultant would combine, ideally, the disciplines of analytical chemistry, ecology and toxicology. He would be asked to spend not more than two weeks on this initial survey, and report informally to interested departments and Corporate functional components.

Depending upon his findings, a possible second step would be to engage the electrical industry in cooperative investigation of the problem, through an appropriate industry technical body (e.g., the dielectric committee of NEMA).

The above recommendation is the outcome of discussions between Drs. Anderson and Murphy of RECO (environmental pollution); Mr. E. N. Deck (Safety and Plant Protection); and Messrs. Marquis and Nelson (Product Safety). It has been reviewed at length with Dr. Pozefsky, Dr. George, Mr. Scoville and others at Hudson Falls, and briefly with Mr. Alimansky and Dr. Osthoff at Pittsfield, all of whom have expressed general agreement.

Mr. Deck has suggested that we consider Dr. Horace W. Gerard, a toxicologist at Fairleigh Dickinson University for the assignment as our liaison scientist. Dr. Gerard is a hydrocarbon expert who does much work for the Mobil Company and has carried out assignments for GE in the past.

J. S. Nelson
October 30, 1969