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January 27, 1988

Mitchell Guss, Esq.
Uniroyal Chemical Company, Inc.
Benson Road
Middlebury, Connecticut 06749

Dear Mr. Guss:
Re: Mary A. Dendinger, et al vs Chrysler Plastic Products, Corp., et al
Deposition: Denton R. Leach-- January 7, 1988

URL 07249

Enclosed please find original deposition in connection with the above-captioned action.

We ask that the deponent read and sign the deposition before a Notary Public and return the signed deposition to:

Kirk J. Delli Bovi, Esq.
Murray & Murray
300 Central Avenue
Sandusky, Ohio 44870

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UNIROYAL CHEMICAL
COMPANY, INC.

Thank you for giving this matter your attention.

Very truly yours,

James A. Martone/sm

James A. Martone
COURT REPORTER

Enc. Original w/ Exhibits
cc: Kirk J. Delli Bovi, Esq.

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

ORIGINAL

MARY A. DENDINGER, ET AL., :
Plaintiffs, :
-versus- : No. C87-7117
CHRYSLER PLASTIC PRODUCTS CORP., ET AL., :
Defendants. :

Deposition of BENTON R. LEACH, taken pursuant to Agreement, at the corporate offices of Uniroyal Chemical Company, Inc., Benson Road, Middlebury, Connecticut, before James A. Martone, a Notary Public in and for the State of Connecticut, on January 7, 1988, at 9:30 a.m.

URL 07250

A P P E A R A N C E S:

For the Plaintiff:

MURRAY & MURRAY CO., LPA
300 Central Avenue
Sandusky, Ohio 44870
By: KIRK J. DELLI BOVI, ESQ., of Counsel

For the Defendants Uniroyal Chemical Company, et al.:

FULLER & HENRY
1200 Edison Plaza
300 Madison Avenue
Toledo, Ohio 43603-2088
By: ROBERT A. BUNDA, ESQ., of Counsel

For the Defendant Stauffer Chemical Company:

THOMPSON, HINE & FLORY
National City Bank Building
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By: TIMOTHY J. COUGHLIN, ESQ., of Counsel

For the Defendant Chrysler Plastic Products Corporation:

EASTMAN & SMITH
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Toledo, Ohio 43604
By: PETER R. CASEY, III, ESQ., of Counsel

For the Defendant A. Schulman, Inc.:

MANAHAN, PIETRYKOWSKI & BAMMAN
414 N. Erie Street
Toledo, Ohio 43603-2328
By: LARRY P. MEYER, ESQ., of Counsel

A L S O P R E S E N T:

Mitchell Guss, Esq.
Uniroyal Chemical Company, Inc.
Benson Road
Middlebury, Connecticut 06749

URL 07251

MR. DELLI BOVI: Before we begin, is it my understanding that despite the indication in Uniroyal's response to our document production request, that records containing information that we thought were available for inspection and photocopying, that, in fact, those records are not available today for inspection and photocopying?

MR. BUNDA: I don't know what your understanding is.

MR. DELLI BOVI: My understanding is what your responses say in that is records containing such information are available for inspection and copying at Uniroyal's world headquarters, Middlebury, Connecticut.

MR. BUNDA: That's right.

MR. DELLI BOVI: And, in fact, those records are not available today for either my inspection or for photocopying; is that correct?

MR. BUNDA: No.

MR. DELLI BOVI: Then I would like to inspect and have them photocopied today.

MR. BUNDA: Do you want to postpone the deposition and go over and look at them now? I've offered to make copies to you. They are not here in the building. I discovered that this

URL 07252

morning. We have offered copies to you.

We've given you summaries of the information that exists in those records. We're not trying to hide the records from you, but they're not available right now. If you want to see them before the deposition, we can go ahead and do that and postpone the deposition.

MR. DELLI BOVI: How long will it take to retrieve and have the records ready for my inspection?

MR. BUNDA: Well, I don't know. I think Mr. Leach can tell us that.

THE WITNESS: I would estimate at least a week.

MR. BUNDA: They're in storage.

MR. DELLI BOVI: Then it can't be done.

MR. BUNDA: We'll supply you with copies of the records. You have the right to request that the deposition be reconvened if you want to ask additional questions.

MR. DELLI BOVI: Well, I intend to do that. We also agree for purposes of the record that I hand-delivered a letter to you the day before yesterday, indicating that I desired the records

URL 07253

that are referred to in Uniroyal's response to our request for production on documents to be made available today.

MR. BUNDA: And I think I indicated to you at that time when you hand-delivered the letter, that I would try and do that, and I've discovered that they're in storage. I can't do anything about it.

MR. DELLI BOVI: All right. Uniroyal will agree, however, to retrieve and copy those records for us?

MR. BUNDA: Yes.

MR. DELLI BOVI: All right. Thank you.

MR. BUNDA: The only thing that I can add as a stipulation to that, if it proves to be too voluminous, you may want to go and look at the records yourself. I'm not going to put the company through an inordinate amount of bother, but we'll try and be cooperative and try and make copies and have them available to you.

MR. DELLI BOVI: All right.

B E N T O N R. L E A C H,

called as a witness, having been first duly sworn by James A. Martone, a Notary Public in

UHL 07254

and for the State of Connecticut, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. DELLI BOVI:

Q. Would you state your full name, please?

A. Benton R. Leach.

Q. What is your present address?

A. Home or work?

Q. Home.

A. 27 Rimmon Hill Road, Woodbridge, Connecticut.

Q. Do you have any plans on changing your address within the next six months?

A. None that I'm now aware of.

Q. How long have you lived at your present home address?

A. 11 years.

Q. Your present age, please?

A. 57.

Q. Would you outline for me your educational background after your graduation from high school?

A. I have a Bachelor's degree in chemistry from the Virginia Polytech Institute in 1952.

Q. Have you received any additional educational training at the college or graduate or

UAL 07255

postgraduate level since 1952?

A. I attended the Executive Development Program at the University of Michigan in 1968, for approximately six weeks or thereabouts. No degree or anything as a result of that.

Q. What did that course work deal with?

A. General management concepts.

Q. You mentioned in your resume that you attended numerous in-company training courses. Were these courses offered by Uniroyal?

A. Some were, some were not. Some were outside. They were paid for by Uniroyal, but --

Q. What subject matters did those courses cover, sir?

A. General development concepts, how to write letters, public speaking, meeting management, variety of things of that type.

Q. Did any of those in-company training courses deal with the fields of occupational health and safety, industrial hygiene or chemistry?

A. Probably some of them dealt with chemistry, not with the industrial hygiene and industrial toxicology.

MR. BUNDA: Could I interrupt for a second?

URL 07256

MR. DELLI BOVI: Yes.

MR. BUNDA: Could we make the resume an exhibit, if you're asking questions from it and making reference to it? I think it probably would be easiest if anyone reading the record had the exhibit.

MR. DELLI BOVI: I don't have a desire to have it marked as an exhibit. If you want to have it marked as a defendants' exhibit --

MR. BUNDA: Fine, we'll do that.

Q. Are there any further educational courses or courses of study you've pursued, other than those you've outlined, since you obtained your BS degree from VPI?

A. None that I can recall now.

Q. Would you outline briefly, Mr. Leach, your employment initially after you obtained your BS degree from VPI.

A. First thing I did was spent two years in the Army, ordinance corps, during the Korean war.

Q. Overseas?

A. One year overseas in Korea.

Q. And your employment upon your discharge?

A. After a few months of job hunting, I came to work for the Naugatuck Chemical Division of U.S.

UAL 01257

Rubber Company in January, 1955.

Q. What was your initial position with U.S. Rubber?

A. I was a laboratory supervisor in the quality control laboratory at the synthetic rubber plant.

Q. In Naugatuck?

A. In Naugatuck.

Q. How long did you hold that position, sir?

A. Six or seven months.

Q. How did your position change at that time?

A. I became the foreman of the plastics pilot plant.

Q. Of U.S. Rubber?

A. All of these would be with U.S. Rubber, Naugatuck Chemical Division until I tell you there was a change.

Q. What type of plastics were you involved with in that position?

A. We made a variety of polymers based on emulsion polymerization. These were ABS, PVC, nitrile and probably some others I can't recall now.

Q. This was at the Naugatuck facility of U.S. Rubber?

URL 07258

A. It was.

Q. Your initial familiarity then with the polymerization of vinyl chloride dates back to approximately 1953?

A. No, sir.

Q. All right.

A. 1955.

Q. Did U.S. Rubber ever begin large scale production of PVC?

A. Yes, sir.

Q. When did that begin, sir?

A. Approximately 1949 or 1950, U.S. Rubber Company purchased a PVC facility from the Glen L. Martin Company. This facility was located in Painsville, Ohio.

Q. How long did you continue to work for U.S. Rubber?

A. I never left the employment of U.S. Rubber. U.S. Rubber changed its name in the late '60s to Uniroyal.

Q. When you were foreman at the pilot polymerization facility, what job duties did you have?

A. I managed the operation. Other people, the people who were the development engineers, provided

URL 07259

the pilot plant with what was called job tickets, which was a plan for making a particular study of a batch of something, and the plastics pilot plant provided the equipment, the materials, and the employees to produce that particular material in a pilot sized lot.

Q. Prior to 1955, did U.S. Rubber polymerize vinyl chloride only using the emulsion process?

A. I don't know.

Q. All right.

A. I think the answer to that is yes, but I'm uncertain as to what the product line at the plant was in the '50s because I had nothing to do with that.

Q. You then worked as a development chemist for U.S. Rubber?

A. That is correct. After about a year and a half in the pilot plant, I moved to the research and development organization as development chemist with our acrylonitrile, butadiene, styrene monomers.

Q. Were you involved at all with PVC during the period of time you were a development chemist, or was your work confined to ABS?

A. Confined to ABS. During that period of time, I -- only the three monomers were involved in

UBL 07260

that particular product. There were no co-blends.

Q. You then became a process development group leader?

A. Yes. Still in the ABS product line.

Q. And then a production general foreman?

A. That was at the Naugatuck synthetic plant. That occurred in 1961.

Q. What production processes did you oversee in that capacity?

A. The emulsion polymerization of butadiene and styrene, to make both dry synthetic rubber and latex.

Q. You were not involved in PVC production?

A. No, sir.

Q. You were then production superintendent at Naugatuck?

A. Same plant.

Q. Not involved with PVC production?

A. Correct.

Q. It was approximately then in December of 1978, that -- 1968, I'm sorry, that U.S. Rubber became Uniroyal?

A. Sometime like that. I don't recall the exact time of the change. It was sometime before 1970, that U.S. Rubber Company changed its name to

URL 07261

Uniroyal.

Q. Did your work between December, 1968 and May, '71, as the manager of Colloidal Products Research and Development involve PVC production at all?

A. It didn't.

Q. In June of 1971, you became plant manager of Uniroyal's facility in Painsville, Ohio?

A. That is correct.

Q. And that was a polymerization facility?

A. That is correct.

Q. How long had Uniroyal or U.S. Rubber owned and operated that plant?

A. As I told you, that plant was purchased from Glen L. Martin in either 1949 or 1950. I'm not certain as to the exact date.

Q. And how long had Glen L. Martin owned and operated the facility?

A. Only a few years. It was built right at the end of the war.

Q. Between 1971 and 1977, where did the Painsville facility acquire its vinyl chloride?

A. The vinyl chloride came from a joint venture called Monochem.

Q. That was with Borden?

URL 07262

A. Yes, sir.

Q. And that joint venture began in the early 1970s?

A. No, sir.

Q. When did Monochem first begin producing VC?

A. 1961.

Q. Was the vinyl chloride supplied to the Painsville facility acetylene based or --

A. Yes. Acetylene based.

Q. That was true during the period of time that you were plant manager there from June of '71 to March of '77?

A. Yes, sir.

Q. And also to your knowledge prior to that time?

A. I'm certain it was, because the facility which was purchased about 1949 had as part of it, a vinyl chloride facility that was based upon acetylene, and when Monochem started up, the on-site vinyl chloride facility was closed down.

Q. Uniroyal, then, between 1949 and 1950 and 1961, was itself a producer of vinyl chloride?

A. Yes, sir.

Q. Has Uniroyal --

A. And subsequently also because we were joint

URL 07263

owner of Monochem.

Q. Where was the Monochem facility located?

A. Geismar, Louisiana.

Q. Is that its one and only production facility?

A. It is.

MR. BUNDA: Was.

A. Mr. Bunda has corrected me. Was. About 1983 or '84, Uniroyal sold its interest in the vinyl chloride portion of Monochem to Borden. We no longer own any part of it.

Q. Between 1968 and March of 1977, did Uniroyal have any other PVC production facilities besides Painsville?

A. No.

Q. How did your employment with Uniroyal change in April of 1977?

A. At that time, I left the Painsville plant and came back to corporate headquarters as director of manufacturing.

Q. Is the Painsville facility still operating?

A. It is. The Painsville facility at the time I went there in 1971 had two products: PVC and nitrile rubber. At the end of 1975 -- actually in January, 1976, the PVC portion was shut down.

URL 07264

Nitrile rubber production continues at the site.

Q. Has Uniroyal been a producer of PVC since January of 1976?

A. It has not.

Q. What was the reason for the shut down of the PVC production aspect of the Painsville facility?

A. The old manufacturing facility which we owned couldn't be retrofitted with the necessary corrective devices to enable us to comply with the vinyl chloride regulations that were being implemented.

Q. Was that because of the ambient air levels in the facility or because of the residual vinyl chloride monomer content in the finished product?

A. Both of those and others.

Q. What is your present position with Uniroyal?

A. I am director of environmental affairs for Uniroyal Chemical Company. The resume which you have is a couple years old so it doesn't show the transition from Uniroyal, Incorporated back to Uniroyal Chemical.

Q. All right.

A. That occurred at approximately October,

URL 07265

1986, when Uniroyal Chemical Company was sold by Uniroyal, Inc.

Q. During the period of time between 1968 and 1974, was the PVC that Uniroyal manufactured, manufactured by Uniroyal, Incorporated or Uniroyal Chemical?

A. It was manufactured by the Uniroyal Chemical Division of Uniroyal, Inc.

Q. Uniroyal Chemical was a wholly-owned subsidiary or division of Uniroyal Incorporated between 1968 and 1974?

MR. BUNDA: Ill object to the question. I think that it's a compound question. There's a legal distinction between a division and subsidiary.

Q. A wholly-owned division of Uniroyal Incorporated between 1968 and 1974?

A. It was.

Q. All right.

MR. BUNDA: By definition, divisions are wholly-owned.

MR. DELLI BOVI: Thank you, Mr. Bunda.

MR. BUNDA: You're welcome.

Q. Mr. Leach, I'd like to hand you what I have

URL 07286

marked as Plaintiffs' Exhibit 1, Uniroyal.

Would you take a look at that document and identify it it for me if you can?

A. It's title is "Responses of Defendant, Uniroyal, Inc., to Plaintiffs' Interrogatories Directed to all Defendant PVC Manufacturers."

(Plaintiffs' Exhibit Uniroyal 1 marked for identification.)

Q. Are the answers that are contained in that document, answers supplied by you on behalf of Uniroyal?

A. Others assisted in the preparation, but I signed this as the submission of Uniroyal.

Q. Are the answers provided in that document, to the best of your knowledge, accurate and complete?

A. Yes, sir.

Q. Your answer to interrogatory No. 3 indicates that Uniroyal ceased the manufacture of PVC resin in 1975. Do you know whether it was in 1975 or 1976?

A. We may have run out from our production silos, some -- in early January of 1976, some material that was produced prior to December the 31st of 1975.

URL 07267

Q. All right.

A. But you get to a very narrow distinction as to what "manufacturing" is. We didn't polymerize any material after the end of 1975.

Q. Between 1968 and 1974, did the Painsville facility use both the suspension and the emulsion polymerization processes?

A. We did.

Q. And during those years, did each process account for approximately 50 percent of the total PVC production at Painsville?

A. It did. They did. We had two plants. One suspension plant and one emulsion plant.

Q. Were both plants shut down at the same time in 1975?

A. They were.

Q. Do you know, sir, whether or not the PVC resin that Uniroyal sold to Chrysler between 1968 and 1974 was based on the emulsion or the suspension process or both?

A. Both.

MR. BUNDA: I think to be accurate, interrogatory No. 8 addresses that. Is that right? It contains figures, the breakdown and the years, some of the years.

URL 07268

Q. I'm going to hand you next, Mr. Leach, what we've marked as Plaintiffs' Exhibit Uniroyal No. 2. Would you identify that document, please.

A. It is entitled "Response of Defendant Uniroyal, Inc., to Plaintiffs' Request for Production of Documents, Directed to all Defendant PVC Manufacturers."

(Plaintiffs' Exhibit Uniroyal 2 marked for identification.)

Q. That document bears your signature?

A. It does.

Q. And are the responses provided in that document, to your knowledge, accurate and complete?

A. They are.

Q. In addition to the documents that are attached to Plaintiffs' Exhibit Uniroyal 2, has Uniroyal provided this morning three documents which I have marked as Plaintiffs' Exhibit Uniroyal 3, 4 and 5? Those documents were produced by Uniroyal this morning?

A. They were.

MR. BUNDA: For the record, I think we should indicate that we received a request from the plaintiff to supplement our responses.

In response to that, we went through

UAL 07269

our records again, and in connection with the interrogatory and request for production of documents regarding the size of the polyvinyl chloride, additional sales literature and descriptive information was found which addresses that particular point, and it was supplied to plaintiffs' counsel this morning by me.

Q. To the best of your knowledge then, Mr. Leach, prior to the present time, the only documents that Uniroyal has produced in this case are the documents that are attached to Plaintiffs' Exhibit Uniroyal 2, and the documents that have been marked Plaintiffs' Exhibits Uniroyal 3, 4 and 5?

A. So far as I know.

(Plaintiffs' Exhibits Uniroyal 3, 4 and 5 marked for identification.)

MR. BUNDA: There was an attachment to the interrogatories as well, attachment No. 1.

Q. That is the only other document in addition to those that we have just identified that Uniroyal provided prior to today; is that correct?

A. So far as I know.

Q. All right.

A. These are the ones that I have seen that we have provided.

URL 07270

Q. Do you know of any others that have been provided?

A. I don't.

Q. Now, at the time you signed these answers to interrogatories, were there any documents other than those that Uniroyal produced today or prior to today, that you reviewed or consulted in order to prepare the answers?

A. Yes.

Q. What documents are those, sir?

A. Uniroyal Chemical has maintained certain records of its sales in the form of a -- of computer printout sheets, which show what the year-end sales were for each customer and each product that we sold to that customer.

These year-end summaries, if you would, represent a record of what was sold to each customer, and that record was referred to to derive the answers that were provided in the answers to interrogatories.

Q. Were there any other documents that you reviewed in order to respond to the interrogatories?

A. We reviewed certain records that we had, which are not very much these days, because of the length of time since the plant was shut down, to

URL 07271

select the documents that were added to -- used for interrogatory answers and for production of document answers that seemed to be responsive to the questions that were asked of us.

Q. So do I understand it, then, that prior to answering these interrogatories and producing the documents that were produced back in October of 1986, you had someone go to Uniroyal's warehouse, go through Uniroyal's documents, and select out the documents that were necessary for you to provide these answers and to produce these documents?

A. Yes, sir.

Q. After those documents were selected and reviewed by you, what happened to them?

A. Returned to the warehouse.

Q. Is there any reason why those documents that were reviewed by you in order to prepare these answers to interrogatories in the fall of 1986 were not produced at that time?

A. They are quite voluminous. It was not clear that we should copy all of the information about all of the sales of these particular product lines, many of which were not to Chrysler or even to Chrysler Sandusky, as part of the interrogatories here.

URL 07272

I don't recall at the present moment how the information is arranged on those things. It's either arranged by customer or by product type, and I just don't recall which.

Q. Did Uniroyal at any time supply PVC resin to any facility of Chrysler other than that located in Sandusky, Ohio?

A. I am uncertain. I know Chrysler was a customer, but I just don't know.

Q. Prior to 1974, and the announcement by Goodrich of the angiosarcoma deaths, what percentage RVCM was Uniroyal experiencing in its resin that it produced at Painsville?

A. I don't know.

Q. Did Uniroyal at any time prior to 1974, test its resin that it produced, either by the suspension or the emulsion process at Painsville to determine the RVCM content?

A. Yes, but as far as I know, it only occurred after the announcement.

Q. Prior then to CREECH's announcement in January or February, 1974, Uniroyal did not test the resin that it produced at Painsville to determine the RVCM content?

A. Would you start that again for me, please?

URL 07273

(Question read.)

A. Not so far as I know.

MR. BUNDA: I want you to -- I'm going to object to the form of the question. Mr. Leach is here to answer what his personal knowledge is. I'm not sure that the question is addressed to his knowledge, but to what Uniroyal did, and on that basis -- we're not submitting Mr. Leach at this time as a witness to give the total experience of Uniroyal. We may do so in the future and will inform you of that at that time, but to the extent that he may not have complete knowledge of what Uniroyal did, I'll object to the form of the question.

Q. You are, are you not, Mr. Leach, the most knowledgeable person at Uniroyal concerning the residual concentrations of vinyl chloride monomers in the PVC resins manufactured by Uniroyal between January 1, 1967 and December 31, 1980?

A. I believe that's so because of the transitions that have occurred since that time.

Q. Are you aware of the existence of any documents that indicate testing at the Painsville facility or anywhere else of PVC resin manufactured by Uniroyal prior to January of 1974, for RVCM

URL 07274

content?

A. I am not aware of such information and we have looked for it.

Q. When did Uniroyal first conduct tests of its PVC resin to determine RVCM content?

A. To the best of my knowledge, in early 1974.

Q. And why did Uniroyal begin testing of its PVC resin at that time?

A. In light of the revelations that were made by the CREECH announcement, we felt we needed to know what the content of our resin was.

Q. And why did Uniroyal feel it needed to know what the content of its resin was?

A. Because it was apparent that vinyl chloride had properties that I had not been previously aware of, and we knew that both in our manufacturing facility and in the facilities of our customers, the amount of vinyl chloride present in the workplace would be an important thing to know and control.

Q. And what were the properties of vinyl chloride that you learned about in early 1974 that you were previously unaware of?

A. The announcement of Goodrich in early 1974, was that there was an apparent connection between

URL 07275

angiosarcoma of the liver and exposure to vinyl chloride.

Q. When Uniroyal first performed that testing in 1974, what did it reveal in terms of the RVCM content of Uniroyal's PVC resin?

A. One of our answers to interrogatories, I believe, covers that better than I could produce from my head. There's a chart in the answer to interrogatories called "Residual Vinyl Chloride in Packaged Goods When Packaged."

This was produced in March of '75, and it lists the vinyl chloride content of various types of PVC which we manufactured for each month, and I have to believe, though I didn't myself produce this report, that those months are the months of 1974.

MR. BUNDA: That's attachment one of the third document to the answers to interrogatories.

Q. Has a copy of that document you've just identified been marked as Plaintiffs' Exhibit Uniroyal 4?

A. Yes, sir. However, I have an earlier Plaintiffs' Exhibit Uniroyal 4, which is one of the PVC selection guides.

UHL 07276

MR. DELLI BOVI: We'll relabel it Plaintiffs' Exhibit Uniroyal 6.

THE WITNESS: Correct.

MR. DELLI BOVI: Thank you.

(Plaintiffs' Exhibit Uniroyal 6 marked for identification.)

MR. BUNDA: That's a document dated March, '75?

THE WITNESS: Yes. The particular document is dated March 13, 1975.

Q. And whose initials are DER?

A. That's Don Rinehart. He was the technical superintendent of the Painsville plant at this time.

Q. And what were his responsibilities in 1974 and early 1975?

A. I'm wrong. He was not the technical superintendent, someone else was. Mr. Rinehart was the technical manager of PVC matters at the Painsville plant. He reported to the technical superintendent.

Q. In the upper right-hand corner of that document are a number of initials, including yours, correct?

A. That is correct.

URL 07277

Q. Was this document, to your knowledge, circulated in 1975 outside of the Uniroyal organization?

A. I believe it was not. The people on that distribution list that you refer to are all people at the Painsville plant. I probably sent this to some of the people at the company headquarters, at division headquarters, but certainly no one in the Painsville plant circulated these data outside of the plant, outside of the company.

Q. To the best of your knowledge, then, the information contained in Plaintiffs' Exhibit Uniroyal 6 was not furnished to Chrysler?

A. I would be quite confident that that data on this sheet was not furnished to Chrysler.

Q. In Uniroyal's answer to interrogatory No. 19, you indicate in the first sentence, "increased vacuum stripping was used in 1974 and 1975, which produced some reduction in residual VCM," correct?

A. Yes, sir. That is what that answer states.

Q. Now, prior to CREECH's announcement in January, 1974, had Uniroyal undertaken any efforts to reduce the VCM levels in its resin?

A. I think we had not taken any efforts

UBL 07278

specifically directed toward reducing the residual levels of RVCM. Some of the things we did to improve the operating economics in our plant, by increasing the recovery of unpolymerized vinyl chloride may have had that effect, but that was not the objective of it.

Q. Did the increased vacuum stripping that was used in '74 and '75 include both the suspension and the emulsion derived PVC resin?

A. It did.

Q. And would you describe for me specifically what the increased vacuum stripping consisted of?

A. Usually it consisted of longer residence time in the stripping step. Probably it included additional steam addition to the stripper, as well as longer time, and the combination of additional steam and longer time would have reduced the amount of free vinyl chloride in the slurry.

Q. When, to the best of your knowledge, in 1974 did Uniroyal begin this increased vacuum stripping?

A. I would say approximately midyear we began to do some things, once we determined that some actions were required.

Q. Did it begin the increased vacuum stripping

UBL 07279

in '74 on both the suspension and the emulsion derived PVC resin?

A. We did.

Q. Prior to the beginning of that increased vacuum stripping, do you have reason to believe that the RVCM levels in Uniroyal's PVC resin were ever lower than the numbers indicated on Plaintiffs' Exhibit Uniroyal 6?

A. Particular lots might have been lower intermittently, but nothing that I'm aware of that we did deliberately would have resulted in any higher levels in early 1974 than existed at any previous time.

Q. What steps had Uniroyal taken, to your knowledge, between 1968 and 1974 prior to the CREECH announcement, that would have reduced either as a direct effect or indirect effect, the RVCM levels in its resin?

A. I can't think of anything. The reason I answered the question as I did, has to do with the fact that there is a certain level of residual vinyl chloride in the resin at the time of its production, and the longer that material stays in storage, the lower the level of residual vinyl chloride that remains. So that what is displayed in the chart of

URL 07280

3/13/75, is the level of vinyl chloride at the time the material was packaged.

If the material remained either in a bulk storage silo or in a -- in bags for varying lengths of time, there would have been lower levels of vinyl chloride in the product at the time it was shipped.

Q. Was the testing that was done that's reflected in Plaintiffs' Exhibit Uniroyal 6 done before or after the resin was packaged?

A. The title of the particular document says "Residual Vinyl Chloride in Packaged Goods when Packaged," which means that if the material went into bags, it was done at that time, or if the material -- if the suspension material went from the bulk storage silos into a hopper car or a sealed bin for transportation, the sample would have been taken at the time it went into that shipping container.

Q. Does Uniroyal have in its possession any of the raw test data that's reflected in Plaintiffs' Exhibit Uniroyal 6, other than this single document?

A. There's not a single answer to the question which you asked. The answer, number one, is that we have no raw data that backs up the data on this page. We do have data on vinyl chloride content of

UBL 07284

our polymer in other forms than exist on this page, but none of the raw lot-by-lot data.

Q. What other data does Uniroyal have concerning --

A. I believe there are other interrogatory attachments.

Q. Other than the interrogatory attachments, does Uniroyal have any other documentation?

A. No, sir.

Q. All right. Do you know by what method Uniroyal generated the data that's reflected in Plaintiffs' Exhibit 6? In other words, what equipment was used?

A. Gas chromatography.

Q. Who ran the GC, do you know?

A. The data reflected on the sheet dated 3/13/75, was derived in the laboratory at the Painsville plant. Other data that we have submitted was sometimes derived by others.

Q. Do you know the type of GC used to conduct this analysis or when that GC was purchased by Uniroyal?

A. I know neither of those.

Q. Do you know whether Uniroyal had a GC at its Painsville facility prior to 1975?

URL 07282

A. I do know that we did have a GC because it was used to determine the purity of our polymer stream.

Q. Did the Painsville facility have a GC when you began employment there in 1971?

A. It did.

Q. Do you have any reason to believe that if it had chosen to do so -- Withdrawn.

Uniroyal could have used that GC, could it not, prior to 1974, to test its resin for RVCM content?

A. Yes.

Q. I'd like to refer you, Mr. Leach, to Plaintiffs' Exhibit Uniroyal 2. Do the attachments to that exhibit reflect the types of Marvinol that Chrysler purchased from Uniroyal?

A. I believe so.

Q. So Uniroyal's knowledge, then, between 1968 and 1974, Uniroyal would have sold Chrysler Marvinol 22, Marvinol 23, Marvinol 1001, Marvinol 50, Marvinol 56 and Marvinol 5051?

A. Yes, sir.

Q. Do you know of any other Marvinol product lines sold to Chrysler between 1968 and 1974 other than those six?

URL 07283

A. I do not. There may have been some others that are included in the total weight that we show in one of our interrogatory answers as sold to Chrysler, for which we couldn't find the technical data sheets. These types listed here, however, cover the range of products which we manufactured.

Q. Going back to Plaintiffs' Exhibit Uniroyal 6, after the Marvinol types on the left-hand column, there are indications, for example, Swensen, Boeing 1, Boeing 2.

What do those refer to?

A. They refer to the spray dryer lines in which the product was made. We had three spray dryers. Swensen and Boeing are the names of the manufacturers.

Q. All right.

A. Williams Mill was another kind of dryer line in which the tin was manufactured. The group at the top of that sheet represents the emulsion types. The lower half of the sheet, 5 through 24 represents the suspension types.

Q. So Marvinol 22 and 23 would be suspension based, and Marvinol 50, 56, 5051, and 1001 would be emulsion based?

A. I am a little uncertain on 1001. Let me

URL 07284

look at the technical data sheet and see what that says. I am, as I sit here, uncertain as to what 1001 was. That is outside of the regular type numbering system, and I can't tell from this sheet -- well, from the particle size it was an emulsion type. Very fine, and this means it was emulsion.

Q. Do you know why there was apparently no testing by Uniroyal on its Marvinol 56 prior to July of 1974?

A. Probably there was no demand for its manufacture. That was a somewhat specialized resin and we didn't --

Q. Was there any testing of the 1001 resin by Chrysler for RVCM in 1975?

MR. CASEY: Objection. You said testing by Chrysler.

MR. DELLI BOVI: I'm sorry, by Uniroyal?

A. Can I hear that again?

(Question read.)

Q. Was there any testing by Uniroyal of its 1001 resin in 1975?

A. I don't know.

Q. To your knowledge, was any testing ever

URL 07285

conducted of Uniroyal's 1001 resin for RVCM content?

A. Not to my knowledge. I found no information to answer that.

Q. How was the emulsion derived resin shipped to Uniroyal's customers?

A. Emulsion resin has the consistency of flour which could only be handled in bags, never in bulk, so it was all shipped in bags.

Q. Do you know offhand whether the 1001 resin was shipped in bulk or in bags?

A. From the information on the technical data sheet as to its particle size, it is the fine particle size and would have been shipped in bags.

Q. What about the suspension based resins, Marvinol 22 and 23?

A. Suspension resins have the approximate consistency of sugar and they can either be shipped in bags or they can be shipped in hopper cars, or they can be shipped in the big rubber bags called sealed bins. All three shipping containers were utilized.

Q. Do you know by which method or methods Uniroyal shipped resin to Chrysler between 1968 and 1974?

A. For any of the emulsion types we sold to

URL 07286

Chrysler, it would certainly have been in bags.

Q. What about the suspension derived resins?

A. I -- my memory is that Chrysler was a hopper car customer. I would say that suspension to Chrysler was mostly in hopper cars, though we could have shipped some in bags. I don't believe they were a sealed bin customer.

Q. Would that method of shipment have held true between '68 and '74?

A. Yes, sir.

Q. In terms of the size of the suspension based resins, how did Marvinol 22 and 23 differ?

A. Very little differences as to size. You mean particle size?

Q. Yes, sir.

A. Very little difference as to particle size.

Q. And what was the average particle size of those two suspension-based resins?

A. These are not numbers that I have in my head. I'm going to have to look them up and see what we claim in our technical data sheets.

MR. BUNDA: Referring now to attachment one to responses to request for production of documents.

A. Well, I looked at attachment one and that

UBL 07287

does not provide, as far as I can see, an average particle size which is what he asked for. It shows a particle size distribution.

MR. BUNDA: What are you looking at then?

THE WITNESS: I haven't found anything yet. I'm looking for the answer to his question.

Q. All right.

A. I cannot answer your question as to average particle size. I have never had those numbers in my head and I cannot find them in any of the data that is here.

Q. What can you tell me in terms of the suspension-derived resin in terms of particle size distribution?

A. All -- essentially all of the particle size of suspension resins would have been retained on a 200-mesh screen, and all of it would generally have been in the range between what would be retained on an 80-mesh screen and a 200-mesh screen.

Q. How did that differ from the emulsion resins?

A. Emulsions would have essentially all passed through a 200-mesh screen.

UAL 07288

Q. Between 1968 and 1974, how did the suspension and emulsion resins differ in terms of their porosity?

A. I don't think I can answer how they differed. Both of them probably had some small amount of porosity, but that's a technical detail that I just don't know.

Q. Would you identify Plaintiffs' Exhibit Uniroyal 7, please?

A. It's entitled "Residual VCM in Marvinol PPM and VCM by Weight," dated 4/30/75.

(Plaintiffs' Exhibit Uniroyal 7 marked for identification.)

Q. Thank you.

A. Is that an attachment to one of these?

A. Yes, to Exhibit 1.

Do you know when the testing upon which the data reported in Plaintiffs' Exhibit Uniroyal 7 was based was conducted?

A. Since the document is dated April 30, '75, it certainly was collected before that time. Since we began the testing in 1974, early 1974, I would say it was collected approximately over that 14- or 15-month period of early 1974, through early 1975.

Q. Can you tell me, for example, why, while

UAL 07289

Plaintiffs' Exhibit 6 shows Marvinol 22 concentrations, for example, as high as 778.5, in Plaintiffs' Exhibit 7, the highest reported is 910?

A. Sir, that question again, please?

Q. Sure. Can you tell me why, let's take Marvinol 22, for example, Plaintiffs' Exhibit Uniroyal 6 shows a high of 878.5, while Uniroyal Exhibit 7 shows a high of 910?

A. No. I can't answer that. From my viewpoint, there's no technical difference between the number 910 and 878.

Q. Let's take a look at Marvinol 23 then. Can you tell me why Exhibit 6 discloses a high of 1264, while Exhibit 7 discloses a high of 2920?

A. I would say that sometime other than the 12-month period on Exhibit 6, we obtained a sample that was higher.

Q. Would the date lead you to believe then that the higher sample for Marvinol 23 was obtained after December of 1984?

A. Probably, though not certainly. Because it is my interpretation as I look at what is called Exhibit 6, that the data on that page represents the average for all of the Marvinol 23 tested for any particular month. The datas reported on the 4/30/75

URL 07290

report, exhibits the range, so if there were a higher level sample obtained at some period of time that ended up being an average for a month, Mr. Kim would have reported the range. I say Mr. Kim because C.H.K. is the initials of C.H. Kim, who was our technical superintendent.

Q. Although, if you look at Marvinol 22, the high in Uniroyal 7 is less than the range reported for November of 1974, correct?

A. Yes, sir. I have no explanation for that. I think that's a distinction without a whole lot of real difference. Those numbers are so close together.

Q. How were the "As Received by Customer" columns in Plaintiffs' Exhibit 7 derived? Where did that data come from?

A. I believe that we either sent people from our plants or some people from the company headquarters visited our customers to obtain samples of resin as received by the customers, to determine that value, those values.

Q. Do you know of any testing that Uniroyal ever performed of resin received by Chrysler?

A. I don't.

Q. Was the data that is reported in

URL 07291

Plaintiffs' Exhibit 6 and 7 data generated in-house by Uniroyal?

A. Yes, sir.

Q. Was the data generated in Plaintiffs' Exhibit Uniroyal 8, which is the first page of attachment one, also generated in-house by Uniroyal?

A. Yes, sir.

(Plaintiffs' Exhibit Uniroyal 8 marked for identification.)

Q. And was that also true of Plaintiffs' Exhibit Uniroyal 9, which is another page from attachment one?

A. Yes. Attachment 9 is a part of a report that refers to the data that made Uniroyal 8.

Q. And what report is that?

(Plaintiffs' Exhibit Uniroyal 9 marked for identification.)

A. In early 1976, we produced a report that summarized the various things that we had done in the PVC plant over the period of approximately two years, to manage vinyl chloride exposures in our plant, and to manage the vinyl chloride content of the product which we made. We put together a summary report as part of our winding down of the business that summarized the data which we had

URL 07292

collected.

Q. Was --

A. And this, Plaintiffs' Exhibit No. 9 is a portion of that report and Uniroyal Exhibit 8 is the data which summarizes the written portion that is No. 9.

Q. Was that report ever distributed outside of Uniroyal, to your knowledge?

A. To the best of my knowledge it was not.

Q. Does the report still exist?

A. I have no idea.

Q. You --

A. I have not seen it.

Q. Did the report exist at the time you provided those documents in response to our request?

A. I have no idea. I believe it did not. At certain times in the past, we have selected data from various sources to answer questions that we had, and that sometimes -- sometimes that selected data became part of a file and the origin from where it came was disposed of for other reasons, so I think we didn't find this report.

Q. In response to our request for production of documents, have you searched the records of Uniroyal to determine whether or not the report in

UHL 07293

its entirety exists?

A. No search has been made for this particular report. We have searched the places where we believe documents exist and we didn't find the report.

MR. DELLI BOVI: I would like to get a copy of that report if Uniroyal still has it. Will you agree to produce that document if it exists?

MR. BUNDA: Well, I want to take a look at the document to see whether it's relevant. I will agree that we'll look for the document to see if it exists.

MR. DELLI BOVI: Will you advise us as to whether or not it exists?

MR. BUNDA: Yes.

MR. DELLI BOVI: Thank you.

Q. At any time after 1974, did any individual or entity outside of Uniroyal -- Uniroyal's organization, to your knowledge, conduct any tests of Uniroyal's resins for RVCM content?

MR. BUNDA: Read that back.

(Question read.)

A. No.

Q. Prior to 1974, did Uniroyal inform or

URL 07294

disclose to any of its resin customers that Uniroyal -- Uniroyal's PVC resin contained unreacted vinyl chloride monomer?

A. So far as I know, we didn't.

Q. Was Uniroyal aware prior to 1974, that its PVC resin contained unreacted vinyl chloride monomer?

A. Yes.

Q. Was Uniroyal between 1970 and 1974, a member of the Manufacturing Chemists Association?

A. Yes.

Q. Do you know whether or not between 1970 and 1974, Uniroyal participated on the MCA's occupational health committee?

A. Yes. Uniroyal did.

Q. Was there a particular employee or representative of Uniroyal between 1970 and 1974, who sat on that MCA committee?

A. Yes. Dr. Walter Harris.

Q. Is Dr. Harris still with Uniroyal?

A. He is not.

Q. When was he last employed by Uniroyal?

A. I think he probably retired in 1984 or perhaps 1985, I'm somewhat uncertain.

Q. Do you know his present whereabouts?

URL 07295

A. Yes. He lives in Naugatuck, Connecticut.

Q. What is Dr. Harris' approximate age at the present time, if you know?

A. Approximately 67.

Q. Did Dr. Harris sit on the MCA's occupational health committee between 1970 and 1974?

A. I don't know. Perhaps I responded incorrectly to the earlier question. Didn't that have to do with the vinyl chloride committee?

Q. If you want to talk about the vinyl chloride committee, we can do that. Would that be easier for you?

A. Well, perhaps I improperly anticipated your question and answered for the vinyl chloride committee, when your real question was occupational health committee. If that's --

Q. Let's talk about the occupational health committee first.

A. I -- any answer that I gave regarding the occupational health committee, I should have said no, because I have no knowledge of Uniroyal's participation with the occupational health committee.

Q. What about Uniroyal's participation in the MCA's vinyl chloride committee?

URL 07296

A. Dr. Harris was a member of that committee.

Q. When was that committee formed, to your knowledge?

A. I don't know. I don't know.

Q. Have you discussed with Dr. Harris at any time his involvement with the vinyl chloride committee of the MCA?

A. Yes. When the -- my first memory of those discussions is in early 1974, when the B.F. Goodrich announcement of the newly determined effects of vinyl chloride were big news, I had initial discussions with Dr. Harris as to what all of this meant, and he provided me with some of the knowledge which he had.

Q. Between 1971 and 1974, you were the manager of Uniroyal's PVC production facility in Painsville?

A. That is correct.

Q. All right. At any time between June 1971 and CREECH's announcement in 1974, did Harris or anyone else at Uniroyal discuss with you any information Harris had or Uniroyal had or Harris acquired or Uniroyal acquired concerning studies relating to the adverse health effects of exposure to vinyl chloride?

MR. BUNDA: I'm going to object to

URL 07297

the form of the question. I think it presumes that Harris had information. I think it's vague as to what information we're talking about, but I'll let you go ahead and answer the question.

A. Not so far as I remember.

Q. Were you aware, sir, that prior to the CREECH announcement in 1974, of any reports relating to adverse health effects in either humans or animals in exposure to vinyl chloride?

A. Yes. It was well-known that vinyl chloride is an anesthetic and a poison, so we had various instruments that measured explosive limits and other rather high levels of vinyl chloride as future events turned out in our plants, because we wanted to not asphyxiate anyone.

Q. Prior to 1974, then, what Uniroyal was concerned about in its PVC resin facility was either anesthetic or explosive levels of VCM monomer in the ambient air?

MR. BUNDA: Objection to the form. He's only answering to what he knows. Ask him about his personal knowledge, that's fine, but I'm going to object to that question in its present form.

Q. You can answer it.

A. Can I hear the question again?

URL 07298

(Question read.)

A. And in addition, we were concerned about the operating economics of our facilities because we didn't want to lose the valuable vinyl chloride monomer.

Q. When Harris first discussed with you his knowledge concerning studies relating to adverse health effects from exposure to VC in early 1974, what did he tell you?

A. He told me what the MCA vinyl chloride panel had learned from their discussions with Dr. Maltoni. He told me of the review of the indications of Dr. Maltoni's study with NIOSH.

Q. All right.

A. He told me of the indications of the conclusions of Viola's work as they now seemed to be confirmed by Maltoni's work. And perhaps other things.

Q. Was your first knowledge of Maltoni's studies or Viola's studies acquired by you as a result of what Harris told you in 1974?

A. That was my first --

MR. COUGHLIN: Objection. Go ahead.

A. That was my first information on it. I learned more by reading the stuff that came out

UAL 07299

subsequently.

Q. You mentioned that prior to 1974, you were aware that at certain levels, vinyl chloride had anesthetic properties?

A. Yes, sir.

Q. And that it was a poison?

A. Yes, sir.

Q. What was your knowledge prior to 1974 in terms of in what manner vinyl chloride was poisonous?

A. Can I hear that again?

(Question read.)

A. As I mentioned earlier, one of my previous jobs with Uniroyal, prior to going to Painsville, was as the foreman of the plastics pilot plant. We used vinyl chloride in the plant to make some of the experimental polymers there.

One of the responsibilities of the foremen of the plastics pilot plant was to maintain a book of information on all of the materials that we used in that pilot plant, and toward that end, we had a sheet on vinyl chloride and the other monomers that were used there, and we utilized whatever data sources there were in 1955 to prepare the vinyl chloride sheet, and the Sachs and various and sundry

URL 07300

other referenced books indicated that vinyl chloride was an anesthetic, and that vinyl -- high levels of vinyl chloride could, by inhalation, kill you.

Q. All right.

A. So I retained that to memory. We -- the procedures in the plant as they existed at the time I got there took into account all those things, and many others that had been learned by the practical experience in the use of vinyl chloride in the plant over many years.

Q. Prior to 1974, how did Uniroyal monitor for VC in the air in its resin plant?

A. We had instruments that determined explosive levels of hydrocarbons in the air.

Q. All right.

A. We also had some hand carried probably infrared devices that would measure somewhat lower levels of vinyl chloride. These were used to a large extent to track down leaks.

Q. Do you know what the detection limits of those devices that were used prior to 1974 were?

A. The explosive detection devices would have measured vinyl chloride in the air in terms of percentages, because they were designed to measure something that was less than the lower explosion

URL 07301

limit of vinyl chloride in air and give an alarm if the limit was about to be approached. The hand-carried infrared device probably would measure in the hundreds of parts per million.

Q. Is it your understanding that the lower explosive limit of vinyl chloride is 3.6 percent?

A. I don't remember that. If you have a document that tells you, that's a lot more accurate than my memory.

Q. Was Uniroyal, prior to 1974 in terms of occupational health and safety, concerned with vinyl chloride in the ambient air in percentages lower than the lower explosive limit of vinyl chloride?

A. I think so, because it is my memory that the level at which the odor of vinyl chloride can be detected is considerably lower than the explosive limit, and we were all well schooled that if you can smell vinyl chloride in the air, some action needed to be taken to correct whatever the source was.

Q. What is your present understanding as to the odor threshold of VC?

A. I believe it is approximately 1,000 parts per million. In many individuals, it varies with the people.

Q. Have you ever smelled vinyl chloride?

URL 07302

A. I certainly have.
Q. What does it smell like?
A. I say it is a characteristic odor slightly sweet.
Q. Were you aware prior to 1974 of any ACGIH recommended exposure limits for vinyl chloride?
A. I think I was not.
Q. Are you aware at the present time that there were recommended exposure limits promulgated by the ACGIH prior to 1974?
A. Yes, sir.
Q. When Harris talked to you in early 1974, did he indicate whether or not he was aware of Viola's work and Maltoni's work as a member of the MCA's vinyl chloride committee?
MR. COUGHLIN: Objection.
A. Yes, and by his own independent following of the literature.
Q. Do you know R.N. Wheeler?
A. I do. I have met Nick Wheeler.
Q. When did you last meet R.N. Wheeler?
A. I can't say with accuracy but I would say it was five to six years ago.
Q. Have you read within the last 30 days R.N. Wheeler's deposition in this case?

URL 07303

A. I have.

Q. Have you reviewed prior to today the exhibits attached to R.N. Wheeler's deposition?

A. No. The document I received was the transcript, without its documents.

MR. BUNDA: Let's take a break.

(Recess taken.)

Q. Can you tell me with respect to the Marvinol resins, which resins are homopolymers and which resins are copolymers?

A. I believe so. Want to ask me specific things?

Q. Sure. Marvinol 22?

A. Suspension. I'm sorry, Marvinol 22 is homopolymer.

Q. 23?

A. Homopolymer.

Q. You don't know about the 1001?

A. Perhaps that technical data sheet that we had would indicate that. I don't know it from my head. Perhaps one of the other. The technical data sheet indicates it's polyvinyl chloride and I believe it would indicate it was a copolymer, if it were.

MR. BUNDA: This is one of the

URL 07304

technical data sheets?

THE WITNESS: For 1001.

MR. BUNDA: Attached for the responses for production of documents.

Q. 50?

A. 50 is a homopolymer.

Q. 56 is a copolymer?

A. Yes, sir.

Q. And 5051 is a homopolymer?

A. Yes, sir. Our line contained only two copolymers, that's 56 and this.

Q. When you talked with Harris in 1974, did he inform you of data or information communicated to the MCA either by a Dr. LeFevre or by a representative of Csolcay Et Cie?

A. I don't recall any mention of LeFevre's name.

MR. COUGHLIN: I want to object to the question. Calling for hearsay.

Q. Did you become aware after 1974 or in that year, of any information communicated to the MCA either by Dr. LeFevre or a representative of Csolcay Et Cie?

MR. COUGHLIN: Objection.

A. I don't recognize this man's name other

UBL 07305

than I've seen it in print in some of the recent documents I've reviewed.

Q. I'm going to hand you, Mr. Leach, what I have marked as Plaintiffs' Exhibit Uniroyal 10. This document has previously been marked Plaintiffs' Exhibit Wheeler 4, and would you take a look at that document and tell me whether or not you have ever seen it before?

A. This is called "The Pathology of Vinyl Chloride by P.L. Viola," and I have not seen it before.

(Plaintiffs' Exhibit Uniroyal 10 marked for identification.)

Q. Did Dr. Harris indicate to you in 1974, whether he was in the possession of or whether Uniroyal had in its possession any articles written by Dr. Viola?

A. I don't recall that he did.

Q. All right.

A. I don't recall discussions with Dr. Harris of what documents he had in his possession.

Q. Did Dr. Harris indicate to you by what method or means he became aware of Dr. Viola's work?

A. I believe that he was aware of it through his participation in the MCA.

UAL 07306

MR. COUGHLIN: Object to that.

Q. Did Dr. Harris ever indicate to you whether or not he met with Dr. Viola either in the United States or in Europe?

MR. COUGHLIN: Objection.

A. I recall no such information.

Q. So you don't know one way or the other whether Harris met Viola or not?

A. I don't.

Q. Were you aware, Mr. Leach, prior to 1974, of studies associating exposure to vinyl chloride with acro osteolysis?

A. I was not.

Q. When you met with Dr. Harris -- who was Dr. Harris at the time you met with him in 1974?

A. He was the corporate toxicologist with Uniroyal, Inc.

Q. And how long had he been the corporate toxicologist of Uniroyal, Inc.?

A. I think approximately 8 to 10 years.

Q. In 1974, did you regard him as the most knowledgeable person in Uniroyal concerning the health effects of chemicals Uniroyal either worked with or manufactured?

A. Yes.

URL 07307

Q. Was it one of Dr. Harris' responsibilities to keep abreast of developments or reports or studies in the medical and scientific literature concerning actual or potential adverse health effects of chemicals produced by Uniroyal?

A. I believe it was.

Q. And was Dr. Harris' responsibility in that regard confined to medical or scientific literature generated in the United States or --

MR. BUNDA: Objection.

Q. Or was that responsibility worldwide?

MR. BUNDA: I'm going to object to the form of the question. We're getting into an area of Mr. Harris' responsibility. I recall the question, if I do, it's a blanket statement about Mr. Harris' review of the literature. If you want to ask Mr. Leach about his knowledge, that's fine, but I think that we first have to establish a foundation about whether or not Mr. Leach knows what Mr. Harris' responsibility -- Dr. Harris' responsibilities were, and at that point then we can -- then the questioning can go on.

But I don't want the answers to be represented in the record as being a complete and accurate representation of Mr. Harris' -- or Dr.

UAL 07308

Harris' job functions if, in fact, Mr. Leach doesn't have any knowledge of that. The objection will be as to the form of the question on that basis. And you can go ahead and answer the question, unless Mr. Delli Bovi wants to rephrase it.

Q. You can go ahead and answer it.

A. At the time, in 1974, I would have had no idea as to how to answer the question which you have just posed.

Q. Do you know how to answer the question today?

A. Yes, sir. Because in some later years Dr. Harris reported to me and I understood what his job responsibilities were at that time, and if I can extrapolate backwards in time, I would say that the answer to your question is yes. Because Dr. Harris' responsibility as corporate toxicologist for Uniroyal, Inc., extended around the world to all the facilities Uniroyal, Inc. had around the world.

Q. At that time, 1974, in how many countries approximately did Uniroyal operate?

A. I would say that at least a dozen and -- you know, if you would like, I can try to enumerate them, but many is the answer.

Q. Did Uniroyal in the early 1970s, have any

URL 07309

PVC polymerization facilities either wholly-owned or jointly-owned or part of a joint venture outside of the United States?

A. No. The Painsville facility was the only PVC plant of Uniroyal, Inc.

Q. I'd like you to assume, Mr. Leach, for the purpose of my following question, that Plaintiffs' Exhibit Uniroyal 10 was published in an Italian medical journal article in March of 1970.

Can you assume that for purposes of the question I'm about to ask you?

A. Sure.

Q. Assuming that that article was published in an Italian medical journal article in 1970, in March of that year, would it have been, as you now understand it, one of Dr. Harris' responsibilities to uncover that article and to read it and to report the results of his review of that article to Uniroyal?

MR. BUNDA: Objection.

A. I certainly cannot answer that question. To the best of my knowledge, Dr. Harris had no knowledge of Italian and I think he couldn't have read it in the original form, and I have no idea when it might have appeared in any literature review

URL 07310

of things that would have been in a form he could handle.

Q. Let me hand you then, Mr. Leach, what I have marked as Plaintiffs' Exhibit Uniroyal 11. Would you look at that document and tell me whether you've ever seen that before?

A. This document is entitled, "The Cancerogenic Effect of Vinyl Chloride," P.L. Viola, Presented at the 10th International Cancer Congress, Houston, Texas. I have not seen this document before.

(Plaintiffs' Exhibit Uniroyal 11 marked for identification.)

Q. What did Dr. Harris tell you in 1974 about Dr. Viola and his work?

MR. COUGHLIN: Objection.

A. I can't say exactly what he told me. He -- my memory of what I learned from Dr. Harris in early 1974, was that the CREECH-Goodrich announcement seemed to confirm in humans the data that was emerging from Dr. Maltoni's studies on rats in Italy, and that there had been some previous indications of possible human effects from the studies that Dr. Viola had done on rats.

But it sure wasn't clear to me with

URL 07311

my level of sophistication about toxicology at that time exactly what the distinctions were between what Viola had done and what Maltoni had done. All I cared was that workers in another PVC plant had problems, and I wanted to know how the workers in my plant were likely to be affected.

Q. Is that something you would have wanted to know in 1971, '72, '73, as well as in 1974?

A. Yes. If there had been as clear information in 1971 and 1972 as there was in 1974.

Q. Do you know from your meeting or meetings with R.N. Wheeler whether or not he sat on the same vinyl chloride committee of the MCA as did Dr. Harris?

A. I don't know that from any meetings with Mr. Wheeler. My one meeting with Mr. Wheeler was a casual introduction to him at a meeting of the Chemical Manufacturers Association in Washington, and when I found out that he was Nick Wheeler from Union Carbide, I asked him if he knew my former college roommate, who was also employed by Union Carbide in South Charleston.

His answer was he didn't know my former roommate, and I found out that he was another graduate of Virginia Tech and we talked about that.

UAL 07312

We didn't have any discussion of vinyl chloride.

Q. Who is your roommate?

A. Charles Frye.

Q. What did he do at Carbide in the early 1970s, if you know?

A. I have no idea.

Q. This meeting, was it at the Chemical Manufacturers Association or the Manufacturing mists Association?

A. It was at the Chemical Manufacturers Association, because sometime in the mid to late '70s, the Manufacturing Chemists Association changed its official name to the Chemical Manufacturers Association.

Q. Would you take a look at Plaintiffs' Exhibit Uniroyal 12, which has previously been marked as Plaintiffs' Exhibit Wheeler 6, and tell me whether you've ever seen that document before?

A. Yes, sir.

Q. When did you first see that document?

A. Sometime this week.

Q. Had you ever seen that document in the form that it's being presented to you now or in any other form prior to this week?

A. I answered sometime this week.

UBL 07313

Q. Have you read that document?

A. I quickly glanced through it.

Q. When you met with Dr. Harris in early 1974, did he discuss with you any of the work or reports of Dr. LeFevre that are referred to on pages 3 and 4 of that exhibit?

MR. COUGHLIN: Objection.

MR. CASEY: Objection. Asked and answered.

MR. BUNDA: Object on the same basis.

MR. CASEY: At least twice now.

MR. BUNDA: Do you recall the question?

THE WITNESS: No. May I hear it again?

(Question read.)

Q. I'll rephrase it. In 1974, did you become aware of any of the information attributed to Dr. LeFevre on pages 3 and 4 of that exhibit?

MR. COUGHLIN: Objection.

A. I'll have to read the pages. As I mentioned, I never heard Dr. LeFevre's name until I read it in these documents.

Q. I would like you to read the last paragraph

URL 07314

on page 3 through item No. 6 on page 4.

(Plaintiffs' Exhibit Uniroyal 12 marked for identification.)

A. Yes. I have read that.

Q. Were you aware of any of the information that you just read in or before 1974?

A. No.

Q. I'm going to hand you next what's been marked as Plaintiffs' Uniroyal 13, an exhibit previously marked as Plaintiffs' Exhibit Wheeler 7.

Would you take a look at that article and tell me whether or not you've seen that prior to today?

A. Yes. This is one of the several documents that I reviewed during this week.

(Plaintiffs' Exhibit Uniroyal 13 marked for identification.)

Q. Have you read the document?

A. I have not. This document is written at a level of technical stuff that is beyond me.

Q. Did Dr. Harris tell you in 1974 what was happening to the animals that were being administered vinyl chloride by Dr. Maltoni and Dr. Viola?

MR. COUGHLIN: Objection.

URL 07315

A. I understood that the rats were developing tumors.

Q. Did Dr. Harris tell you in 1974 when Dr. Viola had first reported that the rats he was giving vinyl chloride were developing tumors?

MR. COUGHLIN: Objection.

MR. MEYER: Objection.

A. If he did, I don't recall.

Q. All right. Was the information that Dr. Harris passed to you in 1974 something you were interested in as the plant manager of the Painsville facility?

A. Very much.

Q. And if Dr. Harris had known that information in 1973 and 1972 and 1971 and possibly 1970, would you have wanted to have that information presented to you as soon as he knew about it?

MR. CASEY: Asked and answered in another form. Objection.

MR. MEYER: Objection.

A. If the indications of the studies had provided direction as to what should be done in plants of -- in my plant, I would have wanted to know it.

Q. Did Dr. Harris indicate to you when you met

URL 07316

in early 1974, for how long he had known of the results or any of the results of the work of either Maltoni or Viola?

MR. COUGHLIN: Objection.

A. I understood he was aware of these animal studies for a couple of years, but I also understood that in his estimation, the relationship of studies on rats was not clearly related to the impact on humans of those same chemicals.

Q. Did you ask Dr. Harris why he did not disclose to you prior to 1974 the information he had obtained or the information that had been disclosed to him regarding Viola's work and Maltoni's work?

A. I don't recall that I did ask him that question. Because I wouldn't have known what to do with the information. My -- the thrust of my interest was what should I be doing in my plant.

Q. Okay.

A. I didn't care what was happening to some rats in Italy.

Q. What did Dr. Harris tell you in 1974?

A. He told me that for the past several years there had been work going on in Europe of exposure of rats to various levels of vinyl chloride, some of the levels being so high, it was clearly toxic and

UAL 07317

it was directly killing the rats, and that certain kinds of tumors had developed in these animals, and that the work was continuing to try to understand what it meant.

Q. Did he tell you what kind of tumors the rats were developing?

A. Yes.

Q. Did he tell you they were malignant tumors?

A. He did.

Q. Did he tell you in what particular areas of the body the tumors were developing?

A. He did.

Q. What areas --

A. One of the significant ones being the Zimbol gland which exists in a rat and not in humans.

Q. Did he also indicate to you they were developing malignant tumors in the area of the submaxillary and the parotid glands?

A. I doubt it.

MR. BUNDA: Object. That was a mischaracterization of what the article says.

THE WITNESS: I don't understand what those words mean.

Q. Did you ask Dr. Harris in 1974 what this

URL 07318

meant to you in terms of your facility in Painsville?

A. Yes.

Q. What did he tell you?

A. Told me that we needed to increase the amount of monitoring that we were doing in the workplace and to increase or to put in place monitoring of our workers, so we could determine both what the general workplace levels of vinyl chloride were, and what the individual exposures of workers were.

Q. Did Harris indicate to you in early 1974 what his opinion was as to what the levels should be?

A. If he did, I can't recall.

Q. I'm going to hand you next what I've marked as Plaintiffs' Exhibit Uniroyal 14, document previously marked as Plaintiffs' Exhibit Wheeler 8.

Would you take a look at that document and tell me whether you've seen it before today.

(Plaintiffs' Exhibit Uniroyal 14 marked for identification.)

A. Yes, sir. It was in the package of documents that I reviewed this week.

URL 07319

Q. Had you seen that document prior to last week?

A. No, sir.

Q. Do you know any of the four individuals or the three individuals other than R.N. Wheeler, whose names are contained in the first paragraph of that document, either Rowe, Rinehart or Best?

A. I don't. Only -- Mr. Wheeler is the only one of that group of people that I've met.

Q. Do you know or have you ever met Dr. David Duffield?

A. No.

Q. Dr. Harris discussed with you in 1974 a presentation made by MCA to NIOSH?

A. Yes, sir.

MR. COUGHLIN: Objection.

Q. Did Dr. Harris indicate to you in 1974 whether or not he relayed any of the information he acquired concerning studies into the adverse health effects of exposure to vinyl chloride prior to 1974 to any other employee of Uniroyal?

A. I cannot recall specifically that he told me that, but referring to my later knowledge of Dr. Harris and his relationship to his boss, I am certain that he would have discussed this

UAL 07320

information with the corporate medical director, who was his boss in 1974, and somewhat earlier and was his boss later.

MR. MEYER: Objection.

Q. And the corporate medical director at the time was Kleinfeld?

A. No, sir.

Q. Who was it in 1970?

A. Dr. Dexter Forbes.

Q. He was the corporate medical director of Uniroyal, Inc.?

A. Yes, sir.

Q. Do you know over what period of time Dr. Forbes held that position?

A. He became the corporate medical director at the time Uniroyal, Inc. moved its headquarters from New York City to Middlebury, Connecticut, so I believe that was approximately 1972.

Q. Do you know what Dr. Forbes' prior employment was?

A. Prior to that?

Q. Yes.

A. I can't recall.

Q. And how long was Dr. Forbes the corporate medical director of Uniroyal?

URL 07321

A. From the time he came here in approximately 1972, until probably late 1985, when he was terminated during the free organization of Uniroyal, Inc.

Q. Do you know Dr. Forbes' current whereabouts?

A. He left us and went to Union Carbide and I have heard that he's no longer at Union Carbide but working in Pittsburgh.

Q. Do you know who he's employed by in Pittsburgh?

A. Either Mobay or Beyer. I'm not sure which of the corporate entities.

Q. What is the basis of your current understanding that any information Dr. Harris acquired prior to 1974 relating to studies into the adverse health effects of exposure to vinyl chloride, would have been communicated to Dr. Forbes?

A. In my later job assignments as you see on my resume, when I was in charge of health safety environmental affairs for Uniroyal, Inc., Dr. Forbes reported to me. At that time, Dr. Harris reported to Dr. Forbes, as he had for approximately 10 years or so. Knowing -- learning what I did about the

URL 07322

relationship between those two individuals, I'm sure Dr. Harris would have kept his boss apprised of what he was learning.

Q. Did Dr. Forbes ever indicate to you the extent of his knowledge concerning studies into the adverse health effects of exposure to vinyl chloride, prior to 1974?

A. When we learned of the problems with vinyl chloride in early 1974, I talked with both Dr. Harris and Dr. Forbes because I was concerned as to what I should be doing to do the necessary things for monitoring the health of my plant employees. I discussed this with Dr. Forbes. I don't know.

Q. Was Dr. Forbes on the vinyl chloride committee of MCA?

A. He was not.

Q. Do you have a present understanding as to whether or not Dr. Forbes would have passed on to any of his superiors at Uniroyal the information imported to him by -- imparted to him by Dr. Harris?

A. I don't.

Q. Who is Dr. Forbes' superior? Who was Dr. Forbes' superior at Union Carbide between 1972 and 1974?

MR. BUNDA: I don't think Dr. Forbes

URL 07323

was at Union Carbide at that time.

MR. DELLI BOVI: Uniroyal, I'm sorry.

A. I don't know. That's a level of the organization that I didn't deal with.

Q. At the present time, is there a corporate medical director of Uniroyal?

MR. BUNDA: There's no Uniroyal. Talking about Uniroyal Chemical?

MR. DELLI BOVI: Yes. Uniroyal Chemical.

A. No. Not functioning as such. We have a local physician who assists us in the operation of our dispensaries, but we don't have anybody that functions as a corporate medical director.

Q. Did Dr. Harris indicate to you in 1974 whether he or anyone else at Uniroyal had taken steps prior to 1974 to disclose to any of Uniroyal's customers the information that Harris had acquired prior to 1974?

A. I don't recall any discussions of that type. I was only interested in my plant.

Q. When did you first discuss with anyone outside of Uniroyal studies relating to the adverse health effects of exposure to vinyl chloride?

URL 07324

A. When did I first discuss it?

Q. Yes, sir.

A. I don't know. I guess I don't understand exactly what that question means.

MR. BUNDA: If you don't understand the question, then ask him to rephrase it.

Q. Did you ever contact any of the customers of the Painsville facility after Harris talked to you and communicate to them the information that Harris had communicated to you?

A. I didn't.

Q. Did you ever seek authority from anyone in Uniroyal to communicate to Uniroyal's customers the information given to you by Harris in early '74?

A. I didn't. My responsibilities were directed to my plant.

Q. All right. Who had the responsibility in early 1974, and in the years immediately prior to that, of communicating to Uniroyal's customers any information Uniroyal might acquire concerning adverse health effects relating to chemicals manufactured by Uniroyal?

MR. MEYER: Objection.

A. This, I think, is one of the responsibilities of the corporate toxicologist, to

URL 07325

obtain and interpret whatever information he has obtained about our products, to communicate that to the various sales organizations responsible for the sale of these products, and to determine how the import of whatever information he had would properly be provided to the customers.

Q. Did you attend an Occupational Safety and Health Administration fact-finding hearing into the toxicology of vinyl chloride in Cleveland in February of 1974?

A. Yes, sir.

Q. Prior to that meeting, did you have any discussions with any of your counterparts at any other PVC resin production facility, concerning the toxicology of vinyl chloride?

MR. COUGHLIN: Objection.

A. I don't think so.

Q. Did Harris ever indicate to you or do you have any knowledge of what other resin manufacturers sat on the MCA's vinyl chloride committee?

MR. COUGHLIN: Objection. It's a compound question. So we don't know if it's Harris' relaying information to him or whether it's his information individually.

MR. DELLI BOVI: I'll ask that as the

VRL 07326

follow up.

A. Well, some of the documents that I have reviewed that you have showed me here today indicated people who were participating in that.

Q. I'd like you to look at Plaintiffs' Exhibit 15 Uniroyal, if you would, which has previously been marked as Plaintiffs' Exhibit Wheeler 9.

(Plaintiffs' Exhibit Uniroyal 15 marked for identification.)

Q. I'd like to specifically direct your attention to the list of attendees that accompanies that document. This is the Cleveland meeting on February 12, 1974.

MR. COUGHLIN: There's highlighting on that document. Could you explain for the record where that highlighting came from, if you know?

MR. DELLI BOVI: The highlighting on Plaintiffs' Exhibit Uniroyal 15 in terms of gray marks over black type was highlighting done at our office, as is the yellow highlighting on page 2 of the other written marks on the document, as far as I know were put there by OSHA, but I don't have any independent knowledge of that fact.

Q. Did you ever see a copy of Plaintiffs' Exhibit Uniroyal 15 before today?

UAL 07327

A. Yes, sir. It was part of the group of documents that I reviewed this week.

Q. Did you ever receive a summary of that Cleveland meeting prior to this year?

A. I attended it.

Q. Do you know with reference to the list of attendees, whether representatives of Goodrich, Union Carbide, Firestone, Stauffer, Goodyear, Conoco, General Tire and Rubber, Diamond Shamrock, Stauffer, Tennaco, Goodyear, and the MCA also attended that meeting?

MR. CASEY: Objection.

MR. COUGHLIN: Objection.

MR. MEYER: Objection.

MR. BUNDA: Objection. I'm going to object to the form. Are you asking him does he see those companies listed on here or are you asking of his independent knowledge?

MR. DELLI BOVI: I'm asking him with reference to that whether or not he knows if representatives of those companies attended the meeting.

MR. BUNDA: I'm going to object on the basis of relevancy. I mean the man can read as well as we can. Whether he knows as an independent

URL 07328

factor whether they were there or not is not the question put before him, and I don't see the relevance of the fact of whether they're on that list now.

MR. COUGHLIN: I also want to object because your statement if it's purely from his personal knowledge is one thing, but if you're asking if those are listed on the exhibit, that is an incomplete list of all the attendees, because I believe the following page lists a number of attendeeswho were at that meeting. So representatives of those unions that attended that meeting. In order to be accurate, you're going to have to read every one of those groups or individuals who attended.

MR. DELLI BOVI: I'm sure you can do that on your examination.

Q. Would you answer the question, please?

A. I've completely lost track of the question. If you would like to ask me again or reread it, I'll try because I lost the --

Q. I'll ask it another way.

Do you know of any manufacturer of PVC resin who didn't have a representative at that meeting in Cleveland?

URL 07329

A. I'd have to study this and compare it to my knowledge. I'll be glad to if you want me to.

Q. Sure.

MR. COUGHLIN: Is that information that you have asked him, is that including foreign manufacturers of polyvinyl chloride who may have imported that product into the United States?

THE WITNESS: By quick review, compared with my mental list of who made PVC at the time, I don't see anyone missing, but this is a pretty complex question that you're asking me.

MR. BUNDA: Is this a good time for a lunch break?

MR. DELLI BOVI: Sure.

(Luncheon recess taken.)

Q. Mr. Leach, have you ever given a deposition before today?

A. I have.

Q. Has that been in connection with other litigation?

A. Yes.

Q. Has any of that litigation involved claims of injury or death relating from exposure to vinyl chloride?

A. No.

URL 07330

Q. Are you aware of any claims asserted against Uniroyal involving injury or death that are attributed to exposure to vinyl chloride?

A. Yes.

Q. Other than the litigation that we're here about today, what other claims are you aware of?

A. Well, there are some other cases that I have provided information on. I can't tell you the names of them now. It's been a while since I did them, but there's probably something like five or six others.

Q. Are these claims involving employees or former employees of Uniroyal or involving employees or former employees of Uniroyal PVC resin customers?

A. None of them involved Uniroyal employees. Most involve customers of -- PVC customers and at least one I'm aware of was a monomer customer.

Q. Who purchased VC monomer from Monochem?

A. Purchased VC monomer from Uniroyal. All of Monochem's production was the property of its two owners.

Q. Were the other claims that were asserted against Uniroyal by customers claims made by or on behalf of employees of PVC fabricators?

A. Yes.

URL 07331

Q. Are any of those claims currently pending in any court, to your knowledge, or have they been resolved?

A. To my knowledge, all of them have been resolved, but my role has not been to follow them in detail. My role has been to provide the interrogatory answers and anything else that is required.

Q. All right.

Q. In how many of those cases have you given deposition testimony?

A. None.

Q. Have you ever given deposition testimony concerning RVCM concentrations?

A. No.

Q. Did any of the claims made against Uniroyal by employees of PVC fabricators involve claims of cancers caused by exposure to vinyl chloride?

A. Yes.

Q. Did they all?

A. Probably. I'm not absolutely certain, but I believe so.

Q. Was each of these claims against Uniroyal involved in litigation, that is a lawsuit had actually been filed?

IRL 07332

A. Yes.
Q. And --
A. I'm not -- I am unclear as to what any other situation might be.
Q. All right. And can you -- there were a total of either five or six such cases?
A. I believe something in that order of magnitude.
Q. Did any of those cases, to your knowledge, go to trial?
A. I can't say.
Q. Were any of those cases, to your knowledge, settled?
A. Yes.
Q. How many of the five or six were settled?
A. I think probably the majority. As I say, I have not followed in detail. I have just -- I just pick up from information from time to time that this one that we were talking about last month has been settled.
Q. So to the best of your knowledge, are any of those cases still pending?
A. To the best of my knowledge they are not, but I have not followed them carefully -- closely.
Q. Do you know in what court any of those

UBL 07333

cases are pending or were pending?

A. No. I can tell you the city or -- and/or state in which I believe some of them were, but I can't tell you in what court they were.

Q. That would be helpful if you could do that, please.

A. Okay. At least one of them was in Cleveland, associated with vinyl chloride monomer.

Q. Was that a case involving breast cancer?

A. I don't think so. It was a male.

Q. Do you know if that case was filed in federal court or state court?

A. I don't recall.

Q. Do you recall the name of the plaintiff?

A. No.

Q. Do you know whether or not Uniroyal was the only defendant or whether other PVC resin manufacturers were also defendants?

A. The particular case had to do with Uniroyal's supply of vinyl chloride monomer. Uniroyal was not the only defendant.

Q. In what other cities are or were vinyl chloride related claims against Uniroyal pending?

A. There was one in Philadelphia where I provided interrogatory answers. There was one in, I

URL 07334

think, Detroit, where I provided interrogatory answers.

Q. Was that involved with an employee of Ford?

A. Yes. The one in Detroit?

Q. Yes.

A. Yes.

Q. What about the one in Philadelphia, what customer of Uniroyal did that involve?

A. I can't recall.

Q. Are you aware of any other cities in which any of these cases are or were pending?

A. No. That limits what I can recall.

Q. All right. Do you recall the name of the plaintiff in either the Philadelphia or the Detroit litigation?

A. Philadelphia, I don't.

Q. What about Detroit?

A. Detroit, I think the plaintiff's name may have been Mikyska. I probably remember that because it's an interesting sounding name.

Q. And in addition to the Philadelphia and the Detroit cases, you are aware of approximately three other claims brought against Uniroyal by employees of PVC fabricators?

A. Yes, sir.

URL 07335

Q. Who within Uniroyal would have knowledge as to the specifics of those pieces of litigation?

A. I would say that our general counsel would have whatever information exists.

Q. And that's Mr. Guss?

A. No, sir.

Q. Who would that be?

A. Our general counsel's name is Ira Krakower.

Q. Is his office located at this facility?

A. It is.

Q. How many times have you given deposition testimony before today?

A. Two.

Q. And what did those cases deal with?

A. Acrylonitrile. Actually it was two depositions in one case at different times.

Q. All right.

A. The thrust of the case was that the person who was ill had -- was ill because he had developed colon cancer, and it was asserted that his exposure to acrylonitrile was the reason he had colon cancer.

Q. What was the relative cost of producing a pound of emulsion based resin as opposed to suspension based resin? Was one more expensive to

URL 07336

produce than the other?

A. Yes. The emulsion resin was more expensive. I am uncertain as to the exact relationship, but I would estimate that between a pound of emulsion was between a third and a half more to produce than a pound of suspension. Primarily related to the different processing steps used in the manufacture of that resin directed toward maximizing the properties that were desirable in the emulsion types.

Q. Polyvinyl chloride is a man-made product?

A. Yes, sir.

Q. During the period of time that Uniroyal manufactured PVC, let's take between 1968 and 1974, is it your opinion that Uniroyal was an expert in the health effects associated with that product that it manufactured?

MR. BUNDA: Objection.

A. I think Uniroyal was not an expert in the manufacture, in the health effects of polyvinyl chloride.

Q. What steps did Uniroyal take before it marketed that product to customers throughout the country to determine whether or not that product or any compone: of it was carcinogenic or otherwise

URL 07337

harmful to human health?

A. I can't answer that question. I have no information.

Q. Prior to 1974, was there a specific step in either the --

A. I'm sorry, prior to when?

Q. '74, was there a specific step or process that Uniroyal used either in the emulsion or the suspension polymerization process to recover residual vinyl chloride monomer?

A. Yes. Steam stripping.

Q. What determined the length of time that the resin underwent that steam stripping step?

A. Primarily the process economics to make sure that we had recovered the optimum amount of vinyl chloride for reuse.

Q. That recovery process then was purely directed to economics?

A. Yes, sir.

MR. BUNDA: Speaking of the period before '74?

MR. DELLI BOVI: Yes.

Q. There was no effort by Uniroyal prior to 1974, to reduce the level of residual monomer in the resin for health related reasons?

UBL 07338

A. That is correct.

MR. CASEY: I'd just like to point out that we covered this this morning.

Q. Who is or who was R.A. Poxon?

A. He was one of the employees at the Painsville plant. If I can take a look at that --

Q. Certainly. It's --

A. You took back my stack.

Q. I'll give you the original. It's answer to interrogatory number 10.

A. Okay. Poxon was a member of our technical department at the Painsville plant.

Q. Can you tell me anything about his educational background?

A. No. I think he was a college graduate, but beyond that I can't tell you anything.

Q. Referring to your answer to interrogatory No. 7, are you able to break down or do you need to refer to the records of Uniroyal to break down those yearly items of data according to the particular type of resin shipped to Chrysler?

A. May I hear that again, please?

(Question read.)

A. I'm not able as I sit here to break that down. I am confident that from the records which we

UBL 07339

have, we can break those pounds down to the individual types that make them up.

Q. With reference to your answer to interrogatory No. 12, do you or does Uniroyal have any general information that you believe would allow you to testify on the average or mean or median time between manufacture of resin and shipment to Chrysler?

A. No. There is no such data.

Q. Do you feel able to give opinions on that subject, that is the approximate amount of time between manufacture and shipment of the resin that went to Chrysler?

A. I can give an opinion on that subject.

Q. All right, and what is your opinion on that subject?

A. My opinion is that the time between manufacture and shipment to Chrysler could vary from any place between days to months.

Q. Uniroyal has --

A. I would say further, that the materials shipped at the shortest time is likely to be the emulsion resin, because that was our best selling product, and very often we were hand to mouth, in terms of delivery.

URL 07340

The materials that are most likely to have the longer shipping dates are likely to be our suspension resins are where we maintained a significant inventory in our on-site silos.

Q. Wasn't there between 1970 and '74, a shortage of production capacity for PVC resin throughout the United States?

A. I believe that is so.

Q. Was the Painsville facility between '71 and '74, generally operating at full capacity?

A. Yes, sir.

Q. What storage facilities did Painsville have for its resin between '68 and '74?

A. All of the emulsion resins were packaged in bags and they would have been stored in our on-site warehouse, and if we needed additional, perhaps in some off-site warehouses, any suspension resin packaged in bags would have been stored in our on-site warehouse or perhaps off-site.

The bulk storage of our suspension resins was in four concrete silos on-site, and we would have loaded out the hopper car or sealed bin for a specific customer at the time it was required.

Q. In terms of production, how many days or weeks or months of production at Painsville could

URL 07341

Uniroyal warehouse?

A. I would say that in terms of the bagged resin, probably a week or so production, perhaps two weeks at the most. In terms of suspension resin, probably up to a month.

However, certain types move faster than other types, and so slow-moving types would probably be in inventory for a longer period of time than materials that were in high demand.

Q. And can you articulate for me with regard to the types of resin shipped to C ysler, those that generally during the time fra '68 to '74 were in high demand?

A. I can't say what types we s pped to Chrysler, but I think some of these material safety data sheets that are attached to one of your exhibits, if I could see that one again, that has the material safety data sheet, I can answer.

Q. Sure.

A. Of these types, the ones that would have been in the highest demand from my memory are the Marvinol 50 and the Marvinol 5051. Those types we e -- that was our best selling product.

The next group would be the Marvinol 22, Marvinol 23. There were a number of competitors

URL 07342

for those. They would have moved next fast, and then we get down to the 56 and some others that are -- a lot of people had them and we didn't have anything extra to sell so they would have been probably slower moving.

Q. Was there anything about the improved vacuum stripping that Uniroyal employed in 1974 and 1975, that would have prevented its application in prior years?

A. No. Other than the economic fact that the amount of time necessary to perform the additional stripping would have, and did slow down the number of pounds that could be processed through the total plant.

Q. Is it your understanding that the RVCM is a gas that is incapsulated within the resin particle?

A. I am uncertain as to whether the state of vinyl chloride is a liquid or a gas in a PVC particle.

Q. Do you have an understanding today as to how or by what processes the RVCM can become liberated from the resin particle?

A. Yes.

Q. Would you outline your understanding for me, please.

URL 07343

A. Any material that can form a gas comes to equilibrium between whatever it is contained -- comes to equilibrium within the container that is containing it.

The first stage is it's contained in the PVC particle, and it's in there because it hasn't yet escaped. If that PVC particle is put into a box, then over some period of time the volatile vinyl chloride will diffuse from the particle, and come to a certain equilibrium within the container, so that no more migrates from the particle into the container.

An equilibrium is eventually achieved by diffusion of the vinyl chloride from the particle into the container that's holding it.

Q. Were the bags -- do you include within your definition of the word "container," the bags in which Uniroyal shipped its resin?

A. No. A paper bag is not a container for gaseous vinyl chloride.

Q. Were the bags of resin that Uniroyal shipped between '68 and '74 lined at all?

A. They were not.

Q. Do you have an understanding at the present time as to any steps that quickened the liberation

URL 07344

of RVCM from the resin particle?

A. Yes. As indicated in one of our interrogatory answers, we determined by experimenting in our plant that if we aerated the resin in our storage silos, we could reduce the vinyl chloride content of the PVC particles.

Secondly, once the PVC particles are introduced into any kind of compounding equipment, the heat associated with that compounding equipment causes the release of the vinyl chloride monomer.

Q. All right. What about the dissolving of the resin in a solution, in a liquid solution? Do you have an opinion as to whether that releases the residual monomer?

A. The condition which you describe would release the residual monomer from the vinyl chloride particle into whatever the solvent was.

Q. Did Uniroyal between 1968 and 1974 have its own fabrication facilities?

A. It did, yes.

Q. How many PVC fabrication facilities did Uniroyal have in the United States between 1968 and 1974?

A. At least six.

Q. And would you list those for me, please.

URL 07345

A. Mishawaka, Indiana; Stoughton, Wisconsin; Port Clinton, Ohio; Philadelphia, Pennsylvania; Washington, Indiana; Farmville, Virginia.

Q. Prior to 1974, did Uniroyal to your knowledge do any in-plant testing for vinyl chloride in the air in any of those facilities?

A. To the best of my knowledge, no.

Q. Are each of those fabrication facilities that you listed still in existence?

A. No. Some are, some aren't.

Q. Which are not?

A. Philadelphia, Pennsylvania; Washington, Indiana and Farmville, Virginia.

Q. When were those facilities closed?

A. I don't know. My memory is that they were closed -- all three were closed prior to 1980, but I'm uncertain.

Q. Why were they closed?

A. Economics of the products that they made.

Q. Did their closing have to do at all with the inability to purchase resin?

A. No.

Q. Their closure then was unrelated to the promulgation of the OSHA vinyl chloride regulations?

A. I believe that is correct.

URL 07346

Q. Were you aware prior to 1974 of any recommendations from the MCA regarding exposure limits for vinyl chloride?

MR. COUGHLIN: Objection.

A. Yes. MCA put out a safety bulletin on vinyl chloride, as they did on a number of high volume chemicals.

Q. And what was your understanding as to the MCA exposure recommendation prior to 1974?

A. I don't recall. If you have a copy of the bulletin, you know, that would indicate it. I don't recall what the number was.

MR. COUGHLIN: Objection.

Q. Did you know of the MCA exposure recommendation prior to 1974?

A. I was aware of that book and so I expect I knew that number. Do you have a copy of that MCA bulletin?

Q. Yes. I believe you do also.

A. Okay.

Q. Is it your opinion, Mr. Leach, that Uniroyal's customers of PVC resin were entitled to know about any information Uniroyal acquired concerning the actual or potential health effects from exposure, either to that resin or a component

URL 07347

of it?

MR. MEYER: Objection.

MR. BUNDA: Objection. The basis of my objection is the fact that it's an incomplete and misleading characterization of the actual facts. But you can go ahead and answer it if you understand the question.

A. I was not then and don't now -- I didn't have then and don't now have concern for what was happening other than to my own plant people. I was concerned about how -- what management was required of the vinyl chloride levels of my manufacturing plant, what those people that I was responsible for were exposed to, and how I could reduce those responsibilities.

In my estimation, others would interpret whatever information was available from other sources, and apply it to our customers. I had more than I could do to manage my own responsibilities.

Q. All right. Your position is that as the plant manager of the Painsville facility, that your employees were entitled to know any information that Uniroyal learned concerning the actual or potential adverse health effects of exposure to VC?

URL 07348

A. That is correct.

Q. When Uniroyal began testing for RVCM at Painsville in 1974, it used a gas chromatograph; is that correct?

A. That was one of the instruments used.

Q. Did you ever attempt to determine the approximate per analysis cost to test for RVCM in the resin?

A. No, because that had no pertinency to what we were doing. We knew we had to know what it was and we went ahead and did it.

Q. Do you have an opinion as to approximately what it cost to perform such a test?

A. I don't.

Q. Did Uniroyal, to your knowledge, prior to 1974, conduct or sponsor any scientific research into the actual or potential adverse health effects of exposure to vinyl chloride?

A. I'd like to hear that question again please. I need to know the time frame.

Q. Prior to 1974.

MR. COUGHLIN: Could you define what you mean by "actual or potential adverse health effects"? Are we talking about cancer? Talking about any health effects? This is a cancer death

URL 07349

case.

MR. DELLI BOVI: Talking about any health effects including cancer.

MR. COUGHLIN: I object on the grounds of relevancy.

A. If I heard correctly that question, the key word in there was "sponsor," and I'm not aware of anything we sponsored prior to 1974.

Q. Did Uniroyal, to your knowledge, contribute monetarily prior to 1974 to any scientific research into the health effects of exposure to vinyl chloride?

MR. COUGHLIN: Same ground. Object.

A. Okay. It is -- I believe that Uniroyal participated in the -- I'm uncertain how to pronounce the word, acro osteolysis or whatever that term is. Our plant workers were part of those surveyed as part of the industry study that was done prior to 1974.

Q. Did you fund the Tabershaw-Cooper study?

A. We did. That wasn't before '74.

Q. Did it in part fund the industrial biotest study?

A. We did.

Q. Were the results of those studies furnished

URL 07350

to Uniroyal upon their completion?

A. They were.

Q. What other studies did Uniroyal fund prior to 1974, if in fact --

A. Those didn't occur prior to 1974, to the best of my memory.

Q. I want to go to Uniroyal's answer to interrogatory No. 14.

Does Uniroyal currently have in its possession a copy of the April 1, 1975, letter that is referred to in the second paragraph of that answer?

A. We don't. We have made numerous searches for that and have not been able to find it.

Q. Does Uniroyal have any documentary evidence that Chrysler ever received a copy of that letter?

A. I think we don't. Otherwise we would have produced it.

Q. I'd like to refer you to your answer to item A of interrogatory No. 15.

Is your January, 1974 date based upon your knowledge or Uniroyal's knowledge or Harris' knowledge or all three, or a combination?

A. I think the answer as stated here is my understanding of when vinyl chloride became a

UAL 07351

suspected human carcinogen. Others may have had other opinions.

Q. So the answer to interrogatory 15 A is based on your opinion?

A. Yes, sir.

Q. I'd like to go next to your answer to interrogatory No. 17, which reads, "Uniroyal participated in whatever industry studies were undertaken with respect to the subject."

When you refer and use the word "industry," what do you mean?

A. The Manufacturing Chemists Association performed various studies. One being the biotest studies, to expose rats to vinyl chloride, to try to confirm what conditions were produced.

Another study of the Manufacturing Chemists Association was the Tabershaw-Cooper study, which was an epidemiology study of workers in the vinyl chloride and PVC manufacturing industries.

Q. Did Uniroyal participate --

MR. BUNDA: Are you done?

THE WITNESS: Yeah.

Q. Does the word "industry" refer to the MCA, the U.S. polyvinyl chloride resin industry, the worldwide polyvinyl chloride resin industry, or

URL 07352

something else?

A. To the best of my knowledge, Uniroyal's participation in any studies of vinyl chloride in PVC was limited to the United States.

Q. All right. Do you know of any MCA sponsored studies dealing with vinyl chloride in which Uniroyal didn't participate?

A. I don't.

Q. Do you know whether or not in 1967, Uniroyal participated in MCA sponsored studies into acro osteolysis at the University of Michigan?

A. I believe I answered before that the Uniroyal plant in Painsville participated in that study.

Q. Now, as a result of that study, did the authors in February of 1970 recommend a worker exposure limit of 50 PPM?

MR. COUGHLIN: Objection. Hearsay.

A. If they did, they did. I don't recall that.

MR. BUNDA: Do you have a copy of the study that he could look at?

MR. DELLI BOVI: I have a copy of the MCA document that refers to it. I don't have a copy of the study with me, no.

URL 07353

MR. BUNDA: Then I'll object. The study can speak for itself.

Q. Were you aware of the results of the University of Michigan study sponsored by the MCA when the results were reported?

A. At the time they were reported, I was not aware of them.

Q. When did you first become aware of the results?

A. After January, 1974, when I began to try to expand my knowledge of the effects of vinyl chloride, I found in the plant files a copy of the report. I also found the information which indicated that the condition was not present in any of the workers in the Painsville plant.

Q. When was the report authored?

A. I don't know. You just read the dates there. It's whatever it is.

Q. February 1970?

MR. COUGHLIN: Objection.

A. If that's a question, I don't know. You have that data. I don't have that data.

Q. Well, does Uniroyal still have the report?

A. We didn't find it.

Q. To your knowledge, was Uniroyal aware in

URL 07354

1968 of the results of the research done by Dow Chemical into the liver function in workers exposed to vinyl chloride?

MR. COUGHLIN: Objection.

A. I can't say what Uniroyal knew in 1968. My awareness that I should have concern about vinyl chloride began in January 1974, and I learned some things after that. I have probably reviewed that article, but I don't know what Uniroyal knew in 1968.

Q. I'm going to hand you what I have marked Plaintiffs' Exhibit Uniroyal 16. Would you take a look at that document and tell me whether you've ever seen it before?

A. Yes, sir.

(Plaintiffs' Exhibit Uniroyal 16 marked for identification.)

Q. Did you see that document prior to this year?

A. I don't remember that I did. It's one of the documents I reviewed this week in preparing for today.

Q. Did you testify as a witness at the OSHA vinyl chloride hearings in 1974?

A. That is correct.

URL 07355

Q. Do you have any recollection as to whether in 1974, you --

A. I'm sorry. That was in 1975, the OSHA hearings.

Q. Let me refer you to --

A. Maybe I'm simply wrong.

Q. Let me refer to you this document, I'll mark it in a few minutes. It's a summary of testimony.

A. Yes, sir.

Q. Can you tell with reference to the first page of that document whether or not --

A. It says 1974. Very clear.

Q. Do you have a recollection at the present time as to whether at any time in 1974, you or Uniroyal was furnished with a copy of Plaintiffs' Exhibit Uniroyal 16 by the MCA?

A. I have no such knowledge. I don't recall ever having seen that document.

Q. Did Uniroyal in 1974, file suit against the Occupational Safety and Health Administration challenging the vinyl chloride regulations?

A. I don't remember.

Q. I hand you what I've marked as Plaintiffs' Exhibit Uniroyal 17. Would you take a look at that

UNL 07356

document. Tell me whether you have reviewed it prior to today.

A. I have not.

(Plaintiffs' Exhibit Uniroyal 17 marked for identification.)

A. These were activities beyond the scope of what the plant was doing.

Q. Are you aware of any other specific industry studies that Uniroyal funded other than the industrial biotest and Tabershaw-Cooper studies?

A. Yes. I think about 1979 or thereabouts, the Chemical Manufacturers Association did a follow-up on the Tabershaw-Cooper study and we did our part of that.

Q. And who did that research?

A. It's something like Environmental Health Associates or some name similar to that. I'm a little hazy on the name.

Q. Did Uniroyal sponsor in part the epidemiological research done by Dr. Chiazze?

A. I don't know.

Q. On PVC exposure related to factory workers?

A. I don't know.

Q. I'd like you to refer next to Exhibit No. 2. Did Uniroyal author any technical data sheet for

UNL 07357

Marvinol 22 after December 7, 1971?

A. I expect so.

Q. Has Uniroyal been able to locate any such document?

A. No.

Q. Did Uniroyal author a technical data sheet for Marvinol 23 after December 7, 1971?

A. I expect so.

Q. And that has not been located?

A. No, sir.

Q. Did Uniroyal author a technical data sheet for Marvinol 1001 after May 9, 1968?

A. Probably.

Q. You have not been able to locate that document?

A. No, sir.

Q. Did Uniroyal author a technical data sheet for Marvinol 50 after February 23, 1972?

A. Probably.

Q. You don't have a copy of that document?

A. Don't.

Q. Can you tell me the date on which Uniroyal authored its technical data sheet for Marvinol 56?

A. Not with certainty, but my guess is that this was before January 1974, because it has no

URL 07358

warnings about the vinyl chloride on it.

Q. And does that also hold true of the technical data sheet for Marvinol 5051?

A. Yes, sir.

Q. Can you tell me when Uniroyal authored the document titled, "A Selection Guide to Marvinol, A Family of PVC Resins"?

A. I cannot.

Q. Do you know whether it was before or after 1974?

A. I couldn't guess at that one.

Q. Attachment 2, to Uniroyal's answers to interrogatories is a resin guide published by U.S. Rubber in 1965 and 1966?

A. Yes.

Q. I'd like to refer you next to attachment 3 on Uniroyal's answers to interrogatories. Can you tell me the date on which the material safety data sheet for Marvinol 22 was authored?

A. No, sir. I see no date on here.

Q. Does --

A. Certainly it was after May of 1972, because I see that the form was revised in May of 1972 by OSHA.

Q. And you also know that it was after the

UHL 07359

promulgation of OSHA's vinyl chloride regulations in 1974?

A. Because it so states that, yes.

Q. Normally, do Uniroyal's material safety data sheets indicate the date on which they're authored?

A. Usually they do. I think it is unusual that this one doesn't have it.

Q. Now, this MSDS for Marvinol 22 indicates on the first page, "may contain trace amounts of vinyl chloride monomer"; is that correct, right in the middle of the page under "Note"?

A. So it says.

Q. What does the word "trace" mean?

A. It means a little bit.

Q. Now --

A. I don't think it has a scientific meaning.

Q. Did Uniroyal undertake any steps after 1974 to inform its customers as to the amount of vinyl chloride monomer in the resins that were being shipped by Uniroyal?

MR. BUNDA: Other than the reference to trace amounts?

Q. Other than the reference to trace amounts.

A. My memory is that we did that if our

URL 07360

customers asked for it.

Q. All right. And does Uniroyal have in its possession today any documents informing any Uniroyal customer of the concentration of RVCM in its resins, to your knowledge?

A. To my knowledge, we don't.

Q. Do you have any record of any request of Uniroyal at any time from Chrysler to supply Chrysler with information as to the RVCM in Uniroyal's resins?

A. None that I'm aware of.

Q. Now at the time that material safety data sheet was authored, Uniroyal had done the testing to determine the ranges of RVCM content in Marvinol 22, hadn't it?

A. Yes, sir. And as we indicated in some of our earlier discussions, the level in any particular lot of materials shipped to a customer would have been dependent upon the type of material and how old it was after the manufacturing process. And the storage conditions under which it had been stored between manufacturing and shipment.

Q. So Uniroyal, at the time it authored that material safety data sheet, knew that at least after production it had RVCM concentrations in its

URL 07361

Marvinol 22 as high as 978 PPM, correct?

A. Yes, sir.

Q. All right.

A. It was not the level that would probably be there when it was delivered to the customer.

Q. Does Uniroyal have a material safety data sheet for Marvinol 22 that was authored prior to the promulgation of the OSHA VC regulations?

A. From this attachment of documents that we have just been looking at, it appears to me that we have the one that was issued in 1971 -- that we thought was issued in 1971. Yes. Technical data sheet Marvinol 22, 12/7/71.

Q. All right. Prior to the OSHA regulations, then, Uniroyal didn't utilize material safety data sheets for its Marvinol resin?

A. Under a different name.

Q. All right.

Q. Prior to 1974, and the promulgation of the OSHA standards, Uniroyal was advising its resin customers that its resin was physiologically inert; is that correct?

A. May I ask where you are reading that?

Q. Sure. I'm reading from the Marvinol 56 product safety data sheet dated November 17, 1972,

URL 07362

which appears to be the most recent one prior to the promulgation of the OSHA regulations.

A. Yes, sir. That says synthetic polymer generally recognized as being physiologically inert. It says the polymer is physiologically inert.

Q. Prior to 1974 and the promulgation of the OSHA regulations, Uniroyal never told its customers that the resin contained RVCM, right?

A. I believe that is correct.

Q. Now, who was R.J. Dowling?

A. Mr. Dowling was an engineer in the product safety group in Uniroyal Chemical Company, who was responsible for the preparation of the safety data sheets on all of the products of Uniroyal Chemical.

Q. Do you know as of today whether this particular product safety data sheet dated November 17, 1972, was authored after the publication of Viola's work?

A. If you will show me when his work was published.

Q. Sure.

MR. COUGHLIN: Are you asking for his current knowledge?

MR. DELLI BOVI: Yes.

UNIROYAL 07363

MR. COUGHLIN: Objection. The documents speak for themselves.

MR. BUNDA: Objection on the basis of relevancy.

A. Well, since the date of the publication appears to be May 1971, and the date of the safety data sheet is November 1972, the answer to your question is there's a difference between those two.

MR. COUGHLIN: We also have a hearsay document with the Viola study and that's never been authenticated, so I'm going to object.

MR. CASEY: I'm just glad we got this point about these dates out. I think that's --

MR. DELLI BOVI: Thank you. Dates are rather important in this case.

MR. CASEY: And they certainly speak for themselves.

Q. Did you, Mr. Leach, either in your general reading or in your reading as the plant manager of the Painsville facility, come across any of the studies relating to health effects from exposure to vinyl chloride that were done by Viola or Maltoni prior to 1974?

A. No.

MR. CASEY: Objection. We went over

URL 07364

this this morning at least three or four times.

A. The thrust of my responsibilities were to operate my plant. Beginning -- the reason I was sent out to Painsville in May -- June 1971 was because my predecessor died of a heart attack very soon following a federal grand jury indictment of Uniroyal and others for polution of the Grand River.

There was a whole lot of environmental regulations being promulgated at this time. My responsibilities were almost fully directed to mee ng all of the environmental regulations that were being thrust upon me, and meeting the production schedules that were being given to me. I was not reading technical literature of this type.

Q. Would you identify Plaintiffs' Exhibit 18 for me if you can?

A. It is entitled, "Proposed OSHA Standards for Vinyl Chloride Exposure."

(Plaintiffs' Exhibit Uniroyal 18 marked for identification.)

A. I see no date on it.

Q. Would you take a look at the last page of the document.

URL 07365

A. "Signed at Washington, D.C., 6th day of May, 1974."

Q. When did you first see those proposed regulations, if you know?

A. I don't know with certainty, but I expect that I saw them within a week after they were published by OSHA.

Q. Do you know J.H. Hansen?

A. The name doesn't ring any bells.

Q. Would you identify Plaintiffs' Exhibit 19, please?

A. It's a letter from Uniroyal's Washington, Indiana plant, and Mr. Hansen says he is manager of the clothing division.

Q. Did do you have any reason to question the authenticity of that document?

A. None whatsoever.

MR. BUNDA: Objection.

(Plaintiffs' Exhibit Uniroyal 19 marked for identification.)

Q. Would you identify Plaintiffs' Exhibit Uniroyal 20, please?

A. It's a letter from Uniroyal Chemical dated June 12, 1974, to a person at OSHA from Marty Kleinfeld, director of commercial planning for

URL 07366

Uniroyal Chemical.

(Plaintiffs' Exhibit Uniroyal 20 marked for identification.)

Q. Do you have any reason to question the authenticity of that document?

A. No. It's a request that we be included on the docket of the OSHA hearings on the vinyl chloride standards, and I know such a request was made. I know Mr. Kleinfeld.

Q. If I can refer to the second page of that document, was at this time the major objective of Uniroyal's presentation to convince OSHA that the stringency of the proposed permanent standard is neither necessary, reasonable nor economically feasible?

A. Yes, sir.

MR. COUGHLIN: I'm going to object to this whole line of questioning because if this deposition is to be used at trial, you're obviously trying to make use or improper use of a First Amendment right that a corporation has, and I'm sure it will come up in many others of these following depositions to make some sinister use of petitions of the government for their own rights, which is clearly a First Amendment protected right versus

URL 07367

some type of use you're trying to make of it. In addition, I don't think it fits into any allegation in the complaint.

Q. Would you identify Plaintiffs' Exhibit 21, please?

A. Letter dated June 18, 1974, from Art Young, factory manager of Uniroyal's --

Q. Is that an authentic document?

A. I know who Art Young is.

(Plaintiffs' Exhibit Uniroyal 21 marked for identification.)

Q. Are you familiar with his signature?

A. I'm not. I guess I don't know what an authentic document is.

Q. Do you have any reason to question that that is in fact a copy of a letter from A.C. Young, the factory manager of Uniroyal in Farmville, Virginia to H.F. Byrd, Jr.?

A. I don't.

Q. Would you identify Exhibit 22, please?

A. It's the summary of testimony of Uniroyal, Inc. at the OSHA hearings, and it's dated June 21, 1974.

(Plaintiffs' Exhibit Uniroyal 22 marked for identification.)

URL 07368

Q. All right.

A. This is a document we submitted to OSHA along with the testimony which we gave at those hearings.

Q. And does this summary of testimony reflect the official position of Uniroyal with respect to the proposed federal regulations on vinyl chloride?

A. I believe it did. They sent us down there to do a job and this is what we did.

Q. Was it the position of Uniroyal in 1974, that the OSHA regulations governing vinyl chloride exposure should not be applicable to PVC fabrication facilities?

A. Yes, sir. I believe that is one of the statements that appears in here. By that time, we had collected data in our fabricating plants and we were satisfied that the levels of vinyl chloride monomer in Uniroyal's fabricating plants was below one part per million in any operating area and was generally way down in the tenths of a part per million.

MR. COUGHLIN: I want to voice my objection to this whole line of questioning.

Q. I'd like to call your attention to Exhibit C, page 5, of Exhibit 22.

URL 07369

MR. COUGHLIN: I'd also like to object to the introduction of this document into the record, if it contains numerous internal hearsay documents, which it apparently does.

MR. MEYER: I voice the same objection.

Q. Does page 5 of Exhibit C of Exhibit Uniroyal 22 refer to the results of ambient air testing done at the Mishawaka fabrication plant at Uniroyal?

A. Yes.

Q. Does it refer to VCM concentrations in that plant as high as 38 parts per million?

A. It does.

MR. BUNDA: Objection. If you're going to make references to the document, let's make a complete reference. What particular designation are you talking about and where is the sample taken?

MR. DELLI BOVI: Sample designation No. 20 is the one I'm talking about.

MR. BUNDA: That's the one inside the blender?

A. A kokneader is a mixer, where the plastisizor and the resin are mixed and heated

UAL 07370

together in order to make a consistent softened blend. This is a heated piece of equipment. This sample was certainly taken at the feed throat of the kokneader. It does not represent the work environment at all. It represents a specific emission part from that particular piece of operating equipment.

Q. What is done at the feed front of the kokneader?

A. The roughly mixed platisizor pigments and PVC are fed from a hopper of some sort into this equipment, where they are melted and mixed.

Q. Is that feeding done by a human being?

A. It is not. Done by a piece of equipment.

Q. Would you refer to Exhibit E of that document, please?

A. What page?

Q. One -- one of 12.

A. Yes, sir.

Q. Does that exhibit, particularly pages three, four, and five of that exhibit, indicate that in 1974 Uniroyal had in its possession the Italian medical journal article of Maltoni?

MR. MEYER: Objection.

A. Certainly it does because it attaches

URL 07371

tables from that document.

Q. Do you know when that document -- that is the Italian medical journal article of Maltoni -- first came into the possession of Uniroyal?

A. I have no knowledge. Certainly it was prior to June 14 of 1984 -- '74.

Q. Has Uniroyal learned since 1974 whether or not any of its employees, either at Painsville or any of its fabrication facilities have contracted or died from angiosarcoma of the liver?

A. Yes, we have.

Q. What have you learned or determined?

A. Neither in the Tabershaw-Cooper report, nor in the Environmental Health Associates report, were any indications of angiosarcoma uncovered among the employees or former employees of the Uniroyal plant at Painsville.

Q. What about as the result of any studies by Uniroyal itself or any other organization?

A. Certain studies were made by the University of North Carolina that roughly parallel the work done by Environmental Health Associates, and no angiosarcoma was found there. Look at the same data, you get the same information from it.

Q. Has Uniroyal conducted any epidemiological

UNL 07372

survey of the workers at the fabrication plants of Uniroyal looking at their cancer rates as opposed to the cancer rates in the general population?

A. Has Uniroyal itself done them?

Q. Or commissioned such studies to be undertaken?

A. Well, the MCA studies reported the results in terms of SMRs and other relative rates as opposed to populations.

Q. Did the Cooper-Tabershaw studies include all of the fabrication facilities of Uniroyal or just the polymerization plant?

A. Both our monomer facility at Monochem and our PVC plant at Painsville, didn't include the fabricating plants.

Q. Did Uniroyal obtain a breakdown from Cooper-Tabershaw of their overall study that related only to the facilities of Uniroyal that Cooper-Tabershaw surveyed?

A. Yes.

Q. What did those studies reveal in terms of cancer SMRs?

A. I don't recall.

Q. Does --

A. I recall that we received the detailed

URL 07373

information from the Tabershaw-Cooper study for the Painsville plant. It didn't show any angiosarcoma, but beyond that, I don't know what it showed.

Q. Does Uniroyal still have a copy of that study in its possession?

A. Not that we were able to find.

Q. You've looked for it and haven't been able to find it?

A. Yes, sir.

Q. All right. Are the letters that make up attachment 4 to Plaintiffs' Exhibit 2 all copies of the business records of Uniroyal --

MR. BUNDA: I'm sorry, what was the description?

Q. Attachment 4 to Exhibit 2.

A. I believe the answer to that question is yes. I see that at least in three of the four of those attachments, we have a copy of the -- copy of the memo that was directed to J.D.F., which is Dexter Forbes, the corporate medical director, and the 1980 letter has his initials on it, so I assume all four of these came from Dr. Forbes' files.

Q. Does Uniroyal have in its possession at the present time any correspondence prior to 1974 between Dr. Harris and any other employee of

URL 07374

Uniroyal relating to health effects from exposure to vinyl chloride?

A. Not so far as I know.

Q. With regard to the first attachment, the letter from McNeil to Stender dated March 21, 1974, are all of the employees who received blind copies of that letter Uniroyal employees?

A. Now or then?

Q. Then?

A. Yes.

Q. Do you know why a copy of Harris' July 15, 1974 letter was sent to an L. Ballou, at Firestone?

A. No, sir.

Q. Do you know whether the other individuals who received blind copies of that July 15, 1974 correspondence were at the time employees of Uniroyal?

A. Yes, they were. Of some interest here is the letter of February 1, 1980, indicating the studies that were conducted at the Painsville plant by the University of North Carolina, and indicating that that study did not show any cases of angiosarcoma.

Q. Where is that study, by the way?

A. We have it.

UAL 07375

Q. At the present time?

A. We have it, yes.

Q. Would you provide a copy for your attorney to forward on to me?

A. Yes, sir.

MR. BUNDA: I don't mean to be difficult about this, but we have got eight or nine depositions and a couple of requests already. Could you send me a letter after the deposition so that I can be sure that we won't forget anything?

MR. DELLI BOVI: Certainly. It will also be clear because you're getting a copy of the deposition.

MR. BUNDA: Well, there's some delay in receiving it and I don't always sit down and review it.

Q. Would you identify Exhibit 23, please.

A. 23 is the transcript of the testimony of Uniroyal, Inc., at the OSHA hearings in, I guess, June, 1974.

(Plaintiffs' Exhibit Uniroyal 23 marked for identification.)

MR. COUGHLIN: Note my continuing objection to this line of questioning regarding testimony before OSHA.

URL 02376

Q. Was it the position of Uniroyal at the hearing that Uniroyal was not going to invest any money to update its facilities in Painsville in terms of lowering RVCM concentrations until Uniroyal knew what the final regulations of OSHA were going to be?

A. Yes, sir. Because if the permanent standard as then promulgated of non-detectable was sustained when it issued as a final, there's no way that any PVC plant could have continued to operate in the world -- I mean in the United States.

Q. Was it the position of Uniroyal at the hearing that an exposure -- workplace exposure of 50 parts per million was safe?

A. That was stated if the document is read carefully by Mr. Kleinfeld, but that was a misstatement of the Uniroyal position.

It was the intention as is shown in Exhibit 22, the written copy, that Uniroyal's recommendation was that a ceiling of 40 parts per million and a time weighted average of 25 parts per million seemed from Uniroyal from the available data to be satisfactory permissible levels for vinyl chloride.

Q. I'd like to direct your attention to page

URL 07377

1506.

A. Yes, sir.

Q. You were present when Mr. Kleinfeld testified?

A. Uh-huh.

Q. Now, did Mr. Kleinfeld indicate in his testimony that "We concluded from evidence that we have seen -- hard evidence that we have seen that 50 parts per million would be safe"?

A. Oh, that is certainly what the reporter reported here, but I'm telling you that Mr. Kleinfeld misstated the position of Uniroyal. It was 40 parts per million and this is covered in some of the later pages, which I just read last night, I guess, which indicated that that was not the intention to state that. It is a ceiling of 40 parts per million with a time weighted average of 25 parts per million which is the position of Uniroyal -- was the position of Uniroyal.

Q. Was it Uniroyal's position at that time, 1974, that a ceiling exposure level in excess of 40 parts per million was unsafe?

A. I think we stated what we intended to state here. That we felt that there was a reasonable limit to which things should be controlled.

URL 07378

Q. Would you identify Plaintiffs' Exhibit Uniroyal 24, please?

A. 24 is a letter dated August 24, 1974, to docket officer at OSHA, from Bob Douglas, who was the industrial relations manager at the Painsville plant.

(Plaintiffs' Exhibit Uniroyal 24 marked for identification.)

Q. And that document is part of Uniroyal's business records?

A. I don't know --

MR. BUNDA: I'm sorry. Let me stop you for a second. The document that you gave him came from your review of the OSHA files?

MR. DELLI BOVI: That is correct.

MR. BUNDA: Your question is is it currently a part of Uniroyal's business records?

MR. DELLI BOVI: Yes. All I want to do, Bob, is find out whether these were authentic documents or Uniroyal is going to take the position somewhere down the road in this case that these aren't copies of authentic Uniroyal pieces of correspondence.

MR. BUNDA: I can't tell you what Uniroyal is going to do down the road. I don't know

URL 07379

if he can identify it as authentic or not. If he can, fine. I think the question is straying about whether it at any time was a member of Uniroyal's records or is at the present time. I don't want the record to be unclear. I believe we have gone through those records and haven't found this particular one.

A. If the question is whether this is Bob Douglas' signature, I recognize his signature on here. If the question is whether we could find one of these tomorrow, I have no idea.

Q. Do you have any reason to question the authenticity of that document?

A. Not at all because as indicated in the first paragraph, we produced this letter at the request of OSHA, and this represents the official information from the Painsville plant which we submitted to the OSHA docket.

Q. Would you identify Exhibits 25 and 26, please.

A. 25 is a letter dated July 11, 1974, from Marty Kleinfeld to a hearing officer at OSHA, and 26 is a letter dated July 15, 1974, from Walter Harris to a hearing officer at OSHA.

(Plaintiffs' Exhibits Uniroyal 25

UAL 07380

and 26 marked for identification.)

Q. I need you to identify 27.

A. 27 is a letter dated September 20, 1974, from Bob Dowling, R.J. Dowling, to David Bell, a person at OSHA.

(Plaintiffs' Exhibit Uniroyal 27 marked for identification.)

Q. Have you authored, Mr. Leach, any books or articles?

A. No, sir. As indicated in my resume, the best thing I can say I've ever authored is a patent.

Q. Other than your testimony in depositions and your 1974 testimony before OSHA, have you testified under oath before?

A. I can't recall that I ever have.

MR. BUNDA: Besides today.

THE WITNESS: On the advice of counsel, besides today.

MR. BUNDA: We did swear you in.

Q. In your opinion, Mr. Leach, what types of respiratory protection are effective in preventing the inhalation of gaseous vinyl chloride?

A. Depends entirely on the level.

Q. What about a level under 100 PPM?

UNL 07381

A. I think probably a canister type would be sufficient for that.

Q. On a --

MR. CASEY: I'm going to object to this line of questioning. I don't think there's been any foundation laid that the witness is competent to testify about that.

Q. Did Uniroyal conduct any other testing of the type shown in Exhibit 8 at other times or for other types of Marvinol resin? In other words, is this one of a whole series of tests?

A. This particular document shows the effect of aeration of suspension resin in our silo at Painsville, refers to Marvinol 23.

It shows that at the time it went in, it was 420 parts, and by continuous aeration after five days, the level was down to 86 parts per million, and at the time it was loaded into the hopper car, it was 28 parts per million. It is very likely we ran similar tests on other types to confirm the differences between types, if any.

Q. Now --

A. We've not been able to find any documents that supported additional stuff, however.

Q. You believe that additional testing was

URL 07382

done, but the documents presently don't exist?

A. We were not able to find them.

Q. In your MSDS for Marvinol 5051, you advise on page 2 in section 9, "store in well-ventilated area, any intensive mixing operations should be equipped with efficient exhaust ventilation."

Could you explain to me the reason for those instructions?

A. Yes, sir. An intensive mixer, examples are a Banbury mixer or the kokneader which we discussed a little earlier, uses heat and mechanical action to heat up and mix a particular kind of polymer blend.

During the -- increasing the temperature of a mixture of PVC resin and plastisizor, any residual vinyl chloride monomer in the PVC would be released by that heating action. So we are indicating that the proper precautions to take, because of the presence of vinyl chloride monomer in this polymer, is to have good exhaust ventilation any time you heat the polymer.

Q. Does that release all of the residual resin, the heating of the --

A. No, sir. Just the majority of it. When a question is asked regarding all, it gets down to the sensitivity of the analytical method by which the

UDL 07383

residual materials can be determined.

In 1974, we had -- we were pressing it to measure probably the one in 10 parts per million in the polymer. By today, probably we can measure down to parts per billion, if not parts per trillion in the polymer.

MR. BUNDA: Let's take a break.

(Recess taken.)

Q. Mr. Leach, as I understand your testimony from earlier today, Uniroyal began this improved stripping operation in 1974?

A. Yes.

Q. In Plaintiffs' Exhibit Uniroyal 6, if we refer to Marvinol --

A. Excuse me. Could I have back one of those documents so I can look at that myself?

Q. Sure.

A. I think it's either 1 or 2 that has that attachment. I've got it.

Q. All right. If we take, for example, Marvinol 19, Marvinol 22, 23 and 24, it appears at least from the data, that the concentrations at the end of 1974 were significantly higher than they were at the beginning of the year.

Do you know what those differences

URL 07384

are attributable to?

A. I think that it is probably reflecting the length of time between manufacturing and packaging. That if the material stayed in the silo, in the case of the 15, 19, those things are suspension resins, if the materials stayed in the silo for a longer time prior to being put into its shipping container, it would have had more time for the residual vinyl chloride to be aerated off. That's my guess. I can't accurately say why that is so. By the numbers it appears as they do.

Q. When did Uniroyal begin the aeration of suspension resin in the storage silos?

A. I am not certain but I think it was probably into 1975 sometime.

Q. So if we look at Plaintiff's Exhibit 8, prior to that aeration process, the RVCM concentrations would not have diminished as rapidly as they do with the aeration?

A. That is correct.

Q. Does Uniroyal have any data as to the percentage of RVCM given off by its different grades of Marvinol resin over time prior to the aeration in the silos?

A. I think there's another exhibit here that

URL 07385

shows some of that. This is the next page, the one called "Residual VCM in Marvinol," a table prepared 4/30/75.

Q. This table was prepared and based on data collected after the improved vacuum stripping began?

A. Yes. Well, it covers that period before and after.

Q. Does Uniroyal have any comparative data before and after the improved vacuum stripping and before and after the aeration of the silos that shows the release -- or charts the release over time of the RVCM from the resin?

A. I think we don't, because I am confident that we searched for information of that type, and what we have provided you is all that we have found.

The reason, for instance, that we ran the experiment on the aeration of suspension resin in our silos is because we didn't get as much impact as we hoped from the improved stripping, and we were just about at the limit of what we could do in terms of stripping time, so we sought other alternatives, and the silo aeration was one of those that we looked at.

Q. So the aeration data that's on Plaintiffs'

UNL 07559

Exhibit 8 is data generated after the resin had undergone the improved vacuum stripping operation?

A. Yes, sir. If we could look again at the table called "Residual VCM in Marvinol," the last column there, this is there because this table was constructed as part of our evaluation of what we were going to do for the long run in our plant.

We felt that we had achieved about all we could with the existing plant equipment, as is shown under the columns headed "Present Operation." And that we would need to put in significantly improved stripping equipment in order to achieve reduced levels, and that column is "Estimated Residual VCM after Stripping," is what we expected for the long run with a lot more installation of equipment.

Q. All right. So this last column then ties in with your testimony in June of 1974, before OSHA, that until OSHA determined what the standard was going to be, Uniroyal was not going to spend the money for capital improvements to strip additional VC from the resin?

A. That is correct. Because it was very clear that if they persisted in the non-detectable standard, that there was no way that Uniroyal or any

URL 07387

other PVC manufacturer was going to consider making the -- trying to make the capital investments to achieve it because we knew that that was technically infeasible.

Q. All right. In terms of the technology required to achieve the levels shown on the right-hand column of Exhibit 7, that technology was available in 1974 and 1975, was it not?

A. We believed that taking the available technology and making some improvements in it, which we felt were possible, we could achieve it. It is my belief that, certainly we didn't have the technology in-house to achieve those levels. Others may have had, but we felt that we could engineer facilities that would produce that level.

MR. BUNDA: When you say "that level," are you referring to the last column on this exhibit?

A. Referring to the last column. After stripping system implementation.

Q. So in April of 1975, it was Uniroyal's belief that through the expenditure of money, it could obtain residual VCM levels in its newly produced resin of -- with one exception under 10 PPM?

URL 07388

A. That is correct from the chart that is there. What is significant on the chart, the one that has the higher level is the lowest molecular weight material there, because there's variations in what you can do dependent upon the polymer properties of the particular type you're dealing with.

Lower molecular weight means lower softening temperature. Therefore, if you heat it too much you get one blob instead of the sugar-like particles that are necessary for the subsequent handling of the material.

Q. Okay.

MR. DELLI BOVI: That's all I have. Thank you.

MR. BUNDA: Can we have this marked as Defendants' Exhibit 1?

(Defendants' Exhibit 1 marked for identification.)

CROSS-EXAMINATION

BY MR. BUNDA:

Q. Could you identify what's been marked as Defendants' Exhibit 1 please, Mr. Leach?

A. This is a resume that I prepared about two or three years ago, which showed what my education

1691 07389

and work experience is.

Q. That's a true and accurate copy of the original resume that you provided?

A. It is.

Q. And is that the same resume that plaintiffs' counsel was asking you about at the beginning of the deposition?

A. Yes, sir.

MR. BUNDA: Thank you. That's all I have.

CROSS-EXAMINATION

BY MR. COUGHLIN:

Q. I just have a couple of questions. You were plant manager at the Painsville Uniroyal facility; is that correct?

A. I was.

Q. Was there union at that facility?

A. There was.

Q. Can you tell me the name of the union?

A. It was one of the locals of United Rubber Workers.

Q. To your knowledge, was there a member of the United Rubber Workers present at the February 12, 1974, meeting in Cleveland, Ohio?

A. I cannot answer from my memory.

JAL 01390

Q. As plant manager, did you have responsibilities in communications with the union regarding hazardous substances that may be present at the plant?

A. Very significant ones.

Q. To your knowledge, did the union or union representatives ever approach management or yourself regarding any health effects from vinyl chloride or exposure to vinyl chloride?

A. Yes, but I'd like you to give me some timing in there as to what time period you're talking about.

Q. That's my next question.

A. All right.

Q. When was that contact?

A. Okay. As soon as we got the initial information in '74, we shared everything that we had with our local union representatives, local union president and his safety guy.

As soon as we got some context on this, we sent out a letter to our employees, and then pretty soon we sent out letters to our employees at their homes to make sure that their families were aware of everything which we knew. It was an ongoing program because there was a

URL 07391

continuing flow of new revelations and allegations about what vinyl chloride was all about.

Q. At that time, did the Cleveland Dealer carry stories about vinyl chloride during this time period?

A. Yes.

Q. Numerous articles?

A. Yes. They were particularly fascinated by all of this because along the river, along the lake there in northeast Ohio, there were three companies who had facilities: The Uniroyal plant in Painsville, the General Tire plant in Astrabula and a large facility of B.F. Goodrich at Avon Lake to the west of Cleveland.

Q. There were numerous articles in the Plain Dealer dealing with possible toxic effect of exposure to vinyl chloride?

A. Yes, sir.

Q. In Plaintiffs' Exhibit Uniroyal 15, the attendance list that Mr. Delli Bovi chose, selected names from lists John Nussbaum, the Plain Dealer, Cleveland, Ohio as an attendee at that meeting.

Do you remember if Mr. Nussbaum spoke at that meeting or if any member of the press spoke at the meeting?

URL 07392

A. I don't remember that Mr. Nussbaum or any member of the press spoke. What I do recall of the way that meeting was run is it was an information gathering meeting put on by NIOSH. They were seeking the technical views of various of the technical people that were there.

When the views of the -- those who gave testimony were made, often the floor was open for questions for that individual. So I can't say whether questions were directed by some members of the press, but certainly I don't believe any member of the press gave any testimony.

Q. Do you remember if any member of any union that may have attended gave testimony?

A. I'm a little uncertain, but in looking through that list, it seems to me maybe Mr. Mazzocchi gave some testimony.

Q. That would be Tony Mazzocchi, the Oil Chemical Anatomic Workers?

A. Yes, sir.

Q. As plant manager, would you ever receive union publications that were distributed in the plant to the employees?

A. Yes. We had made the acquaintance of Lou Beliczy who was a toxicologist, headquarters in

URL 07393

Acron, so its very easy for him to come and visit us in Painsville. Beliczy, after a visit to our plants a couple of years before this, put me on a distribution list of their publications, so I got that stuff.

Q. Do you remember any union publication in the 1974-75 time period that discussed possible health effects to exposure to vinyl chloride?

A. Not specifically.

Q. Did you keep a file of those union publications?

A. I probably did.

Q. Do you know if one is still in existence?

A. I think it is probably not.

Q. Do you know if vinyl chloride appears in nature?

A. I believe it does not appear in nature. I think it is a man-made substance.

Q. You stated that Uniroyal's bags were not lined --

A. Yes, sir.

Q. -- in 1974-75. Does that mean they were porous enough for a gaseous substance to escape if particles were small enough?

A. It does. They were made out of manila --

URL 07394

no, brown paper, whatever that stuff is called. Craft paper.

Q. To your knowledge, were there foreign manufacturers of polyvinyl chloride who imported their product in the United States?

A. Yes, sir, I know there were.

Q. Do you know who they were?

A. I don't know who all of them were. I know that Rumainca was one because I saw their name in some of the documents associated with this case that I reviewed.

Q. Any others that you have personal knowledge of?

A. No.

Q. Do you know whether they were members of the MCA?

A. I don't know.

Q. Handing you what was marked as Plaintiffs' Exhibit Uniroyal 7, can you read the title of that document?

A. It says "Residual VCM in Mavinol PPM VCM by Weight."

Q. Is there a difference between VCM concentrations by weight verses by volume?

A. Yes.

URL 07395

Q. Could you explain that difference to me?

A. I'll try. Parts per million is a measure of the ratio of one thing to another thing. So an example of parts per million by weight is that one gram of vinyl chloride in one million grams of polyvinyl chloride is one part per million.

Q. By weight?

A. By weight. Gram being units of weight.

Q. Okay.

A. Similarly, one part per million of vinyl chloride in air means one cc -- or cc being a measure of volume -- one cc of vinyl chloride in one million cc's of air. A million cc's of air is quite a bit.

When a gram of vinyl chloride by weight -- when a gram of vinyl chloride vaporizes, it makes more than one cc of vinyl chloride. It's approximately one cc, but the ratio of parts per million by weight to the ratio of parts per million by volume are extremely difficult to equate.

Q. To your knowledge, does residual VCM that may be in a polyvinyl chloride particle leach out slowly over time, or is it an immediate release?

A. At normal temperatures it releases slowly overtime. If it were heated, it would go off much

URL 07396

more quickly. I can't imagine enough heat could be put on a particle of vinyl chloride for immediate release of its residual vinyl chloride.

Q. So if polyvinyl chloride -- for example, a bag of polyvinyl chloride had within the bag vinyl chloride at 50 parts per million per weight, that bears no relationship to what the vinyl chloride may be in parts per million per volume; is that correct?

A. It probably bears some relationship, but I don't know how to determine that relationship.

Q. What I'm trying to say is if the vinyl chloride is entrapped in the polyvinyl chloride particle, a gas chromatic test of the bag would not reveal a 10 part per million per volume level; is that correct?

A. No, because the only way you can determine the ratio of vinyl chloride in a solid material is weight to weight. You can't determine volume to weight because that's not the way in which the determination is made.

Q. So if you had a bag of PVC with seven parts per million by weight of vinyl chloride, that really doesn't tell us anything whether you're meeting the OSHA standard regarding parts per million per volume, is that correct?

UHL 07397

A. No. The only -- I'm sorry, yes, that is correct. Because the only way the -- the OSHA standard is related to parts per million by volume and that has to be determined according to the size of the container into which any weight of vinyl chloride might be released.

If there is any ventilation there, then the continuing change of air in the workplace would prevent the rise of the vinyl chloride gas level, would minimize the amount of vinyl chloride gas that might be present in any workplace.

Q. This is especially true at normal temperature if the vinyl chloride is in fact leaching out over time?

A. Yes, sir.

Q. You mentioned the Sachs reference book?

A. Yes.

Q. Were you familiar with Sachs in the 1971-72 time period?

A. Yes.

Q. Is Sachs considered an authoritative book on toxicology or health hazards associated with certain chemicals or exposure to chemicals in the workplace?

A. No. It is not a reference that

UAL 07398

toxicologists and industrial hygienists believe in. It is a rough cut kind of document for people who are not trained in those disciplines, as I am not.

Q. Was vinyl chloride listed in the Sachs book?

A. I think it was, but I am uncertain. I can't say with certainty.

Q. In your opinion, Mr. Leach, was the polyvinyl chloride industry trying to hide anything from the government regarding possible toxicological effects of exposure to vinyl chloride?

MR. DELLI BOVI: Objection.

A. In my opinion we weren't. I think we were trying to understand what the meaning of the new information was and trying to understand what responses should be made to that new information and trying to make sure that there wasn't an over emotional response to what was newly being learned about vinyl chloride that would produce unnecessary regulations that would shut us down.

Q. To your knowledge, did the industry cooperate with the government in formulating the standards that eventually came out?

A. I believe we did.

MR. COUGHLIN: That's all the

UBL 07399

questions I have.

MR. MEYER: I have none.

MR. CASEY: Just a few.

CROSS-EXAMINATION

BY MR. CASEY:

Q. If I understand the testimony that you've given, this leaching process is a continual process; is that right?

A. You mean leaching of residual vinyl chloride from the PVC?

Q. Yes.

A. Yes.

Q. That begins at the moment of manufacture?

A. I wouldn't say at the moment of manufacture. From the end of the polymerization step, then we are removing incremental amounts of unreacted vinyl chloride subsequently all down the line through stripping, drying, packaging, transportation, and the processing in the fabricating plant.

Q. The factor does not get greater over time? Are there any circumstances in which the residual increases?

A. No, sir. Because while there are some kinds of polymer systems that will do what is called

URL 07400

depolymerize and release again the monomer that was used to make the polymer, vinyl chloride is not one of those.

Q. Okay. So it is fair to say, then, is it not, that in the example of Chrysler, that whatever the parts per million was at the time that it left the plant or the polymerization process was completed, wouldn't be -- it would be a lesser number -- figure by the time it reached us at Chrysler or some other fabricator?

A. Yes, sir.

MR. DELLI BOVI: I'm going to object unless it's phrased in terms of concentration by weight.

A. The answer to your question, I believe, is shown in one of the interrogatory attachments that we provided. That material was a certain thing as manufactured, a certain thing as packaged, a certain lowered thing at the time it got to the customer's plant.

Q. Just a couple more questions. The steam stripping that was referred to earlier, was that an industry wide process?

A. Yes.

Q. And the aeration of the --

URL 07401

A. I guess maybe yes, a simple yes is not the right answer to that question. For polymers, PVC made by the emulsion and suspension processes, stream stripping was part of the industry process.

Q. And those are the ones that we're talking about in this case?

A. In our plant. Okay.

Q. I understand. The aeration that you came to use subsequently, that process, is that or was that also an industry wide --

A. I can't say because we were -- we had four giant concrete silos that were part of our plant that had been part of the earlier operation that took place on this site before we built our plant there. I'm not sure that other plants had that kind of a large storage facility so they could have utilized that kind of step.

Q. The reference that you think may have been in the Sachs book -- is that the right name -- to vinyl chloride in '72 or '71, which you referred to earlier, that would have been to its propensity for poisoning or --

A. I think it would probably have been directed to it's acute properties rather than its chronic properties.

URL 07402

Q. So far as you know, there was nothing in there about it being a potential or suspected carcinogen?

A. I don't think so but I'm not specifically sure.

MR. CASEY: Thank you. No other questions.

REDIRECT EXAMINATION

BY MR. DELLI BOVI:

Q. I have a few. You were questioned about articles appearing in the newspapers regarding health effects of exposure to vinyl chloride in 1974 and you indicated there were many.

A. Yes.

Q. Do you recall reading any such article in any newspaper or in any publication prior to 1974?

A. I don't now recall that.

Q. When did Uniroyal first tell its resin customers that there was residual vinyl chloride monomer in the product?

A. On an across-the-board basis, the first time I know we told them was in April, 1975. We perhaps may have told individual customers prior to that, but that would have been a sales department activity, not something that the plant did.

URL 07403

Q. Do you have any evidence that Uniroyal told Chrysler that there was residual VC monomer in the resin that Uniroyal had shipped and was shipping to Chrysler prior to April 1, 1975?

A. I have no information as to what we did.

Q. This may have been a question I asked this morning, and if it's repetitive I apologize.

Did Dr. Harris prior to 1974 ever discuss with you anything concerning the adverse health effects of exposure to vinyl chloride?

A. Not that I recall.

MR. BUNDA: Would you read that back?

(Record read.)

Q. Finally, Mr. Leach, I want to read you an excerpt from the opinion of the Second Circuit U.S. Court of Appeals in the Society of Plastics Industry, Incorporated versus Occupational Safety and Health Administration. This was one of the cases in which your employer, Uniroyal, was a party.

"Indeed the record --"

MR. COUGHLIN: Objection.

MR. MEYER: Objection.

Q. "Indeed the record shows what can only be

URL 07404

described as a course of continued procrastination on the part of the industry to protect the lives of its employees."

Do you agree or disagree with that statement?

MR. MEYER: Objection.

A. I don't know what that record is that the judge is talking about.

MR. DELLI BOVI: Thank you.

CROSS-EXAMINATION

BY MR. MEYER:

Q. We've discussed how levels of RVCM declined from the time of polymerization to eventual delivery.

A. Yes.

Q. Would that be the same for any manufacturer of polyvinyl chloride?

A. Yes. But unfortunately, the rate of decline is related to the amount of residual vinyl chloride that is present there. That is over time it will go from whatever it starts with in the same period of time it will go to half of that, and in the same period of time it will go to a quarter of that.

If it started at 500, in a certain

URL 07405

period of time it will go to 250, but if it starts at 200 in a certain period, the same time it will go to 100. Providing lots of aeration. It's going to be a time dependent drop that is related to the starting level. So I don't want to get too technical here, but I guess you need to ask me a different question so I know what you're trying to get at.

Q. That same philosophy holds true regardless whether it's a domestic manufacturer or a foreign manufacturer of polyvinyl chloride?

A. Yes, sir.

Q. Then it would fall in line that if polyvinyl chloride was imported from Europe by a domestic supplier, sat in the hands of that domestic supplier and then was eventually distributed to a customer, the levels of RVCM would have declined throughout that whole process?

A. Probably. But if the material was in a closed container that was impervious to escape of the vinyl chloride gas from the container, then it wouldn't have dropped with time. This is the significance of the aeration data of which I showed once the vinyl chloride moves from the polymer into the container that's holding it, if it doesn't go

URL 07406

out of the container, it gets to equilibrium within that container and then doesn't drop within the particle polymer any longer.

RECROSS-EXAMINATION

BY MR. COUGHLIN:

Q. Just so I understand, if you take a bag of polyvinyl chloride and heat it, the polyvinyl chloride is not going to break back down into the monomer; is that correct?

A. That is correct. When polyvinyl chloride breaks down, it releases HCL gas, and the carbon part of the chain becomes a charred mass. It does not release vinyl chloride, other than in practically undetectable amounts. It does not depolymerize to release vinyl chloride.

MR. COUGHLIN: Thank you.

FURTHER REDIRECT EXAMINATION

BY MR. DELLI BOVI:

Q. Just one follow up on that. If polyvinyl chloride is loaded into shipping containers to go on a seagoing freighter or in gaylords, enclosed in a plastic bag, and those containers are filled, it's your opinion that the resin will continue to hold essentially the same RVCM concentration until that package is reopened?

UAL 07407

MR. MEYER: Objection.

A. I -- it will depend entirely upon the nature of the container and whether the container is constructed in a way that will contain vinyl chloride gas. If the material were in a gaylord with a plastic wrap on it, it would be my guess that the vinyl chloride monomer would go through the plastic. Because I doubt it would be impermeable to the transmission of the gas.

If it were in a sealed container like a hopper car, the vinyl chloride monomer level in the container wouldn't drop. But once -- or if it were in -- if the gaylords that you described were in a seagoing van, the vinyl chloride level would reach equilibrium within that van, and the level in the resin particle wouldn't drop any further, but once the van were opened and those gaylords were taken out, now the level would continue to drop again.

Q. As to the resin that Uniroyal shipped in bags, did it ship both by truck and rail car?

A. Very, very seldom by rail car because that requires too much handling, and the bags were relatively fragile to rubbing against each other and stuff.

UAL 017408

Q. Were the bags loaded on pallets?

A. Yes.

Q. Was there a wrapping put around the palletized bags of resin?

A. Generally not for domestic shipments, only for overseas shipments.

Q. How were the palletized loads of resin held together for domestic shipping?

A. By glue between the bags. Interlocking stacking with glue.

MR. DELLI BOVI: Thank you. For the record, I am retaining the original exhibits.

(Deposition concluded: 3:25 p.m.)

with corrections noted

Benton R Leach 2-10-88

SUBSCRIBED AND SWORN TO BEFORE ME, the undersigned authority, on this the 10th day of February, 1988.

Margaret C. O'Reilly

Margaret C. O'Reilly
My Commission Expires Mar. 31, 1990

UAL 07409

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C E R T I F I C A T E

I hereby certify that I am a Notary Public, in and for the State of Connecticut, duly commissioned and qualified to administer oaths.

I further certify that the deponent named in the forgoing deposition was by me duly sworn, and thereupon testified as appears in the foregoing deposition; that said deposition was taken by me stenographically in the presence of counsel and reduced to typewriting under my direction, and the foregoing is a true and accurate transcript of the testimony.

I further certify that I am neither of counsel nor attorney to either of the parties to said suit, nor of either counsel in said suit, or am I interested in the outcome of said cause.

Witness my hand and seal as Notary Public this 27th day of January, 1988.

James R. Martin
NOTARY PUBLIC

My Commission Exp s:
April, 1988

URL 07413

ERRATA SHEET

Caption: Mary A. Dendinger, et al vs Chrysler Plastic Products, Corp., ~~et al~~

DEPOSITION: Benton R. Leach **DATE** 1/~~7~~/88

In order to make this deposition more nearly conform to the testimony, the deponent wishes to make the following changes:

Page #	Line#	Now Reads	Should Read
8	20	ORDINANCE	ORDNANCE
10	15	PAINSVILLE	PAINESVILLE
		There are many other places with this error	
34	2	POLYMER	MONOMER
35	9 etc	BOEING	BOWEN
35	18	TIN ?	RESIN ?
35	20	5 through 24	15 through 24
41	20	1954	1974
44	20	ORIGIN	ORIGINAL
~~49~~	~~1~~	~~A POISON~~	~~EXPLOSIVE~~
73	3	FREE ORGANIZATION	RE ORGANIZATION
73	12	BEYER	BAYER
145	1	ACRON	AKRON
99	15	RESPONSIBILITIES	EXPOSURES
			BRLeach 2-10-88

URL 07414

UNITED STATES DISCTRIT COURT
NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

RECEIVED
LAW DEPARTMENT
JUN 27 1988
UNIROYAL CHEMICAL
COMPANY, INC.

- - -

HERMAN A. DENDINGER, et al.,)
Plaintiffs,)
vs.)Case NO. C84-7854
CHRYSLER PLASTIC PRODUCTS CORPORATION, et al.,)Hon. Nicholas J. Walinski
Defendants.)

- - -

Deposition of ALAN S. TODD, a witness herein, called by the Defendants as if upon Cross Examination under the Federal rules of procedure, taken before me, the undersigned, Casey Gotthart, a Notary Public in and for the State of Ohio, at the offices of Murray & Murray, Murray Building, Sandusky, Ohio, on Monday, April 25, 1988, at 10:00 a.m.

- - -

RECEIVED FROM
DATE: 6/3/88
ROUTE:
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I N D E X

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APPEARANCES:

On behalf of the Plaintiff:

MURRAY & MURRAY:
By: Kirk J. Delli Bovi

On behalf of Defendant Schulman Corporation:

MANAHAN, PIETRYKOWSKI, BAMMAN & DELANEY:
By: H. William Bamman
and
Larry P. Meyer

On behalf of Defendants B.F. Goodrich, Co., Conoco, Inc., Diamond Shamrock Corp., Firestone Tire & Rubber Co., Occidental Chemical Corp., Goodyear, Inc., Tenneco Oil Co., Union Carbide Co., Uniroyal, Inc.:

FULLER & HENRY:
By: Robert A. Bunda

- - -

ALAN S. TODD,

a Witness herein, called by the Defendants as if upon Cross Examination, being first duly sworn, as hereinafter certified, was examined and testified as follows:

CROSS EXAMINATION

BY MR. BUNDA:

Q Mr. Todd, my name is Bob Bunda. I represent some of the Defendants in the PVC case that you're here to testify on today.

I think the record should reflect that the

URL 07419

deposition is by stipulation of counsel pursuant to an original subpoena for Mr. Todd. That subpoena noticed the deposition for an earlier date, and we rescheduled it for a time more convenient to everyone involved; is that correct, Kirk?

MR. DELLI BOVI: Well, I'm not sure it's pursuant to the subpoena. I've never seen the subpoena, but certainly it is to the date and the place and the time. It is by agreement.

BY MR. BUNDA:

Q Mr. Todd, would you please state your full name and business address for the record?

A Alan S. Todd, and the company is Stewart-Todd Associates, Inc., 1016 West Ninth Avenue, King of Prussia, Pennsylvania.

Q Mr. Todd, you received a subpoena in connection with these matters at one time, didn't you?

A I believe that's correct. It must be quite a while ago. That's why I'm saying "I believe" it's correct.

Q Well, the reason I'm saying that is because attached to a subpoena is a request for certain documents.

URL 07420

Have you brought certain documents with you today?

A. I would say yes without fear of contradiction.

Q. Well, you have a file of stuff before you. You've brought these from your own files, or are these things that were here at the attorney's office?

A. These are from my files. A good many of them were submitted, of course, by the attorney to me.

Q. We will get into that in a few minutes. Before that, I'd like to get a few preliminary questions.

I'm going to hand you a curriculum vitae of yours which was used in a deposition in a PVC case in December of 1987. Is that a current curriculum vitae, or are there changes that have to be made to make it more current?

A. Basically correct. It may be out of date, because I don't update them that often, but it's reasonably correct.

Q. Let me ask you, what corrections would you need to make it updated?

A. Oh, if anything, perhaps, anything that I've recently published may not necessarily be included there, but other than that, basically, it's a good summary of my experience and so forth.

URL 07421

Q What have you published that's not in there?

A I've published an article on PVC's and some of the wood preservative compounds over the last four or five years. I think that covers most of my publications in that time frame.

Q Are those two separate articles, or are they --

A Yeah, they're separate.

Q Those are two articles or one?

A Actually, I think there's a series of them on wood preservatives, and there's one on PVC's.

Q And where was the series on wood preservatives published?

A It's in NTIS, National Technical Information Services, now of NIOSH, and the PVC's in the ASHRE proceedings of, I think, '87.

Q Are you saying "ASHRE?"

A ASHRE, American Society of Heating and Air Conditioning Engineers, A-S-H-R-E.

Q That's a regular journal of theirs, or is that something --

A That's regular proceedings. It's an annual proceeding, I believe.

Q It's not a journal, though?

URL 07422

A. No, I think it's strictly a proceedings. I don't know whether they have a journal or not.

Q. Are you familiar with a process where there is peer review of materials submitted for publication?

A. Sure. I've submitted some things for peer review.

Q. Have you had anything published that has gone through this peer review process?

A. I have some publications which are quite antique now, probably 15 years or so back, going on back, perhaps as many as almost 30 years.

Q. This was when you were working for the drug companies?

A. Drug companies or the oil companies -- well, oil companies.

Q. How many articles have you had published that have gone through the peer review process?

A. I would guess on the order of a half a dozen.

Q. None recently; is that right?

A. No, the -- well, the ASHRE article went to a review committee. I don't know that you would necessarily call it a peer review in a strict sense.

Q. And the NTIS doesn't go through any such

URL 07423

procedure, does it?

A. That goes through a NIOSH review committee. It's probably analogous, too, but it's an intragovernment review rather than a total peer review cross section.

Q. Have you ever published anything on polyvinyl chloride or vinyl chloride?

A. No, I have never published on VC or PVC.

Q. How many times have you been deposed in connection with your work as a consultant?

A. At least 50.

Q. And how many times have you testified at trial in connection with your work as a consultant?

A. I would estimate at least 20 times over the last 15 years.

Q. Can you give me some idea of how that breaks down between -- well, let me back up for just a second. Did these involve Worker's Compensation cases, or are these other types of cases?

A. Both.

Q. Can you give me some idea of roughly the percentages between Worker's Comp and other types of cases?

A. I would have to estimate that probably half of them are Worker's Comp and half are not.

URL 07424

Q. Both Worker's Comp and the other types, do they involve chemical exposures, or are there other types of cases mixed in?

A. To a large extent, they're chemical. There are occasionally physical agents involved.

Q. When you say "physical agents," are you talking about noise --

A. No, radiation, a number of others, heat, so forth.

Q. And of the Worker's Comp cases and the other types of cases, can you give me a break down as to how many times or what percentage, however you want to do it, are for the Claimant or the Plaintiff, and how many times for the Company or --

A. I'd have to give you an approximation, about 60 to 70 percent for the Defendants, and the remainder for the Plaintiffs.

Q. In the past year in your legal-related work, has that percentage remained the same, or has that changed?

A. No, pretty much the same.

Q. And as your work -- in your work as an industrial hygienist, can you give me some approximation as to how much of your time is spent in legal-related matters versus just

URL 07425

industrial hygiene consulting, per se?

A. Maybe an outside maximum, 15 percent. It will vary from month to month, but as a maximum, 15 percent.

Q. Fifteen percent is related to legal matters?

A. Yes, and that's probably on the high side.

Q. When you are involved in consulting with an attorney regarding a legal matter, what are the charges that you had?

A. You'd almost have to ask my administrative assistant. I'm not a walking encyclopedia on the fees. I know we have a graduated fee schedule, but I don't approach the figures.

We have one for field survey work; we have one for legal reviews, and one for trial or depositions. I'm not a walking encyclopedia on those, because we've grown a lot, and that responsibility has been turned over to others.

Q. I'm just interested in what you charge, for example, for testifying. You don't remember what that is?

A. I don't recall, no.

Q. Do you have any idea what -- how much you've charged to date for your work involved in this particular case?

URL 07426

A. I wouldn't have the vaguest notion. I've got an administrative assistant who can tell you that, but I cannot.

Q. What has been your involvement in this particular case to date?

A. Well, initially, I would provide a lot of background information both in terms of documents and depositions. A plant site visit to the Chrysler facility was made last fall sometime, and additional documents have been provided since, and I basically reviewed them, and on occasion, have spoke to Kirk, some of the other members of the firm here regarding these documents and general background information. That's pretty much it up to this point in time.

Q. You've supplied them with documents out of your files?

A. I don't believe I supplied them with any documents at this point out of my files.

Q. They've submitted depositions and documents to you?

A. Yes, they've submitted voluminous depositions and documents. I may have pulled a couple references, possibly, but I haven't submitted anything beyond that.

URL 07427

Q. How many legal matters have you consulted on that have involved vinyl chloride or polyvinyl chloride?

A. A few to several, and I really couldn't quote you a better number than that.

Q. Can you describe those for me at all?

A. Well, let's see if I can remember the more recent ones. You're probably familiar with the Celanese PVC related cases, that's PVC and AES both.

Q. Are they the ones --

A. At least some of those cases arose in Columbus, Ohio. Those are in Columbus. I'm trying to remember some of the cases. It seems to me there was a case a few years back, and I'm trying to remember the details of that. Well, I'm going to have to hold this -- that's the one that sticks in my memory, because it's fairly recent.

I know there have been other ones where polymers, where PVC's, I'm thinking now of some of your meat wrappers and similar asthma cases, where you have not only PVC, but polyethylene and some of the other polymer materials.

Q. Have you been involved in any cases involving cancer besides this one and the Columbus case?

A. You mean involving cancer, per se?

URL 07428

Q. Yes, sir.

A. From anything?

Q. No, no. I'm talking specifically with regard to the PVC cases?

A. Okay. I don't believe so, but I'm not absolutely certain on that. Again, 15 years in the consulting business is a long way to go back.

Q. Do you remember where those cases involving meat wrappers asthma or pulmonary problems arose?

A. I know one was in Pennsylvania. I believe another one was in Michigan or somewhere in the midwest, and one was in the far west, and I don't recall where or if there were others.

Q. The Philadelphia case, was that in the -- or the Pennsylvania case, was that in the Philadelphia area or --

A. No, that was in the Scranton geographical area.

Q. The Michigan case was around Detroit?

A. I believe so, I'm not positive. That goes back quite a few years.

Q. Do you remember any of the attorneys involved?

A. No. I'd have to look it up. It's too many years ago.

URL 07429

Q. And were you -- which side of the case were you on in those three?

A. In the Pennsylvania case, I was working for the -- the Defendant, and I believe in the other two cases, for the Plaintiffs.

Q. Who were the Defendants in the Scranton case?

A. Both the supplier of the film and the plant itself, and I can't remember the name of the plant just off the top of my head. It's a food processing plant where the film was used for shrink wrap purposes.

Q. The actual manufacturer of the wrap was not involved?

A. I don't know whether they were involved in the legal proceeding or not, because that started out initially as a Comp case, and I don't know if that went on to civil suit or not.

Q. Do you remember who the manufacturer was?

A. No, I wouldn't remember without looking it up.

Q. The Columbus cases that you were working on, that involved Mr. Delli Bovi's firm as well; is that right?

A. That's a Murray & Murray case, that is correct.

Q. When did you first begin consulting with the law firm of Murray & Murray on these particular PVC cases,

URL 07430

and when I say "PVC cases," I -- perhaps you've --

A. You mean the Chrysler cases?

Q. Well, perhaps you can, in your answer, explain to me, did you start working on the Chrysler cases or the Celanese first?

A. I think Celanese first, to answer your question. Without looking back at my Celanese files and so forth, I would think it would probably be late '86, perhaps early '87.

Q. When did you start on the Chrysler cases?

A. Sometime in '87, and I would think it would have been either late spring or summer.

Q. Do you have any understanding as to how the Murray & Murray firm came to you originally to work on the Celanese cases?

A. I don't know, I really don't know whether somebody referred them to us or what, because we don't actively go out and advertise for that sort of thing. Most of them are referrals, and I don't recall who may have referred to us.

Q. In connection with your deposition here today, did you talk with anybody besides the attorneys from the law firm here about the deposition?

URL 07431

A. I'm not sure I understand the question.

Q. Well, I'm not permitted to go into your discussions with your attorney. I guess what I'm asking for is in preparing for the deposition, did you talk with anybody, to begin with, in your firm about the deposition?

A. Other than my administrative assistant, no, not really.

Q. You didn't consult with -- is Mr. Stewart still involved in your firm?

A. Well, Dr. Stewart -- Dr. Stewart's a physician.

Q. I'm sorry.

A. Yes.

Q. Did you talk with Dr. Stewart about the deposition?

A. Have we talked about -- no.

Q. Have you talked with Dr. Stewart about the Chrysler cases at all?

A. I may have, at some point, had a discussion here or there with him, that's very possible.

Q. Do you know what that discussion may have been about?

A. Not specifically.

Q. Generally?

URL 07432

A. Well, I know periodically we tend to review what we're doing and if we're involved in legal cases, discuss them only to get the point of view of the other professional staff. How in depth that discussion might have gotten, I can't recall. It certainly wasn't a recent discussion.

Q. To your -- I'm sorry.

A. Above and beyond that, I can't give you any information.

Q. Do you recall what Dr. Stewart communicated to you during this deposition?

A. I don't even recall how in depth the discussion was, whether he gave me any input at all. Again, we haven't been asked to specifically address the medical aspects in this case.

Q. That would be his area of expertise, though, would be the medical aspects; is that right?

A. That's correct.

Q. Do you recall whether he communicated to you anything about the medical aspects?

A. Not really. Again, we weren't asked to get involved on an in-depth basis from a medical standpoint. I gather there are others who have provided that sort of expertise.

URL 07433

Q. I understand that, Mr. Todd, but I thought with your discussions, sometimes even though you're not asked to, he may volunteer things, and I guess that is what I'm asking.

A. Well, it's possible he may have, but I don't recall what they may have been, so I can't say one way or the other.

Q. Other than the people in the firm, did you discuss this case with anyone else besides Mr. Delli Bovi's office in preparation for this deposition?

A. No, not really, huh-uh. I don't have any confidants professionally or otherwise that we discuss it with.

Q. Did you review any documents in preparation for the deposition?

A. Well, originally, I reviewed all of these documents you see before the hearing. I didn't review them all yesterday, obviously. It would have been a long Sunday.

MR. DELLI BOVI: Bob, just so we're clear on one of your prior questions, you asked Mr. Todd today whether or not he had discussed the deposition today with

URL 07434

anyone. Just so we're clear, he has had discussions during his tour of the plant with people in the plant, and those discussions did not relate to this deposition.

I just wanted to make sure that nothing got lost between your question and his answer.

MR. BUNDA: Okay, I understand. Thank you.

MR. DELLI BOVI: Sure.

BY MR. BUNDA:

Q. In light of Mr. Delli Bovi's comment, then, let me expand the question beyond just in preparation for the deposition. In conducting your -- or meeting the charge that came from Mr. Delli Bovi's office in connection with these Chrysler cases, other than the people in his office, who have you talked to?

A. Specifically about this case?

Q. Yes, sir, or in preparation for this case.

A. Except for perhaps in a cursory fashion, really nobody. I occasionally discuss aspects of a case with some of our staff, only because they may possibly have

UAL 07435

some experience or insight which would be helpful. I can't recall specific discussions, if I've had them along the way, as I've reviewed certain documents, but I have people on staff who have much more experience in specific segments in the industry than I do, or in some cases, a specific polymer chemist and so forth who can provide me with insight, but in terms of any discussion, say, within the course of the last two weeks with them, no.

Q. Extending it beyond the last two weeks, when you were asked to consult on this case, did you have such discussions with anyone in your organization?

A. I probably have at one point or another. How in depth they got, I don't recall.

Q. Do you remember who these discussions were with?

A. Not specifically, because, again, they tend to be more of a spontaneous sort of thing, as you go through documents and somebody walks in, quite often we would discuss them, call it an informal bull session as it were.

Q. In the course of those discussions, did you obtain information which you believe has helped you in your understanding of this case?

UPL 07436

A. Maybe insight or a little -- maybe a little fundamental knowledge here and there.

Q. Well, can you explain that for me a little bit? What was the insight or fundamental knowledge that you received?

A. Well, I'm not a polymer chemist, and I have an I.H. who works for us who was a former polymer chemist, and I occasionally would have a discussion with him. He's no longer one of our employees, but I can access to him, and when we get into polymer chemistry, I will ask him a question here or a question there, and his experience will go all the way back in the 1950's. He occasionally will provide useful information above and beyond what you can glean from depositions and articles.

Q. And what is his name?

A. His name is Richard Cassar.

Q. You said he is not an employee of yours?

A. No, he used to be. He is an industrial hygienist, but he is no longer. He's a self-employed consultant.

Q. Spell the last name, please?

A. C-a-s-s-a-r.

Q. a-r?

UAL 07437

A a-r.

Q He's an independent industrial hygienist now?

A That is correct.

Q And where did he get his knowledge of polymerization chemistry?

A Well, he basically was a research chemist for Sun Oil Company for approximately 20 years or perhaps a little longer,and one of his major areas of interest was in polymers. Sun, at one point in time, owned several patents, as well as having production facilities for both monomers and polymers, not specifically PVC, whether they gotten involved in mixed polymers with PVC, but they, he manufacture ethylene and similar monomers.

Q Of the polymers he was working with at Sun Oil, you mentioned ethylene. That's a monomer.

A Well, he's worked with almost all the monomers.

Q How about vinyl chloride?

A He's worked with vinyl chloride. He's worked with ethylene, styrene, betaine. I don't know if he's worked with acrylonitrile or not. I would be a little surprised if he hadn't at one point, and I gather he has also worked with some of the fluorocarbon materials, those with teflon in and other products.

URL 07438

Q. And this was in research with Sun Oil?

A. Yeah. He is basically a research chemist who devoted a lot of his time to polymerization-type products.

Q. This was in connection with what, now, with Sun Oil providing monomers, or with Sun Oil going into the polymerization business or what?

A. Sun Oil, at one time -- well, still does produce ethylene monomers. I'm not sure whether they produce presently at this point in time, but they may very well--but at one point in time, were interested in the polymer business, and, as a matter of fact, were co-owners of a polymer plant. Now, that plant was later sold, I think, in the early to mid '70's.

Q. What kind of --

A. I think Standard of Indiana bought it out, Amoco bought it, to my recollection, if I'm correct.

Q. What kind of a polymer plant was it?

A. I'm trying to remember. I can't recall.

Q. It wasn't --

A. I have a feeling it was a mixed polymer plant, but I can't recall the details, because it's too far back.

Q. Did it involve polyvinyl chloride?

A. I'm not sure whether PVC was part of that

URL 07439

process. They had also had some other processes they were working on with FPC Corporation, which I think they patented, but at least Sun never commercialized them, but whether somebody else commercialized them, I don't know.

Q. This was during the time that you were working as an industrial hygienist for Sun Oil?

A. Prior to and during, as well as sometime after I left Sun Oil.

Q. Did you have an opportunity to visit the polymerization plant?

A. No, that was a jointly-owned plant, and I guess industrial hygiene expertise was provided by the main owner. I think Sun Oil had something less than 50 percent of that plant.

Q. Do you remember who the other owner was?

A. I think it was FPC, but I wouldn't swear on that.

Q. Other than the people in your organization, have you talked with -- well, let me break this down a little bit for your help. You've talked to people at the Chrysler plant; is that right?

A. That is correct.

Q. Who have you talked to there, and I realize

URL 07440

it's difficult for your same -- perhaps you can describe them by job description.

A. Well, we're talking -- was that the basic plant management this morning?

MR. DELLI BOVI: Just answer his question.

A. I have a very poor memory for names. I'd almost have to go back and reconstruct that for you.

Q. How many people have you talked to out at the plant?

A. In total, half a dozen, plus or minus one or two.

Q. You came out and visited the plant. When was that, a couple of months ago?

A. I think it was last fall.

Q. And what was the purpose of that visit?

A. Again, I wanted a familiarization of the basic areas, which, at that time, I understood the two individuals worked at.

Q. Do you remember how many people you talked to at that plant at that visit?

A. Three, maybe four.

Q. Did you meet with a gentleman by the name of

URL 07441

Chet Ferguson, then?

A. Yes, as a matter of fact, that's the same person we met with this morning. I'm not sure of his title.

Q. Did you meet with a gentleman who was the plant chemist at that time?

A. This isn't Slautter I assume you're referring to?

Q. No -- well, I think Hans Slautter was, yes.

A. I don't recall Slautter, but I believe from his depo that he's German in origin, but I don't recall anybody with that distinct accent, but I don't think that's the case.

Q. Do you recall from job descriptions who any of the other people were?

A. No. I gather some of them were directly involved in the process, and probably middle management, supervisory people.

Q. Did you talk to any of the production workers?

A. I guess you'd say at a supervisory level. I have watched a number of employees, but I didn't specifically ask questions of individual employees on how long does this take or how long does that take and so forth.

Q. Have you ever talked to any production workers

URL 07442

out at the Chrysler plant?

A. Directly? You mean outside of that visit?

Q. Yes.

A. No, I've had no conversations with anybody directly out there at this point in time.

Q. Do you have any plans to?

A. It's conceivable of what I add to the store of information that you might need in preparation for a trial. It depends upon whether there's individuals who go back far enough to the point in time who would -- who have enough basic information that would add to what we already have.

Q. Well, in your response, you said it was "conceivable." I guess my question is do you have plans now to ask to talk to anyone, or would that information be something that you would need before you could testify?

A. It would be helpful if, again, somebody there -- there's still somebody there who has first-hand knowledge above and beyond what's reflected in the deposition. Remember, there's complete lack of any hard data pre-1974 in terms of exposure to essentially anything.

Q. All right. I want you to understand my question, though, Mr. Todd. This is my opportunity to sit down and

JRL 07443

talk to you, and if you gather information, then, after this, I'd like to know what that is or when that's going to happen, so I guess I'm not asking what would and wouldn't be helpful, but I'm asking you, as you sit here today, is there information that you're going to be asking for that would contribute to your knowledge about the case?

A. It would be useful to get what you're inferring. Whether there are people at the plant who date back to that era, who have sufficient knowledge to add to what we have now, I don't know, but I won't rule out the possibility of doing it.

Q. You haven't, at this time today asked to see or talk to people from the plant?

A. That's correct, I have not, up to this point in time.

Q. And you don't have any current understanding right now that that's going to be supplied to you unless -- if you need it in the future?

A. That's basically correct, if it would be somebody that would add to our store of knowledge, then, again, I may ask for it.

Now, it may be an exercise in futility, because they may come back and find out there's nobody who has any

URL 07444

real familiarity on a worker level dating back to 1974, in which case, the excursion you're planning isn't possible, because they're just not there.

Q. After reviewing the documents, you don't have any present intent to ask for someone, for example, from the Ink Room or some other area of the plant?

A. No, I wouldn't say that's the case at all. There's a lot of missing information, and you've asked me to depict risk not only 10 years ago, but essentially 20, and at least in the first 8 or so years, there's absolutely no hard data, and, therefore, you've got to put the puzzle together as best you can, so the more information you've got, the better off you'll be.

Q. What is the missing information that you're talking about?

A. Well, at least the data I've seen, there's no records indicating exposure to monomers of any type preceding 1974.

Q. I'm sorry, any exposure what?

A. Any exposure data to vinylchloride or anything else pre-1974. Okay. The first monitoring appears to have occurred sometime in mid to late 1974, and even then somewhat sketchy in terms of details.

UAL 07445

Q. Do you have any present idea about how you would go about getting that information or attempting to get it?

A. Well, above and beyond trying to make estimates from our current understanding, ideally what you'd like to have is somebody who not only knew the individuals in question, but actually had some direct familiarity with the tasks they did and the type of materials they handled, the quantities, and so forth and so on, as well as any subjective, for what they're worth, evaluation of dust exposures and odor levels and so forth and so on.

Q. Well, correct me if I'm wrong, but what we're concerned with here is exposure to a gas, not to dust; is that right?

A. Well, you really have PVC dust as well as vinyl chloride monomer itself as the gas.

Q. But we're in agreemment that exposure to PVC dust, as a dust, is not known to be a carcinogen. It's any vinyl chloride monomer that's contained within the dust; is that fair?

A. That's true, we agree that truly polymerized material does not appear to be carcinogen; nevertheless, the polymerized material contains unreacted monomer, and

UAL 07446

if you inhale a dust, it is unlikely that that material is going to escape other than to the systemic system itself.

It's going to gradually degas off there inside the body, and, therefore, result in direct systemic exposure, so that is going to add to any direct airborne VC that you may get as a result of working in proximity to the PVC or whatever the process may be.

Q. This inhalation of the dust depends upon -- okay, let me change that question, then, if I can.

The inhalation of the dust is important only insofar as a content of the vinyl chloride monomer; is that correct?

A. Basically.

Q. We're not talking about levels of dust that are so high here that they will contribute to like a nuisance dust type of situation?

A. I don't know -- when you say, "nuisance dust," and that,that is used in one fashion in professional circles, and in another fashion in nonprofessional circles.

Q. But you understand what I mean by that?

A. Well, I think I know what you mean. Maybe you need to clarify.

Q. We're not talking about dust exposure here

URL 07447

that would contribute to a dust-type lung disease?

A. No, we're not talking about a lung disease from, in quotes, the "PVC dust," per se, although there's some indication in the literature of disease entities from PVC dust. That's more recent literature.

Q. But that is not involved with these two gentlemen; is that your understanding?

A. That's my understanding at this point.

Q. Okay.

A. All I was saying earlier was any potential vinyl chloride in that dust systemically would behave the same as though they inhaled it directly as the airborne gas.

Q. Now, let me see if I understand your charge in this case. You mentioned earlier that you are -- you have been asked to look at -- at what?

A. Basically what these individuals worked with; what sort of work practices were used; what sort of ventilation was in existence there as a function of time; and as best we can, try and depict what they were exposed to in order of magnitude.

Q. Now, you mentioned earlier that you were not asked to look at the medical aspects of the case; is that

URL 07448

right?

A. We weren't asked to specifically relate the specific disease to a specific material or a mixture of materials; that is to say, draw a cause-and-effect conclusion from a medical standpoint.

Q. So I would be correct in presuming that you're not intending to testify at trial as to whether the vinyl chloride caused the cancer in these two men?

A. That's a medical expert.

Q. Well, as an industrial hygiene expert, are you prepared to testify to that?

A. Well, that's a gray area. You get the question of how in depth you go. There is a point where industrial hygienists can't make a diagnosis.

Q. Well, I understand that, Mr. Todd, but you can form opinions as an industrial hygienist regarding whether certain exposures contribute to certain diseases; is that correct?

A. That is correct.

Q. Are you going to do that in this case, to your understanding?

A. Perhaps in an indirect fashion, yes, that may very well be done, because, again, we get back to the fact

URL 07449

of how much do you know about the material as a function of time, and how do you react accordingly in terms of trying to reduce health risks to people who may have potentially been exposed.

Q. Well, I understand that, but I've asked you to expand a little bit upon your answer "In an indirect fashion." I don't understand exactly how you can testify concerning whether there is a dust exposure and so on and so forth unless you relate it to a specific disease -- let me withdraw that question. That's too long.

Explain how, in an indirect fashion, you're going to testify on causation?

A. Okay. Let's see if I can. Maybe you better -- maybe you better repeat the question, be a little more specific, because you're almost asking for dissertation, and I don't think I'm prepared to give you an extended, lengthy -- see if you compartmentalize that question a little bit for my benefit.

Q. Certainly. One of the issues in this case and in these other cases is whether the material caused the injury to the person who is bringing the lawsuit. You understand that, correct?

A. Well, yeah, the question really becomes what

URL 07450

do you know about the material you worked with as a function of time as to their biological or possible biological effects; what do you know about the order of magnitude of exposure; what do you know about what was done as a function of time to minimize that possibility; and now is there possible interaction effect that comes into play.

Q. And you are prepared to testify as to that?

A. To the extent that I can, yes.

Q. Are you prepared to testify as to whether the exposure to vinyl chloride monomer or polyvinyl chloride had a cause-and-effect relationship with the cancers involved in these cases?

A. In a probable sense, yeah.

Q. In an absolute sense, I think, as any area of science, you can't give an absolute, but probable?

A. Yes.

Q. Well, I'd like to get back to that in a minute, but I'm going to try and keep this in some sort of sequence. Have you talked to anyone besides the people in your facility or your company and the people out at the plant concerning the aspects of the case that we were just talking about, what I would term the "causation issue," or with regard to any other issues of the case?

URL 07451

A. Well, again, I'm going to have to give you the same response that I did earlier. If I did, I don't recall it. I'm not sure that I did.

Q. And what texts, medical articles, Chrysler documents, your own files, or any other documents have you reviewed in your preparation for this case?

A. Well, there's a pile of discovery documents here which have come out of both Chrysler and PVC manufacturers, plus a few scientific articles. There's some information on some of the processing areas and ventilation aspects, as well as volumes of materials purchased from various supplier sources over the time period roughly of eight, ten years, twelve years, and it is voluminous.

Q. Let's go through those in a second. Have you done any review of the industrial hygiene literature concerning vinyl chloride or polyvinyl chloride?

A. Oh, I have some of it right in the office, and general solicitations from Patty's and TLV documentations and so forth. Obviously, we have access to all the computerized aspects, certain cancer lines and toxic lines and so forth on our own computer system.

I haven't gotten to those, again, primarily

URL 07452

because I wasn't asked to look at the pure medical aspects in terms of cause and effect. My understanding is that's someone else's area of responsibility.

Q All right, so you have not looked at Patty's to determine the --

A I said -- I didn't say I hadn't looked at Patty. I said I hadn't looked at the computer. That was what was ambiguous about your question, you said, "You have looked at the Patty." I have looked at some of the Patty and TLV information.

Q What else have you looked at?

A In terms of pure toxicology?

Q Yes, sir.

A I really haven't gone beyond that, and, of course, some studies require incorporated into -- I should say summaries of the Maltoni and the IBT evaluations. Now, they're summaries, but the actual, in depth raw data I haven't gone back to.

Q What is the IBT information?

A Industrial biotest, that is the information of 1973, approximately.

Q Where did you get the industrial biotest, the Maltoni and the Viola or any of the medical articles that

URL 07453

you have seen?

A. I think they were supplied by Kirk.

Q. By the attorneys for --

A. At least the summaries of those.

Q. By the attornies for the Plaintiff?

A. I believe so, yeah, either that, or they were in some of the depositions of Defendants' witnesses.

Q. You have not gone out and done a review of the medical or industrial hygiene literature on the issue of causation; is that right?

A. No, that's correct, at this point in time I have not.

Q. Do you have any plans to do that?

A. I don't know. Again, it depends upon how the attorney wants to coordinate his case. You know, I don't know all his experts and where their conversations were going and how he's going to impact it.

Q. Your understanding of your charge at this time is that you would -- you have not been asked to date to testify as to the medical causation issue?

A. That is correct.

Q. By the way, do you know Dr. R. Michael Kelley?

A. I have heard the name, but I can't place the

URL 07454

name with an organization.

Q. Have you ever met him before, to your knowledge?

A. I don't recall the name. Again, I have a very poor memory for names, so I wouldn't swear I never met him, but it does ring a bell.

Q. Do you recall when you looked at Patty's what was indicated with regard to the medical causation of cancer and vinyl chloride?

A. Well, there's a clear cut, of course, relationship with angiosarcoma, and I think that's pretty conclusive, and, of course, some of the obvious acute or less -- or I should say more subtle effects beyond angiosarcoma.

I'd actually have to go back and read in detail -- I don't -- I know they discuss some of the animal toxins they gave in regard to other type cancers. I don't recall them going into a whole of of depth in terms of epidemiology studies to confirm or not confirm those.

Q. Have you seen any of the IARC publications on vinyl chloride?

A. No. I have access to them, but I haven't seen the latest ones. I assume they probably classify it as a noncarcinogen, but I haven't seen the details right up on

URL 07455

the --

Q. You have seen the threshold limit value documentation on vinyl chloride; is that right?

A. That is correct. I don't think that's changed since, I don't know, '75 or '76 or somewhere in that general time period.

Q. Have you seen the medical records of either of these gentlemen?

A. I have, but it's been quite a while, and, again, I wouldn't have gone into any great big detail as a physician who was addressing the medical details. A little bit is beyond my area of expertise, but more importantly, I wasn't asked to look at the records. I've seen them, but I didn't go into great details because I wasn't asked to look at them as a medical expert.

Q. You understand that Mr. Dendinger died of colon cancer?

A. That I believe from recollection, I believe he died from a colon cancer.

Q. Do you understand that Mr. Wallace died from a mucoepidermoid carcinoma that they believe the primary was in a parotid gland?

A. That's my recollection.

UBL 07456

Q. From your review of Patty's or your review of the other things that you have seen, have you seen any information that would lead you to believe that vinyl chloride has been associated with either of these two types of cancers or locations of cancer?

A. From recollection, above and beyond the animal studies, I don't believe Patty goes into anything other than the basic angiosarcoma phenomenon in man.

Now, again, recognizing Patty isn't updated each year either and without looking back on my Patty, which is the most recent decision, I'm not sure even that it was actually within that --

Q. You referred to Patty's in the past as being the bible of the industrial hygiene profession; is that right?

A. It's probably one of the best summary-type documents for looking up information on all materials for which we have a reasonable amount of scientific information where these are used in industrial settings.

Q. And that's where an industrial hygienist first goes to when you first get information about possible exposure?

A. It's a good summary source. It's a good

URL 07457

starting point.

Q. And that's updated from time to time, isn't it?

A. From time to time. I wouldn't swear on the frequency because it's getting to be -- it went from two to, what, six volumes, seven volumes now, and you always have the problem in writing a multi-authored book of that type of trying to get your authors to update their sections, or if they're too busy, get somebody alternatively to do it. Subsequently, I doubt that the updating is going to be all that frequent above and beyond the simple corrections or maybe additions, or when brand new information comes along in a specific area or with a specific chemical.

Q. Along that line, there is an update, from time to time, of information regarding various questions?

A. That's basically true. That's what ACGIH does, and TLV does that.

Q. They do that every year?

A. They do it in theory every year. They don't necessarily do an indepth updating of every material every year, at least on paper they do, but in reality, that's not always possible, and sometimes it's not necessary,as well.

Q. Well, that's what my next question is, if something arises which gives them reason to believe that

UAL 07459

it needs to be reviewed and updated, then they examine that particular material; is that correct?

A. Yeah. If something appears in the scientific literature, or they receive specific comments from various and sundry sources published or otherwise, then they will continue to review it.

If there is nothing that either appears in the scientific literature or otherwise, I imagine -- I imagine the review tends to be cursory.

Q. Because there's nothing to indicate that it needs to be reviewed at that point in time?

A. Basically.

Q. How many TLV's does the ACGIH come up with?

A. I would presume, without having counted them, somewhere between 5 and 600. That's an approximation on that on my part.

Q. And this is a volunteer organization?

A. It's a professional organization. I don't know that you call a professional organization volunteer. None of us could contribute to the --

Q. Let me change my question, then. The members of the TLV committee are not paid any money to sit on that committee.

UBL 07459

A. As far as I know, they do it for the glory. I believe in many cases, their employers, state, county, federal, academia and so forth help pay some of their costs for travel and so forth, but they weren't paid a fee, as it were, by the hour, week, month, or otherwise.

Q. And those members of that committee are the ones doing the review of the TLV's, is that it?

A. They were basically reviewing the TLV's on a periodic basis.

Q. Well, my point is that it's difficult to get a professional organization with volunteers sitting on a committee to sit down and review some 600 chemicals, that you have to look at the ones that are indicating the need to be changed, and you leave the others until some information comes along indicating that it needs to be updated.

A. I agree. What you're saying is that, in fact, the TLV documentation isn't necessarily all the potential available information at one point in time, but it's the best we can do with a volunteer - type organization, so I agree with it.

Q. The ACGIH stands for the American Conference of Government and Industrial Hygienists.

URL 07460

A. That's correct.

Q. In order to be a member of that, you have to be a government industrial hygienist or be in academia.

A. Yeah, you have to work for an agency or be in academia. An example would be someone in the automobile industry who was a consultant to them, and maybe members of the industry, but they're not members of the actual committee. I believe -- I'm not positive, but I believe if you leave academia or government, your membership in the ACGIH, at least in the past, has either disappeared, or you've taken a secondary role.

Q. To be a member in that situation, to be a full, active member, you can't be employed by private industry?

A. At least in the active review process, you can't, because of conflict of interest.

Q. So these are government industrial hygienists that are setting these standards?

A. Governmental or academia.

Q. You're not a member, are you?

A. No, again, I'm not. I don't think you could be a private consultant, simply because you'd probably, at one point in time, have a conflict.

Now, I know a few private consultants who do

URL 07461

consulting work for ACGIH, but they are not members.

Q In your practice, you use the threshold limit values, don't you?

A I quite often use the TLV values.

Q I don't know whether you know this or not, but let me ask the question: As a matter of fact, when OSHA first started out, the purpose of OSHA was to get their own governmental standards; is that right?

A From a legal standpoint, you're correct. Actually, when OSHA first went into existence in December of 1970, even though the statutory requirements required adopting consensus standards, there was a general trend saying, "Well, let's just publish the ACGIH TLV's, and we will take them."

However, there was a court case on that, sort of a subtle reminder to OSHA as to what their limitations were in terms of accepting consensual guidelines versus consensus standards, and so, subsequently, OSHA was forced to adopt, basically, 1968 or 1969 TLV lists, plus some additional -- some additional ones from other sources.

Q Well, I think you said "forced" to do that.

A They were forced to do that legally.

Q As a matter of fact, they were looking to do

URL 07462

that anyway, weren't they? You were referring to ACGIH standards when they first began, because there was all these chemicals out there.

A. Well, yes, that is what happened, and they had to cast in concrete, I think it was, 1969 or 1970, the TLV list, and in some cases, that has varied dramatically over the almost 20-year time period that we're talking about.

Q. But they picked up the ACGIH standards when they first began.

A. Got it only in part. They actually accepted some of the other recommendations of the other consensus groups. For example, on benzene they didn't use the ACGIH limits. They used -- I'm trying to remember the name of the organization and I can't any more, but they used a more restrictive number. They had the option of picking up any consensus then, and they sort of amalgamated those.

Q. Do you have any idea what percentage of these standards were ACGIH standards when you first began?

A. If I were going to guess without looking back on it, I would say probably 85 percent of them were ACGIH.

MR. DELLI BOVI: Could we take a break for about five minutes?

URL 07463

(Whereupon, a brief recess was taken.)

BY MR. BUNDA:

Q. Mr. Todd, you said you looked at Patty's; is that right?

A. At one point in time, yes.

Q. In regard to these cases; is that right?

A. Probably in regard to these or Celanese, I'm not sure which.

Q. Well, I've got a 1982 volume of Patty's, which, in Volume 2C, Page 4304, discusses the carcinogenicity of vinyl chloride. Would you look at that paragraph for a second, sir?

Are you finished, sir?

A. Well, I was until I got distracted there.

Q. Take your time.

A. Okay.

Q. That makes reference to an IARC conclusion or study, doesn't it, sir?

A. That is correct.

Q. Now, Mr. Todd, I'm a little bit confused, because I asked you a question one time about whether or not you would be, in your mind, possibly testifying concerning the cause-and-effect relationship or association between vinyl

URL 07464

chloride and cancers in these gentlemen, and I believe you indicated that you may possibly do that, and then in another point in your testimony, I believe that you didn't understand that that was your charge.

A. Well, my understanding is there is a medical expert involved in the case, and that is basically their role or his role, as the case may be.

Q. And your role is to act as an industrial hygienist; is that right?

A. Industrial hygienist in a broad sense of the word, that is correct.

Q. Patty's, as you've already indicated, is an industrial hygiene manual; is that right?

A. It's an industrial hygiene textbook. I don't know if I'd use the word "manual."

Q. I'll accept that characterization. In this paragraph that I've shown you, doesn't this industrial hygiene textbook indicate that at least digestive system cancers, the data in the IARC publication indicates that the information is insufficient to evaluate the cancer-causing potential of polyvinyl chloride with relation to those cancers?

A. That's what it says in these chapters, that

UAL 07465

is true in the current IARC. Also, I'm not sure who that author is. That individual is unknown to me. I don't know what her background and how she interpreted what she had.

Q. You haven't gone to the IARC article to look at that; is that correct?

A. No. It would be a very easy thing to do. I haven't because I wasn't asked to do that as part of my charge, at least initially. Whether that changes or not, it's not my decision.

Q. But you mentioned that you did look at Patty's when you began this work.

A. I did look at Patty's, and I believe you'll find mine is the same edition as that.

Q. And you saw that information in Patty's when you began working on this case; is that right?

A. I don't know if it was when I began or when I was working on some of the Celanese cases that we referred to earlier.

Q. But in any event, we're looking at the same volume; is that right?

A. I think you'll find it's the same volume, same edition. Whether mine came out in 1982 or not, I don't know, but I doubt that it's been updated since then.

URL 07466

MR. DELLI BOVI: Could we stipulate for the record that the section of Patty's that Mr. Todd was shown was the section on polyvinyl chloride and not the section on vinyl chloride?

MR. BUNDA: Well, I don't know, Kirk, if I can stipulate to that.

MR. MEYER: If you give it a volume and a page number --

MR. DELLI BOVI: Well, let's do that. Can we stipulate to the volume and page number that Mr. Todd was referred to?

MR. BUNDA: I think I've indicated that on the record.

THE WITNESS: I think you already did.

MR. DELLI BOVI: The only reason I brought it up is because I looked in the index, and there's a section on vinyl chloride carcinogenicity that's in a volume different than that one.

(Whereupon, a discussion was held off the record.)

URL 07467

BY MR. BUNDA:

Q. Mr. Todd, getting back to one of the comments that you made earlier that the dust exposure to polyvinyl chloride dust would have some effect on the amount of vinyl chloride monomer that someone would or might be subject to, and to that extent, the polyvinyl chloride exposure would have importance to you, do you remember that testimony?

A. Yes. I said in essence that the dust would add to what was available in the vapor form for direct inhalation.

Q. That would depend upon -- when you say "vapor," you're talking about vinyl chloride monomer; is that right?

A. I'm talking about vinyl chloride monomer in the vapor state, which may volatize off the PVC either in the bags or elsewhere.

Q. Well, you anticipate my next question. Simply knowing the existence of polyvinyl chloride dust will not tell you how much vinyl chloride monomer the person would be subject to.

A. Absolutely correct.

Q. You'd have to know how much vinyl chloride monomer was left in the dust; is that right?

A. Well, that would certainly be helpful. That

URL 07466

would certainly be helpful, surely. If you knew what the dust exposure was and you knew what the residual monomer was, you could then add that component to anything that was a result of direct vapor exposure.

Q. If you don't how much monomer is in the dust, you don't know how much exposure there was to the vinyl chloride monomer; is that right?

A. Yeah, in a simplistic sense, that's correct.

Q. I don't want to be simplistic. Explain to me what you mean.

A. Well, your question really suggests do I know it quantitatively, and if you again go back to the time frame that we're talking about, we know all the PVC's contain residual monomer. Even today a good many of the PVC products, PVC formulations, contain measurable levels of the monomer.

Pre-1974, of course, they were astronomically higher. What you don't know is whether they contain 647 ppm or 1,210 or 2,001 or 135.

What you can say is if they contain the given quantity and they were inhaled as a dust, and that dust either entered the GI tract because it was large dust particles--and that's ultimately where they usually end up--

URL 07469

or it entered the lungs because it was very small particles, that that vinyl chloride which was in there because of either digestive tract activity or lung activity -- activity in the lungs, ultimately would result in off-gassing, and, therefore, direct systemic absorption of the material, adding to any vinyl chloride which is inhaled as the vapor itself.

Do you follow what I'm saying there?

Q. I understand what you're saying. You've also indicated that vinyl chloride monomer is given off poly-vinyl chloride particles over time; is that right?

A. Assuming it's there in a concentration, it's going to off-gas. How rapidly it off-gasses depends upon several factors, all of which were discussed in these articles and elsewhere.

Q. It depends on the temperature --

A. It depends the temperature, porosity.

Q. Size of the particles?

A. A whole number of factors.

Q. Size of the particles?

A. Size of the particles, among others.

Q. It depends on -- in the mechanism that you're describing, it depends on the amount of exposure to

UPL 02470

polyvinyl choride dust; is that right?

A. I'm sorry, I didn't understand the question.

Q. Well, you're describing a system where somebody breathes in the dust or swallows the dust and is exposed to vinyl chloride monomer.

A. Yes.

Q. And my question was addressed to the fact that he had to, in fact, be exposed to that dust; is that right?

A. Absolutely correct. It would have to be in something like bag transfer or in the operation where you can expect to find a measurable level of dust, either intermittently or continuously, depending on what the operation was like and how good the collection-ventilation system was and so forth and so on.

Q. You would also have to know, for example, the ventilation system in the plant?

A. At least on a qualitative fashion, that's correct, you'd have to have a basic understanding of what was in the plant as basic engineering controls as a function of time.

Q. And you'd have to know the size of the plant.

A. Well, size of the plant in general is useful, but it's not the most useful piece of information, because

URL 07471

you could have a tremendously large plant and only 10 percent of it involved in PVC, and if it was compartmentalized for 10 percent, then the other 90 percent is extraneous in terms of your evaluation, so overall size is intersting but not necessarily directly pertinent.

Q. You'd have to know the layout of the plant.

A. You'd have to know the layout of the plant; you'd have to know how much material that's used, to any extent you can, at least qualitatively estimate how much residual monomer is in there, and under what circumstances would off-gas; under what circumstances you could get dust exposure and so forth and so on as a function of how they handle it and how they try to control those airborne contaminants when they are handled.

Q. Can we go through the documents that you've brought with you?

A. Yes, I don't see any reason why we can't.

Q. What are the --

A. Mountain of documents? Well, they're a mixture of Plaintiff's exhibits, depositions, a sprinkling of scientific articles, answers to Interrogatories. I don't know how else I can depict them, some test data here and there.

URL 07472

Q. Well, let's look at this first file that you have here.

A. I think there's a more recent one on top there. I haven't had a chance to look at that one, by the way. That one literally didn't even arrive yet at my office. I picked that up here this morning. I haven't had a chance to look at that.

Q. You're referring to a cover letter from Murray & Murray dated April 22, 1988, transmitting a BFG Technical Document consisting of 18 pages; is that correct?

A. That's the one -- not the whole pile, just that article.

Q. What about the other things that are in this pile? Do you know what they are?

A. Well, without going through the pile myself, I couldn't -- I couldn't recite them. I think most of them are exhibits of various types from the firm. The labels could probably identify it far better than I could from here.

Q. I'm sorry, what was that last part?

A. I said the labels could probably identify them a lot better than I can do. I don't read upside down.

URL 07473

Q. Why don't you look at them right side up and explain to me what they are.

A. Somehow or another, this seems to lack an official exhibit number, but it says Exhibit 4, B.F. Goodrich Company Standard Test Procedure; G.C. procedure for -- I'm abbreviating them. We are notorious for abbreviating.

Q. I've noticed that you guys studiously avoid saying the full word, and I like to hear it, because I have a problem saying it, and I want you to say it.

A. It's a B.F. Goodrich Standard Test Procedure 937DC, and it appears to be for residual -- it's a G.C. procedure for residual vinyl chloride.

Q. Mr. Todd, you've got, as you've characterized, a mountain of stuff here. What I would like you to do is go through this first pile and indicate for me, as perhaps a time saving measure, those documents that you consider to be significant. If you consider them all significant, then we're going to have to take a different tactic.

A. Well, this is interesting because it -- again, it tells me how they will be measuring residuals. The second one is ambient vinyl chloride monitoring. Again, it's a -- I presume it's a Goodrich document since it's

URL 07474

in the same pile, and it's dated April of '75.

This is one of their warehouse facilities in March and April of '75 in which they show concentrations in ppm as well as, apparently, air concentrations.

Q. Does that have any significance to you, in your opinion?

A. Yes, it's useful data in that this tells you roughly a year, a few months later what air concentrations are like in the warehouse. Done by an organization who should have a pretty good capability to monitor them qualitatively, it's useful.

Q. The first document that you mentioned concerned the testing method that BFG used for --

A. Yeah, it's their method at that point in time for measuring residual monomer.

Q. Do you have any problems with the method that's set forth? Do you dispute the method that they used, again, the context of the time?

A. I would think probably of the companies who were in the business at that time, they would probably have been in the forefront of method development; therefore, I probably would give their methodology a lot more credit than some of the companies who were floundering in developing it

URL 07475

at the last minute, and I have no reason to believe in looking at their data and methodology that it's contrary to what was commonly used at that time, and, to some extent, is still used with specific modifications.

The next exhibit is some monitoring of the ambient level of vinyl chloride in April of '75 in a specific Goodrich plant, in this particular case, Avon Lake, Ohio. Again, it's useful background information, tells you what they were looking at in terms of airborne levels in a company which probably is more sophisticated than most here, plus after the temporary emergency standard when the permanent standard, of course, had already gone into effect.

Q. Does that have any relevance to you in determining what the exposure levels were at Chrysler?

A. Well, it would in this sense: Based on a description of events at Chrysler and their relative sophistication compared to Goodrich, you would expect that certainly their level at Chrysler, again, if they were both related to PVC, per se, would be no less, so it would represent a base line.

Q. Hold on. Let me understand that now.

A. Assuming they were both related to PVC, you would expect Goodrich to be more sophisticated in terms of

URL 07476

their control, based only on what we know about the Chrysler plant in general.

Q. You understand that Avon Lake was a PVC manufacturing facility?

A. I assume it was a PVC manufacturing facility, but I also assume there was parts of that facility where people were only exposed to PVC, not to vinyl chloride directly.

Q. And you're saying that you're equating the exposure levels in a PVC manufacturing facility--

A. No, not to parts of that manufacturing facility where they're working with PVC, with VC.

Q. You're equating parts of that facility to the exposures at a PVC fabricating facility.

A. When I say "equating," I'm using it as a base line.

Q. What do you mean by "base line?"

A. Well, if you had a warehousing facility at B.F. Goodrich, you certainly had far more time for alerting them as to the problem, you would expect them to be much more sophisticated in their control at some point in time after the incident for--than December of 1973, than you would the other uses, and by that, I mean the warehouse --

UBL 07477

warehousing and similar type operations which would be more analogous to the Chrysler situation as they receive the material and just do straight processing.

Now, it has fitted into that equation without any heating procedure or processing factor. Obviously, they're not doing that at the facility, and that's why I said it would serve as a base line.

Q I still don't understand what you mean by "base line."

A It would tell you exposure at Chrysler shouldn't be any less than that minimally. They would be reflected in what you see at the warehouse and similar facilities in these type plants at that point in time. This is a year -- well, essentially 15 months or more after the incident.

Q You're saying -- let me get you straight now. You're saying that the exposures at the Chrysler fabricating facility should be at least what they are in the Goodrich warehouse or perhaps higher?

A That's right. I wouldn't expect what I know on the basis of Chrysler at that point in time for them to have installed nearly as good controls to -- they're not only working with PVC, but they're dissolving it and heating

URL 07478

it and so forth, and, therefore, you're going to enhance liberation of the vinyl chloride above and beyond the pure simple degassing as a function of time and ambient temperature.

Q. You will agree with me that PVC, over time, absent any fabricating or working of the material, nevertheless, as you characterize it, off-gasses, gives off vinyl chloride monomer; is that correct?

A. That's correct.

Q. Just sitting in the warehouse.

A. Assuming it's got a measurable level of vinyl chloride. If it didn't, you couldn't measure it, not meaning it's not there, but it's below your ability analytically to project it.

Q. Presume that it's in bags sitting in a Goodrich warehouse, it's giving off vinyl chloride monomer; is that correct?

A. That's correct.

Q. Over time, the level of vinyl chloride monomer goes down as it sits there; is that right?

A. That's correct, depending on a number of factors, but that's, in general, correct.

Q. Temperature?

URL 07479

A. Air return rate, porosity in the resin and a number of other factors.

Q. And the vinyl chloride monomer content goes --

A. That's correct.

Q. You have to know how long this bag was sitting in the Goodrich warehouse to know, for instance, how much vinyl chloride monomer is left at the time that it's shipped, right?

A. Well, the data isn't all that straightforward. The answer is yes and no. I suppose if you were talking about an exaggerated case where it sat around for a year, that would be a very important factor. If it sat around for a month or less, that may not be that large a factor, and, as a matter of fact, there's a little contingency which suggests that after a week -- and, as a matter of fact, analytically, in some cases they found more after a week than they did originally, which is a little bit amusing from an analytical standpoint, but barring it being a tremendously long time or very rapid degassing rate, time doesn't seem to be a big factor here simply because the material, generally speaking, was warehoused that long.

Q. What is the basis for that statement? How do you know that?

URL 07480

A. Well, a number of reasons for knowing it. One, I was somewhat involved in the vinyl chloride incident of early '74 to the basic starting material for vinyl chloride monomer, and, ultimately, PVC comes out of the oil industry, and with the Arab oil crunch of late '73, there was a scramble for supply of any petrochemical materials, including PVC. Consequently, it was a seller's market; consequently, warehouses did not remain full, and turnover was very rapid because of the demand versus the supply.

Now, that has varied from year to year, but by and large, most PVC manufacturers try not to build up tremendous stores simply because of the economics.

Q. Mr. Todd, I'm not sure you're addressing my question, so let me ask the question again.

A. Okay.

Q. From what I heard in your answer, what you're saying is that they didn't warehouse it, they shipped it as soon as they made it; is that what you said?

A. As soon as they had orders to fill, it went out because of the demand.

Q. I'm asking for the basis upon which you have just stated your opinion that sitting in the warehouse, the bags of PVC did not give off vinyl chloride monomer

URL 07481

over the span of, for example, a week, I believe?

A. No, I didn't say they didn't give it off. I said the amount they gave off wasn't that significant in terms of your potential health risk diminishing to any large magnitude.

Q. I'll accept your clarification, and I'll ask for the basis for that opinion. The first basis I believe you gave me was that you worked for the Society of Plastic Industries; is that right?

A. SPI, and one of the specific manufacturers of PVC, and at that point in time, as quickly as they could make it, it went out of their warehouse as soon as it feasibly could, depending on availability and so forth.

Q. Well, you're still missing the distinction that I'm trying to make. I'm saying as it sits in the warehouse, for example, a week --

A. Uh-huh.

Q. -- how do you know that the amount of off-gassing is not significant?

A. Well, there's a number of articles in there from people who have done playing with it. If you believe their data, and I have no reason not to believe it, since they make the material, and they were the ones doing the

UHL 07482

testing, the indications are unless temperatures were extremely high and the resin was extremely poor, a week or two doesn't make a whole lot of difference.

Q. What articles are you referring to?

A. Well, I think you'll find there is a Conoco study, and if I'm not mistaken, I think there is also some data in there from, I believe, Union Carbide, and possibly B.F. Goodrich.

Q. Okay. I'm sorry, but I've got to ask you to find those articles.

A. I was afraid you were going to do that.

Q. Well, I have to get to the bottom of this.

A. Okay, here is one. It's B.F Goodrich Technical Document, and it's called "A Physical Model"-- I wish there was a number on this thing.

Q. Well, let's mark this as an exhibit--

A. It's apparently Exhibit 8 of B.F Goodrich, I assume that.

Q. Well, let's stop for a second, Mr. Todd.

Could we have that marked as Defendant's Exhibit 1 at the top of the deposition, please?

A. Now, that's one.

Q. You have got to stop a minute. She can't mark it while you talk.

URL 07483

(Whereupon, Defendant's Exhibits 1 and 2 were marked.)

BY MR. BUNDA:

Q. Mr. Todd, my understanding is that the basis for your earlier opinion that the level of vinyl chloride monomer does not off-gas to a significant extent during warehousing is contained in the documents that you have before you; is that right?

A. There is a number of documents there that report assays residual material as a function of storing and other processing.

Q. Now, sir, you've given me Defendant's Exhibit No. 1 and Defendant's Exhibit No. 2, which you believe is information which supports your opinion in that regard; is that fair?

A. Those are part of it. Those are the ones we were able to dig out.

Q. Well, sir, what I am going to do is go on perhaps to another area, and perhaps ask you at the lunch break if you could go through the rest of the information and supply that that addresses this particular concern.

A. Okay, I can try on a lunch break. Again, like everybody else, I don't want to starve to death.

URL 07484

Q. I want to be fair to you, too. All I'm suggesting is perhaps you may need additional time, and I'm trying to give that to you.

A. Well, we'll see if we can supplement that with other documents.

Q. Sir, if I can maybe explore around the subject a little bit without getting into great depth on this particular opinion of yours, you stated that the level of the vinyl chloride monomer gas does not degrade significantly as they relate to -- how did you put it -- the biological exposures? Somehow you related that to the significant exposures, and what I'm looking to do is get some sense from you as to what type of exposures are we talking about as to while it's warehousing and while it came into the Chrysler plant.

A. Can you restate that and make that more specific? You've kind of wandered there a bit, and I know it wasn't intentional, but it was a series of questions all stuck together.

Q. Maybe I can kill that question and we'll try again.

You talked about a base line; is that right?

A. Okay. We were talking about the B.F. Goodrich

URL 07485

study in '75, spring of '75, as being a base line of where the industry in general was in the handling of PVC and air concentrations related to it.

Q. I believe that you referred to the vinyl chloride monomer levels from the warehouse as being a type of base line; is that right?

A. That would be a good comparitive -- a good comparitive base line for the Chrysler operation.

Q. A comparitive base line as to the exposures at Chrysler, right?

A. Yeah, they should give you an index of minimal concentrations should be expected there simply because you would anticipate that B.F. Goodrich technology would be more sophisticated in that area, in addition to which a number of the modifications which occurred in the critical areas of Chrysler actually weren't on their way until late '74 or early '75. I'm speaking of ventilation now.

Q. And when you say "a base line," what you mean by that is that the exposures were at least that at the Chrysler plant and perhaps higher?

A. That's correct.

Q. When we are talking in the area of 1973 and '74, what kind of exposures are we talking about, how many

URL 07486

parts per million?

A Are you talking about air concentration?

Q Yes, sir.

A Well, if you believe the numbers which are quoted by Wheeler and a number of other authors as to the residual vinyl chloride levels in the pre-early '74 era where they quote concentrations ranging from 500 to 2,000 parts per million of residual monomer in the material manufactured, and they don't seem to tell you whether that's as it's delivered or whether it's as it's manufactured, although, again, you get the impression that it doesn't sit around very long, anyway, so maybe it's an academic point.

If you again go back to, one, some experience I've had in that particular area: two, the B.F. Goodrich model system of projecting exposures, and this is in general sort of what you get from off-gassing as a function of what the residual monomer -- pardon me, levels are, somewhere in this pile of information--again, I'm sure we can dig it out--they have developed a mathmatical model based on their field experience.

I think this goes back to the mid '70's era, '75 or that time frame, as I recall, perhaps a little later,

URL 07487

where they project the amount of monomer residual as a function of what you would expect to see airborne, and if I understand their model correctly, they're saying with reasonable statistical certainty you can project that 20 ppm residual monomer, 20, 25, on that order of magnitude, should, in most instances, give you 1 ppm or thereabouts of actual airborne material--or maybe I should say less than 1 ppm with statistical confidence most of the time, and, again, there is a scattering type of effect.

If that's true, and let's just assume it's 20 for simplicity, then 500 ppm residual monomer would give you a 20 ppm exposure, or a thousand would give you 40 or 2,000 would give you 80, okay. Unfortunately, neither Goodrich nor anybody else pre 1974 was doing any monitoring so that they could say with certainty when the levels were this high, these are actual air concentrations that we encounter. Their model is based on field data and mathmatical calculations, the best data available.

Now, interestingly enough, in early '74 in the warehouse facility that we went into, 25 to 50 was typically kind of what we ran into. Now, these are PVC manufacturing plants. Now, admittedly, the material went in and came out as quickly as it could, and admittedly, they're typical

HQL 07488

high ceiling with limited ventilation, but a lot of natural ventilation because the open doors and trucks going in and out and so on, so there's seemingly general agreement there.

Q. General agreement about what?

A. In terms in the order of magnitude of exposure that you can expect, at least in early '74 and periods immediately preceding. What it was like in the '60's and the '50's, don't know.

Q. Well, we're not concerned with --

A. Again, it certainly wasn't any better.

Q. Well, we're not concerned with the '50's here --

A. Well, we're concerned with the late '60's. Whether this was much worse in the late '60's or not, you don't know. At least from Chrysler's standpoint, it would appear as though what they had installed in the early '70's in terms of dilution and related ventilation was basically what they should have had in the late '60's; therefore, you would expect similar type exposures, all other considerations being identical.

Q. I didn't understand that last phrase or that last part. Can you run that by me again?

A. Maybe she can better than I.

Q. No, I can read it when I get the transcript.

UAL 07489

A. What I said was, as I understand the Chrysler plant from an engineering and process standpoint, their purchase of that from, I believe, air -- call it '68, from the information I received leads me to believe that relatively little, if any, engineering modifications occurred until early '74. If that's true, then what one could depict for early '74, could probably apply that to '68 without multiplying it by any factors.

Q. The levels of exposures encountered in '74 can be extrapolated as being consistent?

A. Yeah, I think that's valid. I don't think they were any worse in '68. I don't think they are any better, but I don't see indications in the Chrysler plant of -- they bought it in '68, and, you know, the ventilation consisted of a guy with a little pair of bellows at one of the windows. It would appear that the dilution and other ventilation was in the plant when they purchased it, and just didn't get upgraded until '74 when the vinyl chloride situation broke loose, at which time they promptly began to upgrade and go to more elaborate local exhaust as well as producing greater amounts of dilution air feeding into the system, so it wasn't extremely --

Q. Let me understand your testimony correctly.

URL 07490

You were saying that Chrysler changed ventilation in the plant because of the vinyl chloride situation?

A. Well, that's what would appear if you believe their responses, yes, they upgraded their ventilation system in response to vinyl chloride, and again, later, I think in '76, in response to problems with solvent exposures, but, yes, there is at least two or maybe three upgradings, one in terms of supply air and two in terms of exhaust.

Q. All right. Can you get that information out for me, then? I want to see what you're referring to.

A. These would be responses to Chrysler Interrogatories. I'll just have to dig.

(Whereupon, a discussion was held off the record.)

A. This is a description of the ventilation equipment in the ink mixing and related areas, I guess. This is basically in response to the Interrogatories in which they described ventilation installed, in this particular case, the wall exhaust fans that go back to some-time in mid '60's, and they were installed by Airco out in the Ink Room; a centrifugal roof mount exhaust fan was installed in 70; a low-level, floor-type exhaust and

UAL 07491

dilution ventilation in 1970. Again, here's in another room, a system which goes back to the Airco days, a dilution ventilation. These are all mid to late '60's, all Airco, individual fan units. No specifications provided.

Then -- oops, I got beyond myself. Suddenly in '76 -- I don't know whether these are subsequently.

Q. If I can interrupt you there for just a second, Mr. Todd, I'm asking you for the information that you're relying on in your opinion that the ventilation was changed in 1974 because of vinyl chloride.

A. Okay.

Q. Where does it say that in there?

A. Nothing had occurred, apparently, from '68 to '70, and then '70 they added a little dilution ventilation. In June of '74, they added a new air supply -- make up air, okay. Don't have the specifications on it, but they at least described who made it and so forth in this, including their steam coils for heating and so forth, and there's another new air make up unit.

Hold on a second. There's a third make up air unit. Hold on a second. Yeah, this, I'm sorry, is not make up. This is an exhaust, again, June of '74. Here's another exhaust. Here is a third exhaust fan put in in

URL 07492

June of '74.

Here is a fourth one. This is, again, tempered air make up from June of '74; another tempered air make up, June of '74. Here is one there's no date, it's again air make up: and then it was in '76, which were in response to that solvent thing. They're not in sequence, but there's a number of air make up and exhausts that were put in in June of '74.

Based on the time frame, you would expect that they are in response to the VC monomer problems simply because your time required for ordering equipment is minimally a few months, and more realistically several, and that would fit into the time frame. There's no other indication of any specific problem there that they were addressing --

Q. And there is no --

A. -- other than that.

Q. Okay. Are you finished?

A. Yes.

Q. I don't mean to interrupt you. That's why I wanted to ask.

A. That's all right.

Q. There is no specification in the documents

URL 07493

that you've seen that those air changes, those ventilation changes in 1974 were because of vinyl chloride; is that correct?

A. Not specifically in response to the Interrogatory. They talk about improving the -- both the exhaust and the air make up to the specific equipment and area, but they don't say this was done for a specific material.

Q. Your information that the time period during which this change was done gives reason to believe that it was done because of vinyl chloride; is that fair?

A. That, plus my discussions with the people at the Chrysler plant would suggest that's a correct assumption. Okay. They had no other reason, if I can believe these statements in a straightforward fashion, for upgrading the ventilation in that area.

Q. What did the people tell you at the plant on this point?

A. That the systems were modified to make them much more effective in collecting air contaminants with specific concern oriented to possible vinyl chloride because of that standard, that proposed standard at that point in time of somewhere between 125 ppm -- or maybe I should say

UAL 01494

no detectible and 25 ppm.

Q. Who told you that?

A. I don't know whether I can tell you who specifically told me in the discussions I had with them or not, whether it was some of their supervisory people or Mr. Ferguson. I know Ferguson mentioned upgrading that ventilation specifically in the mid '70's.

Q. Did he say why?

A. I don't recall whether it was him or somebody else who indicated the upgrading was done in response to concern for vinyl chloride exposures because of the fact that they were informed there was potential for VC exposure.

Q. You don't remember who told you that out at Chrysler; is that right?

A. Specifically at this point, no, I don't.

Q. Was it more than one person?

A. It might have been. Again, I've spoken to four or five, maybe six people out there.

Q. As you sit here today, do you have a recollection as to whether it was more than one person?

A. Specifically, no, I don't.

Q. Do you recall what he looked like?

A. As I said, it may have been Ferguson. It may

CHL 07495

have been some of the others. Again, when you're out there with a group of individuals and you're asking questions as you go along, you often don't pay attention to who is giving you a specific response.

Q. When is it, do you recall, that they changed the ventilation for the solvent exposures, or as a result of the --

A. Did I give you a listing -- that listing, or is that still here?

Q. Here?

A. I think it's in '76, but I'm not sure when in '76 it indicates it.

Where is that response list?

MR. DELLI BOVI: Here.

THE WITNESS: Oh, is it here? I'm sorry, where is the response to the Interrogatories.

MR. DELLI BOVI: Right there.

THE WITNESS: No, that's Conoco.

(Whereupon, a discussion was held off the record.)

A. No, it was 1976. The question is when. Here

URL 07496

it is, March 1976, they put in a local exhaust system for their batch mixers for solvent fumes. There's two systems in March of '76-- three systems in March of '76. Apparently they also put a system in in March of 1976. This is for dust and fumes from the blender during loading and so forth. Those are the only four systems for 1976 assuming they're out of order. They only have that one system I referred to earlier with no specific date on it, so there's at least four systems in '76, apparently early '76.

If my memory serves me correctly, I believe they were cited a month or two prior to that by OSHA for overexposure to solvents.

MR. MEYER: Those are Chrysler's Interrogatory responses?

THE WITNESS: Those are Chrysler responses.

BY MR. BUNDA:

Q. You've seen the State of Ohio information and the Chrysler information regarding exposure levels for vinyl chloride which were done in the beginning of 1974; is that right?

A. I saw the Chrysler data. I don't recall seeing any from the State of Ohio. I'm not going to say that's

URL 07497

incorrect, but as I recall, the State of Ohio was into the plant several times, and I thought most of that work they did was predating 1974 and wasn't related at all to vinyl chloride, and I'm saying that from recollection. I know Chrysler did monitoring sometime in the '74-on time frame, but not before that.

Q. Well, thrusting aside the issue of who did that monitoring, you've seen those results; is that right?

A. I have seen the data, yeah. There's a little data here and a little data there.

Q. Do you accept that data as being valid?

A. I would accept the samples that were taken as being valid. Whether they represent a full spectrum of all the potential exposures is not a question.

I haven't seen anything from the Ink Room, for example, indicating what sort of exposures occurred in there. Why that's not included, I don't know, but I would assume Chrysler was sophisticated enough to do it correctly, and that the people who did the analysis did it correctly, and, therefore, those numbers that they generated are valid.

Whether they represent all the potential exposures at this point in time is another matter.

Q. Regarding that other matter, there were some

UBL 07498

exposures taken in the Ink Room, do you recall that?

A For vinyl chloride?

Q Yes.

A Yes, I believe that is correct, not necessarily the areas where you'd expect the greatest potential exposures, but I agree you're correct that there was some taken somewhere in the Ink Room, and I've forgotten the time frame without looking at the data.

Q And there were exposures taken of Mr. Wallace, do you recall that?

A I believe that's correct, there was of Wallace, and I'm saying that again from recollection without having seen the data for quite some time.

Q And those exposures in the Ink Room and Mr. Wallace were both below the .5 parts per million; is that correct?

A I believe that is correct, and again, I'd have to look at the hard data.

Q Would you agree with me that again the actual exposure levels,you would not need to do this extrapolation that you were talking about from the B. F. Goodrich exposure?

A Well, that isn't necessarily true. It depends on what he was doing on the given day he was monitored and

URL 07499

whether that reflects what he did over his entire course of history. It also is somewhat dependent upon what sort of stream they were feeding to the Ink Room on that particular day, i.e., and, of course, more importantly, where was he in relationship to where the potential maximum exposures were on this particular day; you know, was he in a task mode where he went in and out very intermittently, where as another day he might have spent an entire day, either because of his job classification or because of specific job problems which required him to be there, and now does this data tell you about the best case, the worst case, or somewhere in between.

Q. What can you tell me about that?

A. Not a whole lot. It says here the number, and I monitored the guy.

Q. Do you have any way of supplying that information, the information that you're talking about?

A. Unless you could go back to their files and find out particularly what his job classification was on that particular day or days, how much time he actually spent in the area of concern, then you might be able to use it.

Now, whether Chrysler would be willing or

UAL 07500

would have records in that kind of detail, I don't know. We haven't pursued that at this point.

Q. You don't have this information down?

A. No. That doesn't mean we'll necessarily pursue it, but we don't have that at this point. This would be a very interesting thing to pursue to see if you're saying less than .5, do you know from what he did on that particular day at this time,what his relative time frame spent in those areas where exposure can occur, did he go up on any of the upper platforms where you would expect it to be higher, or, in fact, did he just walk in and out, grab samples and go off and do a little bit of color matching.

Whether they could retrieve those records or not, I don't know. At this point we haven't asked them to.

MR. BUNDA: Can we go off the record for a second?

(Whereupon, a discussion was held off the record.)

MR. BUNDA: Kirk, I'm hearing from your expert that he needs or would like additional information in order to form an opinion. Now, my understanding was that when he was presented for a deposition

URL 07501

today that you had all the information you needed from the series of depositions of my company people, and that once he had that information, he would be able to form opinions.

I'm hearing testimony that he isn't prepared at this point to testify about the exposure that both of these gentlemen suffered, and I'm not going to go through this series of depositions unless he has that information.

I don't want to waste your time, and I don't want to come back and do this again.

Now, are you finished with preparing him and supplying him with the information, or do you have information in the future that you're going to get and give to him?

MR. DELLI BOVI: Mr. Todd's testifying today based on the information and the evidence that has been uncovered to date in this case. Whether or not additional information and evidence will

URL 07502

be uncovered between the present time and the time of the trial, I do not know.

Consequently, I can't tell nor can Mr. Todd tell you what effect, if any, the receipt of additional information will have on his opinions.

Mr. Todd has formulated opinions based on the evidence and the information provided to him today on his education and his background and his experience, and he's prepared to offer those opinions to you today. Obviously, the lack of information in certain areas causes everybody to desire additional information or evidence which may have bearing on the ultimate issues in this case, the opinion of the experts in this case.

Whether or not that information will ever be uncovered or discovered or provided at this point, I don't know. We're in a continual quest to receive and obtain that information, so Mr. Todd is here to give you the opinions that he has based on what

URL 07503

he has received to date, and based upon his knowledge as it exists at the present time.

What the future will bring, I have no idea.

MR. BUNDA: You're presenting me with a moving target. I'm here to get his information, but I don't want to go back and think that I have his opinions when he's going to be getting additional information.

My understanding from the judge is that discovery is closed in this case and that we're now in the process of deposing the experts for the purpose of presenting this case to the jury at the trial of the causation issue, so I'm going to move to exclude any testimony on information that you may get in the future and provide to him which may affect or change his opinion.

MR. DELLI BOVI: Is it your understanding, Mr. Bunda, then, that discovery is closed as to both sides?

URL 07504

MR. BUNDA: It's my understanding that the continuation of the trial was with the understanding that we're permitted to depose the experts, but that we're not going to engage in additional discovery of information from Chrysler. We're here to get the opinions of experts.

MR. DELLI BOVI: Well, I didn't hear the judge say anything at the pretrial that indicated that I was prohibited or that the Plaintiffs were prohibited in meeting with anyone from Chrysler or obtaining any additional information from Chrysler, and if there is something that occurred at the pretrial or is contained in the journal entry reflecting what occurred during that pretrial that bars me from doing that, I certainly strenuously object to it.

MR. MEYER: Just have the record reflect our intention to join in Bob's motion to strike the information

URL 07505

gained at a later date.

MR. BUNDA: Well, perhaps this is a matter we should best bring to the attention of the Court. Since Mr. Todd is here, I'm going to continue asking him questions.

MR. BAMMAN: Bob, what are we going to do about lunch?

(Whereupon, a discussion was held off the record.)

BY MR. BUNDA:

Q We're back on the record. Mr. Todd, would you agree with me that the exposure information that was obtained at the Chyrsler plant on vinyl chloride would be more accurate than extrapolations from, for example, residual vinyl chloride measurements in the resin on estimates by employees of exposure to dust and such things?

A With the qualification, it depends on how in depth the data is from which you can make true estimates. If you have a spot sample here and a spot sample there with no documentation of what went on, then about all you can say is, "I've got a couple numbers."

So with certain reservations in here, that is

URL 07506

correct. In practice, it may or may not be.

Q. You've seen the documentation that was attached to the studies that were done. Is that acceptable?

A. I saw the documents. I don't recall there being that much documentation. As I recall, we did a survey and analyzed the numbers from people or areas that we monitored, and that's not what I call very complete documentation.

Q. What would you like to have in order for it to be complete?

A. Well, what I would like to have, obviously, is an area-by-area evaluation of where you are and what contributes to exposure rather than, "I came in such and such a date. I took a few samples, and I sampled right out by the door, and here's the sample. I'll see you six months from now," or whatever, and more importantly, what would have been far more useful, of course, is data going all the way to the beginning when the operation -- took it over from Airco, 1968, roughly.

Q. Have you formed an opinion about the exposures at the plant to vinyl chloride?

A. In a general sense.

Q. Give me your opinion, please?

URL 07507

A Well, my opinion at this point, of course, is that pre '74, residual levels were much higher than they were post '74, again, from the documentation, my own experience provided.

I know there was a crash program at this point in time to reduce residual levels as well as alert users of this to the potential probelms that might be inherent in it, and that varied from supplier to supplier, but nevertheless, in general, most people using it became aware some time in '74, certainly before the final standard went into motion, because it impacted on them.

Based on what I know about the basic engineering controls in that plant and the off-gassing that I would anticipate, I think you can depict in a qualitative sense what your potential maximum exposures were, and that would be a function of what they did, what the ventilation was in a given area, and how much material it handled, and what their proximity was to the source of the VC emissions themselves, and the closer the source, the more their exposure was; the more remote they were from them, the less they were; and you can see that as well in the production area, and particularly where the individuals went in and out, you would expect to have less exposure,

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