

1
2 UNITED STATES DISTRICT COURT
3 FOR THE DISTRICT OF OHIO
4 WESTERN DIVISION

5 -----X
6 MARY A. DENDINGER, etc.,

7 Plaintiff,

8 -against-

INDEX NO.
C/87/7117

9 CHRYSLER PLASTIC PRODUCTS CORPORATION, et al.,

10 Defendants.
11 -----X

12
13
14 DEPOSITION of a Non-Party Witness by,
15 ROSCOL NICHOLAS WHEELER, taken by Plaintiffs,
16 pursuant to Notice, held at the Royce Hotel 90-10
17 Grand Central Parkway, Queens, New York, before
18 Margaret Scaffidi Shorthand Reporter and Notary
19 Public of the State of New York, on Wednesday,
20 December 9th, 1987, commencing at 10:00 a.m.
21
22

23 COMMERCE REPORTING COMPANY
24 139 EAST 57TH STREET
25 NEW YORK, NEW YORK 10017
(212) 750-9696

URL 05816

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

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FOR THE DEFENDANTS BFGOODRICH
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COMPANY, FIRESTONE TIRE & RUBBER
COMPANY, CONOCO INCORPORATED, UNION
CARBIDE CORPORATION, DIAMOND SHAMROCK
CORPORATION, TENNECO INCORPORATED, AND
OCCIDENTAL CHEMICAL CORPORATION
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BY: PETER DAVEY, ESQ.

URL 05818

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IT IS HEREBY STIPULATED AND
AGREED, by and among the attorneys for the
respective parties herein, that the
sealing, filing and certification of the
within deposition be waived; that such
deposition may be signed and sworn to
before any officer authorized to administer
an oath, with the same force and effect as
if signed and sworn to before the officer
before whom said deposition is taken.

IT IS FURTHER STIPLATED AND AGREED
that all objections, except as to form, are
reserved to the time of trial.

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Roscol Nicholas Wheeler

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R O S C O L N I C H O L A S W H E E L E R

a Witness stating his address as 2611
Putter's Lane, Melbourne, Florida
32901, sworn by Margaret Scaffidi
Shorthand Reporter and Notary Public
of the State of New York, was examined
and testified as follows:

EXAMINATION BY

MR. BOVI:

Q. Mr. Wheeler, my name is Kirk
Bovi. If there are any questions that I ask
you this morning that are not clear to you or
that you don't understand, would you indicate
that to me before you answer the question?

A. I will try.

Q. Thank you, sir.

Would you state your full name,
please?

A. Roscol Nicholas Wheeler, Jr.

Q. What is your present address,
Mr. Wheeler?

A. 2611 Putter's Lane, Melbourne,
Florida 32901.

Q. How long have you lived at that

URL 05820

address?

A. Two years, a little over two years.

Q. Do you reside at that address in Florida year round?

A. Yes.

Q. Prior to living in Melbourne, Florida, where did you reside?

A. Charleston, West Virginia.

Q. Do you have any plans at the present time of changing your address within the next six months?

A. No.

Q. What is your present age?

A. 65 this month.

Q. Would you outline for me, Mr. Wheeler, your educational background after you graduated from high school?

A. I attend Marshall University in Huntington, West Virginia, for two years, and went to Virginia Polytechnic Institute for two years and received a degree in chemical engineering.

Q. Did you receive a degree from

1 Roscol Nicholas Wheeler 7
2 Marshall University?
3 A. No, that was simply a part of
4 the chemical engineering degree.
5 Q. What type of course work did you
6 pursue at Marshall?
7 A. Primarily the initial
8 engineering courses.
9 Q. What degree did you obtain from
10 the Polytechnic institute?
11 A. B.S. in chemical engineering.
12 Q. In 1943?
13 A. Yes.
14 Q. Have you taken any courses at
15 the college or university level since you
16 obtained your B.S. degree in 1943?
17 A. There were a number of them,
18 either company sponsored courses or courses
19 that were sponsored by the Local Chapter of
20 the American Institute of Chemical Engineers.
21 Q. Have you taken any courses at
22 the college level, at --
23 A. No.
24 Q. -- any colleges or universities?
25 Your answer is no?

URL 05822

Roscol Nicholas Wheeler

8

A. No.

Q. After you obtained your degree from West Virginia Polytechnic Institute in 1943, where were you first employed?

A. I was employed by Union Carbide Institute, March 15, 1943.

Q. Your initial position there was that of a gas analyst?

A. Yes.

Q. What type of gases were you analyzing?

A. Primarily butadiene styrene. It was a butadiene styrene manufacturing plant.

The gases primarily were the C4's that would run the range from the C4's up to methane and various things in between, all sorts of things such as acetylene, which was an intermediate product. Ethylene was an intermediate product.

But primarily it was all based in the C4 hydrocarbons.

Q. Was the butadiene styrene plant and institute a separate facility from polyvinyl chloride production facility of

Roscol Nicholas Wheeler

9

Union Carbide in West Virginia?

A. Yes.

Q. Did you do any analysis, while you were at the butadiene styrene plant, of vinyl chloride?

A. No.

Q. You were a gas analyst for approximately one year before you became a technical assistant?

A. That's correct.

Q. Mr. Wheeler, did you work at the butadiene styrene plant for approximate one year as technical assistant before you went to the South Charleston facility of Union Carbide?

A. I was technical assistant in the styrene manufacturing portion. It is a vinyl monomer.

Q. Union Carbide never produced PVC at its institute in the West Virginia facility; did it?

A. No.

Q. That was only produced at the South Charleston facility?

URL 05824

A. It was produced at the South Charleston facility at that time.

Q. Is it still produced at the South Charleston facility, to the best of your knowledge?

A. I think so, to the best of my knowledge.

Q. Is it still produced at Texas City?

A. Yes.

Q. When did you first become involved, Mr. Wheeler, as an employee of Union Carbide with either the production of polyvinyl chloride or vinyl chloride?

A. I think you have a resume of mine there. I think it was 1946. You can check that, the date there is reasonably good. My memory may not be quite up to par.

MR. BOVI: Bob, do you have an extra copy of Mr. Wheeler's resume that he could look at and I could go through it with him?

MR. BUNDA: No, I'm sorry, I don't.

Q. Your resume indicates that in 1945, Mr. Wheeler, you were involved in production supervision in technical project work in solvent polymerization of vinyl chloride; is that correct?

A. Then I was not correct when I said 1946, it was 1945.

MR. BUNDA: Off the record.

(Discussion off the record.)

Q. What was the extent of your involvement in vinyl chloride polymerization in 1945?

A. I was in responsible charge of a polymerization unit.

Q. Using what process?

A. Using the solution process.

Q. Did Union Carbide utilize any other polymerization processes at the time, other than solution?

A. No, they had other processes. They had an emulsion plant and they had a nonsolvent plant which you can characterize as bulk. It is not, it was in no way similar to the so-called bulk, which I think you made

URL 05826

reference to.

Q. Did Union Carbide employ these three processes at its South Charleston plant in 1945?

A. Yes.

Q. Did it employ the same processes at its facility in Texas City?

A. The Texas City plant was not even built until about 1946. I could be wrong by a year or so there, but I would say roughly, I think they started building the plant about 1946, and it may have been another year before it actually went into operation.

Q. Your particular involvement in 1945 was with the solution process?

A. That's correct.

Q. Your resume also indicates that you were involved in polymerization monomer recovery?

A. Yes.

Q. What processes did Union Carbide use at that time to recover monomers?

A. Each specialized process had its

own individual monomer recovery system. It had to be adopted to the particular process to the resin being manufactured.

Q. Let's talk about the solution process. What monomer recovery methods did Union Carbide use at that time?

A. Solution process monomer recovery was a distillation operation. You were dealing with a resin solution and the unconverted monomer was distilled out of the resin solution.

Q. How?

A. By heat and vacuum.

You are familiar with distillation?

Q. Would you indicate for me, in terms of the emulsion process, what monomer recovery method Union Carbide used in 1945 and 1946?

A. You are asking for something which I cannot really specify since I was not working in that plant at that time.

Q. Okay.

Can you tell me the monomer recovery process that was used in the nonsolvent

URL 05828

operation, or you are not familiar with that?

A. Again, I was not involved with that, so I can't speak of my own knowledge.

Q. For how long after 1945 did Union Carbide continue to use the distillation monomer recovery process in the solution process for the polymerization of vinyl chloride?

A. It's still in use.

Q. Has it been modified?

A. Yes.

Q. When and how?

A. The distillation was made more intensive and it was subject to quality control more so than in earlier years.

Q. When was that change made or first made?

A. I would say it was a gradual change, though the most marked change would have been in early 1974. But no processes can be said to be constant over a period of years.

Q. Can you tell me, between 1946 and 1974 more specifically, how the recovery

URL 05829

Process was altered in the solution process?

A. We put in a flash tank after the distillation column, which was operated at a somewhat higher vacuum. That was the first step.

Then, I think about 1974, and these dates are approximate, we doubled the number of distillation trays in use. When you do that you also do a better separation job.

Q. When was the flash tank installed, approximately?

A. This is a real wild guess. I would say --

MR. BUNDA: If you know, tell

him. If you don't, don't guess.

THE WITNESS: Okay.

A. (Continuing) I'm sorry, I can't guess.

Q. Are you able to estimate at all, give or take two years?

A. I would say it was towards the end of my first job which you have listed there.

Q. All right.

Let me hand you your resume, sir, --

A. All right.

Q. -- and give me a year.

A. You have me starting this job in 1945. I would say someplace in the general area of 1947.

Q. That the flash tank was installed?

A. Yes.

Q. Following the installation of the flash tank, was that done both -- was the flash tank installed in Texas City?

A. I have no knowledge of that.

Q. Following the installation of the flash tank, did Union Carbide conduct any testing between 1947 and 1974 to determine the residual vinyl chloride monomer concentrations in the resin produced by the solution process?

A. There were some, but I can't recall when or how. I do know that the methods of analysis in the earlier years were not very accurate.

Q. Can you tell me approximately

URL 05831

when the testing was performed?

A. No, I can't.

Q. Do you know the method by which the testing was conducted?

A. No.

Q. You had worked with absorption spectroscopy?

A. Yes.

Q. Do you know whether or not that method was utilized or whether GC's were utilized?

A. This was before the days when GC's were in generally use. I'd rather not guess.

Q. Do you have any recollection as to the results of testing prior to 1974 on the polyvinyl chloride resin produced by the solution process at Union Carbide for RVC and content?

A. Run that one by me again.

MR. BOVI: Sure.

Would you read that question back?

(Record read.)

JPL 05832

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A. We did some testing after 1970. I can't give you specific dates or specific results. I do know that we did it and that --

Q. Was the testing done before 1974 or in or after 1974?

A. It was prior to 1974.

Q. Between 1970 and 1974?

A. Yes.

Q. Prior to 1970, did Union Carbide do any testing?

A. I don't recall that we did, but I don't recall that we didn't either.

Q. Now, do you recall between 1947 and 1974 the efficiency of the polymerization process using this solution method?

A. Now, would you define efficiency for me?

Q. Sure. The percentage of vinyl chloride monomer polymerized into polyvinyl chloride. -

A. The conversion in the reactor was about 40 percent, 45 percent. That's not what I would term an efficiency, but that is

URL 05833

a percentage conversion per passing the process.

Q. And did that -- I'm sorry, per pass?

A. Yes. As you recovered the monomer you fed the monomer back into the process. It was a continuous polymerization process starting about 1965.

Q. Now, did Union Carbide at anytime after 1970 provide its customers with the results of the testing that it did on its polyvinyl chloride resin for VC monomer content?

A. I have no knowledge of that.

Q. In 1947 you became a production supervisor at the South Charleston plant involving solvent polymerization?

A. Yes. It's what customarily happens in corporations. You get a little bigger job and they give you a title and no more money.

Q. Your resume indicates that in 1952 the solvent process was converted from batch to continuous operation.

1
2 A. Yes. I was wrong in my
3 preceding statement. If it says there that
4 is was converted in 1952, then it was
5 converted in 1952.

6 Q. During the time you worked for
7 Union Carbide, did it use acetylene or
8 ethylene in the vinyl chloride? Did it
9 either manufacture it or polymerize it?

10 A. Acetylene was used in the
11 manufacture of vinyl chloride monomer.

12 Q. By Union Carbide?

13 A. By Union Carbide and others.

14 There were two processes. One was
15 dehydrochlorination of ethylene dichloride to
16 vinyl chloride and hydrochloric acid gas.
17 You then took the hydrochloric gas with
18 acetylene and converted that to vinyl
19 chloride.

20 Q. Did Union Carbide at anytime, to
21 the the best of your knowledge, use ethylene
22 derived vinyl chloride?

23 A. Ethylene is used to make
24 ethylene dichloride, which is the starting
25 point for vinyl chloride. It doesn't make

UPL 05835

any difference -- well, you can say, part of it was ethylene derived because it came by way of ethylene dichloride. This is still general technology which is used when they talk about ethylene derived.

Q. So, do I understand then that the vinyl chloride used by Union Carbide for its polymerization processes was both acetylene and ethylene derived?

A. That is correct.

Q. That is true throughout the time that you were employed by Union Carbide?

A. No.

Q. When was there a change from that?

A. I believe, well, I won't quote dates, but Union Carbide did withdraw from the manufacture of vinyl chloride in the 1970's and all vinyl chloride was purchased from Dow Chemical.

Q. - Prior to Union Carbide shutting down its vinyl chloride production, was all of the polyvinyl chloride that Union Carbide manufactured a product of Union Carbide

URL 05836

manufactured vinyl chloride?

A. Yes.

Q. And Union Carbide withdrew from the manufacture of vinyl chloride after 1974; didn't it?

A. Well, someplace in that period. Those dates can be found, but I don't recall the exact time.

Q. In 1958, your resume indicates that you became the production department head at large; is that correct?

A. Let me be sure we get these things in context.

Q. Sure.

A. Yes, this is a production department head with a portable department, namely, he is the department.

Q. Now, when you assumed that position, did you acquire any supervisory role over either the emulsion or nonsolvent processes?

A. No.

Q. You were still involved with the solvent process only?

UPL 05837

A. I was involved with generalized engineering projects. I believe I spell it out there as to the duties.

Don't I summarize it?

Q. Well, what it says is:
"Engineering design project, new process evaluation and business, and economic analysis."

A. And those were miscellaneous processes, miscellaneous projects, and in many cases it involved a determination of whether that was an economic process.

Q. Did you have any involvement, prior to 1958, with either the emulsion or the nonsolvent polymerization process at the South Charleston plant?

THE WITNESS: Let me see that again. I would like to be reasonable close.

A. In 1959 I became involved with other polymer processes, none of which, except for the solution vinyl, used vinyl chloride.

Now, the next step there I think is

URL 05838

area superintendent.

Q. Yes, sir.

A. There is where I became involved with the emulsion process dispersion, I think I call it there.

Q. Well, dispersion is a different process than emulsion; isn't it?

A. No, it's the same thing basically.

Q. Did the South Charleston plant use a suspension process for polymerization?

THE WITNESS: Let me look at this. You want to know time, I guess?

A. Approximately in 1960 Union Carbide purchased suspension technology from Walker Cheme.

They began manufacture of suspension polyvinyl chloride at South Charleston. This was later moved to the Texas City plant and discontinued at South Charleston.

Q. The technology was purchased in approximately 1960?

A. Plus or minus several years. I am not sure. It may have been prior to 1960.

URL 05839

Q. And the company from which it was purchased was what?

A. Walker Cheme.

Q. And where were they based?

A. They were based in the Federal Republic of Germany.

Q. How long was the suspension polymerization process used at South Charleston?

A. No more than a few years. Like I say, it was transferred to the Texas City plant. The plant at Charleston was shut-down. I would say no more than a couple of years.

Q. When you say, the plant at South Charleston was shut-down, you meant the suspension process?

A. Yes.

Q. How long was the suspension process used at Texas City?

A. It was used up until approximately 1977.

Q. What was the reason for transferring the process from South

URL 05840

Charleston to Texas City?

A. It appeared to be a more economic operation.

Q. To do it there as opposed to West Virginia?

A. That's correct.

Q. So, consequently, any polyvinyl chloride produced by Union Carbide involving the suspension process after 1977 would have been produced in Texas City -- I am sorry, produced between the early 1960's and 1977, would have been produced in Texas City?

A. That is correct.

Q. Why did Union Carbide purchase the suspension technology?

A. It was cheaper to purchase the technology than it was to try to develop the technology itself.

Q. What was Union Carbide's reason for desiring to utilize the suspension process when it already had the solution, the nonsolvent, and the dispersion processes?

A. Each one of these resins is a specialized item and it fits into a specific

URL 05841

application.

The suspension process fits into the, you might say, the major market for polyvinyl chloride, as well the so-called bulk process, which I think you make reference to. And that fits into this major market for polyvinyl chloride.

Q. In the early 1970's, how did cost of production per ton differ between the four processes that Union Carbide utilized?

A. I can't really give you that information because I don't remember specifically. If I give you anything, it may not be in proper context.

Q. Without talking in terms of dollars, can you talk in terms of relative costs of production between the four processes?

A. The most expensive process is the solution vinyl process.

Q. What about the least expensive?

A. The least expensive would be suspension. It's my impression that the bulk process, as presently used, is competitive

UPL 05842

1
2 with suspension, though I have no knowledge
3 of this.

4 MR. BUNDA: You mean personal
5 knowledge?

6 THE WITNESS: Excuse me.

7 MR. BUNDA: You mean personal
8 knowledge?

9 THE WITNESS: It's only, I would
10 say hearsay. I can't really
11 say. It's my impression by virtue of
12 the fact that people build bulk plants
13 and they build suspension plants and
14 they fit into the same area. So they
15 must be competitive materials.

16 Q. As a result of the polyvinyl
17 chloride resin produced by suspension costing
18 in terms of production less than the solution
19 process, was Union Carbide, in the early
20 1970's, able to sell suspension produced
21 resin for a lower cost than the solution
22 produced resin?

23 A. Yes. Solution resin is a
24 premium product. It costs more to make it
25 and it realizes more money in the

URL 05843

marketplace.

Q. Why?

A. It fits into a very special category of materials.

Q. What is the difference between a suspension produced polyvinyl chloride resin and a solution produced polyvinyl chloride resin?

A. The solution process will not make anything other than copolymers. It will not make homopolymers.

The solution process resin is lower in molecular weight than suspension resin. The solution process resin is soluble in many solvents, suspension resin is not.

Q. When you became involved in 1965 in the dispersion process, what technology did Union Carbide utilize for removing residual monomer from the resin?

A. Their own.

Q. How did it work?

A. Primarily a batch vacuum stripping operation.

Are you familiar with those terms?

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Roscol Nicholas Wheeler

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Q. Yes. Did it use heat?

A. Yes.

Q. Were you involved in 1965 in the nonsolvent polymerization process?

THE WITNESS: Let me see the resume. It has been a long time ago.

A. I will refer you to 1968 when I became production manager for bulk nonsolvent suspension and the ones listed there.

Q. What process did Union Carbide use to remove residual monomer from the resin produced by the bulk or nonsolvent process?

A. The nonsolvent process is a continuous polymerization that achieves a conversion of monomer of about 15 percent per pass. The monomer -- the polymer is not soluble in the monomer, so as a result you have a slurry in the reactor.

The slurry is removed from the reactor and fit into a tank of hot water which is also evacuated, so you in effect boil away the unconverted monomer from the polymer.

Q. Do you have any knowledge of the respective sizes of the resin particles

URL 05845

produced by Union Carbide involving the four processes we have talked about?

A. Yes.

Q. Can we go through each of those, Mr. Wheeler, and talk about the suspension first?

What resin particle size range did the suspension polymerization process produce?

A. It could vary from 60 microns to about 150 microns. Most suspension resin was about 100 microns.

Q. What about the solvent process?

A. The solvent process produced a resin particle about 75 microns as median.

Bear in mind all these -- these are not finite numbers, we are talking about averages.

Q. What was the range of the resin particle size using the solvent process?

A. It was relatively constant, around 75 microns.

Q. What about the dispersion process?

A. The dispersion process of Union

URL 05846

Carbide resin was about 5 microns in diameter.

Q. And the nonsolvent or bulk?

A. It was about 60 microns.

Q. Did these figures remain relativity constant throughout the years that you worked for Union Carbide?

A. Yes.

Q. In terms of porosity, how did the resin produced by these four processes differ?

A. The emulsion process produced fairly dense particle, but as you can see there, it is very small.

The solution process produced a particle that looked in a great respect like a snowflake. It was not a -- it was a very porous particle.

The nonsolvent process, again, produced a very porous particle.

The suspension process had a, as you see, a comparatively large particle and very often porosity was a problem.

Q. Is that ultimately the reason

URL 05847

1
2 that Union Carbide abandoned the suspension
3 process?

4 A. We had a major explosion in the
5 Texas City plant and it would have involved,
6 you might say, a major expenditure to repair
7 the plant. We were not making enough money
8 on suspension resin to justify the additional
9 capital that would have been required.

10 So the decision was made to withdraw
11 from the business.

12 Q. Had a decision been made to
13 withdraw from suspension polymerization
14 before the explosion?

15 A. No.

16 Q. What caused the explosion?

17 A. I can't say of my own knowledge.
18 A reactor was over pressured and it blew up,
19 but I can't tell you what happened.

20 Q. Did Union Carbide experience a
21 declining demand for its solution produced
22 resin after 1974?

23 A. Not to my knowledge.

24 Q. Prior to 1974, did Union Carbide
25 conduct any testing of the resin produced by

any of these four processes to determine residual VCM content?

A. Starting about the first part of 1974, approximately, we tested every lot.

Q. My question, Mr. Wheeler, dealt with prior to 1974.

Would you tell me what testing Union Carbide did, prior to that year, for RVCM in its resin produced by these four processes?

A. I think we covered that in one of your questions earlier.

Q. There was testing done at sometime in the early 1970's?

A. I said there was some testing done, but I couldn't really answer that of my own knowledge.

Q. Who did the testing?

A. I have no idea.

Q. You don't know whether it was done by Union Carbide or an outside company?

A. I am sure it was done by Union Carbide.

Q. Were you ever furnished with the results of the testing?

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A. Yes.

Q. Was the testing done on resin produced by each of these four processes?

A. I couldn't say. It has been a long time ago. I don't remember.

Q. Do you have any recollection as to the relative concentrations of RVCM in each of the four types of resin?

A. Are you speak prior to --

Q. Prior to 1974?

A. I can speak only in relative terms.

Q. Okay, let's talk in relative terms.

A. The solution process of resin was extremely low.

MR. BUNDA: You are speaking now of before 1974?

THE WITNESS: Yes.

MR. BUNDA: That's the period of time you are asking about?

MR. BOVI: Right.

A. (Continuing) The dispersion process, I can't recall ever seeing any data

on those resins.

The suspension process resin was quite high. Again, I can't give you specifics because it has been a long time ago.

Q. Can you give me a range?

A. Well, based on my experience I can't give you a range based on the data at that time.

Q. Okay.

A. Well, we are talking of concentrations of two or three parts per million for the solution resin and we are talking probably a thousand parts per million for the suspension.

Q. What about the --

A. (Continuing) These are parts per million by weight.

Q. I understand.

In your 1981, article didn't you report concentrations of up 2,000 PPMW in this suspension produced resin?

A. Which article are you referring to?

MR. BOVI: I am going to hand

URL 05851

you, Mr. Wheeler, what I have marked
as Plaintiff's Exhibit 1.

I would like to direct your
attention to the second page of
that document Page 124, the last
sentence in the first full paragraph
on that page.

THE WITNESS: You are talking
about the sentence: "In the past
residual vinyl chloride monomer
concentration and suspension polyvinyl
chloride resin ranged as high as
2,000 parts per million by weight," is
that the one?

MR. BOVI: Yes, sir.

THE WITNESS: Is that the one
you're speaking of?

MR. BOVI: Yes, sir.

Q. Is that statement consistent
with the data you would have seen at Union
Carbide in the early 1970's for the
suspension process?

A. Yes.

However, I would like to modify that a

URL 05852

1 bit. Fundamentally, copolymer resins
2 produced by the suspension process were
3 essentially nonporous. It was very
4 difficulty to get the unconverted monomer out
5 of that particle.
6

7 So you will see copolymer resins as
8 high as 2,000 parts per million. But then it
9 was my impression this was not what you are
10 talking about now.

11 You are talking about the polyvinyl
12 chloride homopolymer which would be a
13 somewhat more porous particle and would tend
14 to be more likely in the 1,000 part per
15 million range.

16 Q. It is suspension process, was
17 that capable of producing both a homomonomer
18 and a comonomer or copolymer.

19 A. A homopolymer is 100 percent
20 polyvinyl chloride.

21 Q. All right.

22 A. (Continuing) A copolymer
23 contains some other comonomer such a vinyl
24 acetate, you can use almost any vinyl monomer
25 as a comonomer.

URL 05853

Q. Does the suspension process utilized by Union Carbide produce a homopolymer or only a copolymer?

A. It produced primarily a homopolymer, although they make some copolymers?

But, certainly there is a difference in the resin particle. The 2,000, like I say, probably refers in this case more to the copolymer.

Q. Thank you.

To your knowledge, Mr. Wheeler, did Union Carbide, prior to 1974, disclose to any of its customers that the polyvinyl resin it was sending to them contained varying amounts of RVCM?

A. I can't answer that of my own knowledge.

Q. Have you reviewed any of the material safety data sheets that Union Carbide supplied to its polyvinyl chloride customers prior to 1974?

A. I recall seeing them, yes.

Q. To your knowledge, did any of

those material safety data sheets disclose,
prior to 1974, any of the ACGIH standards
relating to exposure to vinyl chloride?

A. Let's go back through that one.
That question was so disconnected that I'm
not sure I know what you're even talking
about.

Q. Let me ask you a couple of
others and we will lead up to this one.

Prior to 1974, there were ACGIH
regulations, were there not, --

MR. BUNDA: Objection.

Q. -- pertaining to permissible
exposure levels to vinyl chloride?

A. Yes.

MR. BUNDA: I object to the form
of the question.

Q. Originally those levels set a
PEL of 500 parts per million --

A. Parts per million by volume.

Q. -- time weighed average. And
later that standard was lowered to at least
an ACGIH recommendation of 200 parts per
million as a ceiling level; was it not?

URL 05855

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MR. BUNDA: If you know?

A. I know it was lowered, but I can't really tell you what it was lowered to.

Q. But it was lowered prior to 1974; wasn't it, sir?

A. I can't tell you. It was so out of context with the actual situation that it was meaningless.

Q. Now, Union Carbide's suspension produced polyvinyl chloride homopolymer and copolymer had RVC in concentrations of 1,000 to 2,000 parts per million by weight?

A. Let's talk about one resin at a time.

Q. All right.

A. Are we talking about homopolymer?

Q. Let's talk about the homopolymer.

A. I would say in the area of a 1,000 parts per million.

Q. All right.

Now, did Union Carbide, to your knowledge, at anytime prior to 1974 inform

URL 05856

its customers of the ACGIH standards as they related to exposure levels of human beings to vinyl chloride?

A. I can't answer that of my own knowledge.

Q. Have you ever seen any document that indicated Union Carbide disclosed, prior to 1974, to its polyvinyl chloride customers either the existence of residual vinyl chloride monomer in its resin, or any ACGIH regulations or standards relating to permissible exposure levels to vinyl chloride?

A. Again, I have no knowledge of that, other than manufacturing.

Q. Who at Union Carbide was in charge of that area?

A. In charge of what area?

Q. Of passing product information concerning polyvinyl chloride resin to Union Carbide's customers.

MR. BUNDA: Objection.

I think you're presupposing that there was somebody and that there was

a responsibility to communicate that information.

I'll object to that on the basis that there is an improper assumption in the question.

Q. Did Union Carbide furnish material safety data sheets to its polyvinyl chloride customers prior to 1974?

A. Yes.

Q. What department within Union Carbide had the responsibility of formulating those material safety data sheets?

A. I would give you a general statement and say it fell under the general supervision and guidance of the research and development department.

Q. Do you recall a Dr. Dennehl who worked at Union Carbide in the 1970's?

A. Yes.

Q. What was his position with the company?

A. I believe he was Associate Medical Director for Union Carbide.

Q. He testified at the OSHA

URL 05858

hearings in 1974; did he not?

A. Yes.

Q. And do you know a Dr. K. S. Lane who worked at Union Carbide in the 1970's?

A. Yes.

Q. What was his position with the company?

A. That one is a little more difficult. He was in the corporate medical department. I cannot give you a specific title for him.

Q. Did Dernehl and Lane work out of Union Carbide's New York office? Were they based in New York?

A. I think so.

Q. Did you know C. P. Carpenter?

A. Yes.

Q. What was his position with the company in the 1970's?

A. He was in charge of the Industrial Hygiene Fellowship at Mellon Institute.

Q. He was an employee of Union Carbide?

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A. Indirectly. He was employed by Mellon Institute, but the whole thing was supported by Union Carbide's money.

MR. BUNDA: I object to the question and ask that the answer be stricken.

Do you know whether he was an employee?

THE WITNESS: He was not. I know specifically he was not a direct employee of Union Carbide.

Q. What did Union Carbide higher the Mellon Institute to do?

A. To investigate the effects of chemicals on living organisms.

Q. Now, was vinyl chloride one of those chemicals?

A. I can't say specifically, but I would say generally, yes.

Q. When did Union Carbide commission the Mellon Institute to begin research in this area?

A. Are you talking about beginning research as an industrial hygiene fellowship

URL 05880

or as an investigator of vinyl chloride toxicity?

Q. As an investigator of vinyl chloride toxicity.

A. I can't answer that one.

Q. Did the Mellon Institute investigate vinyl chloride toxicity for Union Carbide?

A. I know they investigated the toxicity of polyvinyl chloride resin.

Q. All right.

A. (Continuing) I think I made reference to that in the interrogatories.

Q. Did the Mellon Institute furnish the results of its investigation into the toxicity of polyvinyl chloride resin to Union Carbide?

A. They were furnished to Union Carbide. They also appeared in technical literature.

Q. Can you tell me when the Mellon Institute provided the results of its studies on the toxicity of vinyl chloride to Union Carbide?

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A. No.

Q. Where were the results
published?

A. In the interrogatories I think
you will find a reference of an article by C.
P. Carpenter.

Q. Mr. Wheeler, I would like to
show you what I have marked as Plaintiffs'
Wheeler Exhibit 2.

THE WITNESS: Well now, I did
not solely answer those inter-
rogatories, you must remember.

MR. BOVI: Well, we will ask you
about that.

I just want you to take a look
at that document, if you would, and
identify it for me if you can.

THE WITNESS: These are Union
Carbide's responses to the plaintiff's
interrogatories.

Q. Did you assist in part in the
preparation of those answers?

A. Yes.

Q. Which of the answers to those

UPL 05862

interrogatories did you author?

A. I can't answer that specifically. I can say I contributed to the answers, to most of them, but I did not prepare the final draft. There were other people who provided Peter Davey with some information.

Q. Who?

A. I have no knowledge of that.

Q. Now, can you tell me where in those answers to interrogatories you indicate where the results of the Mellon Institute study on the toxicity of polyvinyl chloride was published?

A. I was wrong. The article is by Smyth & Weil: Chronical Oral Toxicity to Rats of Vinyl Chloride-Vinyl Acetate Copolymer.

It was published in Toxicology and Applied Pharmacology in 1966.

Q. Did the Mellon Institute after 1966 furnish Union Carbide with any additional data concerning the toxicity of polyvinyl chloride?

URL 05863

A. Would you define what you are talking about when you talk about toxicity?

Q. Toxicity in terms of the capability of polyvinyl chloride resin because of RVC and content producing adverse health effects in human beings.

A. Now, what was the question again?

Q. Did the Mellon Institute furnish any additional data to Union Carbide on that subject after 1966?

A. I would say, no.

Q. Do you recall what the manufacturing process was of polyvinyl chloride resin tested by the Mellon Institute for purposes of preparing this article in 1966?

A. No.

Q. Do you recall the RVCM concentrations of the resin supplied to or purchased by the Mellon Institute investigators for purposes of their research?

MR. BUNDA: I object to the form of the question as to foundation.

URL 05864

I don't know that the word recall means that he may have had some information at one time. I'm not sure that information ever existed, therefore, I will object to the form.

You can go ahead and answer if you want.

THE WITNESS: Let's go back to the question again.

MR. BOVI: Sure.

Q. Did Union Carbide supply the Mellon Institute with the resin that it used for purposes of its study?

A. Yes.

Q. In terms of the resin that was supplied to the Mellon Institute, what process was utilized in manufacturing that resin.

A. I think I stated earlier I did not know.

Q. Do you know whether any testing was done on the resin by Union Carbide prior to the time it furnished the resin to the Mellon Institute for purposes of the Mellon

URL 05865

Institute's research?

A. Drive that by again, please.

Q. Sure.

Did Union Carbide, before it sent the resin to the Mellon Institute, run any tests on it to determine how much vinyl chloride monomer was in it?

A. Since I don't know the source of the resin, I can't really say.

Q. I thought you indicated before that the resin the Mellon Institute used was Union Carbide's resin?

A. Yes, but it could have been from any one of a number of processes which would, again, have an effect on what the residual monomer was.

Q. Did it come from the South Charleston plant or the Texas City plant or from both?

A. Considering the time period that the research was done, it had to have come from South Charleston.

Q. Now, if the suspension process had been moved from South Charleston to Texas

URL 05866

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2 City in the early 1960's, do you know whether
3 any of the resin furnished by Union Carbide
4 to the Mellon Institute was manufactured by
5 the suspension process?

6 A. If you look at this article as
7 published. The work was done much earlier
8 than 1966.

9 Q. Do you know whether any
10 suspension produced resin was supplied to the
11 Mellon Institute by Union Carbide?

12 A. Are you saying for purposes of
13 toxicity testing?

14 Q. Yes.

15 A. I have no knowledge if it was.

16 Q. Was there any other testing that
17 the Mellon Institute did on Union Carbide
18 polyvinyl chloride resin, other than the
19 toxicity testing?

20 A. We are dealing with your
21 definition of toxicity?

22 Q. Yes.

23 My question, Mr. Wheeler, is: What
24 other studies did the Mellon Institute
25 perform, for Union Carbide, related to

URL 05867

polyvinyl chloride resin?

MR. BUNDA: You are speaking about other than that done in this study?

MR. BOVI: Yes. Other than what is published in that article.

A. Your definition of toxicity didn't quite cover the area of toxicity that the Mellon Institute spent most of its time on, which would be testing for acute toxicity for skin sensitivity. These kinds of things are generally known as short term toxicity tests.

But an investigation into carcinogenicity has to be a long term test.

Q. Did the Mellon Institute ever look into that issue?

A. Right here.

MR. BUNDA: You are referring to what now?

THE WITNESS: The Smyth & Weil article on Chronic Oral Toxicity to Rats of Vinyl Chloride-Vinyl Acetate Copolymer.

MR. BUNDA: Okay. You just have to remember that when you point, the court report can't take that down.

THE WITNESS: I'm sorry, I forget myself every once in a while.

Q. By what method were the rats exposed to the polyvinyl chloride?

A. It was a feeding study.

Q. Did the Mellon Institute ever conduct any studies involving the exposure of rats to airborne vinyl chloride gas?

MR. BUNDA: You're speaking now of Union Carbide specifically?

MR. BOVI: For Union Carbide or for anybody else, if you know.

A. I am not that familiar with the work that was done at Mellon Institute. I would rather say that I don't know.

Q. Other than offering this 1966 paper, did Mellon Institute or any employees of the Mellon Institute do any other work for Union Carbide relating to polyvinyl chloride resin?

A. Yes. That's what I said a

URL 05869

moment ago. There was a great deal of testing, particularly, with regard to short term acute toxicity, skin sensitivity and these kinds of things.

Q. Were the results of those tests ever published?

A. I have no knowledge that they were.

Q. What did the tests reveal?

A. That polyvinyl chloride resin was an inert material and had no generalized effect on the animals or humans who participated in the testing.

Q. The human test that was done was on skin sensitivity?

A. Primarily.

Q. In 1968 you refer to work on the MCA's acro-osteolysis --

A. Acro-osteolysis.

Q. -- lysis -- epidemiological study.

When did the MCA, to your knowledge, begin that study?

A. It was initiated, I think, in

URL 05870

1966.

Q. What triggered the initiation of that study by the MCA?

A. The medical director for B.F. Goodrich reported observing a condition that he identified as acro-osteolysis in the finger of reactor cleaners.

This he reported to the MCA in a meeting in about 1966. The collective decision of the industry at that time was that we should do an epidemiological study to determine if this is a widespread phenomenon, do we have something here that's likely to be an occupational problem.

Q. Were the results of that acro-osteolysis epidemiological study ever reported by the MCA?

A. I have no knowledge of that. I know that Union Carbide received a report. It was also published in a series of three articles coming out of the University of Michigan.

I can't give you the references on that, but I do recall that there were three

URL 05871

1
2 separate articles that were published in the
3 general technical literature.

4 Q. Do you know who the author was?

5 A. I think it was Denman.

6 Q. How do you spell that, please?

7 A. D-E-N-M-A-N, I believe.

8 Q. And approximately when were
9 those articles published?

10 A. I would say around 1970.

11 Q. Your resume, Mr. Wheeler,
12 indicates that in 1975 you were involved as a
13 representative to -- 1965, I am sorry -- that
14 you were involved as a representative of
15 Union Carbide in planning and coordinating
16 the acro-osteolysis epidemiological study; is
17 that correct?

18 A. Correct.

19 Q. When did the MCA first furnish
20 Union Carbide with any of their results, be
21 it a preliminary or final, from that study?

22 A. Approximately 1969.

23 Q. And the results indicated what
24 in terms of the ability of vinyl chloride to
25 cause acro-osteolysis?

UPL 05872

A. The study failed to, what I would say, clearly identify vinyl chloride as being the cause for acro-osteolysis.

Q. Were you aware, in addition to the MCA study, of other studies appearing in the medical literature involving acro-osteolysis and exposure to vinyl chloride?

A. I can't give you the date, but I attended an MCA sponsored meeting in which we were talked to by Dr. LeFevre in Europe.

He talked and summarized that they had observed acro-osteolysis. They were almost as much at a loss as to the exact cause as we were. We did learn at that time that this was not a condition that appeared only in the United States.

Q. Did Dr. LeFevre also discuss with you, when you met, studies that he was aware of indicating liver dysfunction among workers exposed to vinyl chloride?

A. Not that I can recall.

Q. Your meeting with Dr. LeFevre was in approximately 1971?

URL 05873

A. I can't really make that specific.

Q. To your knowledge, was any of the data that Union Carbide acquired from Dr. LeFevre or the MCA, supplied to any of Union Carbide's polyvinyl chloride resin customers?

A. No data was transferred from Dr. LeFevre to Union Carbide. It was a matter of listening to his talk and drawing your own conclusions from that talk.

Q. Was any of the information passed to Union Carbide by Dr. LeFevre, to your knowledge, communicated to any of Union Carbide's polyvinyl chloride resin customers?

A. You have a compound question there. Would you repeat that and break it down into two pieces?

Q. Sure.

When you met with Dr. LeFevre, either in the United States or in Europe, did he communicate information to you concerning European studies on health effects relating to exposure to vinyl chloride?

A. No, he was speaking solely

URL 05874

about information derived from industrial experience.

Q. In Europe?

A. Yes.

Q. Did he communicate information on that subject to you?

A. Orally, yes.

Q. You met with Dr. LeFevre in your capacity as Union Carbide's representative to the MCA?

A. I was not formally in that capacity, but I attended the meeting and did report to my supervisors the information which I thought I heard.

Q. My question then, Mr. Wheeler, is whether or not you're aware whether Union Carbide ever communicated that information to its polyvinyl chloride resin customers.

MR. BUNDA: I will object to the question as being vague.

Quite frankly, I don't know what information we are talking about. I think we ought to back that up.

For that reason I will object on

URL 05875

those basis.

THE WITNESS: The context I put on it is, he is talking about information as regards acro-osteolysis.

Q. Yes, that's correct.

Are you aware whether or not Union Carbide ever passed that information to its resin customers?

A. No, I am not. I would like to add that none of our customers had reactor cleaners, which is where the disease appeared.

Q. You last worked for Union Carbide in 1985?

A. Yes.

Q. Have you worked for anyone as an employee since retiring from Union Carbide?

A. I have done some contract work for Union Carbide.

Q. In what areas?

A. Let me think, primarily litigation.

Q. Have you been employed by anyone

at anytime since you retired from Union Carbide, other than any contractual relationships you had with Union Carbide?

A. No.

Q. Have you testified under oath before today?

A. Yes.

Q. On how many occasions?

A. We are speaking of testified, and you are saying deposed.

Q. No. My question is whether you have testified under oath in any proceeding, be it a deposition, testimony before a congressional committee, testimony in court, any testimony which you have given prior to today under oath.

A. I have had two depositions as regards polyvinyl chloride. I testified under oath at the OSHA hearing.

I think those are the only two, three situations that I can recall.

Q. Would you tell me about the two polyvinyl chloride matters that you gave depositions in?

UPL 05877

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A. Be a little bit more specific.

Q. Sure.

There were cases that were involved in litigation, there was a lawsuit involved?

A. One was a lawsuit in New Jersey. And the other one was a lawsuit in Ohio.

Q. I take it that Union Carbide was a defendant in both the Ohio and the New Jersey litigations?

A. Yes.

Q. Did the suit involve a death or a personal injury?

A. Yes.

Q. Do you recall?

A. An alleged personal injury.

Q. Do you recall the name of the person that brought the suit?

A. New Jersey was -- one name was Malico and I believe one plaintiff was Schaffer. Now, I'm getting a little vague, it might be Mazinowski.

I'll put a question mark on that one.

Q. All right.

A. There were four, but I can't

URL 05878

recall the fourth one.

Q. Were these people employees of Union Carbide?

A. No.

Q. Were they employees of a customer of Union Carbide's?

A. No.

Q. What was the nature of the claim that they made against Union Carbide, to the best of your knowledge?

A. I think they involved generally carcinogenicity, Schaffer was not.

Q. How did these individuals allegedly come to be exposed?

A. They were employed by Amboy Terminaling Company.

Q. Would you spell that for me, please?

A. A-M-B-O-Y, Terminaling Company.

Q. Amboy Terminaling Company was the company that off loaded the ships that transported bulk polyvinyl chloride from Texas City?

A. Yes. They off loaded, they

URL 05879

bagged and they shipped.

Q. When did you testify in that case?

A. I would say approximately 1978.

Q. Was the case brought in State Court or Federal Court in New Jersey?

A. I have no knowledge.

Q. Do you know the name of the lawyer who represented the plaintiffs?

A. I think it was Levinson.

Q. Where was your deposition taken?

A. In the offices of Bitney, Harden & Kipp.

Q. In what city?

A. I am sorry, it slips my mind. It just doesn't come to mind.

It was about 30 miles or so west of Newark, but I can't remember the name of the city.

Anyway, Bitney, Harden & Kipp have an office there.

Q. Did you ever give courtroom testimony in that case?

A. No.

URL 05880

Q. Do you know what the ultimate outcome of the case was?

A. The case was settled out of court.

Q. Do you know what types of cancer any of the plaintiffs had?

A. There was one with lunge cancer, I don't recall the others.

Q. When did you give testimony in the litigation Union Carbide was involved in in Ohio?

A. That was about 1984, but I could be off on that somewhat.

Q. And did this involve a claimed exposure to vinyl chloride?

A. Yes.

Q. How were the plaintiffs allegedly exposed to the vinyl chloride?

A. One plaintiff had progressive multiple sclerosis.

Q. - Was there only one plaintiff in the case?

A. Yes.

Q. The plaintiff attributed his

1
2 progressive multiple sclerosis to exposure to
3 vinyl chloride?

4 A. Yes.

5 Q. Do you know whether that case
6 was brought in State Court or Federal Court in
7 Ohio?

8 A. I can't say.

9 Q. Do you recall the name of the
10 plaintiff's lawyer?

11 A. I am sorry, but I don't.

12 Q. Those are the only two pieces of
13 litigation that you have given testimony in
14 prior to today?

15 A. Yes.

16 Q. Are you aware of any other
17 litigation pending against Union Carbide
18 involving claims of adverse health effects
19 resulting from exposure to vinyl chloride?

20 A. No.

21 Q. Now, you indicated earlier that
22 you have been, at least for some period of
23 time after 1985, under contract with Union
24 Carbide and have testified in matters
25 involving litigation.

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MR. BUNDA: Objection.

THE WITNESS: Well, not to --

MR. BUNDA: Let me finish.

THE WITNESS: Okay.

MR. BUNDA: I'll object on the basis that I'm not sure that's a fair characterization of his testimony.

I believe he testified that he was under contract to do certain things. I am not sure that Union Carbide has placed him under contract to testify in litigation.

Therefore, I object to the form of the question.

Q. What is the nature of your contractual agreement at the present time with Union Carbide?

A. To provide them with consulting services as requested. Of course it goes into all these things like, you are going to keep all this confidential.

Q. Are you paid a retainer or per diem?

A. Per diem.

UPL 05883

Q. What is your per diem?

A. Part of it is \$300.00 a day.

Right now I'm being paid \$360.00 a day.

Q. That depends on whether you're giving testimony or whether you're doing other types of work?

A. The per diem doesn't vary.

Well, I take that back. I have had some per diems of \$400.00 a day.

Q. Other than you receiving a per diem, I assume Union Carbide is paying your expenses? Is there any other basis for you receiving remuneration under your contract with Union Carbide?

A. On what basis, you mean?

Q. Outcome of litigation, whether or not the case is settled.

A. And interpretation of regulations, Government regulations, these kinds of things.

Q. My question is: Is there any contingent element in your contract?

A. No.

Q. Are you presently receiving or

URL 05884

are you entitled to receive at some point in the future retirement benefits or some other form of deferred compensation from Union Carbide relating to your past employment?

A. I receive a pension.

Q. Are you a stockholder of Union Carbide?

A. No.

Q. Have you provided consulting services for anyone other than Union Carbide since 1985?

A. No.

Q. When did you first become aware, Mr. Wheeler, of the cases that we are here about today?

A. I can't really give you a specific date. I think it may have been as far back as two years ago. In fact, it was more than two years ago, I beg your pardon.

Q. In addition, Mr. Wheeler, to assisting Union Carbide in providing answers to interrogatories, did you also assist Union Carbide in providing responses to requests for documents?

URL 05885

A. When they asked me.

Q. I am going to hand you what I have marked as Plaintiff's Exhibit Wheeler 3 and I would like you to take a look at that for me.

Did you assist Union Carbide in providing the documents that are identified in that exhibit?

A. Let's say that I only told them where to look for the documents. I did not participate in accumulating the documents or anything else.

Q. Do you know, sir, from reviewing Plaintiff's Exhibit Wheeler 3 whether or not the materials contained in that supplemented by the correspondence Union Carbide's attorney handed me this morning, which consists of letters dated February 14th, 1975 with attachments thereto, and May 9th, 1975 with attachments thereto, constitute full and complete responses to the document production request directed to Union Carbide?

A. I don't think so.

Q. Are you aware of the existence

of documents that Union Carbide has responsive to any of the plaintiffs' requests that had not been provided?

A. You are making a presumption that I have knowledge of what Union Carbide has in its files. Now, I have suggested to Mr. Davey that he look for additional documents, and I assume he is going to do it. Whether they are there or not, I don't know.

Q. When did you first review these responses that are contained in Plaintiff's Exhibit Wheeler 3?

A. I think about a little over a week ago.

Q. I take it, Mr. Wheeler, that it is your belief then that there may exist, at Union Carbide, other documents responsive to these requests that have not yet been provided?

A. Only in one case.

Q. Would you identify that for me?

A. That would be Item Number 5.

Q. Item Number 5 calls for documents indicating the results of any tests

URL 05887

1 done on any polyvinyl chloride resin, by you
2 or any other entity, to determine the
3 concentration in parts per million of the
4 residual vinyl chloride monomer in polyvinyl
5 chloride resin of the type sold to Chrysler
6 during the time period specified in Request
7 Number 1; correct?
8

9 A. Correct.

10 Q. Now, what documents do you
11 believe Union Carbide had or has that are
12 responsive to that request?

13 A. Well, starting with the first
14 part of 1974, I think I mentioned that Union
15 Carbide did a residual monomer analysis on
16 all batches, lots of resins sold.

17 Now, I think, but I am not prepared to
18 swear, I think that there maybe some that Mr.
19 Davey has overlooked.

20 MR. BUNDA: I'm sorry if
21 I interrupted here, but for the
22 record, I would like to indicate that
23 we responded to your request for
24 production of documents. My
25 understanding is that the documents

UPL 05888

Roscol Nicholas Wheeler

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at Union Carbide are not organized in any comprehensive manner, but exist as boxes of documents in storage someplace.

When Mr. Wheeler and I met prior to the deposition, I understood that there were attachments to the letters of February 14th, and December 2nd, of 1974, and February 14th, of 1975 which were not supplied to you and those were produced this morning, along with the letter of May 9th, 1975.

We learned also this morning from Mr. Wheeler that there may be additional documents. We are not sure and we will make continuing efforts to supplement whatever information has already been provided.

Q. It's your belief then, Mr. Wheeler, that beginning in early 1974 Union Carbide performed a test for RVCM on each and every batch of resin produced?

A. Yes.

UPL 05889

Q. To your knowledge, did Union Carbide ever furnish the results of those tests to Chrysler or to any of its polyvinyl chloride resin customers?

A. I have no knowledge of that.

Q. Are you aware of any other documents that maybe responsive to any of the document production requests, other than the documents that you have just indicated relating to test results being in 1974?

A. I did review this with Mr. Davey, and Mr. Bunda and I pointed out the only places where I think there were possible omissions.

Q. Are there any other places where you believe there are omissions, other than the one you have just indicated?

A. No.

Q. I want to go back just for a minute, Mr. Wheeler, to Plaintiff's Exhibit 2, which are the answers to interrogatories.

Have you reviewed those answers prior to today?

A. Yes.

URL 05890

Q. To the best of your knowledge, are the answers contained in that document accurate and complete?

A. The only point that I would make about the answers is when we answered these, we were talking about the Union Carbide bulk process and not the bulk process in general industry uses at the present day.

So there is a very definite difference in the resins of each process.

Q. Is there any manner in which you believe Union Carbide's answers to the interrogatories are not complete and accurate?

A. No.

Q. Thank you.

Can you tell me what there is about Union Carbide's bulk or nonsolvent process that differs from the process used by other polyvinyl chloride manufacturers?

A. - I can speak from specific knowledge of the Union Carbide bulk process. I can only give you my impressions of the other processes because I have no exact

UPL 05891

1 knowledge of them.

2 Q. Why don't you go ahead and do
3 that for me.

4 A. The Union Carbide bulk process .
5 was a low convention continuous
6 polymerization process. The resin was
7 stripped of its free monomer by boiling in
8 hot water. The resin particle was relatively
9 small and extremely porous.
10

11 Now, the bulk process in general use
12 involves a two step batch process where the
13 vinyl chloride monomer is essentially
14 converted to, let's say, approximately 90
15 percent, or in that general ball park.

16 The free monomer is then removed from
17 the solvent particle by a vacuum operation.
18 The particles are somewhat more dense than
19 the Union Carbide bulk process.

20 They are much larger. Here we are
21 talking about material on the order of 100
22 microns or so.

23 Q. Have you at anytime, Mr.
24 Wheeler, discussed the health effects or
25 potential health effects of exposure to vinyl

chloride with anyone at Chrysler?

A. No.

Q. To your knowledge, has anyone at Union Carbide?

A. I don't know.

Q. Union Carbide's answer to Interrogatory Number 2 indicates that Union Carbide started commercial production of a solvent polyvinyl chloride resin in 1933; is that correct?

A. That's correct.

Q. Now, did the --

MR. BUNDA: Wait a second.

Number 2 talks about solution, you said solvent.

Q. I am sorry, solution. It started that in 1933?

A. Yes.

Q. When did it begin the emulsion and bulk processes?

A. The bulk process was about 1936, I'm speaking approximately now. The emulsion process was about, and I'm guessing, 1942 or 1943.

URL 05893

Q. Prior to 1974, did Union Carbide, for its emulsion and bulk processes, make any technological changes in its RVCM recovery?

MR. BUNDA: To the best of his knowledge?

MR. BOVI: Sure.

A. I can't, of my own knowledge, talk about that now. When you get to later in the time period when I was production manager for these things I can speak authoritatively about that, but prior to that time, I can't.

Q. Can you speak authoritatively on the dispersion or bulk processes for recovery of residual monomers prior to 1974 at all?

A. No.

Q. What about after 1974? What technology did Union Carbide employ on any of its four processes to reduce RVCM content?

A. I think I answered that in the interrogatories.

Well, it was here a little while ago.

Q. Are you referring to Number 19?

A. I think I passed it.

That's correct.

Q. The first item indicates vacuum stripping systems were installed on suspension resin lines about 1967 or 1968. Can you indicate what effects the installation of the vacuum stripping systems had on RVCM content of the suspension resin?

A. I can't give you a specific data but it is in effect a second string step in the production operation. When you put a second step in, you reduce the residual monomer.

Q. Did Union Carbide conduct any testing after it installed the systems to determine their efficacy?

A. I am sure that they did, but I have no knowledge of it.

Q. Were you ever furnished with the data?

A. No, because that was much before the time when I became a production manager for this operation.

Q. The second item indicates resin

URL 05895

drying systems were upgraded to reduce
volatiles in 1967 to 1972.

What processes did that relate to?

A. In general it was providing more
time in the dryer either by adding additional
dryer capacity -- there were various changes,
depending upon the resin and a particular
process. But generally speaking, it was a
matter of providing a longer drying time.

If you reduce the volatiles, you also
reduce the unconverted free monomer.

Q. What drying temperatures were
used?

A. It has been too long ago, I am
sorry.

Q. Did Union Carbide conduct any
testing after it made those changes in its
resin drying system to determine efficacy in
reducing RVCM?

A. I can't speak of my own
knowledge, so I don't know.

Q. The third item indicates resin
testing and aeration initiated in 1974 to
reduce residual vinyl chloride and suspension

URL 05896

process polyvinyl chloride.

That was done, I take it, at the Texas City facility?

A. Yes.

Q. This involved blowing air into the resin bins and thereby sweeping residual monomer out of the resin.

Q. When Union Carbide began its batch testing in 1974 for the suspension process resin, what was the range of numbers it was coming up with?

A. I think I gave you this somewhat earlier.

Q. So the figures that you gave me of up to a 1,000 were figures in and after 1974?

A. After 1974 the homopolymer member resin was significantly lower, let's say 500 to 600 parts per million as opposed to a 1,000.

MR. BUNDA: and what -- I'm sorry for interjecting.

At what point in time are we talking about?

Roscol Nicholas Wheeler

83

THE WITNESS: We are talking
about 1974.

MR. BUNDA: Also at what point,
when it leaves the factory or arrives
at the customers?

THE WITNESS: When it leaves the
Plant.

Now, bear in mind that vinyl
chloride monomer is not soluble in the
polymer, and it is a fugitive gas.
So the longer the material sits in
tanks, sits in bags and so forth, the
less residual monomer it contains.

Q. What storage facilities did
Texas City have for polyvinyl chloride resin?

A. The resin was dried and put into
bins. It was screened. It was placed in
what we call van boxes, actually they were
ship containers. Are you familiar with a
ship container? And these containers were
then stored on the dock for, I would say, up
to about 28 days.

When the tanker came in, these were
deck loaded on the tanker. They would be

loaded on the tanker and carried to Perth Amboy and again be stored in the storage yard at Perth Amboy.

If there was a need, they did maintain bag resin in a warehouse. As the resin stock in the warehouse was depleted, they would draw boxes out of the storage yard, bag additional resin, and this would go into the warehouse.

Shipments were made out of this warehouse to various customers including Chrysler.

Q. Did Texas City only ship polyvinyl chloride resin in bulk?

A. No.

Q. It also shipped bag resin?

A. Yes.

Q. To what areas? Were there particular areas of the Country?

A. Anything in the Northeast that would be within, shall we say, one days truck run from Perth Amboy would be handled through Amboy Terminal.

People, as you move west, shall we

say, if I were going to supply resin to a west coast customer, it would probably come directly out of Texas City because it's shorter shipping from Texas to the west coast.

Q. Did Union Carbide only ship to Perth Amboy in bulk form?

A. Yes.

Q. And any bagging that was done, was done at Perth Amboy?

A. That's correct.

Q. Before we got off on this subject we were talking about the RVCM content in the suspension resin.

Was the 1,000 parts per million by weight figure you testified to earlier this morning, the figure that was generated before or after this resin aeration was initiated in 1974?

A. It was much before. Don't forget when I spoke of the 1,000 I was speaking in general for the polyvinyl chloride industry and not for Union Carbide.

Q. Well, you tell me what RVCM figures Union Carbide was generating for its

suspension homopolymer prior to 1974?

A. I think at one time I took a generalized look and I came up with a figure of 850 parts per million, 860, somewhere in there, as an average.

Q. Approximately, when did you do that?

A. I can't answer that.

Q. Was this --

A. Oh, I'm sorry, mid 1970's someplace in there.

Q. This is suspension homopolymer?

A. Yes.

Q. Produced in Charleston or in Texas City?

A. Produced in Texas City, Charleston did not produce it.

Q. Did you do the testing?

A. No.

Q. What was the form of the data that you reviewed?

A. This were residual vinyl chloride analyses as reported by the Texas City Quality Control Laboratory.

Q. Prior to 1974?

A. No, after starting in 1974.

Prior to 1974 the methods of analysis were not very accurate and not very repeatable.

Q. What caused the shutdown of the Union Carbide emulsion process in 1976?

A. The decision was made that this was not an economic process.

Q. What do you mean by that?

A. Companies are in business to make a profit and the dispersion emulsion resin appeared to be very minimally profitable.

Q. It was more expensive to produce the suspension, for example?

A. Yes.

Q. In 1977 both the suspension and the bulk processes were shut down; correct?

A. That is correct.

Q. Were those both shut down because of the explosion?

A. Yes.

Q. In 1980 the solution process

URL 05902

production was cut to 80,000,000 pounds; is that correct?

A. That is correct.

Q. What was the reason for that decrease in volume?

A. We were not selling it.

Q. Why?

A. Again, it's a matter of economics. The solution process resin sold for a considerable premium over suspension and as a result if a customer discovered that he could use suspension in place of solution, naturally, he would do it.

Q. Does Union Carbide still manufacture polyvinyl chloride?

A. They manufacture solution process polyvinyl chloride.

Q. Mr. Wheeler, do you consider yourself an expert in the health effects on humans of exposure to vinyl chloride?

A. I think that's out of my area of expertise.

Q. Do you consider Union Carbide to be an expert in that area?

UPL 05903

1
2 A. I don't think I can answer that
3 because you're calling upon me to make a
4 judgment that I can't really make.

5 Q. Is polyvinyl chloride a man made
6 product?

7 A. Yes.

8 Q. Do you know who invented it?

9 A. No.

10 Q. Did Union Carbide's suspension
11 process, the technology that it purchased
12 from Walker, differ substantially from other
13 suspension polymerization processes that you
14 are familiar with in the United States?

15 A. I don't believe so. The
16 technology purchased was more a matter of,
17 shall we say, recipe, the procedure for
18 making the components.

19 Q. Does your 1981 article
20 accurately describe the suspension
21 polymerization process that was utilized at
22 the time by Union Carbide?

23 A. I think I would like to remind
24 you that this article was issued in 1981. We
25 went out of the business in 1977.

URL 05904

Q. Did it describe the process that Union Carbide utilized for suspension polymerization in and immediately prior to 1977?

A. Not quite.

Q. In what respect was Union Carbide's process different?

A. As I mentioned earlier, we had a two step stripping operation. The flow sheet here shows only one step.

This is a generalized flow sheet, it's not really intended to indicate anybody's process.

Q. Do you agree, as a general rule, Mr. Wheeler, that the larger the particle size, the higher the RVCM content?

A. Well, there are several factors involved. One, yes, the larger the particle -- let's go back and be theoretical for a moment.

If you recognize that you have a particle, you have molecule of vinyl chloride in the center of that particle and if you have a large particle, it's going to take

URL 05905

much longer for that molecule of vinyl chloride to get out of the middle of that resin.

Now, if you have cracks, fissures and what have you in your large particle, then the time required for that vinyl chloride to get out of the resin is somewhat less. So it's a matter of particle size and particle porosity.

Q. Vinyl chloride is neither absorbed nor adsorbed by polyvinyl chloride; correct?

A. That is correct.

Q. The vinyl chloride, the RVCM that we are talking about is a gas that is encapsulated by the solid polyvinyl chloride particle; correct?

A. Yes.

Let me point out one other thing. In the suspension process polymerization takes place as a globule of monomer suspended in water.

The polymer is formed in that globule and you carry that conversion to 80 or 90

URL 05906

1 percent conversion, so that you end up with a
2 solid, a more or less solid resin particle.
3 If you are proficient, you can make that
4 particle somewhat porous. If you are not so
5 proficient, you make a dense particle.
6

7 So the residual vinyl chloride monomer
8 content of various types of resin made by the
9 suspension process did vary quite widely.

10 Q. Was increased porosity one of
11 the goals of the aeration?

12 A. No. The resin particle had
13 already been made at that point. The goal of
14 the aeration was to provide a sweeping
15 mechanism to carry away the vinyl chloride
16 monomer.

17 If you put the sample or a batch of
18 polyvinyl chloride in a sealed container, it
19 will come to equilibrium, the vinyl chloride
20 content will come to equilibrium with the
21 vapor space or the air above the solid.

22 Nothing will change. It will stay,
23 namely, most of the residual vinyl chloride
24 will stay in the resin particle, but if you
25 are prepared to remove that, shall we say,

URL 05907

air in the container and replace it with more air, then you do tend to accelerate the removal of vinyl chloride.

Q. What occurred in 1974 that allowed Union Carbide to reduce the RVCM content in its suspension produced resin?

A. We made a great effort to secure a more porous particle and we did go into the aeration of the bins of dried resin.

Q. I take it that that was technology that was available to Union Carbide prior to 1974?

A. It was available to everybody.

Q. Prior to 1974?

A. Yes.

Q. Prior to 1974, was it possible to increase drying time to achieve virtually 100 percent conversion?

A. You said conversion?

Q. Polymerization.

A. - I don't like the question.

MR. BUNDA: I object to the form of the question.

THE WITNESS: I don't like your

URL 05908

question either.

MR. BUNDA: I think you are
confusing terms.

When you say, conversion, what
do you mean?

MR. BOVI: Converting vinyl
chloride to polyvinyl chloride.

A. There is no process such as you
are asking the question about.

Now, if you want to talk about the
amount of residual vinyl chloride retained in
the particle at the end of the process, that
is a reasonable question.

But when you talk about a 100 percent
conversion process, this is an idealized
thing that has never been achieved by anyone.

Q. Let's talk about methods
available prior to 1974 to eliminate, at the
polymerization facility, RVCM content in the
resin.

Was that something that could have
been achieved from increased drying time or a
number of technologies that Union Carbide
employed in 1974 and thereafter?

1
2 A. I think we did utilize the
3 technology and we did go for additional
4 stripping time. We did try for additional
5 porosity and eventually we did then go to the
6 bin aeration.

7 These are not things which you can
8 achieve overnight. You don't just turn on a
9 switch and say tomorrow I'm going to make
10 high porosity resin.

11 Q. Were any of the technology
12 changes, Union Carbide made prior to 1974 to
13 reduce RVCM, motivated by concerns for the
14 impact of the RVCM on human health?

15 A. As of my own knowledge, and not
16 necessarily Union Carbide's, I would say that
17 there was no connection between human health
18 and vinyl chloride prior to the issuance
19 NIOSH/Goodrich report of angiosarcoma in late
20 1973 early 1974.

21 MR. BOVI: Could you read that
22 back to me, please?

23 (Record read.)

24 Q. Are you aware, Mr. Wheeler, of
25 the work done by Dr. Viola in Italy in 1970

and 1971?

A. Yes.

Q. And you were aware, were you not, of Dr. Viola's work in 1970 and 1971; were you not?

A. Yes.

Q. You passed along his information to your superiors at Union Carbide; did you not?

A. Yes.

Q. You were aware that Dr. Viola reported an increase in cancer in rats who were exposed to concentrations of vinyl chloride; were you not?

A. Yes, 30,000 parts per million. These are exposures such that, frankly, I'm surprised the rats didn't die.

Q. Did you ever review Dr. Viola's initial publication in 1970?

A. Yes.

Q. When did that publication first come to your attention?

A. I can only answer that approximately. I would say about sometime in

1971.

Q. How did Dr. Viola's 1970 study come to your attention in 1971?

A. It was called to my attention and even ones by the Manufacturing Chemists Association.

Q. I am going to hand you what I have marked as Plaintiffs' Exhibit Wheeler 4. Will you identify that for me, if you can, after you take a look at it?

A. This not is the paper that Viola gave in the meeting in Texas. This is a subsequent paper.

Q. Well, it's a prior paper; isn't it?

A. No.

Q. The meeting in Texas was in 1971; was it not?

MR. BUNDA: Well, first of all, I am going to interpose an objection.

Exhibit 4 what is this?

MR. BOVI: What is it?

MR. BUNDA: Yes. It is a typed sheet purporting to contain the

URL 05912

1 results of a study done by P. L.
2 Viola. There is a name at the top,
3 Medicina del Lavoro, is this a
4 translation?
5

6 MR. BOVI: To the best of my
7 knowledge, it is a translation of
8 Viola's original work.

9 MR. BUNDA: All right.

10 I am going to object to any
11 questions about this. I'm not sure
12 it's an accurate translation. I am
13 not sure it was available literature
14 at the time --

15 MR. BOVI: My only question
16 about it is whether he saw it or not.

17 Either he saw it or he didn't
18 see it.

19 MR. BUNDA: Okay, then let me
20 back up.

21 If that was the question, then I
22 will withdraw the objection. I don't
23 recall that that was the question.

24 I would also like to interpose
25 an objection about this line of

URL 05913

questioning, I'm not sure it's
relevant.

I will base my objection on the
fact that it's not relevant.

THE WITNESS: Well, I would like
to answer.

A. I do not think that this is the
paper that I saw initially.

Q. Do you recall, prior to today,
ever having seen that paper?

A. Yes.

Q. When?

A. I could not tell you. After
Viola presented his paper in Texas and it was
called to our attention, we went to great
lengths to get every scientific document
relating to that that we could find.

Q. Is it your belief that it is
more probable than not that you would have
seen this document in 1971?

A. - I don't think so.

Q. Were you aware in 1971 that
during the recent years a syndrome
characterized by alterations of the skeleton,

URL 05914

ligaments, nervous system, and hepatic function has been observed among the workmen associated with vinyl chloride polymerization processes?

THE WITNESS: Let me look at that.

MR. BOVI: Certainly.

THE WITNESS: You had a lot of words there.

MR. BUNDA: The record should reflect that counsel was reading from this particular exhibit, Exhibit 4.

A. I don't think that I quite agree with this statement.

Yes, there have been and were reported alterations in the skeletons of workers exposed to vinyl chloride. But to my knowledge, I don't know that there were any reported alterations in the nervous system or hepatic function at this point in time.

Q. Thank you.

THE WITNESS: Let's put things into context, if I might?

MR. BOVI: What I like you to

do, Mr. Wheeler, is just answer my questions, if you would.

THE WITNESS: All right, okay, I'm sorry.

Q. Were you present at Dr. Viola's presentation in Houston?

A. No.

Q. Did you receive a copy of his Houston presentation?

A. Yes.

Q. I am going to hand you, Mr. Wheeler, what has been marked as Plaintiffs' Exhibit Wheeler 5. Would you take a look at that for me and tell me whether or not you have seen that document or a document with the same content in it before?

A. This is the one which Viola gave at the Texas meeting and the one which I received as being a copy of his presentation.

Q. Did you receive that document in 1970 or 1971?

A. I have to say sometime in that period, but I can't really give you an exact date.

Q. All right.

A. (Continuing) I received it through the auspices of the Manufacturing Chemists Association when they had a general industry meeting to discuss the apparent problem.

Q. Now, when you reviewed that document, Mr. Wheeler, in 1971 you became aware of the results of Dr. Viola's study showing that 65 percent of the rats who had been exposed to the concentrations of vinyl chloride that we talked about developed skin tumors?

A. Yes.

Q. And that the type of cancers they were developing were either epidermoid or mucoepidermoid carcinomas.

MR. BUNDA: Objection. Could you let him look at the article?

MR. BOVI: Yes, it's in front of him.

MR. BUNDA: Look at the article before you answer the question.

MR. BOVI: I am referring

URL 05917

specifically, Mr. Wheeler, to the last paragraph on the first page.

A. I have no comment, other than if it's there, it's there, and if it's there, I saw it.

Q. Okay.

A. (Continuing) But aside from that, I can't really qualify as being knowledgeable in neoplasms.

Q. I would like to direct your attention, finally, to the next to the last paragraph on the second page and the last sentence in that paragraph.

You would have read in 1971: "All of the cutaneous tumors developed in the same cite i.e. the reigon including the area in which the submaxillary and carotid gland are located." Correct?

A. If it's there it's what it says.

Q. Thank you.

Now, after you received -- how did you receive word of Dr. Viola's presentation in Houston?

A. As I mentioned earlier, the

UPL 05918

Manufacturing Chemists Association called a general meeting of the vinyl chloride polyvinyl chloride industry which I attended.

Q. To your knowledge, were any of the customers of the polyvinyl chloride industry called to participate in that meeting?

A. They would have been if they were members of the Manufacturing Chemists Association. I can't really say that a specific customer appeared.

Q. Did Union Carbide, to your knowledge, make any attempts to inform its customers either of Dr. Viola's work or of the MCA meeting in 1971?

A. I can't answer that because I have no knowledge of it.

THE WITNESS: May I borrow your copy of Viola's Texas paper for a moment?

MR. BOVI: Certainly.

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

MR. BUNDA: Let's go off the

UPL 05919

record for a second.

(Discussion off the record.)

Q. Could you identify Plaintiffs' Exhibit Wheeler 7, please?

A. This is an article by Viola which I think I received sometime, probably, in 1973.

Don't forget, when you write these things in Italian, you have to first know that they are there and, secondly, you have to get somebody to translate them.

Q. Well, you met with Dr. Viola in 1971; didn't you?

A. I didn't, but Union Carbide had a representative there, yes.

Q. This article appeared in Cancer Research in May of 1971; did it not?

A. That's what it says.

Q. Do you recall whether or not you saw this article in 1971?

A. I said I thought I saw it about 1973 or 1972. There was a considerable lag.

Q. Did you indicate earlier that in 1971 after you became aware of Viola's

URL 05920

presentation in Houston, you conducted or
Union Carbide conducted a search through the
known medical literature concerning toxicity
studies relating to vinyl chloride exposure?

MR. BUNDA: I object to the form
of the question.

A. I can't answer that of my own
knowledge.

MR. BUNDA: I don't think he
indicated that in his previous
testimony.

That's the basis for the
objection.

Q. When the work of Viola first
came to your attention, did you know what the
RVCM concentrations were in Union Carbide's
resin?

A. No.

Q. What steps did Union Carbide
take, after becoming aware of Viola's work,
to test its resin to determine what the RVCM
concentrations in it were prior to 1974?

A. Union Carbide concentrated its
efforts on making a determination of whether

UPL 05921

or not vinyl chloride exposure was a cause of cancer in humans.

Q. Is it your opinion, as you sit here today, Mr. Wheeler, that vinyl chloride is or is not carcinogenic to human beings?

MR. BUNDA: Objection.

A. You're calling for conclusion in which I have no expertise.

Q. You have no opinion one way or the other?

A. Sure I have an opinion, but my opinion is valueless.

Q. Well, I would like to know what your opinion is, sir.

Is it your opinion that vinyl chloride is or is not carcinogenic to humans?

MR. BUNDA: Objection.

THE WITNESS: What should I do?

MR. BUNDA: Go ahead and answer it.

A. I think that exposure to vinyl chloride causes hepatic angiosarcoma.

Q. Would you identify that document for me, please?

URL 05922

MR. BUNDA: And that document
you are referring to is?

MR. BOVI: Exhibit 6.

A. This is a letter which I wrote
to my associates at Union Carbide reporting
on the meeting that I mentioned earlier that
the Manufacturing Chemists Association called
as a result of the Viola paper.

I would like to point out that out of
that meeting Union Carbide took a position of
leadership to secure additional toxicity
testing and to confirm or try and confirm a
connection between vinyl chloride and human
health.

Q. The memorandum is dated November
23rd, 1971; correct?

A. Yes.

Q. Did you author that memorandum?

A. Yes.

Q. Does your signature appear on
the last page of that document?

A. Yes.

Q. Is the exhibit that you have
before you a complete and accurate copy of

URL 05923

1
2 that memorandum?

3 A. It appears to be.

4 Q. Are each of the eight people
5 that that memorandum is addressed to
6 employees of Union Carbide?

7 A. They were at the time.

8 Q. Was this memorandum to your
9 knowledge, ever circulated or intended for
10 circulation outside of Union Carbide?

11 A. It was not intended to be
12 circulated outside of Union Carbide.

13 Q. Why not?

14 A. Because I was informing my
15 associates of the MCA meeting, the results of
16 that meeting, and the position that we were
17 taking the lead into the toxicity testing of
18 vinyl chloride.

19 That involved epidemiology it involved
20 metabolism and it involved long term exposure
21 to rats, mice, and hamsters.

22 We, Union Carbide, would lead in
23 trying to get the money to get this program
24 off the ground.

25 Q. The memorandum discusses the

URL 05924

1 results of Dr. Viola's work; does it not?

2 A. Yes.

3 Q. And discusses the information
4 communicated by Dr. LeFevre, does it not?

5 A. Yes. I might add, though, this
6 is not an exact presentation of what was said
7 at the meeting. This is based upon my
8 impressions of what was said and what went on
9 at the meeting.

10 Q. I would like to refer you to the
11 first page of the memo Item Number 2
12 indicates: "Review the reports of Dr. P. L.
13 Viola on the development of tumors in rats
14 exposed to vinyl chloride monomer gas."

15 Is that what it says?

16 A. Yes.

17 Q. During the MCA meeting, did you
18 review more than one report of Dr. Viola's?

19 A. Based on material contained -- I
20 can't really say that this is an exact -- I
21 think this might be secondhand information
22 taken from a number of sources.

23 The primary paper presented at the
24 meeting was the Viola paper presented in
25

URL 05925

Houston.

Q. Yes, but you --

A. (Continuing) But there were other people there who had additional input. And this report on Dr. Viola's work represents my impression of what was said at the meeting.

Q. Now, at the time you wrote this memo on November 23rd, 1971, you had already seen Plaintiffs' Exhibit Wheeler 7; did you not?

A. No, I had not.

Q. Look at Page 2 of that document, Mr. Wheeler, -- I'm sorry, Page 2 of your memorandum.

Does that indicate, the second paragraph from the bottom, that Dr. Viola's initial work involving exposure to rats to 30,000 parts per million of vinyl chloride was reported at the Tenth International Cancer Congress at Houston, Texas in May of 1970 and was later published in Cancer Research in May of 1971?

Now, is it your testimony today that

URL 05926

1 when you wrote that memo on November 23rd,
2 1971 and cited that Cancer Research article,
3 that you had not seen it?
4

5 A. I had seen it.

6 But now, like I say, the additional
7 information presented here, I will call your
8 attention to the statement: "The remaining
9 data is unpublished at this time."

10 Q. All right.

11 A. (Continuing) So I did not have
12 this. All I had was the initial Viola paper
13 and, you might say, word of mouth transmittal
14 which came secondhand from various people.

15 Q. So, although this memo dated
16 November 23rd refers to Dr. Viola's article
17 published in Cancer Research in May of 1971,
18 you had seen it or you hadn't seen it?

19 A. I can't really say.

20 Q. Okay.

21 A. (Continuing) I definitely
22 referred to it, but I can't really say that I
23 had the paper in hand.

24 Q. It was an article then that was
25 available to you in 1971 if you wanted to

read it?

A. I guess you can say that.

Q. It was available to Union Carbide?

A. Yes.

Q. Now, the next sentence reads: "The remaining data is unpublished at this time."

Now, what was the remaining unpublished data of Dr. Viola?

A. Most of this unpublished data came as a result of the meeting between Dr. Lane and a number of other medical men who had Dr. Viola come over to this country and discuss his work with them.

Q. Union Carbide in fact paid all or a substantial part of Dr. Viola's expenses to bring him to Washington for the meeting; didn't they?

A. I don't think he came to Washington.

Q. Do you recall?

A. I think that this might have been a meeting at Kennedy Airport.

Q. Doesn't it indicate, on Page 2 of that document, that after the appearance of Dr. Viola's paper at the Houston meeting, intereseted companies, including Union Carbide, paid Dr. Viola's expenses for a meeting in Washington on May 5th, 1971?

A. If that's what it says, that's what happened.

Q. Now, the unpublished data of Viola is in fact recorded right above that paragraph, is it not, showing tumors in rats at concentrations substantially less than 30,000 parts per million?

A. Yes.

MR. BUNDA: Objection to the form of the question.

Q. Your concern was that if this data showing the incidence of tumors below 30,000 parts per million was published in the United States, it was going to cause serious problems for the vinyl chloride monomer and resin industry; wasn't it?

A. How can I say that when you say this was already available to the industry?

1
2 Q. Sure, the data at 30,000 was
3 available but the data below 30,000 wasn't
4 available; was it, sir?

5 A. That is correct.

6 Q. Your position was that you and
7 your company did not want that unpublished
8 data to become known in the United States?

9 MR. BUNDA: Objection.

10 I object to that too.

11 We had no -- we were concerned about
12 what would happen, but we were not
13 making any effort to not make this
14 information known.

15 Q. There was a meeting set up
16 between industry representatives and Dr.
17 Viola in May of 1971; correct?

18 A. That is correct.

19 Q. When that meeting was set up,
20 did Union Carbide know whether or not Viola
21 had published in the United States? Was this
22 article out when this meeting was set up, or
23 did this article come out after the meeting
24 was set up?

25 A. I think I saw it afterwards, but

I --

MR. BUNDA: If you recall just tell him what you know and if you don't know, you don't know.

A. (Continuing) I don't think I saw this second article.

Q. Wasn't one of the reasons for the meeting with Viola to discourage him from publishing his results in the United States?

A. No. The whole function of the meeting was to try and decide what Dr. Viola had seen and what sort of a problem might grow from that.

Q. Did you personally participate in the meeting with Viola?

A. No.

Q. Have you ever met him?

A. No.

Q. Did you write on November 23rd, 1971, quote: "Publishing of Dr. Viola's work in the United States could lead to serious problems with regard to the vinyl chloride monomer and resin industry." close quote?

A. That's what it says, that's not

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