STATE OF MINNESOTA COUNTY OF CARLTON

DISTRICT COURT SIXTH JUDICIAL DISTRICT

7 PERSONAL INJURY/CAREY

Arthur A. Frehse,
and Helen J. Frehse,
husband and wife,

Plaintiffs,

vs.

Anchor Packing Company,
et al.,

Defendants.

VOLUME I

Deposition of CARL U. DERNEHL, M.D., taken pursuant to Notice of Taking Deposition, and taken before Kirby A. Kennedy, a Notary Public in and for the County of Hennepin, State of Minnesota, on the 10th day of March 1989, at the Holiday Inn, University Plaza & Trade Center, 333 Sherman Parkway, Springfield, Missouri, commencing at approximately 9:15 o'clock a.m.

APPEARANCES:

MICHAEL S. POLK, ESQUIRE, of the Law Firm of HERTOGS, FLUEGEL, SIEBEN, POLK, JONES & LaVERDIERE, 999 Westview Drive, Hastings, Minnesota 55033, appeared for and on behalf of Plaintiff.

ROBERT D. BROWNSON, ESQUIRE, of the Law Firm of STICH, ANGELL, KREIDLER & MUTH, Suite 120, The Crossings, 250 Second Avenue South, Minneapolis, Minnesota 55401, appeared for and on behalf of Defendant Conwed Corporation.

BRUCE JONES, ESQUIRE, of the Law Firm of FAEGRE & BENSON, 2200 Norwest Center, 90 South Seventh Street, Minneapolis, Minnesota 55402-39001, appeared for and on behalf of Defendants Armstrong World Industries (Delaware), Inc., GAF Corporation, Keene Corporation, National Gypsum Company, Owens-Corning Fiberglas Corporation, Owens-Illinois, Inc., Turner & Newall PLC, Union Carbide Corporation and United States Gypsum Company.

WILLIAM D. HARVARD, ESQUIRE, of the Law Firm of BLASINGAME, BURCH, GARRARD & BRYANT, PC, 440 College Avenue North, P.O. Box 832, Athens, Georgia 30603, appeared for and on behalf of Defendant Union Carbide Corporation and members of CCR.

ANTHONY J. LAURA, ESQUIRE, of the Law Firm of KELLEY, DRYE & WARREN, 175 South Street, Morristown, New Jersey 07960, appeared for and on behalf of Defendant Union Carbide Corporation.

JOSEPH GOLDBERG, ESQUIRE, of the Law Firm of MILLER & NEARY, Suite 606, Park National Bank Building, 5353 Wayzata Boulevard, Minneapolis, Minnesota 55416, appeared for and on behalf of Defendant A. W. Chesterton Company.

ROBERT E. DIEHL, ESQUIRE, of the Law Firm of MEAGHER, GEER, MARKHAM, ANDERSON, ADAMSON, FLASKAMP & BRENNAN, 4200 Multifoods Tower, 33 South South Sixth Street, Minneapolis, Minnesota 55402, appeared for and on behalf of Defendant A.H. Bennett Company.

GARY E. BISHOP, ESQUIRE, of the Law Firm of MANN, WALTER, BURKART, WEATHERS & WALTER, 300 John Q. Hammons Parkway, Suite 600, Springfield, Missouri 65806, appeared for and on behalf of Defendant W. R. Grace & Company.

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(At this time DERNEHL Deposition Exhibits 1 through 44 were marked for identification by the Court Reporter.)

MR. JONES: Dr. Dernehl has informed us that he is a diabetic and for that reason is occasionally subject to hypoglycemia. He has also asked us to watch him carefully because he has difficulty because of lack of concentration. He will take the measures that he can to correct it. It's also important for that reason that we break for lunch right at 11:55 or noon.

MR. BROWNSON: Why don't you make sure that we have a watch here.

MR. JONES: I just wanted to let you know.

MR. BROWNSON: We will do anything to accommodate.

(At this time a discussion was held off the record.)

CARL U. DERNEHL, M.D.,

the Witness in the above-entitled matter after having been first duly sworn deposes and says as follows:

CROSS-EXAMINATION

BY MR. BROWNSON:

Q. Dr. Dernehl, my name is Bob Brownson. I introduced myself to you earlier. I represent a company called Conwed Corporation, which is a Defendant in a lawsuit up in Minnesota brought by a James Manisto against many Defendants. Do you understand generally that we are here on that case? Have you been informed of that fact?

A. I have been informed that there is a lawsuit which involves Union Carbide and that's about it.

Q. We are here today to ask you some questions concerning Union Carbide matters and I am going to start out the questioning and others, I am sure, will also question you. Before we start I would like to tell you a couple of things. The first is if my questions are not clear to you or anyone's questions are not clear to you or you don't understand them, would you please tell us that before you answer the question?

A. Yes.

Q. And that way we will have a record which reflects questions that you understood. Okay?

A. Right.

Q. And, secondly, please speak up audibly and don't shake your head or shrug your holders or say huh-uh

or those sorts of things because Kirby will have difficulty with that.

A. I understand.

Q. And, finally, don't speak while I am speaking and I will try not to speak while you are because he can't take down two people at once. Is that agreeable?

A. Right.

Q. Dr. Dernehl, have you ever had your deposition taken before?

A. Yes.

Q. Has it ever been taken in any proceedings regarding an asbestos-related case?

A. I was called to give a deposition in an asbestos-related case but the deposition was discontinued. It was a problem between the attorneys.

Q. Did you actually give any testimony on the record or didn't it get that far?

A. It never got that far.

Q. The depositions that you have given, generally in what context were those, what type of case?

A. Usually involving chemicals.

Q. Were those injury type cases involving chemicals or patent cases or what?

A. Injury type.

Q. Have you ever testified in court in an injury

case where you have actually gone with Counsel to the courthouse and testified?

A. Yes.

Q. Do you recall where that was?

A. Well, there was some involving Workmans' Compensation cases that were down in Galveston County in Texas. I testified in Georgia, North Carolina, New York, Tennessee, maybe some others. Those are all I can recall right now.

Q. In any of those cases in which you have testified, did they involve asbestos in any way?

A. They did not.

Q. Have you ever given testimony before Congress or any regulatory agency?

A. As I recall I testified before a Senate hearing on the OSHA law during the days when it was being formulated.

Q. Was this the OSHA law with respect to asbestos in the work place or something else?

A. No, this was the basic OSHA law.

Q. Did that testimony have anything to do with asbestos or asbestos standards?

A. No, it did not.

Q. Have you ever given any testimony to, and this would be testimony under oath, in any forum regarding

asbestos for OSHA standards which regulate asbestos that you can think of?

A. No, I have not.

Q. Are you the author of any publications?

A. Regarding anything?

Q. Well, I will start with that and I think we will narrow it down pretty quick depending on what you say.

A. Yes.

Q. About how many publications have you authored? I don't need an exact number but give me a ballpark figure.

A. Ten.

Q. Did any of those publications have anything to do with asbestos?

A. They did not.

Q. Have you contributed to any textbooks or publications or texts of any type which dealt with asbestos even if you weren't the primary author?

A. I have not.

Q. Have you peer reviewed any texts or articles or published material dealing with asbestos?

A. I have not.

Q. Dr. Dernehl, how old are you at the present time?

A. Seventy-five.

Q. Are you currently employed?

A. No.

Q. Would you then be retired?

A. I am retired.

Q. Are you living here in Springfield?

A. Yes, I am.

Q. What was the last occupation you retired from?

A. I was the associate corporate medical director of Union Carbide Corporation.

Q. When was the date of your retirement?

A. It would be August, I guess, probably the 30th, 1979.

Q. And where were you located at the time of your retirement, where were you offiding?

A. 270 Park Avenue, New York.

Q. Is that the location of the main Union Carbide medical department in the United States, corporate medical department?

A. It was at that time.

Q. Has that changed since that time?

A. Yes, it has.

Q. When did you begin with Union Carbide?

A. April 1, 1947.

Q. Let me just back up before that a little bit and ask you what your formal education was before that time?

A. I was in high school in a city called

Wauwatosa, Wisconsin, which is a suburb of Milwaukee. I entered the University of Wisconsin where I received a BA degree and then an M.D. degree.

Q. When did you receive your M.D.?

A. 1938.

Q. And that was from Wisconsin?

A. That was from Wisconsin.

Q. At Madison?

A. At Madison.

Q. What was your BA in, what field?

A. Nothing specific, just general arts, Bachelor of Arts.

Q. What training or further education did you obtain upon getting your M.D.?

A. I had a one-year rotating internship at the Medical College of Virginia in Richmond, Virginia, and then I stayed on for the first year of a medical residency as Internal Medical Residency at the Medical College of Virginia. I was scheduled to take the last two years of a residency there but due to problems with the alumni, the decision was made to drop a number of non-MCV graduates from the residency program and so we had to look elsewhere. I then went to the Medical Branch of the University of Texas at Galveston, Texas, where I took two years in a trial residency program, which was a conflagration of

preventative and internal medicines.

Q. Sounds like the alumni at the Medical College of Virginia didn't like non-Virginia Medical College graduates in the residency, is that it?

A. Well, their problem was that all but one of their residents were from outside schools and the alumni felt that some of these residency positions should be reserved for MCV graduates. At that time residencies were hard to get, and when we were told that we were going to be dropped it was really only by sheer luck that I got this place down at the University of Texas. All of the rest of them were filled up years in advance.

Q. Following that residency in Texas did you have any further education, formal education?

A. After I finished the residency, I was offered a position on the teaching faculty and I stayed on in the Department of Preventative Medicine teaching Occupational Medicine from 1942 to 1947.

Q. And did you then join Union Carbide?

A. Joined Union Carbide in 1947. The University requested permission to keep me on as an advising lecturer, which was granted by Carbide. In the couple of years later, Baylor Medical College in Houston requested my services as a faculty member and I was given a position as Clinical Assistant Professor of Occupational Medicine, Industrial

Medicine at that time.

Q. Would you describe for us your positions in the medical department at Union Carbide through the years, can you take us through that chronology?

A. I started in 1947 as the medical director of the Texas City plant, which was a large chemical plant. I worked there until 1955 when I was transferred to New York as assistant medical director of Union Carbide Corporation with responsibility for the chemicals plants. In 1963 I was given the title of director of toxicology for the corporation. In 1965 I was given the title of associate corporate medical director with responsibility for toxicology and assorted general trouble shooting operations. I was also at that time told that I was to represent the corporation in medical affairs in various specialty organizations like the Manufacturing Chemists Association, Society of the Plastics Industry, Compressed Gas Association. Those I think were the major jobs that I have done.

Q. Then from '65 through '75 you were associate corporate medical director, do I have that right?

A. '65 through '79.

Q. '79?

A. Right.

Q. And you were stationed during those years at

New York City at the corporate offices on Park Avenue?

A. Right.

Q. During your years at Union Carbide up through 1979, did you ever attend any conferences or symposia or proceedings which had anything to do with asbestos?

A. I did.

Q. What and where were those?

A. I really can't remember.

Q. Can you remember any of them?

A. I can't give you any dates, but I know that I attended some that were conducted by Dr. Selikoff and at least one that was conducted by the, I guess, New York State Industrial Hygiene Department.

Q. And do you recall which conferences you attended which were conducted by Dr. Selikoff?

A. No, I really don't.

Q. Do you recall where those conferences were held?

A. In New York, as I recall.

Q. Were they at Mount Sinai Hospital?

A. One of them was.

Q. Were those conferences at which you attended by Dr. Selikoff conferences conducted by the New York Academy of Sciences?

A. I really don't remember.

Q. Do you recall the topics under discussion at those conferences with Dr. Selikoff?

A. My recollection would be they were the general types of hazards associated with asbestos and some research reports on some of Selikoff's work.

Q. Do you remember any of the other speakers at those conferences other than Dr. Selikoff himself?

A. No, not really.

Q. Do you know if either of the Dr. McDonalds were involved, Dr. A. V. or a Corbit McDonald? How about Dr. Wagner from South Africa, do you know if he had any involvement?

A. I don't believe I ever heard him.

Q. How about a doctor named Arthur Rohl, do you know if he was involved?

A. I don't remember.

Q. How about a doctor named Langer?

A. I don't remember.

Q. When did you first hear of the work of Dr. Selikoff, do you recall that?

A. Yes, it was during the testimony before the Senate committee when OSHA was being formed. Dr. Selikoff testified immediately or a short time before I did and he used the asbestos -- the observations he had made in asbestos workers as the pressing point for an OSHA law.

Q. Do you remember when that was?

A. The best I could remember it would have to be in the late '60s or early '70s.

Q. Do you recall where this Senate hearing took place?

A. Washington, D.C..

Q. Was it some particular committee or subcommittee of the Senate, do you recall?

A. I don't recall that. I know it was in one of the hearing rooms in the Senate office building.

Q. Do you remember any of the Senators who were present?

A. I am sorry, I don't. The only one that rings any kind of a bell, and I don't remember his name, and he was from New Jersey and he was one of the Democrats and one of the pressing members of the issue.

Q. When did you first become involved in any way with the asbestos group, if I can use that term, at Union Carbide?

A. I would have to say in certainly the '60s.

Q. And do you recall what that involvement was or what you did at that time?

A. At that time there was some conferences with the corporate medical director and the asbestos production people at which we discussed their plans for the production

of asbestos.

Q. Now, when you say asbestos production people, are these the people at King City, California, is that what we are speaking about here?

A. At that time they were the people in the New York offices who were working on the concept of going into the mining of asbestos at King City.

Q. So if we could put this in context, it sounds like the King City deposit, the Coalinga deposit, had been discovered and now there was some discussions as to going into production, is that about the time frame we are in?

A. That's about it.

Q. Were there any written reports or documents produced as a result of those discussions?

A. I really don't know.

Q. Who were the asbestos production people, if I can use that term, who were involved in the discussions?

A. I have no recollection.

Q. Do you recall why the medical director and yourself were involved in the discussions?

A. Because that was standard procedure within the corporation, that when we were about to embark upon a new manufacturing activity early in the planning stages the corporate medical department was brought into the picture.

Q. Who was the corporate medical director at the

time who was involved in the discussions?

A. Dr. Thomas Nale.

Q. Is Dr. Nale still around?

A. He is dead.

Q. Other than yourself and Dr. Nale, do you recall any other people from the medical department involved in those discussions?

A. At that time I think there was just the two of us. Excuse me. There was one other who was involved at that time and that was our chief industrial hygienist, Paul McDaniel.

Q. Is Mr. McDaniel still around?

A. I really don't know.

Q. Do you know if he is alive?

A. He was two years ago. Whether he still is, I don't know.

Q. I take it from your answer that he is no longer working at Union Carbide?

A. No, he retired a number of years ago.

Q. Do you know where he was as of a couple of years ago?

A. I think he was at Rochester, New York.

Q. Let me go back to the year 1955 when you moved to New York City to the medical department at Union Carbide. At that point in time I want to ask you about the medical

department, how it was set up. I take it that the main office of the medical department for Union Carbide Corporation was in New York City at the Park Avenue address, is that right?

A. We weren't in Park Avenue at that time. The medical department was situated at 300 Madison Avenue.

Q. Did the medical department have its own facility or was that in the corporate offices of Union Carbide?

A. Well, they had two medical departments in New York; they had a rather large personnel medical department, which also was responsible for supervision of overseas operations, and then the department they called the industrial medicine and toxicology department, which was comprised of two people, Dr. Hale and myself, and we were at 300 Madison.

Q. Where was the personnel medical department?

A. It was at, what was the address, let's see, it was on 42nd Street. Right around the corner on 42nd Street.

Q. Now, the personnel medical department, what generally did they do or what was their function at that time?

A. Provided medical service for people that worked in the building, did pre-employment examinations.

Q. And would they, for example, have anything to

do with medical problems in the Union Carbide plant around the country?

A. No.

Q. Was that under the auspices of you and Dr. Nale?

A. Yes.

Q. Now, the personnel medical department, you say, also was in charge of overseas work. What was that?

A. Well, they did all the medical work for individuals who were being sent overseas for either work positions or on trips and they received a lot of the questions that came up as a result of overseas operations where as they received them they were normally passed on to Dr. Nale and myself for answers.

Q. Let me give you a hypothetical example. Let's say a Union Carbide division in Brighton in 1955 some question came up about a condition in a factory, for example. Are you telling us that that question may have been conveyed to the personnel medical department who would then refer it to you and Dr. Nale?

A. That sort of an operation, yes.

Q. But --

A. Excuse me, let me also comment on the fact that without any specific directive in that direction in the subsequent few years from '55 on, I would say the

overseas operations began to respond directly to Dr. Nale and myself without going through the employee medical services.

Q. Well, would it be fair to say that ultimately such questions from overseas department about toxicology or hygiene would end up in the department of you and Dr. Nale?

A. Absolutely.

Q. And would that also be true about such questions in this country, if the question came from a Union Carbide facility here about hygiene or toxicology, that would be referred to you or Dr. Nale?

A. Yes.

MR. JONES: What time period are you talking about?

MR. BROWNSON: I was still talking about 1955.

BY MR. BROWNSON:

Q. Was that true then up through 1965, that same general set up from '55 to '65?

A. From '55 to '65 I would say practically all of the overseas operations problems came to Nale and myself, and all of the U.S. plant operations came to Nale and myself.

Q. Now, when you were promoted to director of toxicology in 1963, was this still within the industrial

medicine and toxicology branch of the medical department?

A. It was within the same framework with the exception that somewhere in there, and I really don't know when or where, the toxicology was dropped from the department and it mainly became the industrial medical department.

Q. But did that department still deal with hygiene and toxicology questions?

A. Right.

Q. Throughout your tenure at the New York office from 1965 to 1979, were you always involved with that particular aspect of the medical department?

A. Yes.

Q. The toxicology aspect?

A. Yes.

Q. And I take it that the name changed from time to time but the subject matter remained the same?

A. Correct.

Q. Other than Dr. Hale and yourself, who else was involved in that department while you were there through '79?

A. Let's see, Dr. Kenneth Lane, who was an assistant medical director; Dr. Brian Balantyne; a large staff of industrial hygienists, Paul McDaniel being one, Leo LaFrance. I can't remember the other two. Those are

the ones that I knew best. There were about four or five others. An epidemiologist by the name of Susan Austin. There was another M.D., let's see, who was -- his name escapes me but he is now medical director of Cyanamid. think that's about it. Wait a minute, I have to add one more, there was a change in corporate medical directors in there, Dr. John Welsh was the corporate medical director from 1963 to 1979 when I left.

Q. I think you answered this before but just so I am clear on this point, from 1955 to 1979 were questions of industrial hygiene and toxicology in Union Carbide facilities both in this country and overseas within the jurisdiction of this industrial medicine and toxicology group?

A. Yes, they were.

Q. And have you now given us the names of all the people you can recall who were within that group for those years, anyone else in that group that you can think of from '55 to '79?

A. I really can't remember.

Q. Now, other than at the main medical office in New York City, were there industrial hygiene type people, whether they are medical doctors or not, at other Union Carbide locations?

A. Yes.

Q. Generally how was that set up, can you tell us?

A. Generally it was set up on the basis of plant size and management opinion, let's put it that way, because we had -- in the chemicals operations where we had large clients, lots of people, lots of hazards, we had full time medical services, one or two plant physicians, and industrial hygienists, and nurses. And other operations where we had just as many employees but the hazards were different, they were lower, we would have part-time positions in the community. So every plant we had had some contact with a physician who acted as the medical director for that particular unit.

Q. How about King City, California, do you know what medical personnel you had there through the years?

A. They had a outside consulting physician who examined their people, read their X-rays, handled any minor injuries they had and so forth.

Q. Do you know who that physician was?

A. I don't recall his name.

Q. Was he at King City?

A. I am not sure, it was either King City or Monterey. I believe he was at King City.

Q. Have you ever been to King City?

A. Twice.

Q. When was that, do you know?

A. Once I believe in the middle '60s, and once I think in the early '70s would be my best recollection.

Q. Do you recall the reason for either of those visits?

A. Just routine.

Q. And by routine, what do you mean, would you visit all Union Carbide facilities on some rotating basis?

A. When it was convenient to do so, yes.

Q. Do you recall when you went to King City on either of those visits what you did there?

A. I met with the physician and reviewed a bunch of X-rays with him. I went down to the plant and made a plant tour. And I went out to the mine site and observed some of the mining operations and I had an industrial hygienist with me. Following the completion of our survey we met with the management and gave them our opinions of the status.

Q. Do you recall what your opinions were of the status on either occasion?

A. One thing that was of concern to us was the ore pile, which was being allowed to dry out and becoming rather dusty and we were concerned about that as a dust hazard. And we were a bit concerned about certain maintenance activities which were allowing some of the ventilation equipment to deteriorate a little bit more than

we would like to see, so there were some leaks in ventilation equipment. That's my recollection of our two main concerns.

Q. Did you recognize at the time of the first visit that asbestos dust could be in any way hazardous to human health?

A. Yes, we knew that.

Q. Is that one of the things you were looking for on the visit?

A. Yes.

Q. Was there any recognition at the time of the first visit that asbestos dust in some form and some dose could cause cancer?

A. Well, we were concerned with the disease asbestosis.

Q. At the time of the first visit in the mid-1960s had you heard of the disease mesothelioma?

A. I really can't recall just exactly when I did first hear of that disease.

Q. Do you know when King City began, the King City facility, began taking chest X-rays from employees?

A. As far as I know day one.

Q. Was that at your directive?

A. That was at that time the directive of Dr. Male who is the corporate medical director.

Q. What was the policy for chest X-rays of employees at King City, was it an X-ray or some other --

A. My recollection is it was annual.

Q. This was done by this outside doctor at King City?

A. Yes.

Q. Were those annual chest X-rays of employees then kept on file somewhere?

A. As far as I know, the doctor kept them.

Q. Did Union Carbide keep them anywhere?

A. No.

Q. At any time up through 1979, or even after that time, if you are aware of it, do you know if any epidemiological study was done of employees at the King City facility?

A. I don't believe so.

Q. Do you know if there has been any screening or review of X-rays other than on a case-by-case basis for those employees?

A. There was a time, I don't remember exactly when it was, but we did have a large number of X-rays reviewed by a specialist in reading X-rays for dust exposure to make sure that the local people were not missing anything.

Q. Do you know when this was?

A. I really can't recall.

Q. Do you know where this reading took place?

A. I don't remember that either.

Q. Do you remember who the expert was?

A. I don't remember that either.

Q. Do you recall if he was a so-called B reader?

A. I believe that's why he was selected.

Q. Do you know if he was a radiologist?

A. I believe he was a radiologist.

Q. Do you know where the records or reports or findings of this screening would be located?

A. No, I do not.

Q. Do you know if any written report or findings was ever prepared from that screening?

A. I can't recall.

Q. Do you know at whose instance the screening was done or whose request the screening was done?

A. I think it was done at the request of personnel in the medical department, that is the Union Carbide medical department.

Q. So the Union Carbide medical department at New York?

A. Yes.

Q. Now, other than --

A. Incidentally, I was not involved in that phase

of things. I saw it from the side but at that time Dr. Lane was doing most of the coverage of the King City operations.

Q. So this X-ray reading or screening or whatever you want to call it would have been done at the direction of Dr. Lane?

A. Probably at Dr. Lane's request.

Q. Do you know if Dr. Lane actually went out to King City to set things up or --

A. I don't remember that.

Q. Is Dr. Lane still alive?

A. Yes.

Q. Is it he or she?

A. He.

Q. Is he still at Union Carbide?

A. No, he is retired.

Q. Do you know where he is located?

A. Bartlesville, Oklahoma.

Q. Do you know why this X-ray study of King City employees was done?

A. I think it was done just to give us a feeling of confidence in the fact that we had not observed any problems in the people and we just wanted to make sure that we weren't being suckered into a state of complacency.

Q. Was it done because the Union Carbide medical

department at that time recognized that exposure to asbestos dust in some dose could cause disease?

MR. JONES: Object to the form of the question as argumentative. You can go ahead and answer, Doctor.

A. We knew that before they ever started mining asbestos.

Q. Was there a recognition at the time this X-ray study was done that exposure to asbestos could cause cancer, a recognition at Union Carbide's medical department that asbestos exposure could cause cancer?

A. At the time that that review was done we knew of Selikoff's studies with regard to cancer and asbestos.

Q. Was there a recognition at the Union Carbide medical department at the time that X-ray study was done that asbestos could cause mesothelioma?

A. Yes.

Q. Was that recognition gained from Dr. Selikoff's work or from some other source?

A. I would say that Dr. Selikoff's work was the moving force behind the knowledge that there was an association between asbestos exposure and cancer.

Q. And by cancer would you include mesothelioma?

A. Yes.

Q. Now, the overseas divisions of Union Carbide,

did they have their own medical departments or would all hygiene -- stop there. Did the overseas divisions of Union Carbide have their own medical department?

A. Yes, they did.

Q. Would questions of toxicology and hygiene at overseas facilities be handled by those medical departments or would they all come to New York?

A. This would be handled by those medical departments with the New York operation being the source of expert knowledge if they needed it.

Q. Did the Niagara Falls research facility of Union Carbide have its own medical personnel at any time while you were with the company?

A. We did have a full time medical director at the electro metalurgical group in Niagara Falls in 1955. It goes back earlier than that. I guess the medical director probably was hired about the same time I was in '47 and he stayed on at Niagara Falls Falls until maybe 1960.

Q. Did he have anything to do with the asbestos group at Union Carbide?

A. Not that I recall.

Q. Was there anyone at the Union Carbide medical department in New York City who had responsibility at one time or another for asbestos related matters or for the Union Carbide asbestos group?

A. In the medical department?

Q. Yes.

A. It would be Dr. Lane.

Q. Do you recall what period of years Dr. Lane dealt with that topic?

A. Not specifically. I would say probably from the late -- probably the last ten years that I was there, about '68 to '79.

Q. Did the Union Carbide medical department in New York City have a medical library?

A. Nothing more than the books that we ourselves kept in our home.

Q. Did it subscribe to any medical journals or periodicals?

A. Yes.

Q. Do you recall which medical journals or periodicals?

A. British Medical Journal was one, Journal of Occupational Health, American Hygiene Medical Journal was another, Archives of Industrial Health was another. We had a complete set of the Journal of Industrial Hygiene and Toxicology. Wait a minute now. I will have to qualify an answer I gave you earlier when you asked me did we have a library. I had forgotten the fact, yes, we did have a library. That's where we kept all of these journals and

collection of approximately 250 to 300 books.

Q. Did the Union Carbide medical department subscribe to the publication Nature?

A. I don't believe so.

Q. How about Lancette?

A. Lancette, yes.

Q. How about the New England Journal of Medicine?

A. That was a personal subscription.

Q. To who, you?

A. Well, I carried it myself for a number of years.

Q. How about Cancer?

A. No.

Q. How about the Archives of Environmental Health?

A. Yes.

Q. Is that some thing different than the Archives of Industrial Health? Are those two different publications because you earlier had told us that you subscribed to the Archives of Industrial Health?

A. I guess I probably meant the one that you mentioned.

Q. The Archives of Environmental Health?

A. The Archives of Environmental Health.

Q. There also is a Journal of Archives of Industrial Health.

A. As a matter of fact, I believe we had both of them because the Archives of Industrial Health, as I recall, was a continuation of the Journal of Industrial Hygiene and Toxicology.

Q. How about the publication entitled Chest?

A. No.

Q. How about the Canadian Medical Association Journal?

A. No.

Q. The British Journal Cancer?

A. No.

Q. The publication entitled American Review of Respiratory Disease?

A. No.

Q. The publication entitled Environmental Research?

A. No.

Q. How about the Annals of the New York Academy of Sciences?

A. I think we had some of those but not all of them.

Q. Do you know if you had the issues dealing with any of Dr. Selikoff's studies?

A. I think we did.

Q. What was the purpose for maintaining this

medical library and subscribing to these medical journals at the medical department of Union Carbide?

MR. JONES: Object on the grounds of foundation. Go ahead and answer.

A. Reference work.

Q. And were these used by yourself and the other medical personnel at the medical department?

A. These and other sources, yes.

Q. What were the other sources? Were there other medical libraries that your department used?

A. Yes.

Q. What were those?

A. New York Academy of Medicine Library. I guess that would be the primary other source for medical references.

Q. Did the Union Carbide medical department, during the years you were there from '55 to '79, do its own research into either industrial hygiene or toxicological issues?

A. Yes, we had our own laboratory at Mellon Institute in Pittsburgh.

Q. Now, before I get to that, other than at the Mellon Institute in Pittsburgh, was there research conducted within the medical department of Union Carbide during the years you were there?

A. Yes, on occasion we participated in research done at some other locations.

Q. Were any of those locations in this country?

A. Yes.

Q. Do you recall what they were?

A. One was the CIIT, Chemical Institute of Industrial Toxicology at Chapel Hill -- at Research Triangle, Research Triangle in North Carolina. There was some work done at some of the private consulting toxicology laboratories in Illinois and I don't remember where the others were.

Q. Now, was this research at these places research actually done by Union Carbide medical personnel or was this research commissioned by Union Carbide and done by these outside sources?

A. Commissioned by Union Carbide and done by the outside people.

Q. Now, did Union Carbide personnel do their own research?

A. At the Mellon Institute.

Q. And which Union Carbide personnel did research at the Mellon Institute in Pittsburgh?

A. There was a staff of about 35 people who worked at the chemical hygiene fellowship at the Mellon Institute in Pittsburgh. At that time it was headed by Dr.

H. F. Smith, Junior. Second in command was Dr. C. P. Carpenter, and an inhalation specialist Urboano Pozzani, and statistician, Caroll Weil. I don't remember the other names.

Q. During what years did Union Carbide conduct research at the Mellon Institute?

A. From about 1938 through the present. Wait a minute, I shouldn't say through the present any more because I guess just about the time I left they severed their relationship with Mellon and they maintained a laboratory as their own corporate toxicology laboratory.

Q. And is that corporate toxicology laboratory still in existence?

A. To the best of my knowledge, yes.

Q. Where is that?

A. I am not sure whether it's either Bush Run outside of Pittsburgh or up in Weschester County, New York at -- I have forgotten the name of the place now.

Q. Was medical research commissioned by Union Carbide at any facilities overseas during the years you worked at Union Carbide?

A. I think, I am not certain about this, but I believe that they had one study conducted by a British research laboratory but I do not remember the name of the laboratory.

Q. We will maybe talk about that a little later. Let me back up to another topic. Let me ask you a little bit about the Mellon Institute because I don't know much about it. Is this part of Carnegie Mellon University or is this another institution?

A. Mellon Institute was an organization founded by the Mellon interests as a independant research center run by the Mellon Institute in supporting a number of different fellowships. Various corporations would contract with the Mellon Institute for a fellowship; for example, Union Carbide had a chemical fellowship there where a lot of the basic research in chemical processes was being done, and this was prior to the formation of the chemical hygiene fellowship. And when in 1933 Union Carbide decided they had to learn more about the toxicology of their products, they established what they called the chemical hygiene fellowship. And since they already had had chemical fellowships at Mellon, they established this chemical hygiene fellowship at Mellon.

Q. And what years did Union Carbide have the chemical hygiene fellowship at Mellon Institute?

A. As long as Mellon Institute existed. And sometime, I would guess sometime in the '60s, the Mellon Institute was taken over by -- well, let me put it this way, that the Mellon interests were taken over by Carnegie

University and at that time was formed the Carnegie Mellon University.

Q. Okay.

A. The Institute people and activities then fell under the umbrella of Carnegie Mellon University. And they stayed there up until the late '70s or very early '80s when Carbide decided, because of administrative problems with the University, to withdraw their fellowship and establish their own laboratories.

Q. Now, the Union Carbide chemical hygiene fellowship, was that a fellowship that was always filled by Union Carbide's personnel or would that be open to others?

A. All the people that worked there were -- this was a peculiar situation. They were paid by the Mellon Institute or Carnegie Mellon University, but they had all the rights and benefits of Carbide employees so that we always considered them as Carbide employees.

Q. And did Carbide provide the fellowship funds that were paid out through the University?

A. That's correct.

Q. So the actual reimbursements for these people came through Carbide or directly through the University?

A. Correct.

Q. And during the years that the industrial hygiene fellowship was in existence at the Mellon Institut

was there always one fellow or were there sometimes nobody or sometimes more than one or how did that work?

A. Well, I guess there were always a lot of fellows. Henry Smith was the administrative fellow, and C. P. Carpenter was the assistant administrative fellow, and the others I guess would just be classified as fellows.

Q. Now, C. P. Carpenter, is that Charles P. Carpenter?

A. Right.

Q. How about Edwin R. Kinkead, was he a fellow?

A. Kinkead came along later. I don't know what his status was.

Q. Do you know if he ever held the Union Carbide industrial hygiene fellowship at any time?

A. I don't know if he was ever classed as a fellow there or not. He may have been. I don't recall.

Q. Was he kind of a lower echelon researcher?

A. He was not one of the top guys.

Q. I assume that the fellows had staffs of technicians or researchers or whatever who worked for them?

A. Yes.

Q. So everyone who worked there would not necessarily be a fellow, is that correct?

A. That's correct.

Q. Do you remember, in any event, that Edward

Kinkead worked for some of the fellows at the Union Carbide industrial hygiene fellowship?

A. I don't know what Kinkead did.

Q. How about Urboano Pozzani, was he a Union Carbide industrial hygiene fellow?

A. Yes.

Q. How about Charles C. Haun, do you recall him?

A. Yes, Haun was one of the later guys that came in in the middle '60s probably.

Q. How about John M. King?

A. Also.

Q. He was also under that fellowship?

A. He was in the fellowship, yes.

Q. Now, I am going to get into this a little later but I wanted to ask you now, in one of the reports issued by the Mellon Institute it has attached a mailing list and we are going to look at this a little later, but what I wanted to ask you is it talks about what seems to be different medical department and it says Number 4, Dr. C. Bernehi. Was your department called Department 4?

A. No, it was on the fourth floor of the building.

Q. Actually I think in this particular case it may mean that you got four copies?

A. That's also possible.

Q. Let me give you some other names. There is an

E. Q. Hull. I don't know if is he a doctor.

A. He is.

Q. Was he in your department?

A. No, he was the medical director of the plant in South Charleston for a number of years and then in the last five, six, eight years he was listed as the medical director of the chemicals division.

Q. Where would he be located?

A. South Charleston.

Q. Did they have their own medical department at South Charleston?

A. Yes, they did.

Q. That's West Virginia?

A. Yes.

Q. Is there a Union Carbide plant there of some sort?

A. A very large plant in South Charleston.

Q. Does that have a name?

A. South Charleston plant.

Q. How about Dr. R. E. Joyner?

A. Dr. Joyner took my place at Texas City when I went to New York.

Q. During the 1960s was he located in Texas City, do you know?

A. Part of the time. He left sometime in the '60s

and became medical director for Shell Oil.

Q. How about Dr. R. J. Sexton?

A. He was the medical director of the chemicals plant at Institute, West Virginia.

Q. That's the name I was thinking of. How about Dr. F. E. Medford?

A. Medford.

Q. He may not be a doctor, F. E. Medford?

A. I think he is. He was after my time, I believe.

Q. Do you know where he was located?

A. No.

Q. Was he within Union Carbide somewhere?

A. I am not sure.

Q. Do you know where the research and development department library was located?

A. South Charleston, West Virginia.

Q. How about N. H. Ketcham?

A. He was the chemical division chief industrial hygienist.

Q. He was where, South Charleston?

A. South Charleston.

MR. JONES: Would this be a good time to take a brief break?

MR. BROWNSON: I think it would.

(At this time a brief recess was taken.)

BY MR. BROWNSON:

Q. You mentioned earlier, Dr. Dernehl, that the chest X-rays of workers at King City were done at day one, do you mean day one of production at King City?

A. At the time they were hired.

Q. Does that go back to the time that King City started production?

A. That would be about the time that the first people were hired.

Q. When was that, do you remember, that production started?

A. I don't remember.

Q. Do you recall it being around 1963?

A. The best I could say it would probably be sometime in the early '50s.

Q. Now, was there a policy among Union Carbide plants elsewhere, other than King City, wherefor Union Carbide facilities that employees have annual chest X-rays?

A. Yes.

Q. Where else?

A. All of them.

Q. When did that policy begin?

A. I would say probably in the early '40s.

Q. Do you know if Union Carbide at any time

instituted a policy wherein it would advise its customers of asbestos that their workers ought to have annual chest X-rays?

MR. JONES: Could you read the question back?

(At this time the requested portion of the transcript was read aloud by the Court Reporter.)

MR. JONES: Thank you.

A. I don't recall that Carbide ever advised any of their customers on the specific steps that should be followed in protecting their people against the hazards of a material is the best day way I can express it, which in effect says that we did not tell -- I do not recall that we told people specifically that their people should have a chest X-ray at regular intervals, although it is entirely possible that customers may have been told this by sales and marketing people with whom they dealt, that as far as the medical department is concerned we did not issue any directives to customers that they should have an annual X-ray on their people.

Q. Did the medical department issue any directives to sales and marketing people that customers should be advised about annual chest X-rays for their workers?

A. Not that I know of.

Q. Now, are you familiar with the OSHA standard concerning asbestos in the work place which took effect in 1972?

A. I am hardly familiar with it. I think I read through it once back when it first came out.

Q. I am not asking you at this point if you know what it says, I am just asking you if you know that OSHA in 1972 issued it's standard for asbestos in the work place?

A. I know the issue, but I don't know the date.

Q. Do you know if the Union Carbide medical department ever issued any material for customers telling customers that their workers should take any kind of precautions against asbestos dust before the OSHA standard came out?

A. Carbide issued certain materials that were available to customers that would involve precautions that should be taken with regard to their employees but I do not recall what specific wording or specific precautions were involved in those documents.

Q. Do you know if any of these documents dealt specifically with the topic of asbestos dust?

A. I think there were documents of that nature.

Q. Now, I am talking about the time period before the OSHA standards came in. We know there were after the

OSHA standard.

MR. JONES: I will object on the basis he said he didn't know when the OSHA standard came in. Can you give him a date?

THE WITNESS: He did, '72.

BY MR. BROWNSON:

Q. Just so my question is clear, let me start over. Confining ourselves to the time period before the asbestos OSHA standard came out.

A. All right.

Q. Do you know if in that time period Union Carbide issued any literature or notice to customers as to how to protect their employees from asbestos dust?

A. I would have to say that they did not issue, to the best of my knowledge, information on how the employees were to be protected but I am reasonably sure that they would have issued information on what the employee should be protected against. How the employee provided that protection was up to the employer, not Union Carbide.

Q. Do you know what form these directives or these notices took?

A. My best recollection would be they would be in product bulletins and material safety data sheets, if there was one on asbestos at that time, and in toxicology studies.

Q. I am going to show you what has been marked as Dernehl Deposition Exhibit 9, it's a document that's entitled "Union Carbide Material Safety Data Sheet". Is that the type of sheet you just referred to?

A. That's the type of a sheet I am referring to.

Q. Okay.

A. But it's incomplete.

Q. Because there is only one page there?

A. That's right.

Q. Let me show you what's been marked as Dernehl Deposition Exhibit 10 and ask you if this is a complete copy of that document?

MR. GOLDBERG: Just for the record, Bob, what is the title?

THE WITNESS: "Refind Chrysotile Asbestos, Product Specifications, Descriptions, Uses."

A. What is the date on this?

Q. There is a September '72 date up on the top.

A. I have not seen this material safety data sheet. It was not made in my department.

Q. Well, the questions I am asking right now, Dr. Dernehl, are not about the contents of this particular material safety data sheet, I am just asking if this is the form or the type of material safety data sheet that you referred to earlier?

A. This is a version or revision of the material safety data sheet that we used for other products.

Q. Do you know when the first material safety data sheets were issued with respect to the Calidria asbestos by Union Carbide?

A. No, I don't remember when.

Q. Did the medical department have anything to do with providing the information on the material safety data sheets which dealt with Calridia asbestos?

A. If the material safety data sheet was prepared in our medical department then we had an input into it. As I indicated, I have not seen this particular material safety data sheet before. It was issued, apparently, by the asbestos people or the mining and metals people because it came out of Niagara Falls. And I don't recall ever having seen it before.

Q. And you are referring now to Bernehl Exhibit 10, for the record?

A. Yes, sir.

Q. Now, you mentioned earlier that customers were not told what steps to take to protect their workers from asbestos dust but they were told what the workers should be protected from, is that a fair statement?

A. That's correct.

Q. And look at the particular material safety

data sheet we have here, which is Exhibit 10. There is a heading down near the bottom which reads, "Effects of over exposure," and it says, "Prolonged over exposure may result in lung damage."

A. Right.

Q. Is that such a reference?

MR. JONES: Can you clarify the question?

BY MR. BROWNSON:

Q. Well, is that, what you just spoke about where Union Carbide said what they should be protected against?

A. That is part of it, but the other part of it is up there under "Permissible Exposure to Airborne Concentrations".

Q. And that sets forth the OSHA standard requirement, is that right?

A. That's correct.

Q. In this particular Exhibit Number 10?

A. Yes, because listed Federal Register, Volume 38, such and such, so that goes back to the OSHA standard.

Q. Now, the particular material safety data sheet, which is Exhibit 10, was issued after the OSHA standard for asbestos dust?

A. Right.

Q. What I am wondering, before the OSHA standard for asbestos, do you know what the Union Carbide material

safety data sheet said about asbestos?

A. First of all, I don't recall whether there was one prior to this date and I would not recall what it said without seeing the document.

Q. Now, we had earlier been talking about what notices Union Carbide gave to their customers about protection of customer's workers from dust. Other than the notices, which are headed material safety data, such as we see in Exhibit 10, were there other types or forms of notices that were issued by Union Carbide to customers?

A. Product bulletins would be one. This is a -- this is one type of a product bulletin. There were probably others that were put out that would have made reference to the hazards of the product and precautions that should be taken in handling. Another one, of course, is the label types which is put on the products which also gave precautions and warnings.

Q. I am going to show you now what has been marked as Dernehl Deposition Exhibit 15 and ask is you if this is a Union Carbide information bulletin of the type that you just mentioned?

A. This is one such bulletin, yes.

Q. And my question is, look at the first page of that exhibit, it's got this heading at the top that says, "Asbestos Product Information Bulletin."

A. Yes.

Q. Is that the type of heading that these product information bulletins would carry, the ones that you have mentioned?

A. Some of them, yes.

Q. Have you ever seen that particular heading before?

A. I really don't recall.

Q. On the right corner of the heading there is some kind of a logo that appears to be a jumble of fibers. Do you know what that is, what that portrays?

MR. JONES: Object to the characterization by Counsel but go ahead and answer.

BY MR. BROWNSON:

Q. Do you know what the logo up on the upper right-hand corner of the exhibit portrays?

A. I am sure I don't know. All I can think of is it probably refers to asbestos fibers.

Q. Do those look to you like a magnified picture of asbestos fibers?

MR. JONES: Objection.

A. I am sure I don't know.

Q. Have you ever observed Calridia asbestos under the microscope?

A. Yes. I looked at some of the samples

collected by our industrial hygienists. They did not look like that.

Q. What did they look like, the ones that you saw?

A. Well, first of all, they were very short fibers, not long drawn out fibers, but they were very short fibers. They weren't single strands but they tended to be sort of -- how could I best describe it? You could see that they seemed to be made up of bundles of very small fibers of unequal length, that's the best way I can describe it.

Q. Are you familiar with the different types of asbestos fibers?

A. Not really. I know that chrysotile generally is considered to be the long fiber asbestos.

Q. The long or the short?

A. Long.

Q. Long. Okay.

A. It is the type of asbestos commonly used in weaving the ropes and the mat and such because of its long fiber characteristics.

Q. Are you familiar with the term amphibole fibers?

A. I know it's a type of asbestos, but other than that I know no more about it.

Q. Are you familiar with the term serpentine

fibers?

A. Serpentine, to the best of my knowledge, is simply a mineral classification. Beyond that I don't know anything about it.

Q. The logo on Exhibit 15 in the upper right-hand corner, what type of asbestos fibers does that look like to you, based on your own knowledge?

MR. JONES: Object to the form of the question. Lack of foundation. He has already stated he doesn't know what those are.

MR. POLK: I want the record to reflect that the witness was about to answer the question.

MR. BROWNSON: He also stated he didn't think that was Calridia fiber. I am asking him what he thinks it is.

A. I would say it would be a long fiber chrysotile.

Q. But not Calridia?

A. No way.

Q. Do you know if Union Carbide mined any chrysotile other than that out of the Calridia deposit at King City at any time?

A. Not that I know of.

Q. Do you know if Union Carbide sold any fiber other than that, the Calridia fiber from King City?

A. I have no idea.

Q. I guess what I am wondering is do you know why the logo on the product information bulletin, such as Exhibit 15, would show a long chrysotile fiber that wasn't Calidria that Union Carbide didn't mine or sell such fiber?

MR. JONES: Object to the form of the question, lacking foundation.

A. I would have no way of knowing why the art department of Carbide did what they did.

Q. Are you familiar with the term blue asbestos? Have you ever heard that used?

A. Yes. As I recall, that referred to asbestos that they mined in South Africa, crocidolite.

Q. I don't know. I am asking you.

A. I think. I am not sure.

Q. Okay.

A. But I believe it refers to the asbestos mined in South Africa.

Q. To the best of your knowledge that is crocidolite fiber?

A. To my recollection.

Q. Have you ever heard of a brand of asbestos known as Johns-Manville Ultrabestos blue asbestos?

A. I have heard of Johns-Manville, beyond that nothing.

Q. Do you know if Johns-Manville mined any asbestos from the Coalinga deposit around King City?

A. I believe they had a mine maybe 30 miles east of King City. Unless I am wrong, I think it was at a town called Coalinga.

Q. Do you know what type of asbestos Johns-Manville mined at that facility?

A. I have no idea.

Q. Are you aware of Union Carbide ever commissioning any research or studies into the toxicity or toxicology of the Coalinga or Calridia fiber?

A. Yes, we did some work on it.

Q. And do you recall some work ever being done by a Dr. Arthur Langer, who was affiliated with Mount Sinai Hospital, as far as analyzing that fiber?

A. That doesn't ring a bell.

(At this time DERNEHL Deposition Exhibit 45 was marked for identification by the Court Reporter.)

BY MR. BROWNSON:

Q. I am going show show you a document which the reporter has marked as Dernehl Deposition Exhibit 45 and just ask, if you take a moment, you don't have to read the whole thing but just look it over.

MR. JONES: For the record, I would

object to the exhibit on the grounds that it contains highlighting by Counsel.

MR. BROWNSON: You are right, it does contain highlighting.

(At this time a brief recess was taken.)

BY MR. BROWNSON:

Q. Doctor, let's go back on the record here. I have shown you what has been marked as Dernehl Exhibit 45 and you have now had a chance to review that briefly, is that right?

A. Right.

Q. Do you recognize any of the authors of that particular article?

A. No, I don't.

Q. Langer, Wolff, Rohl and Selikoff?

A. Selikoff.

Q. That's the same Dr. Selikoff you were speaking of before?

A. That's right.

Q. Do you recognize the publication? This was published in the Journal of Toxicology and Environmental Health.

MR. LAURA: Are you asking if he recalls that journal?

MR. BROWNSON: Just the journal, right.

A. No. My recollection is that this is a journal that Selikoff and some of his people started and I don't think we ever subscribed to that.

Q. Do you know if you have ever seen the journal?

A. I don't think so.

Q. Now, in this particular article, which was published in 1978, there is some --

MR. JONES: For the record, why don't you read the name of the article?

MR. BROWNSON: The name of the article is, "Variation of Properties of Chrysotile Asbestos Subjected to Milling."

BY MR. BROWNSON:

Q. And in this particular article there is a study being done of Union Carbide Calridia RG 144 fiber. Did you see that reference in here?

A. I saw that.

Q. That's at Page 1 1975. First of all, do you know what Calridia RG 144 fiber is?

A. I do not.

Q. It's described in the article as chrysotile. Does that seem right to you?

A. If they describe it as chrysotile, I assume it's chrysotile.

Q. Have you ever heard of this particular study

which is described in this article, Exhibit 45?

A. No, I have not.

Q. Do you know who commissioned that study?

A. I have no idea.

Q. And do you know if Union Carbide ever commissioned studies similar to that where Calidria asbestos fiber was analyzed for its toxicity?

MR. JONES: You said commissioned?

MR. BROWNSON: Yes.

A. Was analyzed for its toxicity, yes, we did some work at Mellon.

Q. Other than studies at Mellon, do you know of any other studies that Union Carbide commissioned on that topic?

A. Not that I recall.

Q. Are you aware of any other studies that anyone has done, whether they were commissioned by Union Carbide or not, on the toxicity of the Calridia fiber?

A. Calridia fiber, no.

Q. Now, you mentioned the Mellon study and I want to show you next a document that's been marked as Dernehl Deposition Exhibit 7 and it's entitled "Mellon Institute, Special Report, The Fibrogenic Potential of Asbestos Products via Intraperitoneal Injection in Guinea Pigs, Rats and Rabbits," and ask you to look at that one.

Dr. Dernehl, I would like to ask you some questions about this particular document, which is Deposition Exhibit 7. If you look at the cover page, first of all, this appears to be a report by the Mellon Institute, is that right?

A. That's correct.

Q. Is this the report that you just referred to about the study about the toxicity of the Calridia asbestos?

A. Yes.

Q. And what is the date of it?

A. 1966.

Q. And this was a study done by Mellon Institute personnel who were Union Carbide employees, is that right?

A. Right.

Q. And it indicates on the back that you received it appears like four copies of this. If you go to the very last page it shows the distribution list.

A. Uh-huh.

Q. Would you agree with me that based upon what it says there that you, in fact, received four copies of this report?

A. Yes.

Q. Do you know of any other studies done by the Mellon Institute done on the toxicity of Calidria asbestos other than the one you are looking at, Deposition Exhibit 7?

A. That, I believe, is the only one I can recall.

Q. Do you remember why that study was done?

A. Yes.

Q. And why was that?

A. The current knowledge in the middle and early '60s when this was done held that the fibers that were active in causing asbestosis were the long fibers and that was the reason why the air sampling standard at that time limited the counting to fibers of ten microns or longer because it was felt that these were the fibers that were of significance and that you had to be protected against. Sometime about this time there developed information that there was a form of silicosis, which is a disease not widely different from asbestosis, that there was a form of silicosis which was rapidly fatal and was produced by ultra fine particles of silica. It was first observed in the mining process somewhere in the United States where, for reasons unknown, a group of miners started working in an area of high purity quartz and they developed a very rapidly progressive and very rapidly fatal silicosis, which was something totally unknown before.

Shortly after that in Germany there was some work done with a ultra fine silica powder, I believe it was -- went by the name of aegusa silica, which was a micro fine silica powder and which produced the same sort of

response in the workers exposed to it as was seen in this group of workers in this country who developed a rapidly progressive and fatal silicosis. Since this involved a scaling down of particle size, we were concerned then whether or not the short fiber Calridia asbestos might have a similar reaction in people as did the micro fine silica; in other words, were we going to be faced with a rapidly progressive and possibly rapidly fatal form of asbestosis in people who were overexposed to this very short fiber and very fine fiber type of asbestos that we were getting at Coalinga.

Q. Okay.

A. Which is the reason why we asked for these studies and to try to compare the action of these fibers in animals as compared to a standard long fiber or reasonably long fiber Johns-Manville product.

Q. So would it be fair to say that as a result of your knowledge of hazards with silica you became concerned at some point in the mid-'60s that the Calridia asbestos could have similar effects in humans?

A. Could be rapidly?

Q. Yes.

A. Rapidly progressive and rapidly fatal, yes, we were concerned with that possibility.

Q. As a result of that, you commissioned this

study by the Mellon Institute?

A. That's correct.

MR. JONES: The study reflected in Exhibit 7.

BY MR. BROWNSON:

Q. Was your concern only for the workers at the King City facility?

A. The concern would be to anybody that was exposed to the material, the workers at the King City facility certainly but anybody else who handled the material likewise.

Q. Would that include workers at customer plants who are handling the material?

A. Certainly.

Q. Are you familiar with a gentleman by the name of Robert G. Woolery?

A. Robert G. Woolery?

Q. W-o-o-l-e-r-y.

A. No, I am afraid not. Not at this stage.

Q. He at one time was a group leader of product development and technical services at the mining and metals division of Union Carbide in Tuxedo, New York.

A. I may have had contact with him, but that was so long ago that I wouldn't remember it.

Q. I want to show you what has been marked as

Dernehl Deposition Exhibit 1 and ask you this question only, is this a publication put out by the Union Carbide Corporation?

MR. HARVARD: What was the exhibit number?

MR. BROWNSON: Exhibit 1.

MR. JONES: For the record, the document is entitled, "The Effects of Chrysotile Asbestos Additions to Cellulosic Paper" by Robert G. Woolery.

A. Well, this was a paper apparently prepared by Robert G. Woolery, but what happened to the document I am sure I don't know.

MR. GOLDBERG: What is the date on that?

THE WITNESS: There is no date that I know. At this point in time it has not been accepted for publication. This is apparently a copy that he kept of something he did submit for publication which may or may not have been published.

BY MR. BROWNSON:

Q. You have no idea if this was sent to customers, however?

A. If it was published, interested customers might be provided with a reprint of the paper.

Q. Well --

A. I don't know that that happened. I am merely

talking of a possibility.

Q. In this case, this particular report did reach Conwed Corporation, who was a customer of Union Carbide. Does that indicate to you whether it was published or not?

MR. JONES: I will object to that.

A. It suggests that it was published. Carbide itself might have prepared a number of those documents for submission to customers, I don't know about that.

Q. Now, was there any policy at Union Carbide in the 1960s that technical reports concerning asbestos which were sent to customers be reviewed by the medical department?

A. Not all of them.

Q. So would it be possible for someone such as Mr. Woolery to issue a technical report such as Exhibit 1 and it not be reviewed by the medical department?

MR. JONES: I am going to object to the characterization of the exhibit as a technical report. Go ahead and answer.

A. If the publication made any reference to health problems associated with the product then it would have been reviewed by somebody in the medical department. If it was just a technical report we would not review it.

Q. Was there ever a policy instituted at Union Carbide that reports to customers about the use of asbestos

be reviewed by the medical department?

A. Not that I know of.

Q. Was there ever a policy at Union Carbide that reports to customers about the asbestos contained statements about health?

MR. LAURA: Rephrase that.

BY MR. BROWNSON:

Q. Was there ever a policy at Union Carbide Corporation that reports sent to customers by Union Carbide must contain a statement about the health effects of asbestos?

A. There was no such policy, no.

Q. I am going to show you what has been marked as Exhibit 2 and ask you if this is a report issued or a document issued by Union Carbide?

MR. JONES: For the record, the document is entitled "Properties of Asbestos Suitable for Use in Cellulosic Paper" by A. J. Naumann.

A. It says that it was issued by Union Carbide, so I presume it was. I don't know Naumann and I have not seen the document.

Q. Do you know if this document was reviewed by the Union Carbide Medical department before it was issued?

A. I have no idea.

Q. The next thing I want to show you is a

document marked as Dernehl Deposition Exhibit Number 4, and ask that you first look at that.

MR. JONES: For the record, as has been noted before in other depositions, I will object to the annotations on the copy.

MR. BROWNSON: That document was produced to us with those annotations.

(At this time a discussion was held off the record.)

BY MR. BROWNSON:

Q. Doctor, is this a copy of a document entitled "Asbestos Toxicology Report" and it has your name at the end of it?

A. Right.

Q. It also has the name of Dr. K. S. Lane?

A. Right.

Q. Is that the same Dr. Lane we were talking about before?

A. Yes.

Q. Were you the author of this?

A. I probably wrote part of it and Lane probably wrote part of it too.

Q. Do you remember writing it?

A. I doubt it.

Q. Do you recall writing any toxicology reports

about asbestos?

A. Do I specifically recall? The answer is no. Did I write them? I am sure I did.

Q. You don't deny, for example, that you wrote this particular one, Exhibit 4?

A. No, I don't deny that I had a hand in writing that.

Q. You don't know whose writing these handwritten notes are, do you, on Exhibit 4?

MR. BROWNSON: Are those yours?

MR. POLK: It might be.

THE WITNESS: Not mine.

MR. BROWNSON: Is that yours?

MR. POLK: Yes.

MR. BROWNSON: Now we know whose they are.

BY MR. BROWNSON:

Q. We have been told in prior depositions by Union Carbide employees that this particular Asbestos Toxicology Report was updated from time to time. Do you remember doing that?

A. Specifically, no.

Q. Does that sound like it's something that could have occurred?

A. That's a logical procedure.

Q. Do you know where we would find today copies of the different versions of this asbestos toxicology report if it was updated?

A. I have no idea.

Q. While you were at Union Carbide at the medical department until '79 where would you file these asbestos toxicology reports?

A. They would be filed in our toxicology files under asbestos.

Q. Did you have a particular drawer or file marked asbestos?

A. We had folders marked asbestos.

Q. What sorts of materials would you keep in those folders?

A. Anything that came to our mind about asbestos, that came to our hand about asbestos, correspondence, toxicology studies, anything we picked up in the literature that was of interest if we felt we wanted to keep there.

Q. Did you maintain that file over the years?

A. Yes.

Q. Would you ever throw things out of it?

A. I doubt it.

Q. Do you know if it's still maintained today?

A. I have no idea.

Q. Do you know who would have custody or control

of such files today?

A. To the best of my knowledge, when I left New York all of those files were put in a box and they were shipped somewhere, down to West Virginia, I believe. What they did, whether they kept all of that stuff in West Virginia or simply kept the chemicals part, I don't know.

Q. Now, in the second paragraph of Exhibit 4, the Asbestos Toxicology Report, there is a statement, "It is believed by most authorities that these cases -- " and they are talking about cases of cancers, " -- have been associated with exposure significantly exceeding the threshold limit value." Do you see that particular sentence?

A. Yes.

Q. Do you know who the authorities are that are referred to there as "most authorities"?

A. I think that is a statement that is lifted from the general literature and really does not mention any specific names.

Q. Well, let me back up a little bit. Do you know when this Asbestos Toxicology Report was published, Exhibit 4?

A. I do not. I am surprised that it does not have a date on it. Ordinarily we dated those things.

Q. I am going to show you a document marked

Dernehl Deposition Exhibit 32, which is a memorandum of January 12, 1965, which refers to the report and ask you if that gives you a point of reference to date the report?

MR. LAURA: I object to that characterization as it refers to that report. It refers to a report.

MR. POLK: Off the the record.

(At this time a discussion was held off the record.)

BY MR. BROWNSON:

Q. Doctor, do you believe that this memorandum, which you are looking at which is Exhibit 32, does that help you date the Asbestos Toxicology Report that we have just been referring to?

A. I would suggest that we probably prepared it in 1964.

Q. Now, with that knowledge, let's go back to the Asbestos Toxicology Report, does that help you determine who those authorities are that said that cases of cancer have been associated with exposure significantly exceeding the threshold limit value?

A. Not really.

Q. But is it your testimony that that statement is based upon a review of the medical literature at the time?

A. That's right.

Q. Can you give us any specific articles or references or texts?

A. Not any more.

Q. Now, on the third paragraph of the Asbestos Toxicology Report you are talking about waste control asbestos dust exposure. Do you see that?

A. Yes.

Q. And one of the things that you talk about is "wet processes where possible". What do you mean by that?

A. Well, if you handle the asbestos in a water slurry or with the fibers thoroughly wetted with water, there is no dust and there is no reasonable way that you can expect the fiber to enter the body.

Q. And would you consider a paper making operation to be a wet system?

A. Yes.

Q. But would you agree with me that in a paper making operation or a wet system there is some process at the begining where the fiber has to be dumped into the wet system where it would release dust?

MR. JONES: If you know.

A. Yes, we know that to be true. And I know, that Carbide tried to handle -- to reduce the amount of dusting that occurred at such a time by pelletizing the product so

that it wasn't just loose fibers in a bag, which is the way it was originally sold. But the product was pelletized so when you dumped you had much less dust and your local exhaust ventilation at the point of dumping more readily picked up and carried away the dust.

Q. Would you agree, however, that even the pelletized asbestos did create some dust as it was being dumped into the wet process in a paper making operation?

A. I think very probably it did, yes.

Q. Would you also agree that even the pelletized asbestos would create dust during delivery and unloading if bags were broken or that sort of thing?

A. Certainly.

Q. Would you also agree that in a paper making operation where you have a wet system, after that product comes out of the dryer and is now in a paper board form that you would get dust as it's cut and drilled and ground and those sort of things?

MR. JONES: I will object on the basis of foundation.

A. Not to my knowledge whatsoever.

Q. Have you ever observed a paper making operation using the Calvidia asbestos?

A. No, I have not.

Q. Do you know of any Union Carbide customers who

had such operations?

A. I know that Calridia asbestos was sold to certain customers for that purpose but I do not know who the customers were.

Q. Have you ever heard of the Conwed Corporation?

A. No.

Q. Never visited their plant at Cloquet, Minnesota?

A. No.

Q. And I take it then you weren't aware that it was a manufacturer of ceiling tile?

A. No.

Q. Among other things?

A. No.

Q. Would you agree with me that as of the date the Asbestos Toxicology Report was written, why don't you look at it again, the recommendations that you made to control dust were to use a closed flow system, a wet process, adequate ventilation and pelletizing of the asbestos? I am getting that all out of Paragraph 3 there.

MR. JONES: Look at it again.

A. "Closed flow systems, wet processes were possible, and adequate exhaust ventilation where openings in the system are necessary."

MR. LAURA: Let the record reflect that

the Doctor was reading from his report.

A. Then we also recommend the use of respirators.

Q. Where do you see that on there?

A. It says, "Where satisfactory containment to stay within the threshold limit value is impractical or impossible, efficient and reliable respirators are available for the protection of employees."

Q. Now, would you agree with me, however, that the recommendations made by you in the Asbestos Toxicology Report are, Number 1, a closed flow system?

MR. JONES: I am going to object to the form of the question first in the sense that he did not draft it by himself. Second, that what recommendations the document makes are in the document itself. You can go ahead and answer.

A. Well, I agree to what is in this paragraph.

Q. Paragraph 3 of the toxicology report?

A. Certainly. I think that covers the thing very practically and it is state of the art protection of that day and time.

Q. One of the things listed in Paragraph 3 is the statement, "In paper manufacturing, it would be desirable to know the dust concentrations where the asbestos is dumped from bags into the pulp slurry." Do you see that?

A. Yes.

Q. Why would that be desirable to know?

A. Because that's the place where a person might be exposed where the product is removed from its protective bag covering as used in shipping and it gets exposed to the outside air and allows the escape of fibers to the outside air.

Q. Would that be true with the pelletized asbestos as well as the open fiber?

A. We are talking about pelletized fiber here.

Q: And it also goes on to say, "Concentrations should also be determined where dusting occurs in finishing products." Do you see that?

A. I see that.

Q. I take it from that statement that it was recognized that once the product comes out of the wet system and is in the finishing stage, you can get dust there, is that right? Is that what we are talking about there?

A. That is what the statement implies, and I assume at the time we wrote this we were told that this would occur.

Q. Now, do you know if any tests were done by Union Carbide to determine what the dust concentrations were at the point that pellets were dumped from bags into the pulp slurry?

A. Union Carbide did not do that kind of testing. That would be the responsibility of the user.

Q. Did Union Carbide ever tell customers or users that they should do that testing?

A. Did it right here.

Q. You are saying that Paragraph 3 of the asbestos toxicology report tells customers to do that?

A. That's right.

Q. Did Union Carbide ever do any testing to determine what concentrations of dust were in finishing products in the paper industry?

A. That was the responsibility of the customer. Union Carbide did not do testing in the customer's plant.

Q. Well, if the evidence in this case shows that Union Carbide did do testing at the Conwed plant, would that surprise you?

A. If they did, I didn't know about it and I would be surprised if they did.

MR. JONES: Your questions were talking about at the finished product end?

MR. BROWNSON: My last question was anywhere in the plant. I just said at the plant.

MR. JONES: I just want to make sure that the Doctor understood that.

A. Well, it was our policy not to do testing at

the customer's plant. That was the responsibility of the customer. If a Carbide person came in and did sampling in the Conwed plant I would be very much surprised.

Q. Would you be surprised to hear that sampling was done by Union Carbide at the point where the bags were dumped into the pulp slurry?

A. I would be surprised to find out that Union Carbide people did that, yes.

Q. Would you also be surprised to find out that sampling and testing were done by Union Carbide at the point where the products were being finished?

A. Yes, I would be surprised to hear that.

Q. Now, look at Page 2 of the Asbestos Toxicology Report. It also says that, "Pre-employment and periodic physical examination of workers are desirable." Do you see that?

A. Yes.

Q. And then it goes on to say, "These should include chest X-rays." Do you know why this particular statement was made in the Asbestos Toxicology Report? What was the purpose of putting it in there?

A. Well, it's known that breathing excessive quantities of asbestos will produce changes within the lung that show up on X-ray.

Q. Was it also known by you or the Union Carbide

medical department at the time this Asbestos Toxicology Report was written that mesothelioma could be caused by exposure to asbestos?

A. I am not sure it was known at the time that this was in here, although in the earlier paragraph up here they talked about increase in the incidents of cancerous tumors, especially of the lung.

Q. Would you agree with me that mesothelioma is a cancerous tumor of the lining of the lung?

A. That's right, I would agree with that.

Q. Let's move on to another exhibit.

MR. GOLDBERG: Before you do that, you might want to review the time.

MR. BROWNSON: It's five to 12:00.

MR. JONES: Why don't we break now for 45 minutes for lunch.

(At this time a lunch recess was taken.)

BY MR. BROWNSON:

Q. Dr. Dernehl, the next thing I want to show you is what's been marked as Dernehl Exhibit 5, and Dernehl Exhibit 5 is a report by Doctor I. C. Sayers in England and with Union Carbide U.K. Limited. I will show it to you. I will ask you, first of all, have you ever seen that report before I have shown it to you right now?

A. I really do not remember the report. I do

remember the request for analytical assistance from Union Carbide.

Q. Now --

A. It's probable that I did see the report since I recollect that part about the analytical assistance.

Q. What request for analytical assistance are you speaking of?

A. Let's see if I can find it back here in the text. This would be on Page 15.

Q. That's Paragraph 5.0 entitled "Request for Analytical Assistance."

A. Yes.

Q. What do you remember about that request?

A. Well, my recollection is that they wanted Carbide to use some analysis to help to quantitatively define the parameters to be used in -- parameters of the fibers that were to be used in testing.

Q. And who is the they that was making that request, was that Dr. Timbrell?

A. I think it was probably --

Q. Or Dr. Sayers?

A. I think it was probably a request of UICC. I think that they wanted help in defining this matter. Now, without reading this line-by-line I couldn't tell you specifically which individual requested it.

Q. Who is UICC?

A. That was the organization that was being set up to determine the characteristics of the fibers that were to be used in a series of tests to determine the effects of asbestos in animals, animal experimentation.

Q. Who was setting up this UICC, I guess, is what I am wondering?

A. The international organization.

Q. Was Union Carbide involved with it?

A. I think it was a European organization. Union Carbide would have been involved only through the British organization.

Q. Was the British organization Union Carbide, U. K. Limited?

A. Probably, yes.

Q. That name is on the first page of the Sayers' report and, I guess, that's why I asked the question. You wouldn't disagree?

A. No.

Q. Do you know Dr. I. C. Sayers?

A. I don't know him, no.

Q. Have you ever heard of him?

A. I don't know him. I haven't heard of him, other than what I would have gotten from this report.

Q. You told us today that reports about

industrial hygiene or toxicology from Union Carbide overseas subsidiaries would be routed to your department?

A. Yes.

Q. Would that be true with this report as well, exhibit --

MR. HARVARD: Is this Exhibit 7?

A. Exhibit 5.

Q. I take that back, Exhibit 5.

A. I think, as a matter of fact, we just would have been sort of on the fringes of this. This would be a request to go to the management people, since it involved commitment of laboratory facilities, people and the finances that were involved and medical would not be involved in that part of it.

Q. But it, nevertheless, contains numerous toxicology and industrial hygiene conclusions from England, and I am assuming that?

A. It's possible.

Q. As such it would have come to your attention?

MR. JONES: Let me object to the testimony of Counsel characterizing the document. Go ahead and answer it, Doctor.

A. I have stated that the only thing that I remember about this document was a request for -- was the only thing that makes me think I saw this document is I

remember the request for support of the analytical studies.

Q. Well, would you agree --

A. The rest of the document I do not remember seeing.

Q. Would you agree with me that this document discusses toxicology issues concerning Union Carbide asbestos at the British subsidiary?

A. Without reading the whole document I couldn't agree to that, no.

Q. Well, let's look at Page 4, Paragraph 1.0, the introduction reads, "Union Carbide U.K. Limited has been promoting the sale of Coalinga asbestos for just over two years. During this time, the public has become increasingly aware of the considerable health risks associated with the use of this material. So far, over 20 potential customers have raised the issue and have requested an assurance that Carbide's material will not be a source of danger to their employees." Now, would you agree that those statements raise industrial hygiene and toxicology issues about the use of Union Carbide asbestos in England?

MR. JONES: Object again to the form of the question. The foundation is not set. Unless you give him a chance to read the entire document he can't answer the question.

MR. BROWNSON: I am asking the question based upon the statements I just read.

MR. JONES: Based upon two isolated statements from the document?

MR. BROWNSON: Yes.

MR. JONES: Same objection.

A. Well, apparently this first paragraph indicates that customers in England raised some questions about the hazards of asbestos and it further follows in the next paragraph to say that some of these concerns were answered by materials sent from the New York office and the Asbestos Toxicology Report, which you showed me earlier, and that these reports had gone part way in alleviating some of the concerns that existed.

Q. Well, based upon the three paragraphs entitled "Introduction" that we have just looked at on Page 4 of 24 of this report, wouldn't you agree with me that this discusses industrial hygiene and toxicology issues?

MR. JONES: Again, same objection. Characterization of the document which the witness did not write, the document speaks for itself.

A. Well, as I stated before, on the basis -- I can only say that on the basis of these initial paragraphs it is suggested that the subsequent contents of this document would have something to say about the hazards

associated with the use of asbestos.

Q. And is that not the type of information which would come to you in the medical department?

A. I have already indicated that the only thing that I remember about this document is -- at this time the only thing I remember is the request for support for the analytical studies. I do not recall the rest of the report.

Q. Maybe my question isn't clear. I am not asking you if you remember this particular document, I am asking you isn't this document of the type that would come to your attention because it contains toxicology and industrial health issues?

A. It would come to my attention.

Q. Now, do you know what they are referring to in the third paragraph in the introduction where they say, "Carbide's replies have been based upon two communications set by New York office on March 22nd 1966, and October 7th, 1966"?

A. I have no idea what they said.

Q. Do you have any recollection of being informed of the work of Newhouse and Thompson at the London Hospital that's talked about in Paragraph 2?

A. No, I do not.

Q. Do you ever remember hearing about problems with dock workers in London handling Union Carbide asbestos,

refusing to unload it from ships?

A. I remember hearing about that, yes.

Q. Do you know who you heard that from?

A. I heard that by word of mouth in the course of just general discussions.

Q. And do you know what steps Union Carbide took, if any, to alleviate the fears of those dock workers?

A. No, I do not.

Q. Will you look on Page 5 of the report? Paragraph 2.2 is entitled "Paper," and I would ask you to look at that paragraph.

A. The first paragraph?

Q. Well, the whole section about the -- Paragraph 2.2 about paper.

MR. JONES: Bob, to avoid interrupting you later on, would you accept a continuing objection to subsequent discussions of various paragraphs isolated from the report without giving him an opportunity to read the whole report?

MR. BROWNSON: Well, I don't like that objection because I am going to have him read each section that I ask him about.

MR. POLK: Counsel, you are representing by that objection or the request for a continuing objection that this witness has not reviewed this report before his

deposition today, is that correct?

MR. JONES: I didn't make any representation like that.

MR. POLK: Well, in my opinion the objection is not well taken if it's established through this witness's testimony that he has reviewed the report before his deposition today.

MR. HARVARD: The witness stated on the record that he would not be in a position to answer what the report says or doesn't say unless he had an opportunity to go through the whole thing a moment ago, and I think that's foundation for the objection. That's the extent to which I believe the objection is offered.

MR. BROWNSON: We have now reached the point where three different Union Carbide lawyers have made objections at the deposition. I don't mean to cut you guys off, but why don't one of you make the objection?

MR. JONES: Your concern is noted.

MR. BROWNSON: I don't care if you consult or whatever, but we will be here all day if everyone is thinking of objections.

MR. LAURA: Off the record for a second.

(At this time a discussion was held off the record.)

BY MR. BROWNSON:

Q. Have you ever read this report before now?

A. I may have read the report when it first came in my hands, assuming it did. I assume it did.

Q. Did you read it in preparation for your deposition today?

A. No.

Q. Have you now had a chance to look at Section 2.2 entitled "Paper"?

A. Yes.

MR. JONES: Do you have a response to my request for a continuing objection?

MR. BROWNSON: Go ahead, that's fine. I don't think it's a good objection.

MR. JONES: I didn't expect you to.

BY MR. BROWNSON:

Q. Would you agree with me in Section 2.2 of the Sayers report Dr. Sayers is describing concerns raised by paper makers in England to the use of Union Carbide asbestos in their plant?

A. Well, in part it's true. It not totally true. 2.2.3, for example, will tell. The Tullis people indicate that their failure to use the material was not so much the dust proposition as it was the fact that there was indeterminant experimental work I gather on their product.

Q. Would you agree though that at Southhills, the

Charles Turner Mill, and the Tullis Paper Mill seems to be expressing to Dr. Sayers about the use of Union Carbide asbestos in their paper mills?

A. They raise questions about it, yes.

Q. Do you know if Union Carbide took any specific steps to answer these questions raised by the paper makers in England?

A. I have no idea.

Q. Do you know if Union Carbide ever advised its customers in the United States in the paper industry about these conversation from England?

A. I have no idea.

Q. Why don't you go to Page 8 of the Sayers report? Paragraph 3.3 is entitled "Literature Surveys," and it reads, "These are made from time to time on the subject of toxicology, and a number of more important articles have been collected." Do you see that reference?

A. Uh-huh.

Q. Do you know who is making the literature surveys that they talk about there?

A. I do not know.

Q. Would you agree with me as a general proposition that in trying to determine the toxicology of asbestos it would be a good idea to survey the medical literature on that topic?

A. I think that we did survey the literature in terms of keeping abreast of the material which came into our hands. We did not specifically initiate a broad survey of all the literature in the world. We did try to keep abreast of the literature that came out in the United States on this product.

Q. Are you aware of literature which came out in the United States in the 1960s concerning studies done at the South African asbestos mines with respect to disease?

A. We saw some literature which came out of South Africa.

Q. Now, I am not speaking about literature published in South Africa, I am speaking about literature published in America concerning the disease in the South African asbestos?

A. I would say that the only thing that we saw in that regard were some references that were published in Selikoff's papers.

Q. My next question then, Dr. Dernehl, is did you also see some of the literature published outside of this country about studies of disease among South African asbestos mine workers?

A. We did see an occasional report which came to our attention.

Q. Did you see studies about disease associated

with Canadian chrysotile mine workers?

A. Yes, that we did.

Q. Do you know if those were the studies of Dr. J. C. McDonald, the other Dr. McDonald?

A. I believe they were.

Q. I will next ask you to go to Paragraph 4.4.2 on Page 11 which is entitled "Cause of Disease." In the quote in that paragraph they refer to cases --

MR. JONES: Have you had a chance to read the whole section?

THE WITNESS: I have read through the quote.

BY MR. BROWNSON:

Q. They are referring to cases in Canada, six in number from 1952 to 1964. My question is, are those the cases that we just mentioned that you saw coming out of the chrysotile miners?

A. They were part of them.

Q. McDonald articles?

A. There were others besides mesothelioma.

Q. Right. But does this reference, which you have just read, the quote appear to talk about some of the cases cited by Dr. McDonald among the Canadian chrysotile miners?

A. Part of the cases, yes.

Q. On Page 18 of the Sayers report, at Paragraph 7.1.1 --

A. All right.

Q. They quote from your toxicology report, and this is a quote we discussed earlier, "In paper manufacturing, it would be desirable to know the dust concentrations where the asbestos is dumped from bags into the pulp slurry." Do you see that quote?

A. Yes.

Q. Do you know why it was considered desirable to have that information?

A. Well, because if the dust concentrations were high it would be highly hazardous areas. If the dust concentrations were low it would be an area of less concern.

Q. It then goes on to state that, "Dr. Taylor believes that there is more dust produced in opening a paper or plastic bag of asbestos than there is with a conventional hessian sack." Do you see that reference?

A. Yes.

MR. JONES: Would you like him to read the whole section then he can talk about it all at once?

MR. BROWNSON: No.

MR. JONES: Okay.

BY MR. BROWNSON:

Q. Have you ever heard of such a thing, that

there is more dust produced in opening a paper sack?

A. No, I have not.

Q. Is that the first time you have ever heard that statement made?

A. Well, if I read this report I assume I saw this statement before. I also notice the following statement that, "No satisfactory answer was forthcoming." This was his opinion.

Q. They then go on to say two paragraphs later, "It is recommended that a dust count be made in a region of a freshly opened bag of pelletized and open products." Do you know if that was ever done?

A. I have no way of knowing.

Q. Do you know if your medical department ever did such a study?

A. To the best of my knowledge we did not.

Q. Do you know a Dr. Hilton Lewinsohn?

A. Lewinsohn, he is the guy with Carbide now?

Q. Well, he is, right.

A. I have met him once, I think, up in New York.

Q. Do you remember when you met him?

A. About 1985.

Q. Do you know, was he at Union Carbide at that time?

A. I believe he was, yes.

Q. Do you know where Dr. Lewinsohn was employed in September of 1975?

A. No, I didn't know that.

Q. Do you know where he worked before he came to Union Carbide?

A. No. He came to Carbide after I left, if he is there now.

Q. Do you know where he worked at the time you met him in 1985? Was he at Carbide at that point?

A. I can't be certain. I would say he worked at South Charleston.

Q. Have you ever heard a reference to Dr. Lewinsohn and his TBA Associates, do you know what that would mean?

A. TBA Associates?

MR. JONES: B as in boy?

MR. BROWNSON: Yes.

A. No.

Q. You don't know what that refers to?

A. No, I have no idea what that refers to.

Q. Do you remember some industrial nygiene studies that were conducted at the Charleston, West Virginia, plant in a couple buildings called buildings 511 and 512 back in 1962 and '63?

A. 511 and 512, that would be up in the research

area, I think. No, I can't recall what you are talking about.

Q. Well, these were particular studies that were done about dust caused by workers sawing insulation block, I think with a band saw.

MR. JONES: Object to the testimony by Counsel.

BY MR. BROWNSON:

Q. Does that help refresh your recollection at all?

A. Buildings 511 or 512 or plant 511 and 512?

Q. It's called plant 511 and 512.

A. Okay. Yes, that was done at the plant level to determine the quantities of dust that were developed in sawing insulation that was applied to pipes.

Q. And do you remember that particular work that was done in connection with that?

A. I just know it was done.

Q. Do you know why it was done?

A. Because we wanted to know how much dust was produced by the process.

Q. Do you know if there had been complaints from workers in those plants about the dust?

A. I don't think there would be any complaints by the workers. I think this was a concern of supervisors in

the industrial nygiene department about the potential hazardous nature of the work.

Q. I am going to show you what has been marked as Dernehl Exhibit 24 which is a memo of July 20, 1962.

MR. HARVARD: What's the number on that?

MR. BROWNSON: Exhibit 24.

BY MR. BROWNSON:

Q. The question I am going to ask you is is that a memorandum concerning this study on sawing insulation in Charleston, West Virginia?

MR. POLK: I will object to the form of the question. The document speaks for itself.

A. Your question was.

Q. Is that a memorandum concerning the dust, what we have just been talking about, from sawing insulation at Charleston, west Virginia?

A. At the Institute plant?

Q. That's the Institute plant?

A. Yes.

Q. Now, on that memo on Exhibit 24, it indicates that a copy was sent to you. Do you see that on the top?

A. Yes.

Q. Do you remember receiving it?

A. Sure.

Q. The next one I want to show you is Exhibit 26 --

well, we will go with Exhibit 25, and I will ask you if you have ever seen that before?

MR. HARVARD: While he is looking at it could you state for the record what the document is so we can make our notes now?

MR. BROWNSON: That's a memo of December 3, 1962 from the medical department at Plant 512 at Institute, West Virginia.

BY MR. BROWNSON:

Q. Can you tell us what that is, what the document is?

A. Well, it's a document prepared by the industrial hygienist at the Institute plant concerning dust problems with the sawing of blocks of asbestos-containing insulation and Johns-Manville's complaints that the results of our observations did not coincide with observations that they had made at their manufacturing plant in Manville, New Jersey. He requested that the supervisor of the insulation department and the industrial hygienist visit the Manville plant to see if we could determine why there was a discrepancy in the results.

Q. Let me show you what has been marked Exhibit 26, and ask you if you can tell us what that is? That's a memo of December 4, 1962.

A. Well, in essence this is a letter from the

Medical Director, Dr. Sexton, to his supervisor, Jim Giambruno, to not send Mr. Peele to Johns-Manville to supervise or to study the Johns-Manville report, but that we were to continue to do a sampling in our plant as the situation indicated.

Q. And that shows that a copy was sent to you as well, correct?

A. That's right, information copy.

Q. I assume you would have read it when you got it?

A. Probably.

Q. Exhibit 27, would you tell us what that is?

MR. HARVARD: Could I see Exhibit Number 26, please?

MR. BROWNSON: December 4.

MR. JONES: For the record, Exhibit 27 is a letter from Sexton to Giambruno dated 23 October 1963.

A. Well, in essence this says that he is submitting -- that Dr. Sexton is submitting a report from Mr. Peele which indicates that two types of asbestos-containing insulation blocks cannot be processed with reasonable dust concentrations that one other type can.

Q. And is that also by Sexton?

A. It's by Dr. Sexton.

Q. Dr. Sexton of Union Carbide?

A. Right.

Q. Okay.

A. The medical director of the Institute plant.

Q. I am now going to show you what has been marked as Dernehl Deposition Exhibit 33 and ask you if you can tell us what that is?

MR. JONES: For the record, this is a letter dated June 7, 1967, to Dr. Hall from Dr. Dernehl. Beyond that I would object to the form of the question. The document speaks for itself as to what it is.

BY MR. BROWNSON:

Q. Have you now had a chance to read it?

A. I did read it.

Q. Did you review this document before your deposition today?

A. Which document?

Q. The one you are looking at there.

A. This one?

Q. Yes.

A. Yes, I did see this.

Q. When did you review it, do you know?

A. Last night.

Q. Now, is that a letter from you of June 7, 1967, to Dr. Tom Hall?

A. Yes, it is.

Q. And it indicates in the very first line that you have reviewed Dr. Sayers' report?

A. Correct.

Q. Entitled, The "asbestos as a Health Hazard in the U.K."?

A. Yes, I did.

Q. Based on that, would you now agree that you did in fact review the sales reports?

A. I indicated before I probably reviewed the report, but I don't remember it.

Q. Now that you see this letter would you agree with me that you did review it?

A. I did review it. I still don't remember it.

Q. Now, in the second paragraph on Page 1 in about the middle you say, "We therefore made some preliminary studies in which the material was injected into the belly cavity of guinea pigs, rats and rabbits." Are you referring there to the Mellon Institute study that we just spoke about a little while ago?

A. That's correct.

Q. Going then to Page 2, to the second paragraph, and the copy is not real good but you speak in that paragraph about halfway through about the threshold limit value. Do you see that?

A. Yes.

Q. And you state, "It is probable that the five million particles per cubic foot will not be acceptable for the prevention of mesothelioma."

A. Yes.

Q. That indicates, I take it, by at least June 7, 1967 some research was being done by Union Carbide with respect to mesothelioma?

A. No.

Q. It does not indicate that?

A. It does not indicate that at all. This is my personal opinion being expressed.

Q. Well, it does indicate that as of that date you were aware of the disease mesothelioma?

A. Correct.

Q. And it also indicates that you questioned as of June 7, 1967, whether the then threshold limit value was sufficient to prevent mesothelioma?

A. I was concerned that it might not be.

Q. In fact, you were concerned that even one million particles per cubic foot might not be enough, is that right?

A. That's a possibility.

Q. And that was one-fifth of the threshold limit value in effect that date?

A. That's correct.

Q. Now, do you know if this concern about the threshold limit value not preventing mesothelioma was ever communicated to Union Carbide customers?

A. I do not believe that it was communicated to customers because it had no basis in fact, it was simply a personal opinion at the time.

Q. But it was your --

A. It was my concern that this would not be acceptable.

Q. And at that point in time you were -- I had better get the title again, associate medical director in '67?

A. In '67, yes, I was associate medical director.

Q. One of the other Union Carbide employees whose deposition was taken in this case, Bert Barton, described you as the Union Carbide toxicological guru. Would you agree with that assessment?

A. I don't know what guru means, but I was the expert in toxicology.

Q. Would it be fair to say that in the Union Carbide company you were the expert or authority in the field of toxicology?

A. That's correct.

Q. And would it be fair to say that your opinions on that subject would carry a good deal of weight within

the company?

MR. JONES: I will object to the form of the question as to asking him to speculate about people's state of mind. Go ahead and answer, if you can.

A. Let's say that I liked to think that my opinions would carry considerable weight.

Q. I will show you what has been marked as Dernehl Exhibit 34 and ask you first, is that another document that you reviewed before the deposition here today?

A. No, I did not review this.

Q. Okay.

A. This is one we looked at before.

Q. I am not sure if we did or not, but you might have looked at it over lunch.

A. The Asbestos Toxicology Report.

Q. I am asking now about the letter.

A. The letter?

Q. To Frank Dexter.

MR. JONES: For the record, this is a letter dated June 13, 1967, to Frank Dexter from T. J. Hall with a two page asbestos toxicology report attached to it.

A. I don't remember this letter, but I do remember that problems arose with the badly damaged shipments of bags of asbestos and the refusal of the dock workers to unload those badly damaged shipments.

Q. And were these badly damaged shipments, the ones over in England?

A. In England.

Q. And these were the dock workers who wouldn't unload them from ships?

A. That's right.

Q. And that was because the bags were broken and they were very dusty?

A. Yes.

Q. Do you remember if that was open fiber or pellets?

A. I have no idea.

Q. Do you remember what type of bags those were?

A. I have no idea.

Q. Do you know if they were paper bags?

A. I have no idea.

Q. The first paragraph of the letter says that Dr. Dernehl has followed this area very closely, the area of possible toxicity and carcinogenic properties of asbestos, would you a agree with that as of June 13, 1967?

A. I would say that we had followed it closely, I am not sure that I would say very closely.

Q. And, again, following it closely includes, reviewing medical literature on that topic?

A. As it came to hand, very closely. It might

have involved going out and searching for stuff rather than just keeping abreast of the stuff that was coming to hand.

Q. Can you identify for us what Exhibit 34 is?

MR. JONES: It's already been identified for the record.

MR. BROWNSON: I didn't think it was for the record.

BY MR. BROWNSON:

Q. Tell us who the author is and what the date was.

MR. JONES: That's been done.

A. This was apparently written by T. J. Hall.

Q. Do you know T. J. Hall to be Dr. Thomas Hall?

A. That would be my understanding.

Q. Okay.

A. And apparently it was written to a Mr. Frank Dexter, who I do not know.

Q. Earlier I had showed you Exhibit 32, which is a memorandum of January 12, 1965. I will ask you now, does that exhibit indicate that a copy was sent to you?

MR. POLK: Did you say January or July?

MR. BROWNSON: January.

A. Yes, I saw the memorandum.

Q. That's all I have on that. The next exhibit I want to show you is Dernehl Deposition Exhibit 35, and I

will ask you first, is that something you reviewed before the deposition today?

A. No.

Q. Would you look at it now then?

MR. JONES: For the record, this is a letter dated August 1, 1967, to Frank Dexter from Thomas Hall.

BY MR. BROWNSON:

Q. Have you had a chance to review it?

A. Yes.

Q. Can you identify for us what that is?

MR. JONES: I will object to that, th document speaks for itself.

BY MR. BROWNSON:

Q. Does that document indicate that a copy was sent to you?

A. Yes, it does.

Q. And would you agree that a copy was sent to you?

A. Yes, it was.

Q. The next document I want to show you is Deposition Exhibit 36 and I will first ask you if you reviewed that before your deposition?

A. No, I did not.

Q. I will then ask you to take a look at it.

That's a letter of November 30, 1967, to Frank Dexter from Thomas Hall in Brussels.

MR. POLK: Well, I think, for the record, it ought to reflect that there is a second page attached to that exhibit that is not typewritten but in some handwritten form.

BY MR. BROWNSON:

Q. Do you recognize the signature at the bottom of the first page where it says Thomas, the signature of Dr. Thomas Hall?

A. It says Thomas Hall below it, so I assume it's Tom Hall.

Q. There is some handwriting on the left margin of that page. Can you tell whose handwriting that is?

A. No, I can't.

Q. Can you tell us whose initials those are at the bottom of it?

A. I have no idea.

Q. Paragraph 2 of this letter there is a sentence, "Perhaps it would be better to have this sort of publication", and they are talking about the Sayers' report, "-- first approved by Carl Dernehl before we finally agree." Do you see that?

A. Yes, but this does not refer to the Sayers' report really.

Q. Do you know --

A. It says, "In this report Ian passes on a request for permission to publish our data." This is the analytical data that should be developed at Niagara Falls, "I would like your comments on this."

Q. Well, it says that "Ian", and I assume that's Ian Sayers, "Passes on the request for permission to publish our data." Do you know what data that refers to?

A. The data that would be -- wait a minute here now. Belgium to Dexter, Union Carbide. No, I don't know what that data refers to but this must have to do with some asbestos data developed by Union Carbide Belgium.

Q. Well, attached to it is handwritten notes of Dr. Sayers, is that right?

A. Well, I don't know who wrote the handwritten note.

Q. The letter says it's Dr. Sayers handwritten notes, is that right?

MR. JONES: It speaks for itself.

MR. HARVARD: Are you asking if that's what the letter says, Bob?

MR. BROWNSON: Yes.

MR. JONES: I don't see it. Can you point out where on the letter?

MR. BROWNSON: First paragraph right in

the middle.

A. Okay.

Q. Does that indicate --

A. "I am enclosing a copy of his handwritten report for your information." All right. So Sayers says, "Chrysotile fibers, being curved, are less likely to go deep into lungs. Injected chrysotile does cause cancer in rats, so the fact that in practice it is less responsible for tumor production is probably due to a greater elimination rate as well as it's geome," whatever the hell he means by geome.

Q. I think it means geometry but it's cut off.

A. That could be.

MR. JONES: What you have just done is read the section handwritten?

THE WITNESS: Yes.

A. In other words, he says that because the fibers are curved they are less apt to penetrate deep into the lung and, therefore, less apt to cause disease in the lung even though these curved fibers, when they are injected into the animal, will produce cancers.

Q. Did you, at that time in 1967, agree with those statements or conclusions by Dr. Sayers?

A. I would agree with them now, so I imagine I did at that time.

Q. Would you also agree that around this same time you were also concerned that in fact the Calridia asbestos, because it was so fine, had a greater propensity to get into the small airways of the lungs than other asbestos fibers?

MR. JONES: Do you understand the question?

A. I don't like the word propensity.

Q. Well, how about ability?

A. How about possibility?

Q. Let me rephrase the question and you can answer it. Will you agree that you were concerned at around this time, 1967, that the Calridia asbestos fibers had a greater possibility of getting into the small airways of the lungs than other asbestos because they were so short, so fine?

A. Yes, I would agree with that.

Q. In fact, that was the reason that you had the toxicology report done by the Mellon Institute in 1966?

A. That was a part of the reason.

Q. Now, again, do you recall approving any publication by Dr. Ian Sayers or approving any reports of Dr. Sayers for publication around 1967?

A. I do not recall any such approval.

Q. Now, you told us earlier that you did receive

a copy of his 1967 report. Do you know if that report was published?

A. I have no idea.

Q. Do you know if you approved that report for publication?

A. I have no idea.

Q. Do you know if you would have had to have approved that report for publication? Let me rephrase that. Was your approval required before that report could be published?

A. I would say that I would be asked for an opinion as to whether it should be published, but this opinion was not binding upon whether or not it was or was not published.

Q. So would your role then be as more of a reviewer as opposed to the final authority as to whether it's published or not?

A. I think that is a fair way to put it.

Q. I am going to show you what has been marked as Dernehl Deposition Exhibit 38 and ask you, first of all, did you review that before your deposition?

A. No.

Q. Can you review it and tell us if you know what it is?

MR. JONES: For the record, this is a

document dated April 28, 1967, to D. C. Willard from Bert Murray.

A. This is a report from Bert Murray, who was an industrial hygienist for the South Charleston plant on studies which were made on employees while they were installing Kaylo insulation and a recommendation that studies be continued to get more meaningful data.

Q. Do you remember being involved in any way in that particular project?

A. No, I do not.

Q. On the last sentence of the letter it says, "It would be helpful to schedule --" I am sorry, it talks about being kept informed of jobs pertaining to cutting, installing and removing Kaylo in order to be helpful to schedule the air sampling work. Does that indicate to you that air sampling work was being done at the South Charleston plant in '67?

MR. JONES: Object to the form of the question. Dr. Dernehl has already said that he wasn't involved in the project. Go ahead and answer, if you can.

A. Well, my answer would be that studies of this type were going on in the three major chemicals plants, Charleston, Institute and Texas City and that information of this type was sent up to my office for information only.

Q. Now, were air sampling studies being done back

in 1967 at Charleston, Institute and Texas City?

A. Charleston, Institute, for sure. Texas City, I think, came later.

Q. Were they being done at Charleston and Institute in 1967 to see if workers were being exposed to excessive amounts of asbestos?

A. That's correct.

Q. And these are Union Carbide employees?

A. Those are Union Carbide employees.

Q. Would it be fair to say that by 1967 the Union Carbide medical department had a concern about it's employees being subjected to excessive amounts of asbestos on the job?

A. Union Carbide had that concern long before 1967.

Q. Do you know when it first had that concern?

A. The first time we started using asbestos.

Q. Would that be as far back as when you began in 1947?

A. Yes, that would be true because when I was at the plant level we were concerned about the insulators removing insulation and applying insulation and the way they were doing it and trying to see to it that they used appropriate respiratory protection while they were doing the work.

A. I may have heard it, but I don't recall it.

MR. JONES: We have been going about an hour and a half, let's take a short break here.

(At this time a brief recess was taken.)

BY MR. BROWNSON:

Q. Doctor, before we took our break we were talking about the International Congress on Occupational Health meeting at Brighton, England in 1975.

A. Yes. Was that the International something on Permanent Commission on Occupational Health?

Q. I don't know. But what I wanted to show you was an exhibit marked 39 and ask you to take a look at that and see if that helps you at all in recalling anything about that?

MR. JONES: For the record, this is a memorandum dated September 29, 1975, from W. S. Rhodes to R. E. Byrne, Junior, among others.

(At this time the requested portion of the transcript was read aloud by the Court Reporter.)

A. Not really. I seem to recall that there was a meeting of the Permanent Commission and International Association on Occupational Health, which was held in Brighton, England, probably at about that time. I was a member of that, but I did not go to England.

Q. And that's because that insulation contained asbestos?

A. That's correct.

Q. One of the things Union Carbide was doing from 1947 was taking air sampling and air tests?

A. They were not taking air samples in those early dates. That came later.

Q. Do you know when that began?

A. About the time when we got industrial hygienists in the plant, which would be in the early '60s.

Q. Do you know when you began to take annual chest X-rays from your workers in the plant?

A. We started that when we -- about 1941 at South Charleston, and we started it in 1947 in Texas City, '47 at Institute, and at all the other plants it was initiated when the plants started, came about.

Q. Did you attend the 18th Annual Congress on Occupational Health at Brighton, England in 1975?

A. No, I did not.

Q. Do you know if anyone from your medical department did?

A. No, nobody did.

Q. Do you know H. B. Rhodes?

A. No, I do not.

Q. Never heard that name?

Q. Do you remember a conclusion coming out of that meeting that the standard of two fibers per CC may be even too high to prevent mesothelioma?

A. I do not remember that, no.

Q. Have you ever heard that said?

A. I don't recall whether I ever heard it said or not.

Q. Do you know, have you ever heard of a Dr. Steve Holmes?

A. No.

Q. Do you know who he is?

A. No.

Q. Now, earlier I had asked you some questions about if Union Carbide did air testing in customer plants.

A. Yes.

Q. Do you know after the OSHA standard went into effect in 1972 if Union Carbide offered that service to its customers?

A. We did not.

Q. Okay.

A. To the best of my knowledge.

Q. Do you know who John L. Myers is? He was the marketing manager for the Calridia asbestos division at one time.

A. I met Myers a few times, yes.

Q. Would you be surprised if in 1974 Mr. Myers was telling customers that he would be happy to take hand or analyze air samples from their plant for asbestos dust?

A. That was Mr. Myers' problem and not mine. It was not the type of thing that Union Carbide as such was doing. We did not want to intrude on customer's operations.

Q. Do you know if in the 1970s such air sampling was being done by Union Carbide as a marketing tool to alleviate the fears of customers about asbestos dust?

A. Not that I know of.

MR. BROWNSON: I guess that's all the questions I have right now. I will let Mr. Polk ask some.

MR. POLK: The record should reflect it's five minutes to 5:00.

CROSS-EXAMINATION

BY MR. POLK:

Q. Dr. Bernehi, I am going to ask you some questions and they are going to be fairly direct and hopefully you will be able to respond in a fairly succinct way so we can get back to Minnesota today. I don't want to waive my right to continue this deposition in the event, however, I am not able to finish.

First of all, I want to tell you my name is Michael Polk. I represent the Plaintiffs in this case.

Secondly, I want to establish your agreement with me that you will do your best to respond as succinctly as possible to the questions that I ask you. Will you agree to do that?

A. I will try.

Q. If there is anything that I ask you that you don't understand, please let me know and I will be happy to clarify the question. First of all, would you agree with this general proposition that Union Carbide, as a corporate entity, as far as you know was well aware of hazards associated with asbestos at the time that you arrived in 1947?

MR. JONES: Object to the legal characterization "corporate knowledge," but go ahead and answer.

A. There were people in the corporate medical department that were aware of health hazards from asbestos.

Q. If you know, would you agree with this, that the knowledge possessed by the Union Carbide medical department, as of 1947, went back into the 1930s?

A. Yes.

Q. And would you agree that the basis for the knowledge that was within Union Carbide's possession as of 1947 was based at least in part on a review of medical literature?

A. Yes.

Q. And would you also agree that Union Carbide, in its medical department as of 1947, had the capability of doing in-depth literature searches?

A. I don't think so. We didn't have time.

Q. Would you agree that at some time subsequent to 1947 Union Carbide had the ability and the resources to do in-depth medical searches, that is medical literature searches?

A. Union Carbide used their Mellon fellowship to carry out some in-depth researches on certain products rather than having this done by the medical department itself.

Q. Let me rephrase it then. Did Union Carbide have the ability and resources to draw on outside organizations to conduct in-depth medical literature searches at some time subsequent to 1947?

A. Yes.

Q. Did Union Carbide's medical department at any time have access to computerized medical literature searches?

A. Through Mellon Institute, yes.

Q. Now, at what point, in your opinion, subsequent to 1947, did Union Carbide have the ability and resources to conduct in-depth medical literature searches?

A. I would say in the late '50s and early '60s

when the Mellon Institute staff was expanded to the point that they could put some people on this sort of search.

Q. This is almost the same kind of question that I asked you earlier but it's a little bit different. Did the knowledge that Union Carbide's medical department had with reference to asbestos hazards, was that knowledge in 1947 solely based on the literature?

A. In 1947, yes.

Q. And when, in your opinion, was the first time that Union Carbide's medical department had knowledge of asbestos hazards that was not based solely on medical literature?

A. I can't answer that question because it's impossible to eliminate the medical literature source from other sources of information.

Q. Okay.

A. They are intertwined.

Q. I understand what you are saying. Let me ask you this. When was the first time, in your opinion, that the Union Carbide medical department had information that they gathered or had gathered at their direction concerning the hazards of asbestos that were not contained within medical literature?

A. I would say at the time that we did the animal studies at Mellon Institute.

Q. In 1966?

A. Whatever year it was.

Q. Would you agree with this, that Union Carbide gained some knowledge in the early 1960s, specifically 1961 and 1962, by virtue of their own in-plant experience in West Virginia?

A. What we gained at that time was information on the dust concentrations that were present during certain manufacturing operations and maintenance operations in the plant.

Q. Now, let me ask you this, I have information that indicates that you attended an IHF meeting in 1955. First of all, did you regularly attend IHF meetings?

A. I wouldn't say regularly. I attended a number of them.

Q. Would you agree that Union Carbide was a founding member of IHF?

A. I would.

Q. And were you ever on the board of directors of IHF?

A. I don't think so.

Q. Were you ever an officer of IHF?

A. No.

Q. And IHF was an organization that was begun when?

A. I really don't remember.

Q. What does IHF stand for?

A. Industrial Hygiene Foundation.

Q. And did you start attending meetings in the 1940s, that is after 1947?

A. I really don't recall, but I doubt that I did.

Q. And why is it that you doubt that?

A. Because as a plant medical director we didn't do much traveling.

Q. When specifically in 1955 were you transferred to New York from the Texas City plant?

A. Officially July 1. I went then to New York for about a week and then I spent a month in Pittsburgh going through the records of Dr. A.C. Kramer, who was the medical director of the chemicals operations prior to the time that I took over in 1955.

Q. Would it make sense to you that you would have attended the IHF 20th Annual Meeting held in November of 1955 in Pittsburgh?

A. I really can't say, but I might have.

Q. Well, I think the gist of my question is based on the position that you held as of November of 1955, would it make sense to you that you would have or may have attended?

A. I might have attended, yes.

Q. I assume that you don't have a specific recollection one way or another?

A. That is correct.

Q. I know this goes back a ways, but did you ever have any discussions with the president of Johns-Manville Corporation at any time during your career with Union Carbide?

A. Not to the best of my knowledge. I don't even know who the president of Johns-Manville was or is.

Q. You don't recognize the name then A. R. Fischer at all?

A. No way.

Q. And when you came on board in 1947, it's my understanding that you personally knew that asbestos could cause asbestosis?

A. That's correct.

Q. And you gained that knowledge from what, your medical education?

A. That's correct.

Q. At the University of Wisconsin?

A. That's correct.

Q. And you understood when you came on board with Union Carbide in 1947 that asbestosis could be fatal?

A. That's correct.

Q. And you also know that in 1947 asbestos was a

progressive disease, is that true?

A. Asbestosis was a progressive disease, that's correct.

Q. And you also, I assume, had knowledge in 1947 that asbestosis was in part related to the dosage that one inhaled or ingested?

A. That one inhaled, not ingested. It has nothing to do with swallowing.

Q. I guess in terms of asbestosis you are absolutely correct, I stand corrected. Now, did you gain any knowledge whatsoever, be it by fact or theory, that asbestos had a propensity to set up a reaction that could lead to cancer?

A. This came to my attention in the early '60s and prior to that I had no knowledge of this.

Q. So it's your testimony today that at no time prior to the early '60s did you even have a hint that asbestos could cause cancer?

A. That's correct.

Q. Do you know a Dr. Henshaw, Corwin Henshaw?

A. I know the name. I don't recall that I have ever met the man.

Q. Do you have any recollection of any textbooks that you have seen written by Dr. Corwin Henshaw?

A. I have not seen any.

Q. You took two years of trial residency in Preventive Medicine and Internal Medicine, is that right?

A. That's correct.

Q. Were you ever board certified in any specialty?

A. I am board certified in the specialty of Occupational Medicine.

Q. When did you become first board certified?

A. In 1955.

Q. To your knowledge is there any board certification or was there ever any board certification for Preventive Medicine?

A. Yes, the subspecialty of Occupational Medicine is -- the certification in occupational medicine is a subspecialty under the Board of Preventive Medicine.

Q. What is your definition of preventative medicine?

A. Preventive medicine is that science of medicine which is devoted to the prevention of illness and disease in human beings.

Q. And if a person is board certified in 1955 in Occupational Medicine, that I assume would include the specialty of Preventive Medicine, is that true?

A. That was a part of it, yes.

Q. Did you ever study, in connection with your medical training, industrial hygiene?

A. No, I did not.

Q. Was there a board certification for the specialty of toxicology in 1955?

A. There was not.

Q. And since that time, to your knowledge, is there such a board certification?

A. I am not sure. I think there may be.

Q. When you came on board with Union Carbide in 1947, did Union Carbide have an industrial hygiene department?

A. In '47?

Q. In 1947.

A. No, they did not.

Q. And subsequent thereto they did establish such a department, didn't they?

A. Yes, they did.

Q. When did Union Carbide first establish it's industrially hygiene department?

A. Well, if one man is considered a department I would say about 1953.

Q. And the one man you are speaking of, that wouldn't have been Mr. Poole, would it?

A. No, that was Mr. Paul McDaniel.

Q. Now, since 1953, taking it up to 1979 when you retired from Union Carbide, would you agree that the

industrial hygiene department grew by leaps and bounds?

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

MR. POLK: He understnds the question. He is thinking about it.

A. The corporate industrial hygiene department grew from one man to about six men and, in addition to that, we had an industrial hygienist and in some instances two industrial hygienists at three plant locations.

Q. Now, would you agree that between 1953 and 1959 or '79 that the industrial hygiene department worked in tandum with the medical department of Union Carbide?

A. I would say yes.

Q. In your opinion, as an associate medical director at Union Carbide, did there exist incontrovertible evidence as of June 1967 that asbestos could cause mesothelioma?

A. Clarify a word for me. Did you say incontrovertible?

Q. Incontrovertible or, if you prefer, uncontrovertible, if there is such a word.

MR. GOLDBERG: Evidence that you can't controvert.

A. I would not consider in 1967 that it was incontrovertible. In 1967 there was a growing probability

that there was a relationship between asbestos and mesothelioma, but there was evidence coming up at intervals which suggested that this might not be the case.

Q. As you sit here today, do you believe that it is incontrovertible that asbestos can cause mesothelioma?

A. I think --

MR. JONES: Any kind of asbestos?

MR. POLK: That's what the question was, Counsel.

A. I think that mesothelioma -- I mean that asbestos can cause mesothelioma.

Q. And that that proposition, in your opinion as you sit here today, is incontrovertable?

A. I think that is true of some cases. Not all cases are caused by asbestos.

Q. That's not the question though. The question is is it, in your opinion as you sit here today, incontrovertible that asbestos can cause mesothelioma?

A. Yes.

Q. Now, tell me the period of time or the date or the year, as best as you can between 1967 and today's dates when you formulated in your own mind that it was incontrovertible that asbestos can cause mesothelioma?

A. I would say in the early '70s.

Q. Now, follow that up with me, if you will, and

tell me what the basis is that you rely upon or relied upon then to come to that conclusion?

A. The epidemiological studies which were done on various work groups which -- reliable epidemiological studies on various work groups which demonstrated a statistical association between asbestos exposure and mesothelioma.

Q. And in your opinion was there an absence of statistical data connecting asbestos to mesothelioma prior to that time?

A. There was an absence of valid epidemiological studies. The great majority of studies which had been done at that time had some serious flaws which raised some question as to the validity of the conclusions that were reached.

Q. Tell me specifically what you are relying upon or what you relied upon in coming to that the conclusion that those studies were invalid?

A. One of them was that they failed to take into account the question of smoking.

Q. What I am asking you is to identify the studies that you reviewed that led you to the conclusion?

A. I really can't recall what the specific studies were that led to those conclusions.

Q. Fair enough. Am I to take it, however, from

your testimony today that you in fact personally reviewed certain studies regarding the connection between asbestos and mesothelioma prior to 1967?

A. I don't believe that any of those types of studies really existed prior to 1967. Prior to 1967 we were in a position where people were counting cases of mesothelioma and looking at exposure to asbestos and making an association which might or might not have been valid.

Q. Did you at that time consider those cases to be solely case studies as opposed to the epidemiological studies that you --

A. I believe, yes, that they were case type studies.

Q. You taught Occupational Medicine for five years, correct?

A. Well, more than that. I continued teaching Occupational Medicine until the day I retired. When I left the University I was given a visiting lectureship at the University and then Baylor Medical College in Houston asked me to teach Occupational Medicine for them until 1955. When I transferred to New York, I was given the title of clinical assistant professor of Occupational Medicine by New York University. I taught there several times a year from 1955 until my retirement until 1979.

Q. Do you have anyone in mind that you consider

to be the, quote unquote, "Father of Occupational Medicine"?

A. I guess you would have to go back to that venerable character known as Urbano Pozzani.

Q. And did you rely on any particular occupational medicine text in your academic endeavors when you were teaching?

A. There was one, I can't remember his name, but it was -- I can't really remember the name of the text.

Q. You did in fact, however, utilize a textbook for the teaching of occupational medicine, is that right?

A. There was such a text, yes, and we used it. But as much as anything else we researched the literature and used information from the literature.

Q. You have used the word hazard on several occasions when you have been testifying here. Can you define the word hazard as you have used it?

A. Hazard would be the probability of a material causing harm under given conditions of exposure.

Q. Let me be a little bit more specific now than I was earlier. Is this a true statement, that in 1947 when you came on board at Union Carbide you understood chrysotile asbestos fiber could cause asbestosis, is that true?

A. That's correct.

Q. And have you personally participated or

directed to be done, participated in or directed to be done, any studies of any nature whatsoever for the purpose of determining the toxicity of chrysotile asbestos fiber when compared to other types?

A. I have not participated in any studies which compared the types of chrysotile toxicity to the toxicity of other asbestos fibers.

Q. Can you tell me up to 1979 when you retired whether you have any information at all that would indicate that Union Carbide ever did a study or commissioned a study for determining the toxicity of chrysotile asbestos fiber as compared to another type of fiber?

A. Not that I know of.

Q. And, furthermore, can you tell me, up to 1979 when you retired, whether or not Union Carbide ever did any kind of studies whatsoever concerning the carcinogenicity of Chrysotile asbestos?

A. Not that I know of.

Q. Did you have any involvement with Union Carbide as a consulting physician after 1979?

A. I had a contract with Union Carbide from 1979 to 1982, at which time the contract lapsed and anything I have done since then has been as an individual contractor.

Q. Have you served Union Carbide as an independent contractor since 1982?

A. Yes.

Q. And I don't want to be repetitious, but have you ever served for Union Carbide as an independent contractor since 1982 with reference to anything having anything to do with asbestos?

A. Only the one case that I indicated early on in which I was asked to make a deposition and for various reasons it fell through.

Q. Now, were you aware of any Worker's Compensation claims being asserted by workers of Union Carbide for asbestos related diseases of any kind prior to 1970?

A. No, I am not.

Q. How about after 1970?

A. I believe there were a couple of cases of alleged asbestosis at Institute in Charleston from the period 1970 until the time I retired. Just how many there were I don't recall.

Q. Do you profess any expertise in the area of air sampling?

A. No.

Q. Do you understand the concept of time weighted average?

A. I think so.

Q. Do you understand the concept of total

concentration in terms of dust studies?

A. Well, I don't really know what you mean by total concentration.

Q. How about just the word concentration?

A. Do I understand the meaning of the term concentration?

Q. Yes.

A. Yes.

Q. As the associate medical director did you have any interfacing, if you will, with any other manufacturers of asbestos or asbestos-containing products?

A. No.

Q. Did you have any relationship with a Dr. Lewinsohn at Raybestos Manhattan at any time?

A. No.

Q. Did you share correspondence with other asbestos manufacturers?

A. No.

Q. Do you know what Bakelite is?

A. Yes.

Q. Did you ever participate in any kind of studies concerning Bakelite?

MR. JONES: Object on the grounds of relevancy.

MR. POLK: Do you want me to show you

the sales records indicating Bakelite sales to Conwed? You have them. There are all kinds of sales of Bakelite to Conwed.

MR. JONES: Do you have them?

MR. POLK: I don't know if I have them with me. I will be happy to share it with you when I get back. I will warrant that to you on the record, that Bakelite was sold to Conwed.

MR. LAURA: When?

MR. POLK: Between 1964 and 1983.

A. Repeat your question.

Q. Sure. Did you participate at all in any studies concerning Bakelite?

A. In studies, no.

Q. Do you understand what Bakelite is used for?

A. I know Bakelite is a phenol formaldehyde resin. It's used in molding various types of things like light fixtures and pan lids, I mean pan handles, and things of that type.

Q. And would you agree that Bakelite contains asbestos?

A. Not to the best of my knowledge.

Q. So it would be your opinion, as you sit here today, that as far as you know Bakelite never contained asbestos?

A. It would be my opinion that the phenol formaldehyde resin which composed Bakelite did not contain asbestos. It would be possible that there might be some varieties of asbestos that -- I mean some varieties of Bakelite that had asbestos added to them. I don't know about that. I don't know all of the product breakdowns of Bakelite.

Q. I will read you an answer to Union Carbide's interrogatories. It says, "Bakelite was a compounded mixture of phenolic resin, tetramine, lubricant and fillers, one of which was chrysotile asbestos."

MR. JONES: Identify the exhibit.

A. That might be one particular product of the Bakelite. For example, we sold Bakelite under something like BKS 400. This might have been BKS 750.

Q. Well, was Bakelite marketed by Union Carbide in granular form?

A. Yes.

MR. JONES: Can you identify the --

MR. POLK: No. You have them. I don't think I am obligated to identify the sources.

MR. LAURA: Sure you are. If you are reading from a document at a deposition you have to let us know what it is.

MR. POLK: I wasn't reading from a

document.

MR. LAURA: I said if you are reading from a document we are entitled to know.

MR. JONES: I will move to strike the last exchange on the basis of what he was reading was not identified.

BY MR. POLK:

Q. Then, I will go through it without reading from the document. Doctor, was Bakelite marketed in granular form?

A. Yes.

Q. Doctor, was there a single purpose for the drafting of the Asbestos Toxicology Report?

A. A single purpose?

Q. Yes. That would be a yes or a no answer, I think.

A. Yes.

Q. And what was the singular purpose for the Asbestos Toxicology Report?

A. A request on the part of the marketing people for such a statement.

Q. And are you able to tell us the degree of involvement that you had with the drafting of the Asbestos Toxicology Report in comparison to Dr. Lane?

A. I can't remember the details of something like

that.

Q. Now, to the best of your recollection was the disease of mesothelioma ever included in any asbestos toxicology report which came from you or your department?

A. I really couldn't answer that. I have no -- I don't have the document to look at, the host of documents, to see whether we ever used the term mesothelioma or not. I am afraid I can't answer your question.

Q. Were asbestos toxicology reports reviewed on any time interval basis; in other words, were they reviewed annually or more often than that for any purpose?

A. Are you talking about Union Carbide toxicology reports?

Q. That's correct.

A. I don't believe that they were on any regular review basis.

Q. Would you agree that as of 1967 you were knowledgeable that there was not a particular safe dose of asbestos for the development of mesothelioma?

A. No, I don't know that today.

Q. Maybe I should rephrase that. Did you have knowledge in 1967 that the development of mesothelioma from exposure to asbestos could occur with less dosage than that needed to produce asbestosis?

A. No, I did not know that.

Q. Did you have any knowledge or idea of that?

A. I had an opinion that that might be the case.

Q. And where did that opinion that you formulated in 1967 come from?

A. That's hard to say. I would say that it was just a judgmental decision on my part at that time.

Q. Well, would you agree with me that an opinion of that nature formulated at that time would have needed some basis?

A. Not necessarily.

Q. Did that just pop into your mind then?

A. It's one of these things that when you pull off something like this why you are concerned about a disease like mesothelioma and it appears to you that a level of five particles per cubic foot might not be low enough to protect against a serious disease like mesothelioma.

Q. And, as I understand it, you found Mr. Sayers' 1967 report to be reasonably accurate, is that correct? I will show you the document if you would like, but I will warrant to you that that's what your letter to Dr. Hall says.

A. Yes, I remember the letter.

Q. All right.

A. Yes, I would say that's probably true.

Q. And without looking at Mr. Sayers' report, as you sit here today, do you have a recollection as to whether Mr. Sayers' report addressed the disease of mesothelioma?

A. My recollection is that it did.

Q. And do you recollect, as you sit here today without reviewing your letter of June of 1967, whether or not that letter -- I take it it's the letter, let me make sure, whether that draws upon Mr. Sayers' report, that is the contents of the report?

MR. JONES: I will object. If you would like to look at the letter again --

A. I have looked at so many documents I'm not sure what you are talking about.

Q. Well, I am talking specifically about the letter that you wrote to Dr. Hall which I think you saw before your deposition here today, it's your June '67 letter to Dr. Hall?

MR. JONES: Dernehl Exhibit 33.

BY MR. POLK:

Q. Your Counsel has given you a copy of the letter, has he not?

A. Yes.

Q. Now, my question to you is this, as you are sitting there in your chair right now reviewing the letter

do you have any recollection of drawing upon Mr. Sayers' report in drafting the contents of Exhibit 33?

A. Not really.

Q. And setting aside the letter for a moment, do you have any recollection of drafting any documents of any kind, Doctor, wherein you relied upon the contents of Mr. Sayers' report?

A. No, I do not recall such a document.

Q. Did you have any input -- I think you talked earlier in your testimony about some kind of warning that was put on to the containers of asbestos, do you recall that?

A. Right.

Q. What kind of involvement did you have in that issue?

A. All of the products that Union Carbide sold had some sort of a label on it. Union Carbide had what they called a label committee, it was a part of the chemicals and plastics division but it acted as a label committee for the whole corporation. The label committee was comprises of the medical department, law department, transporcation, marketing and fire and safety protection and chemical reactivity groups and when somebody had a product that they wanted to market they submitted a request for a label to the label committee.

Q. Did the medical department have any involvement with the label committee?

A. Yes.

Q. Did you personally?

A. Yes.

Q. Were you a member of the label committee?

A. Yes.

Q. Were you a member of the label committee between 1968 and 1979?

A. I was a member of the label committee from 1955 until 1978 when I withdrew from that activity.

Q. Did the label committee keep minutes?

A. Yes.

Q. Was there a secretary to that committee?

A. Yes.

Q. Who was the secretary of the labeling community between 1965 and about 1975?

A. I don't know about as early as '65. I know at '75 a gentleman by the name of Jim Chatsworth was the secretary.

Q. What position or what department would he have come from?

A. He was in, I am not sure, shipping, I think, in South Charleston.

Q. When was the first time that labeling of

asbestos products was discussed in the labeling committee?

A. I have no recollection.

Q. Well, was it ever discussed?

A. Yes.

Q. And did you make recommendations from a medical toxicology standpoint concerning the labeling of the asbestos?

A. Yes.

Q. And were those recommendations geared towards the wording of the label?

A. Yes.

Q. And did you actually, on your own behalf or yourself, draft the language?

A. I probably drafted the language and submitted it to the label committee as a whole for discussion.

Q. Now, was the draft of the label for the asbestos that you did, whenever that was done, was that adopted by the committee?

A. Oh, gee, it might have been adopted with some minor revisions. I really can't answer that.

Q. Did you at any time or anyone from your department at any time make a suggestion to the labeling committee that notification of potential cancers be included on a label?

A. It was discussed.

Q. And it was ultimately rejected, is that right?

A. I don't recall the exact wording which was ultimately used.

Q. Well, Doctor, I am just asking you if the use of the word cancer was rejected by the committee, that's all.

A. Yes, but I think that they selected some alternative language and I was trying to remember what it was.

Q. Whenever the labeling committee met and whenever these discussions were going on, and I understand that you can't recall the time, can you tell me this, were discussions concerning the labeling of asbestos produced by Union Carbide, were those discussions ongoing over the years?

A. They were from the standpoint that there were alterations in the product over the years which resulted in the need for a new label.

Q. And what alterations were made to the product that required that?

A. Well, for one thing, they prepared a so-called coated product, which ended up on the basis of all acceptable knowledge at that day and time as having no carcinogenic hazard and it was a product which, for example, was exempt under the OSHA regulations. So that required

change in labeling.

Q. Would you agree with me on this, that you knew in 1947 that asbestos could cause serious bodily harm?

A. I knew that asbestos, when inhaled in excessive quantities, could produce the disease asbestosis.

Q. In 1947 when you held that opinion, what was your definition of excessive quantities?

A. Anything in excess of ten particles per cubic foot greater than ten microns in length.

Q. And, Doctor, as far as the Union Carbide asbestos is concerned, can you tell me how many particles per cubic foot one needs to be able to see it?

A. I am not sure I can do that.

Q. Did you ever learn, while you were the associate medical director, that there needed to be a certain number of Coalinga or Calidria fibers in a cubic foot of air before it was visible?

A. That was outside of my area of knowledge or competence to judge.

Q. Would you have been interested in knowing information from the Union Carbide industrial hygiene department that unless there were more than ten particles per cubic foot you couldn't even see the stuff?

MR. JONES: Object to the question as calling for speculation.

MR. POLK: I am asking if he would have been interested in knowing that information when he was the associate medical director.

A. Not particularly. We had industrial hygienists that worried about that particular aspect.

Q. So you wouldn't have necessarily been interested in knowing that even in your capacity as being on the labeling committee?

A. That's right.

MR. JONES: I will object to the question as argumentative. Go ahead.

BY MR. POLK:

Q. In your opinion, as a member of the labeling committee for several years, do you personally feel that it does any good to warn a user of Union Carbide asbestos fiber to not breathe dust that they can't see?

MR. JONES: Object to that on the basis it calls for speculation. It's beyond the witness's stated expertise. Go ahead and answer in you can. Also, as to the form of the question as to the words whether it does any good being vague and ambiguous. Go ahead and answer.

A. Yes, because you can't see a gas but you warn people about breathing gas. So it's the same sort of a warning.

Q. And to your knowledge was the word cancer ever

used by Union Carbide in connection with its asbestos products labeling?

A. The labeling I don't recall.

Q. What is the average length of a Calidria asbestos fiber?

A. Average length is somewhere under five microns, as I recall.

Q. And you certainly are familiar with the standards that have been used by industrial hygienists for a long time as far as the counting of asbestos fibers I assume, is that true?

A. I am familiar that they count them. I don't know exactly how they do it. That's their business.

Q. Have you ever had an occasion to do any counting under a microscope of a filter containing asbestos fiber?

A. No, I have not.

Q. Do you know what the aspect ratio is for a particular fiber to be counted as an asbestos fiber?

A. I don't know what you are talking about.

Q. I am going to show you what I have marked as Plaintiff's Exhibit 3824. I will represent to you it's the September 1, 1972 material data safety sheet which you saw before, and I think you indicated that it was incomplete because it didn't have another page connected to it. I

don't think there was any follow up on that. Would you take a look at what I have here and tell me if the second page that is now connected to the first page makes that document complete?

A. That now makes the document complete.

Q. And, again, I don't want to be repetitious, but as I recall your testimony, while you had involvement with the labeling committee, you didn't have any involvement in the drafting of material safety data sheets?

A. No, that's not true. I did not have any particular input into drafting this material safety data sheet.

Q. Can you answer this, with the document you have got in your hand, the September 1, 1972 sheet, would there have been anybody in the medical department that would have had input other than yourself?

A. If there was medical input in it, it came from Dr. Lane.

Q. When did Dr. Lane, by the way, leave Union Carbide?

A. Gee, I am not sure. I would say probably '82.

MR. JONES: Do you mind if we mark that?

MR. POLK: Go ahead, sure.

(At this time DERIEHL Deposition Exhibit 46 was marked for identification by the

Court Reporter.)

MR. JONES: Dr. Dernehl, what has now been marked as Dernehl Exhibit 46, that's the material safety data sheet that you were just talking about?

THE WITNESS: Yes.

MR. JONES: Thank you.

BY MR. POLK:

Q. Would you agree with this, that as of 1960 Union Carbide had experts within it's employ to test ambient air levels for asbestos?

MR. JONES: Object to the form of the question. Test, you mean the capability of testing?

BY MR. POLK:

Q. Do you not understand that question?

A. Yes, we had experts who were capable of making determinations of air concentrations.

Q. And would you also agree that as of 1960 Union Carbide had the equipment within it's possession to test ambient air levels for asbestos?

A. At some locations.

Q. And would you also agree that as of 1960 Union Carbide had within it's employ experts who could evaluate the testing for purposes of determining those levels?

A. Yes.

Q. And in your opinion would Union Carbide's

expertise in the testing of ambient air levels and the counting of asbestos fibers, would that expertise have gotten better or worse between 1960 and 1972?

MR. JONES: Object on lack of foundation. You can answer, if you can.

BY MR. POLK:

Q. In your opinion?

A. No. It would have improved because, for one thing, the technology of sampling and of identification had improved.

Q. And in your opinion, if you have one, is there any expertise required for the counting of asbestos fibers in the ambient air?

A. Yes.

Q. Can you categorize the degree of expertise that in your opinion is necessary for that to be done?

A. No, I can't do that.

Q. And are you familiar with any kind of training program offered by Union Carbide concerning the testing of ambient air levels for asbestos that were offered to any personnel within the employ of Union Carbide at any time?

A. I really have no reliable knowledge in that degree on that question.

Q. You were apparently shown some documents last night when you met with your attorneys from Union Carbide,

is that right?

A. Right.

Q. Are you represented here today?

A. Am I represented here today?

Q. Yes, by an attorney.

A. Two of them.

Q. Maybe even three of them?

A. Maybe even three. I forgot about him.

Q. Did you retain these attorneys last night?

A. No.

Q. Other than the document, which I believe consists of the letter that you wrote to Dr. Hall in '67 --

A. Yes.

Q. I want to know each and every document that you reviewed last night with your attorneys.

A. That is the only document we looked at.

Q. When you left Union Carbide in 1979, did you take any documents with you?

A. I did not.

Q. And who took your position, if anyone, in 1979?

A. I don't think anybody took my position.

Q. And I want to confirm with you that I have a correct understanding of your prior testimony, correct m

If I am wrong, that in the 1940s you recognized a concern in the asbestos area relating to insulators using asbestos, is that true?

A. That's correct.

Q. And the reason that you recognized that at that time was because insulators in the field were manipulating, sawing, and doing other things in the field with asbestos containing pipe insulation, block insulation and that sort of thing, is that right?

A. That's correct.

Q. And, Doctor, do you understand or have any knowledge concerning whether or not asbestos is an ingredient in gasket type products?

A. My knowledge is that it is in some gaskets, yes.

Q. So you have any knowledge from any source whatsoever that would indicate to you whether or not the asbestos within gasket type products is a potential hazard?

A. It is a hazard in certain types of gaskets.

Q. Was Union Carbide, to your knowledge, ever a producer of any asbestos-containing gaskets or packing material?

A. Not that I know of.

Q. Do you have an opinion as to whether or not in-place asbestos-containing insulation products such as

pipe covering and asbestos block possess a hazard? That would be a yes or a no answer.

A. You want to know if I have an opinion? Yes, I have an opinion.

Q. All right. What is your opinion?

A. My opinion is that as long as the asbestos-containing material is not disturbed it is not a hazard.

Q. Do you have an opinion as to whether or not in-place asbestos-containing insulation products pose a hazard if they are disturbed?

A. Yes.

Q. What is your opinion?

A. If they release asbestos into the air they are a hazard.

Q. And do you have any opinions, based on any source from a guess anywhere, as to what the airborne characteristics are of asbestos fibers? I mean to use a different word as opposed to airborne.

MR. BROWNSON: Aerodynamic?

BY MR. FOLK:

Q. Do you know anything about the aerodynamics of asbestos fiber?

A. None whatsoever.

Q. And you don't have any recollection of seeing

any reports, while you were the associate medical director, concerning the aerodynamics of asbestos fiber?

A. Not that I can recall.

Q. And do you have an opinion, as you sit here today, that leads you to a definite conclusion that chrysotile asbestos cannot cause mesothelioma?

MR. JONES: I will object to the form of the question as compound. Answer it if you can.

A. Do I have an opinion that chrysotile asbestos cannot cause mesothelioma?

Q. Yes.

A. No.

Q. No what?

A. No, I don't have an opinion that it cannot.

Q. Do you have an opinion, with reasonable medical certainty, that chrysotile asbestos in fact can cause mesothelioma?

A. Providing that the exposure of an individual is sufficient to bring about such a condition, yes.

Q. Let me just back up for a minute and get the basis for your last opinion that chrysotile can cause mesothelioma. What's the basis for your opinion?

A. That it can cause?

Q. Yes.

A. Well, there is sufficient valid

epidemiological studies today to indicate that chrysotile asbestos can cause mesothelioma, lung cancers. And there is even more conclusive evidence available that the probability of this occurring is enhanced ten times or more if an individual smokes.

Q. Are you of the opinion that there is any synergistic effect between cigarette smoke and asbestos as relates to the disease of mesothelioma?

A. Yes.

Q. And what's that opinion based on?

A. That opinion is based on the fact that there is evidence that the asbestos fiber picks up the carcinogenic materials from cigarette smoke, binds it and carries it with it wherever it goes.

Q. Tell me, in your opinion, is mesothelioma a lung cancer?

A. Not as such. It's a cancer of connective tissue that lines the lung cavity and it lines the intestinal cavity.

Q. Well, Doctor, are you able to cite for me any medical literature from an epidemiological standpoint, first of all, that has lead you to believe that cigarettes can contribute to the development of a mesothelioma?

A. I can't cite for you the literature right now but the statistical data which has been developed to this

point indicates that the incidence of mesothelioma is a heck of a lot higher in those who smoke than it is in those who do not.

Q. Is the same true for the development of lung cancer?

A. Absolutely.

Q. And I assume that you would also agree that Chrysotile asbestos is certainly capable of causing a peritoneal mesothelioma, is that fair?

A. If it can cause it in the lung, it can cause it in the peritoneum.

Q. Doctor, are you aware of any studies that were done in the Cloquet, Minnesota, area concerning the deposits of chrysotile asbestos in the river that adjoined the Conwed or Cloquet plant?

A. I do not know anything about your studies in the river at this point.

Q. And so you were never informed by Union Carbide, at least as far as you can recall, about Union Carbide going to the Conwed plant and testing for chrysotile asbestos in the river, is that right?

A. Not that I know about.

Q. Now, did you know back in 1967 that cigarette smoke and asbestosis had a synergistic effect with reference to the development of lung cancer?

A. In 1967?

Q. That's correct.

A. No, we did not know that at that time.

Q. And did your knowledge concerning the synergistic effect between cigarette smoke and lung cancer arise in the early '70s?

MR. BROWNSON: You had better rephrase that, Mike. You mean cigarette smoking and asbestos?

BY MR. POLK:

Q. I am sorry, cigarette smoking and asbestos, did that knowledge come to you in the early '70s?

A. I would say yes.

Q. Finally, with reference to the labeling committee, can you tell me what criteria was used by the committee in dealing where asbestos labeling?

A. At the time that the first asbestos labels were applied to the bags.

Q. May I interrupt you there? When was that? You don't remember?

A. I am sure I don't know. It would probably be in the early '60s when we first started shipping asbestos.

Q. Why do you say it would probably be in the early '60s when you first started shipping?

A. Because that's when I think they probably started shipping.

Q. Does that necessarily mean then in the early '60s when you started shipping you had the knowledge to put the warning on the bag?

A. We put a warning on the bag.

Q. When you started shipping from the King City plant in the early '60s?

A. To the best of my knowledge that bag would have had some sort of a warning. Now, I must admit there is a possibility -- there is a possibility that the early shipments for the first year or so may have been made without a label but it was not done without the label committee's knowledge or approval.

Q. They kind of snuck them out?

MR. JONES: Object to the form of the question.

BY MR. POLK.

Q. I am just kidding. You think it was about a year or so after that that you believed to the best of your recollection that a warning label was put on the asbestos bags?

A. To the best of my recollection and my expectation that would have been the case at that time I took into consideration what was known about asbestos, what was known about Coalinga asbestos as compared to the long fiber asbestos that was marketed by Johns-Manville and by

the Canadian operations and the belief on the part of many people that only long fiber asbestos caused asbestosis, and because of that the label on the initial Coalinga shipments was probably a mild label.

Q. Saying something like what, don't breathe it?

A. Avoid breathing dust, a simple sort of a thing.

Q. Okay.

A. Subsequently, as we learned more about it, I am sure the language became or should have become and probably did become more stringent and we now warned that breathing dust may cause prolonged serious illness and then the statement, "Do not breathe dust." No longer "avoid", but "do not".

Q. And based on the knowledge that you had at the various times in the '60s and '70s, at what point do you believe that the more serious warning should have been put on the bag?

A. I would say in the late '60s and early '70s, by which time it was pretty well established that there was an association between exposure to asbestos and mesothelioma and lung cancer.

Q. And you have kind of answered my question. Were there any other criteria, other than what you have mentioned, that was used by the labeling committee?

A. Well the kind of damage that was produced was

always taken into consideration.

Q. You mean the kind of damage that the product itself could produce was always taken into consideration?

A. Right.

Q. Did I ask you if you ever recommended that the word "cancer" be put on the label?

A. You asked me and I told you that we did not ever recommend it, that I can recall.

Q. Is there any particular reason that in spite of your knowledge concerning that issue that such a recommendation wasn't made?

MR. JONES: Object to the question as argumentative. Go ahead and answer.

A. My best recollection at the time is that, Number 1, at that point in time everybody was still concerned about the long fiber chrysotile type of asbestos and we were talking about the short fiber, short small fiber Qualinga type asbestos. And it was our belief at that time, and actually to some degree it is still my belief, that they are not the same breed of cat, they don't act exactly the same and they don't necessarily produce the same disease or the same types of disease and that with that uncertainty in there there was also a question of, whether we should go so far as to say causes cancer.

Q. Was that uncertainty ever resolved

definitively in your own mind before 1979?

A. I don't believe it has been assigned or resigned totally at this point in time.

Q. Do you have any idea what Canadian Grade 7 fiber is?

A. No, I don't.

Q. Do you understand that the Calidria or Coalinga fiber was likened from day one to Canadian Grade 7 fiber?

A. No.

MR. JONES: Object to the form of the question.

A. Don't know anything about that.

Q. And did you ever do any kind of work to determine the carcinogenicity of Cadnadian Grade 7?

A. No.

Q. So you wouldn't know, as you sit here today, one way or another as to whether or not Canadian Grade 7 chrysotile causes mesothelioma, is that right?

A. That's correct.

Q. Have you ever been a diagnostic medical doctor?

A. I wouldn't say so, no.

Q. Have you ever treated a patient?

A. Yes.

Q. Do you know how mesothelioma works in the body;

in other words, once you have a tumor do you know what that tumor does to cause death generally?

A. Well to the best of my recollection, mesothelioma --

Q. Doctor, I am just asking you if you know. I don't need an explanation.

A. I really haven't studied it to the point where I could tell you how mesothelioma causes death.

Q. Do you have an opinion, and you may not, whether or not mesothelioma or death by mesothelioma is more painful or less painful than death by asbestosis?

A. I have no way of knowing that.

MR. POLK: That's all I have for now, but again I want to retain my right to continue the deposition. I am ending my questions now because it's 4:50 and we have to get back to Minnesota.

RECROSS-EXAMINATION

BY MR. BROWNSON:

Q. Let me ask you a question, Doctor. Maybe Mike asked it, but I don't think so. Are you aware that some individuals are more susceptible to mesothelioma than others?

MR. JONES: Object to the question as repetitive. Go ahead.

A. I don't know how you determine that.

Q. Are you aware that in practice that has turned out to be the case?

A. I don't know how anybody could prove that there is greater susceptibility to mesothelioma.

Q. Are you aware that cases of mesothelioma have been diagnosed upon extremely low exposure histories to asbestos?

A. I am aware of the fact that there are cases of mesothelioma which are not related to asbestos, so it is entirely possible that you could have somebody with a very low exposure to asbestos who had a mesothelioma.

Q. Are you also aware that people have been diagnosed of having mesothelioma that had very low exposure to asbestos?

A. I suppose that's possible.

MR. BRONSON: That's all I have. Thanks.

MR. GOLDBERG: I have a question.

MR. HARVARD: Can we take a break right now just to give the Doctor a break?

MR. GOLDBERG: I just have one question though. Can I just ask one question?

MR. POLK: I want to be clear here on the record that we are going to have direct examination now.

MR. JONES: Unless you want to say the deposition can't be used at trial.

MR. POLK: I didn't end my questions for the purpose of missing my airplane. I am not done cross-examining the gentleman.

MR. JONES: You made that clear on the record.

MR. POLK: Are you not planning on bringing this witness to the trial, is that the idea, because I have no notice that you intended on taking his testimonial deposition. This was noticed for discovery purposes.

MR. JONES: I think there are some things in discovery that need to be clarified based on some of the testimony that's been given today.

MR. POLK: Then I think you ought to note the gentleman's testimonial deposition. You discovered my client for six hours before I took any direct and I want to have the same opportunity.

MR. LAURA: In every deposition, discovery or otherwise, you have the right to direct examination, so I don't think that's a problem. I mean, if you have a problem with that, tell me what it is but I don't think that we should not have the right to do that.

MR. POLK: I don't know what the intent

here is. What's your intent? Are you intending on offering the deposition at trial? If that's what your intent is, yes, I have a whole lot of problems with that and that's not in accordance with the Minnesota Rules.

MR. JONES: The Minnesota Rules don't make any distinction between depositions for discovery purposes and testimonial purposes.

MR. POLK: Sure it does.

MR. HARVARD: Why don't we get your one question?

CROSS-EXAMINATION

BY MR. GOLDBERG:

Q. One question in two parts. Doctor, my name is Joe Goldberg. With regard to your opinion that chrysotile asbestos can cause mesothelioma, have you had an opportunity to review any literature or hear any testimony to the contrary from any expert?

A. I can only recall seeing, and I can't tell you where I did read it, evidence to the effect that the incidence of mesothelioma among a group where it was expected to be high, was found to be very low. It suggested that there may or may not be a relationship between chrysotile asbestos and mesothelioma.

Q. And now the second part of my question. Could

it be fair to say then that it's not that you have considered and rejected evidence to the contrary but rather that you have just not been exposed to it.

MR. BROWNSON: I am going to object to that in light of his last answer.

MR. POLK: I will join in that.

BY MR. GOLDBERG:

Q. Do you understand the question, Doctor? Let me rephrase the question. Was it that you rejected the voracity of the one item you were talking about or simply that it was not a substantial enough body of evidence to cause you to reconsider your opinion; in other words, did you think it was wrong or not enough?

A. To reconsider what opinions?

Q. That chrysotile can cause mesothelioma.

A. I think that the preponderance of evidence at the present time suggestions that under certain circumstances chrysotile asbestos can cause mesothelioma, and the circumstances generally are those of rather large exposure, massive exposure.

Q. I understand you have testified to that.

A. Now, I think it is also entirely possible that the relationship between exposure to chrysotile asbestos and mesothelioma is and has been exaggerated.

Q. Doctor, my question to you isn't quite on that

point. My question is evidence to the contrary, evidence that asbestos doesn't cause mesothelioma has been described to you. My question was did you think that evidence was wrong or untruthful or simply inadequate in its scope to change your opinion?

A. It was inadequate in its scope.

MR. GOLDBERG: I have no other questions.

MR. HARVARD: Can we take a break right now for about five minutes and let us talk.

(At this time a brief recess was taken.)

MR. POLK: Doctor, we were just outside talking and your lawyers would like to take some testimony from you. I am sure you are tired and would like to go home and we would like to go home. Do you have any problem, if the weather was somewhat decent up in Minnesota, of appearing in Minnesota at some future date for the purposes of completing this testimony? Do you have any problem with that?

THE WITNESS: Well, the main problem is I don't like to travel any more. For one thing, this business of hypoglycemia; the other is I am getting cataracts and you noticed I had a little bit of trouble trying to see when I was reading. And if I do travel my wife has to go with me to keep an eye on me.

MR. POLK: How would you feel about it

if we brought or someone brought you and your wife up to Minnesota at some future date for the purpose of completing your testimony and put you up in a nice hotel in Minneapolis?

MR. HARVARD: At their expense.

THE WITNESS: It would have to be after the 1st of May because we are having a meeting of the Sons of the American Revolution down here the last of April and I am the general chairman of the whole damn meeting. It's a state meeting. I am going to be wrapped up in that from here on out until that is over.

MR. POLK: The lawyers for Union Carbide would like to take some testimony from you. The case that we are here on or one of the cases that we are here for is the Manisto case which is scheduled for trial March 29 coming right up. I certainly don't want to do anything to prejudice Union Carbide to take your testimony, but on the other hand we would like to close it up and that's why we are asking you about your availability and willingness to come up. I think you have answered the question.

THE WITNESS: My problem is the responsibilities I am going to have in this area up until the end of April because from here on in it really gets short and have to work like mad to get everything set up.

MR. POLK: Would those responsibilities

also entail the time period up to March 20, the next week or so?

THE WITNESS: Right up until the 29th of April.

MR. JONES: That starts immediately tomorrow or --

THE WITNESS: It started a few weeks ago and actually just this day loss is sort of a problem to me so, I mean, that's --

MR. JONES: As I see it we have three alternatives, one we can stay and continue it tomorrow; two, we can come back; or, three, we can stipulate that it won't be used until it's completed. You have indicated that you are not willing to do the third, if I understand you correctly.

MR. POLK: That's correct.

MR. GOLDBERG: Isn't there some late plane out of here so you can switch airlines and get to Minneapolis at midnight or something? You need another hour and a half. You need to be walking out of here at 7:00 or 7:30.

MR. POLK: Why don't we reschedule sometime prior to trial and come back?

MR. JONES: As opposed to staying overnight. Doctor, what's your --

THE WITNESS: Well, it would be better for me if we did that. If I have to go up there I have to take a day to go up there, and a day being in session, and a day to get back. That's three days out of my area of responsibility. Down here, if you only have half a day left on me, why it's a half a day loss. If you have a whole day, it's a whole day loss.

MR. POLK: I have a suggestion. The new rules of Minnesota Civil Procedure call for a telephonic deposition, which we did just very recently. Do you have any problem with that? I will stipulate to the taking of the Doctor's telephonic deposition at a time mutually convenient for all parties.

MR. BROMSON: So will I.

MR. POLK: Commencing with your direct examination and reserving any right to further cross. How is that?

MR. LAURA: Sounds good to me.

MR. POLK: Doctor, would that be satisfactory with you? It's a matter of just talking into the telephone.

MR. HARVARD: One of us could be here to show him those documents and you all can just take the piss over the phone that we are living up to our obligation regarding the practice of law that we have shown him the

document and not handed him a script to read the next answer.

MR. POLK: That's fine by me.

MR. HARVARD: I am just kidding about that, Mike. We will have somebody here to meet with the Doctor and be present with him if the telephone deposition occurs, and I assume that's not a problem for anybody

(At this time a discussion was held off the record.)

MR. POLK: It is then agreed on behalf of the Plaintiff, that procedure.

MR. JONES: Fine on behalf of Union Carbide.

MR. HARVARD: Just so the record is clear, I want to make sure that Union Carbide is taking the position that this -- that we object to any attempt to use this deposition in any Court for any purpose allowed by law until such time as the deposition has been complete and the examination which we intend to conduct in the deposition has in fact been accomplished because at this point the deposition is incomplete. We believe there are matters which can be inappropriately interpreted and we want the opportunity to conduct our examination prior to this deposition being concluded.

MR. POLK: You are not asking for my

agreement on that.

MR. HARVARD: No, I am putting my statement on the record.

MR. POLK: The Plaintiff's position is whether it's usable or not in Minnesota is determined by the Minnesota Rules of Civil Procedure.

(At this time the deposition recessed.)