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IN THE SUPERIOR COURT OF THE STATE OF DELAWARE
IN AND FOR NEW CASTLE COUNTY
IN RE: ASBESTOS LITIGATION

MOORE TRIAL GROUP } C.A. No. 92C-11-009
Limited to: S. Przybylski } C.A. No. 92C-09-115

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Limited to: V. August } C.A. No. 94C-04-114

DEPOSITION OF
JOHN DEMENT, P.H.D.
AT DURHAM, NORTH CAROLINA
MARCH 12, 1996
10:00 A.M.
REPORTED BY: KIMBERLY A. PETRARCA, CVR

PAGE

APPEARANCES

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STIPULATIONS

It is hereby stipulated and agreed between the parties to this action, through their respective counsel of record:

1. The deposition of John Dement, Ph.D., may be continued on March 12, 1996, beginning at 10:00 a.m., at the Washington Duke Inn, 3001 Cameron Boulevard, Durham, North Carolina, before Kimberly A. Petrarca, a notary public.

2. Said deposition shall be taken for the purpose of discovery or for use as evidence in the above-titled action or for both purposes.

3. Any objections of any party hereto as to notice of the taking of said deposition, or as to the time or place thereof or as to the competency of the person before whom the same shall be taken are deemed to have been met.

4. Objections to questions and motions to strike answers need not be made during the taking of this deposition but may be made for the first time during the progress of the trial of this case, or at any pretrial hearing held before any judge for the purpose of ruling thereon, or at any other hearing of said case at which said deposition might be used, except that an objection as to the form of a question must be made at

PAGE

the time such question is asked or objection is waived as to the form of the question.

5. That the original of this deposition will be mailed first-class postage to the appropriate party. Notice of filing is hereby waived.

6. That the deponent has the right to read and sign the deposition transcript.

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3 Thereupon,
4 John Dement, Ph.D.,
5 having been previously

6 sworn, was examined and
7 testified as follows:
8 DIRECT EXAMINATION BY MR. DAVIES:
9 Q. Good morning, Doctor.
10 A. Good morning.
11 Q. You understand, do you not, that this is a
12 continuation of your deposition which we began on
13 January 3, 1996, and that you are still under oath?
14 A. Yes, sir.
15 Q. Have you had an opportunity to read the transcript
16 of that January 3 deposition?
17 A. No. I have not.
18 Q. You don't have it in your possession?
19 A. I have got -- I had returned -- I think there were
20 some documents, or a copy, and had the documents
21 returned. But I didn't get a copy of the
22 transcript.
23 Q. When we adjourned last time you had provided to me
24 copies of two different reports, both dated in
25 March of 1995, which had to do with some testing

1 Dr. Dement PAGE 7
2
3 that you had performed. Have you done any
4 additional testing other than what is outlined in
5 those two reports?
6 A. No. I have not.
7 Q. I'm sure you recall that during our last session we
8 had a discussion of a whole series of articles on
9 which you will rely, at least in part, for the
10 opinions that you will give in this case. Are
11 there any other articles that you care to bring to
12 my attention today on which you will rely for your
13 opinions, other than what we have already talked
14 about?
15 A. Well, I guess since the deposition, there are a
16 couple of things that appeared in the literature.
17 It's not directly related to welding rods, but it
18 has to do with asbestos. One is a study of
19 mesothelioma looking at tissues from Canadian
20 cases.
21 And I think Raymond Begin is the second author
22 of the paper. I'm not sure who the first author
23 is.
24 Q. Could you spell that for us?
25 A. B-e-g-i-n. And all it was was analysis of tissues

1 Dr. Dement PAGE 8
2
3 of mesothelioma cases, some of which had been
4 asbestos, some had been -- and some were different
5 industries in Canada. And the gist of the analysis
6 and conclusions were that the fiber types of
7 concentrations varied between amphioboles and
8 crysotyle.
9 And in terms of causality in any one case, it
10 could have been one or more fiber types. In some
11 cases, for example, crysotyle was higher than the
12 amphioboles. In some cases, the amphioboles were
13 higher than crysotyle.
14 Q. And you may have told me where that appeared, and I
15 missed it.
16 A. It was published in the American Journal of
17 Industrial Medicine, I believe, was where it was
18 published.
19 Q. And is that an article that appeared in 1996?
20 A. I think actually the publication date was either
21 early 1996 or end of 1995. One other article that
22 is more of a review article is by Leslie Stayner.
23 Q. Could you spell that last name?
24 A. S-t-a-y-n-e-r. He is with NIOSH. And it again
25 addresses the carcinogenicity of crysotyle, and its

1 Dr. Dement PAGE 9
2
3 ability to produce mesothelioma and lung cancer.
4 And that was published in the APHA journal this
5 last month.
6 Q. What's the journal again? I'm sorry.
7 A. The APHA, American Public Health Association

8 journal.
9 Q. And I thought I understood you to say, before you
10 described those two articles to me, that they had
11 nothing to do per se with welding rods. Is that
12 correct?
13 A. They were general asbestos articles. The source of
14 exposure to asbestos in most cases wasn't detailed
15 other than they were in these industries.
16 Q. Doctor, have you, since our last session, reviewed
17 the results or findings of any other tests that may
18 have been done on welding rods for release of
19 asbestos?
20 A. No, sir. I have not.
21 (THEREUPON, THERE WAS AN OFF-THE-
22 RECORD DISCUSSION WHICH WAS NOT
23 RECORDED BY THE COURT REPORTER.)
24 Q. Doctor, while we were off the record, you were kind
25 enough to number the pages of your earlier report,

1 Dr. Dement PAGE 10
2
3 which is Exhibit No. 2, dated March 14, 1995. And
4 I think we agree that those numbers go from 1
5 through 52. Correct?
6 A. Yes.
7 Q. And then the second report, which is Exhibit No. 1,
8 dated March 29, we have used letters. And those
9 letters run A through P. Correct?
10 A. Yes. That is correct.
11 Q. Let me ask you to turn, Doctor, if you would, to
12 Page 52 of the earlier report.
13 A. Yes. Exhibit No. 2?
14 Q. Exhibit No. 2. Yes. My understanding is that this
15 is a sketch of the test equipment that you used.
16 Is that correct?
17 A. Yes. It is.
18 Q. And did you prepare the sketch yourself?
19 A. I think Courtney drew it. Courtney is my graduate
20 student. And I think Courtney drew the sketch.
21 Q. And when you say "Courtney," you are referring to
22 Courtney Smith?
23 A. Yes.
24 Q. And her name, I believe, appears on the -- on Page
25 No. 1 of that report. Is that correct?

1 Dr. Dement PAGE 11
2
3 A. Yes. That is correct.
4 Q. Can you tell me, since we've mentioned her name,
5 exactly what role she played in the testing that
6 was done?
7 A. Courtney is a graduate student in industrial
8 hygiene at the school of public health at UNC. She
9 is also my employee, working on some research
10 projects at Duke. Courtney helped basically
11 assemble the materials, set it up, things that
12 graduate students usually do.
13 She also helped in conducting the experiment.
14 It was an opportunity to give her some hands-on
15 experience.
16 Q. Does she still work for you?
17 A. Courtney is still working for me on another
18 project. Yes.
19 Q. Is she employed anywhere else, to your knowledge?
20 A. No.
21 Q. And how long has she been with you in an
22 employee/employer capacity?
23 A. Well, about a year, a little over a year, year and
24 a half.
25 Q. Do you recall exactly what it was that she did in

1 Dr. Dement PAGE 12
2
3 terms of the actual testing?
4 A. She -- Courtney actually did the bumping of the
5 rods together. And so, she had her hands stuck in
6 the glove box.
7 Q. And were you present when she performed that test?
8 A. Yes.
9 Q. The entire period of time?

10 A. Yes.
11 Q. And as I understand it, Doctor, there were a number
12 of different welding rods that were bumped and
13 rubbed together. Is that correct?
14 A. Yes.
15 Q. And is it the case that she did the bumping and
16 rubbing in each case?
17 A. Yes. It is. We tried to do that just to maintain
18 at least some comparability between the tests.
19 Q. Do you happen to have an address or phone number
20 for Ms. Smith?
21 A. She is in my -- she can be reached at the same
22 number as my number.
23 Q. As long as we're talking about personnel, I see the
24 name Lori Todd on the report as well. Could you
25 tell us who she is?

1 Dr. Dement PAGE 13
2
3 A. Lori Todd is a faculty member in the school of
4 public health at UNC.
5 Q. And what was her role in the testing?
6 A. Well, her role, primarily, was in the original set-
7 up of this test chamber. It was set up for some
8 other work. So Lori leased the boxes out. So she
9 was primarily involved in setting up that box
10 originally.
11 Q. Was she present when any of the testing was done?
12 A. I don't believe so. No.
13 Q. When you say she was involved in the set-up of the
14 box, could you give me a little more detail on
15 that? Did she construct it, for example? Or what
16 exactly did she do?
17 A. No. We -- the box is used for some other work at
18 the school over in one of the labs. And we sat
19 down probably two years ago and essentially
20 designed the layout of the box, how the air
21 filtration would work, how it would be filtered and
22 that type of thing.
23 Q. Well, is it the case, then, that she really had
24 nothing to do with the actual testing of the rods?
25 A. That is correct.

1 Dr. Dement PAGE 14
2
3 Q. She wasn't present when any of that occurred?
4 A. That is correct.
5 Q. And she is still a faculty member at UNC?
6 A. Yes.
7 Q. And -- I'm sorry. In which department?
8 A. Environmental Sciences and Engineering.
9 Q. Was this testing done at Duke or at UNC?
10 A. It was done in a laboratory at UNC.
11 Q. Is there any relationship between UNC and the Duke
12 University Medical Center?
13 A. Well, we collaborate on a number of things. We're
14 also part of what's called an educational resource
15 center funded by NIOSH for purposes of training
16 people in occupational health, including industrial
17 hygiene, occupational medicine. So, we are part of
18 this educational resource center together. So, we
19 can -- students can actually cross register between
20 the two campuses.
21 Q. The reason for my question is, I see on Page 1 of
22 the report that it bears the name Duke University
23 Medical Center, Department of Community and Family
24 Medicine. Were there any monies paid, to your
25 knowledge, to UNC for the use of their facility in

1 Dr. Dement PAGE 15
2
3 doing this testing?
4 A. I couldn't tell you. I think Lori Todd billed for
5 her time with regards to set-up and consultation on
6 the chamber study.
7 Q. Well ---
8 A. But I can't tell you whether or not, you know, she
9 paid any general monies to the university.
10 Q. Was Lori Todd involved in the actual set-up of the
11 test chamber for the welding rod testing?

12 A. She was involved in the original set-up of this
13 chamber. And she certainly -- we had some
14 discussions on the procedures. And so, she
15 participated in some of the discussions on how we
16 would proceed.
17 Q. What I'm trying to understand is, for what service
18 would she have billed, if she billed?
19 A. She would have billed for her time in consulting on
20 the conceptualizing the design of the study.
21 Q. Well, as I understand it, she conceptualized the
22 design along with maybe you and others for an
23 earlier project.
24 A. Well, she participated in discussion of how this
25 test was done.

1 Dr. Dement PAGE 16
2
3 Q. Do you have any idea how much time she devoted to
4 that phase of this particular test?
5 A. I can't tell you. I didn't see her bill, if she
6 billed. I can't tell you if she billed or not. I
7 can't tell you.
8 Q. Who owns the test chamber?
9 A. That's a good question. Probably it's now property
10 of UNC. I can't really tell you who was the owner
11 of the chamber.
12 Q. Is it presently situated at UNC?
13 A. I don't know.
14 Q. When is the last time you saw it?
15 A. Probably about the time the study was done.
16 Q. Is there any significance to the fact that Duke
17 University Medical Center appears on the cover
18 sheet of your test report?
19 A. Yes. The primary person who did the design of the
20 study and is the primary author is at Duke. That's
21 me.
22 Q. Does that mean that the university medical center
23 in any way endorses the study that you have done,
24 or the findings that you made?
25 A. I can't tell you what the university does or

1 Dr. Dement PAGE 17
2
3 doesn't endorse. I can't do that for any faculty
4 member.
5 Q. Well, has anyone at the Duke University Medical
6 Center reviewed the test protocol or the testing
7 that was done, or the results?
8 A. I can't tell you.
9 Q. I guess one of the things I'm trying to find out
10 is, whether in your view the testing that you have
11 done here has been peer reviewed in any way.
12 A. It's not in a journal. It's a report to -- on a
13 consulting project.
14 Q. So the answer to my question is no, it has not
15 been?
16 A. Well, you know, you have to consider peer review
17 being subject to interpretation. But certainly, it
18 was peer reviewed in terms of the protocol by Dr.
19 Lori Todd.
20 Q. Was there a written protocol for this test?
21 A. Oh, it's in here. The protocol is in the report.
22 Q. All right. So there is no other document, then, as
23 I understand your testimony, which would outline
24 what it was you intended to do or how you were
25 going to do it, or what the equipment would be

1 Dr. Dement PAGE 18
2
3 prior to the testing being done.
4 A. You know, all of this material that is in this
5 report is actually the protocol. This is the
6 protocol.
7 Q. So other than whatever involvement Lori Todd may
8 have had, is it fair to say that the testing and
9 the protocol has not been peer reviewed?
10 A. That's not true. You've got two PhD, certified
11 industrial hygienists who were involved in design,
12 peer review, and this protocol. I consider that to
13 be adequate peer review.

14 Q. And you are one of them?
15 A. That is correct.
16 Q. And is it Dr. Todd?
17 A. Yes.
18 Q. My question was, other than the two of you, is
19 there anybody else who has reviewed this testing
20 and protocol for its appropriate scientific
21 approach?
22 MR. JACOBS: I'm going to object to the form,
23 because are you limiting it to the use of the
24 rubbing of the welding rods within, or are you
25 saying, has anybody peer reviewed the utilization

1 Dr. Dement PAGE 19
2
3 of this box as a good box for taking proper
4 sampling?
5 MR. DAVIES: I'm talking about this test, and
6 the protocol for this test.
7 MR. JACOBS: The protocol here may overlap
8 what I just said. So, I'm objecting as to form.
9 MR. DAVIES: Fine. I think the question is
10 pretty clear.
11 Q. (By Mr. Davies) I just want to know if there's
12 anybody else besides you and Dr. Todd who has peer
13 reviewed the testing that was done here?
14 A. No. I mean, the test was conducted -- back up one
15 step. The Consumer Products Safety Commission
16 originally, back in the 70's and 80's, is a group
17 that began to do these glove-box tests. And this
18 glove-box set-up is quite similar to the one that
19 they used. So it's not a new concept.
20 Q. Other than yourself and possibly Dr. Todd and
21 Courtney Smith, is there anyone at Duke University
22 or UNC that has a copy of these two test reports?
23 A. No.
24 Q. So I take it that if I went to the Duke library, or
25 the UNC library, I would not find copies of these.

1 Dr. Dement PAGE 20
2
3 Is that correct?
4 A. No. You would not.
5 Q. And the tests have not been published anywhere. Is
6 that correct?
7 A. No. We haven't published them yet.
8 Q. Other than the Ness Motley firm which, as I
9 understand it, asked you to do this testing
10 originally, and the Jacobs and Crumplar firm, has
11 the report, or have the reports, been shared with
12 any other law firms, to your knowledge?
13 A. I haven't sent them to anybody else. I can't tell
14 you how, you know, how widely they've distributed
15 reports.
16 Q. Are you aware of any other law firm that is in
17 possession of one or both of these reports?
18 A. I couldn't tell you. I sent it to Sherry Ingram.
19 So, I couldn't tell you beyond that.
20 Q. Doctor, would you turn to Page 52 of the -- of
21 Exhibit No. 2, please? I'd like to ask you a few
22 questions about the chamber itself. Can you give
23 me the size of the chamber?
24 A. The chamber sizewise -- again, it's relatively to
25 scale. It sets on a bench. It's a bench-top

1 Dr. Dement PAGE 21
2
3 glove-box. So it's roughly -- in terms of the box
4 itself, about three and a half, four feet long, and
5 about two feet deep, and around 30 inches high.
6 And then, that's just a rough -- it's not exactly
7 square. It has a sloping front.
8 Q. Do you know what the material is out of which it is
9 constructed?
10 A. It's a plastic, sort of a plexiglass material.
11 Q. Can you see through it?
12 A. Yes. It's completely see-through all the way
13 around.
14 Q. And in terms of putting material into or taking it
15 out of the chamber, how is that accomplished?

16 A. Well, it has two openings, two ports on either end that are sealed ports. And that's how you put material in and out of the chamber.
18 Q. It appears to me that the ports in question are circular. Is that correct?
20 A. Yes.
22 Q. Can you give me the approximate dimension of the openings?
24 A. Well, the way these things are constructed is that it's -- there's actually a lip that comes out, and

1 Dr. Dement PAGE 22
2
3 it has a gasket to fit. And it's, I guess, 10
4 inches.
5 Q. I want to be clear on this. Are you saying the
6 circumference is 10 inches, or the diameter is 10
7 inches?
8 A. The diameter is 10 to 15 inches.
9 Q. And are the port coverings made of this plexiglass
10 material as well?
11 A. Yes. They are.
12 Q. You mentioned that this chamber was constructed for
13 use in some other project.
14 A. Uh-huh (yes).
15 Q. Is that right?
16 A. Yes.
17 Q. Can you tell me when that, the chamber, was
18 constructed?
19 A. I can't -- I don't remember. It was probably at
20 least a year before this study, but I can't tell
21 you any more than that.
22 Q. Do you have any idea how many times the chamber was
23 used prior to the testing that you did in March of
24 1996?
25 A. No. I can't tell you how many times Lori may have

1 Dr. Dement PAGE 23
2
3 used it.
4 Q. How many times, if at all, did you use it prior to
5 the welding rod testing?
6 A. I don't know that we ever used it, to tell you the
7 truth. It was set up to do some emission studies
8 from products. But I don't know that I've ever
9 used it before that.
10 Q. Do you know the products that were involved in the
11 emission studies that were done prior to the
12 welding rod testing?
13 A. No. It's one of Lori's -- I think it was one of
14 Lori's projects.
15 Q. Would Lori be the person to talk to if I wanted to
16 know how often it had been used, and for what
17 projects?
18 A. Not really. I think it's more of a device that was
19 used by the faculty members as well. So, I don't
20 know that she was necessarily the sole proprietor
21 of the state.
22 Q. Do you have any idea whether any testing was ever
23 done using this particular chamber on asbestos-
24 containing material before the welding rod testing?
25 A. I couldn't tell you. I can tell you, we did

1 Dr. Dement PAGE 24
2
3 appropriate purge and background samples which were
4 in the report to make sure that it wasn't
5 contaminated.
6 Q. Do you know if the chamber has been used since?
7 A. I don't know.
8 Q. Is it correct that the testing that you did was
9 performed all in one day?
10 A. I can't remember. It's been so long -- I think we
11 were over there two or three days in terms of
12 getting it set up. I can't remember whether or not
13 the testing itself extended over more than one day
14 or not.
15 Q. Does the chamber have a solid bottom?
16 A. Yes.
17 Q. And it's constructed of plexiglass as well?

18 A. It's enclosed. It's the same materials. It's in
19 one solid piece.
20 Q. You mentioned that when the circular port coverings
21 are put in place there is some sort of gasket
22 material. Is that correct?
23 A. Yes. It's a -- they're gasketed so they don't
24 leak.
25 Q. Do you know what the gasket material is?

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2
3 A. It's just a rubber gasket.
4 Q. And is the rubber gasket on the chamber, or on the
5 portal covering?
6 MR. JACOBS: Objection as to form.
7 A. I believe it's just an O-ring that goes around a
8 lip on the outside.
9 Q. Is that on the outside or the opening, or on the
10 cover?
11 A. I believe it's on the outside of the opening.
12 Q. I take it that during the testing that you did on
13 the welding rods, there was never any type of
14 filtering material in place over either of the
15 ports that we have been discussing?
16 A. No. They're -- they seal. I mean, they are
17 airtight seals.
18 Q. As I look at the sketch on Page 52, it appears that
19 there are hand or arm ports on the front of the
20 chamber. Is that correct?
21 A. Yes.
22 Q. Can you give me the diameter of those openings?
23 A. Well, these are typical glove ports. The diameter
24 of the actual hole is around six inches at the
25 outside.

1 Dr. Dement PAGE 26
2
3 Q. It isn't clear to me what you mean by "glove
4 ports." Could you describe that?
5 A. You stick your hand actually through these
6 openings. And they are gloved inside.
7 Q. So as I understand it, the glove and glove material
8 attaches to the chamber.
9 A. That is correct.
10 Q. So that there can be no in-flow or out-flow of air
11 around the gloves and glove ports?
12 A. That is correct.
13 Q. When you did the welding rod testing, did you use
14 new gloves?
15 A. Yes.
16 Q. Where were those gloves purchased?
17 A. I couldn't tell you. I think they were purchased
18 when the original device was bought.
19 Q. I want to be sure I understand. Did you, or one of
20 the people working with you, actually attach new
21 gloves to the chamber before you started the test?
22 A. Yes.
23 Q. And where did you or that person get those gloves?
24 A. I think it was from the stock material we already
25 had. I think they were purchased at the same time

1 Dr. Dement PAGE 27
2
3 the material, the ---
4 Q. Were these gloves at UNC where the test was done?
5 A. They were at the time. Yes.
6 Q. And do you recall whether they were sealed when you
7 took them out to attach them to the chamber?
8 A. I don't recall.
9 Q. Do you have any idea who the manufacturer of those
10 gloves was?
11 A. No. No.
12 Q. Do you have any idea out of what material the
13 gloves were made?
14 A. It was just a rubber glove.
15 Q. Was it rubber or a rubber-like material, then, that
16 constituted the glove and also came back to the
17 port area where it was attached?
18 A. Yes. And again, I would just elaborate that in
19 terms of any background contamination in this

20 chamber, that was extensively studied prior to
21 doing the test.
22 Q. I can assure you we will discuss that as we
23 progress this morning. While the testing was being
24 conducted, Doctor, what was the source or channel
25 for air into the chamber?

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2
3 A. The only channel for air into the chamber is
4 through the HEPA filter at the top.
5 Q. And as we look at the sketch, I take it that would
6 be the HEPA, H-E-P-A, filter which is on the top
7 right of the chamber?
8 A. That is correct.
9 Q. How large a filter is that?
10 A. I think it's a six-inch square filter.
11 Q. Was that filter ever examined or tested for the
12 presence of asbestos?
13 A. No.
14 Q. As I read your report, it is my impression that the
15 chamber was purged on several occasions. And I
16 take it that would be through the apparatus which
17 is shown on the top left of the sketch.
18 A. Yeah. Basically, that hooks up to a house -- if
19 this is a laboratory which has some house vacuum.
20 Q. So in order to pull air through the chamber, you
21 would suck it out through that apparatus?
22 A. Yeah. It would -- the air entering the chamber
23 would come through the incoming filter. It would
24 be discharged through the HEPA on the outside.
25 Q. And on the out-flow port, it indicates that there

1 Dr. Dement PAGE 29
2
3 is a HEPA filter. Correct?
4 A. Yes.
5 Q. And to your knowledge, was that filter ever
6 analyzed for the presence of asbestos?
7 A. No.
8 Q. Were either of those filters analyzed for anything
9 at any time, to your knowledge?
10 A. No. I mean, these are certified HEPA filters which
11 are -- well, certified HEPA filters.
12 Q. Were they new filters when this testing began?
13 A. Yes.
14 Q. And who inserted them into the apparatus?
15 A. I think Courtney installed those.
16 Q. Inside the chamber, there are several different
17 things depicted. And I want to be sure I
18 understand what they are. One of them appears to
19 be a water bottle. Is that correct?
20 A. That is correct.
21 Q. And what was the purpose of that?
22 A. Well, after each test, the chamber was completely
23 washed down inside. And so, they were put inside
24 prior to the study.
25 Q. The water bottle was in the chamber before the

1 Dr. Dement PAGE 30
2
3 study began?
4 A. That is correct.
5 Q. And then, after each test, the water bottle was
6 used to facilitate cleaning the chamber?
7 A. That is correct. It's washed down inside the
8 chamber.
9 Q. And the water bottle was left in the chamber?
10 A. During this test, yes.
11 Q. Is it fair to say that the bottle stayed in the
12 chamber at all times throughout all of the tests
13 that were performed?
14 A. Well, whenever we had it washed down on the inside,
15 the materials inside were then ready to take out.
16 Then the water bottle was washed down as well,
17 wiped down, and taken out.
18 Q. And how was it cleaned?
19 A. With a Chem-Wipe that's inside.
20 Q. That's the small box in the lower left of the
21 chamber?

22 A. Right.
23 Q. And what is a Chem-Wipe?
24 A. It's a laboratory paper towel, basically.
25 Q. Does it have any type of cleaning material or

1 Dr. Dement PAGE 31
2
3 solvent on it?
4 A. No. That's the reason for the water.
5 Q. And that was left -- that box of Chem-Wipes was
6 left in the chamber during the testing?
7 A. Yeah, for purposes of cleaning. Yes.
8 Q. And there also appears to be a small ring stand.
9 Is that correct?
10 A. Yeah. It's just a clamp to hold the filter in
11 place.
12 Q. And that stand was in the chamber, I take it,
13 during all of the testing?
14 A. That is correct.
15 Q. Was it removed at any time?
16 A. No. It was washed down and left in the chamber.
17 Q. And I see that there are two -- what is described
18 as identical welding rods in the chamber as well.
19 Is that right?
20 A. Yes.
21 Q. Were all of the rods that you were going to test
22 placed in the chamber initially?
23 A. No. Each test was independent of each other.
24 Q. Was there anything else in the chamber during the
25 period of testing?

1 Dr. Dement PAGE 32
2
3 A. No. I mean, the materials in the chamber are
4 shown.
5 Q. It was my impression, from reading your report,
6 that there was a fan involved at some point.
7 A. Yeah. There is a small fan that is basically a fan
8 that's used to cool electrical components.
9 Q. And was the fan in the chamber during the testing?
10 A. Yeah. It's actually mounted in the chamber.
11 Q. Exactly where is it in the chamber?
12 A. It's located up in the top right-hand corner of the
13 chamber.
14 Q. Would that be up near what is described on the
15 sketch as a sampling port?
16 A. It was in that area, but obviously not on that
17 area. That sampling port is just a nipple that
18 allows you to connect an outside vacuum source.
19 Q. And as I understand it, the fan is a permanent
20 fixture inside the chamber?
21 A. Yes.
22 Q. Was it removed at any time during the testing?
23 A. No. It was washed down, again, after each test.
24 Q. And is the fan electrically operated?
25 A. Yeah. It connects -- there are some connections in

1 Dr. Dement PAGE 33
2
3 the back, and a switch on the back that's used to
4 turn it on and off.
5 Q. So it is not battery powered. Is that right?
6 A. That is correct.
7 Q. Can you give me the dimensions of the fan?
8 A. It's a small fan, about two or two and a half
9 inches in diameter. And it's simply a fan that
10 you might, for example, find inside a computer
11 housing for cooling.
12 Q. How many blades on the fan?
13 A. Geez. I don't recall. I think there were four.
14 Q. Does the fan operate at just one speed?
15 A. Yes.
16 Q. And I take it that it was at that speed that it ran
17 during the various testing?
18 A. Yeah. It wasn't turned on until -- as the report
19 says, until later in the test. And the idea was
20 just to keep the material mixed in the chamber.
21 Q. Do you have any idea what the revolutions per
22 minute of the fan were?
23 A. No. We weren't interested in trying to quantify

24 that. It was simply a mixing fan that has one
25 purpose only.

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2
3 Q. And that purpose is mixing?
4 A. Just to keep the material mixed in the chamber.
5 Q. When you say "mixed," does that entail getting it
6 off the floor of the chamber and into the air?
7 A. No. It's -- the idea is just to keep a more
8 uniform concentration of airborne material by
9 having a little turbulence inside the chamber. You
10 are only sampling at one point in the chamber. And
11 therefore, you want to have as well-mixed material
12 as you can.
13 Q. Is there any reason why the fan is not shown in the
14 sketch?
15 A. We just forgot to draw it, I guess. There's no
16 reason why. It's described in the report.
17 Q. As I understand your testimony, that the chamber
18 was cleaned before the first test began. Correct?
19 A. Yes.
20 Q. Do you recall how long before the test began the
21 chamber was cleaned?
22 A. Well, immediately before, when we did the air
23 purge, as it says in there.
24 Q. So in terms of the sequence here, you or one of
25 your team uses the water bottle and the Chem-Wipes

1 Dr. Dement PAGE 35

2 to clean out the chamber before the air purging
3 begins?
4 A. That is right.
5 Q. Do you recall who did the cleaning?
6 A. I think Courtney did most of the cleaning, too.
7 Q. How long did it take her? Do you know? To do all
8 the cleaning?
9 A. 15 or 20 minutes.
10 Q. Was the water bottle cleaned before it was put into
11 the chamber?
12 A. Yes.
13 Q. And how about the Chem-Wipes?
14 A. They were a brand-new box of Chem-Wipes.
15 Q. And how about the ring stand?
16 A. They were washed before they were put in.
17 Q. With water?
18 A. Yes.
19 Q. Nothing else?
20 A. That is correct.
21 Q. Was the tubing that was inside the chamber wiped
22 down as well?
23 A. It was. And it was wiped down after each of the
24 tests.
25

1 Dr. Dement PAGE 36

2
3 Q. How much air did you pull through the chamber
4 before you began the testing?
5 A. I think -- I forget the volume through this house
6 port. But we could achieve about -- we purged for
7 25 minutes. And I think we were achieving around
8 four air changes a minute in there. So, we had a
9 lot of air changes.
10 Q. I thought I read somewhere that when you were doing
11 the testing, you were pulling air at 12 liters a
12 minute.
13 A. Yeah. We're talking about the purging before the
14 test.
15 Q. I understand. What I want to know is, whether the
16 purging that was done was pulling air at a greater
17 or lesser rate than during the test?
18 A. It was pulling at a greater rate. The purging
19 wasn't being done during the test. That was shut
20 off.
21 Q. Now, what is the next thing that was done after the
22 purging of the chamber?
23 A. Well, the first thing you do is, you have to make
24 sure of your air flow calibration to the filter, as
25 the report says. That was done using what is

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2
3 called a bubble meter. The commercial name is
4 called a calibrator. It's simply a bubble meter.
5 So you calibrate the air flow for the filter that
6 you're going to use.
7 We also, as it says, we collected a background
8 sample for 20 minutes in the chamber before the
9 test. We then turned on the air after the -- after
10 we did the background sample. And that was sealed
11 and closed. It was left in the chamber. The
12 chamber was not opened up.
13 We then installed a filter to be used for the
14 study, and we began the air flow. We then removed
15 the plastic bags from the rods, and they were just
16 bumped and rubbed together for a period of about 15
17 minutes. And during that 15 minutes, the air
18 sample was still running.
19 Q. Let me stop you there, if I may, and back up a
20 couple of steps. As I understand it, after you
21 have the pump calibrated ---
22 A. Yes.
23 Q. --- you then pull air for about 20 minutes through
24 a filter. Correct?
25 A. Yeah. A background filter.

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2
3 Q. And was that filter sent off for testing?
4 A. Yeah. They're in there. The results are in the
5 report.
6 Q. I just want to make sure that I know which is
7 which. And if you would look back to Page 3 ---
8 A. Right.
9 Q. --- of Exhibit No. 2 ---
10 A. Right.
11 Q. --- would you tell me which of the background
12 samples is the one that was done before any testing
13 at all was performed?
14 A. Well, each one, before each test a background
15 sample was collected. So, three, five and seven
16 are all background filters.
17 Q. I understand that, from looking at the report.
18 What I'm trying to find out is, which is the first
19 one?
20 A. Oh, the sequence is just as the numbers are.
21 Q. So what is listed as Sample No. 3 would be the
22 background that was done before any testing at all
23 occurred?
24 A. Yeah. Yeah. The sequence is exactly as the test
25 was done. And we tried -- as it says, we actually

1 Dr. Dement PAGE 39

2 put a non-asbestos rod in between the tests as
3 another check.
4 Q. Now, when that background sample is taken, as I
5 understand your testimony, you closed that up,
6 covered it up with duct tape?
7 A. Yeah. The filter has a cap. It comes as a unit.
8 And it has a top that you put on. We also tape up
9 that to make sure it's perfectly sealed and that
10 the top can't fall off.
11 MR. JACOBS: Object to the form of the word
12 "that."
13 (THEREUPON, THERE WAS AN OFF-THE-
14 RECORD DISCUSSION WHICH WAS NOT
15 RECORDED BY THE COURT REPORTER.)
16 Q. I apologize if I asked you this earlier. But, are
17 there any other -- just so we're clear, I'm handing
18 you -- just so we're clear, the questions that I
19 have been asking -- and I apologize if I have not
20 been clear. The questions I have been asking have
21 to do with the background check that involved
22 Sample No. 3 only. Did you understand that,
23 Doctor?
24 A. Well, that's fine. It's the same procedure for

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2

3 each one of the background samples.
 4 Q. Excellent. The cover that you have described for
 5 the filter, is that a solid cover, no opening?
 6 A. It's the cover that comes with the filter itself.
 7 It's a solid cover. It does have a little plug in
 8 the end that you can use it, or do what is called
 9 open-face or closed-face sampling. But it's the
 10 plug that -- it's a solid cover.
 11 Q. Was the testing that was done here in all instances
 12 open-face or closed-face?
 13 A. It was done with the sampling device as would be
 14 used for asbestos, that it was open-face but with
 15 the -- what is called the cone front. There is
 16 just a cone in front of it.
 17 Q. So as I understand it, then, the entire cover
 18 including the plug was off the filter cassette
 19 during the testing?
 20 A. That is correct, as you would typically do for
 21 asbestos. Yes.
 22 Q. And when -- going back to Sample 3 now, when you
 23 were finished pulling the background air that
 24 cover, including the plug, would be put back on the
 25 filter cassette and taped.

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 2
 3 A. That is correct.
 4 Q. Okay. Is all that done by using the hand ports?
 5 A. That is correct.
 6 Q. So that once the side ports on the chamber are
 7 sealed, they stay sealed?
 8 A. For any one -- any particular series, after the
 9 materials are placed in the chamber, the side port
 10 is sealed. It's not opened up again until the
 11 study is done. And then, you would have to go
 12 through the process again for the next sample.
 13 Q. All right. I think I'm getting the picture.
 14 Before you begin the first testing, then, is it
 15 correct that you would have two filter cassettes in
 16 the chamber?
 17 A. That is correct. They would be in the chamber, and
 18 sealed.
 19 Q. One would be for background, and one would be for
 20 the test itself?
 21 A. That is correct.
 22 Q. When the background air is being pulled through the
 23 first filter cassette ---
 24 A. Yes.
 25 Q. --- is the lid off the second filter cassette that

1 Dr. Dement PAGE 42
 2
 3 is in the chamber?
 4 A. No. It's -- they go in series.
 5 Q. And I take it that the second filter cassette is
 6 then placed on the small ring stand by using the
 7 arm ports?
 8 A. That is correct.
 9 Q. Doctor, let me ask you some questions about the
 10 rods themselves here before we go any further with
 11 the testing itself. As I understand what you did
 12 here, you tested three sets of rods. Is that
 13 correct?
 14 A. That is correct.
 15 Q. How many total rods were sent to you or delivered
 16 to you in some way for this testing?
 17 A. We had sent some rods out for analysis. I can't
 18 tell you how many there were. Looking for just the
 19 presence or absence of asbestos. I can't tell you
 20 how many there were.
 21 Q. Well, let's back up a step, then. At some point
 22 in time, you or your colleagues come into
 23 possession of some welding rods. Is that right?
 24 A. That is correct.
 25 Q. Can you tell me how you got the rods? Where did

1 Dr. Dement PAGE 43
 2
 3 they come from?
 4 A. They were sent to us by Ness Motley, or somebody

5 working with Ness Motley.
 6 Q. Do you recall specifically who it was that sent
 7 them to you?
 8 A. No.
 9 Q. Do you recall when they were sent to you?
 10 A. Prior to this. Obviously prior to this test.
 11 Q. Even I could figure that much out. Do you have any
 12 idea when, prior to the test, they were sent to
 13 you?
 14 A. This particular study was done after the first of
 15 the year. I think we would have had sort of had a
 16 few rods sent here and there, not all in one batch,
 17 between -- in the fall of 1994.
 18 Q. Is it the case that you or your colleagues sent
 19 rods here or there?
 20 A. I'm not following you.
 21 Q. I'm trying to use your words, Doctor. And I
 22 understood you to say that rods were sent here or
 23 there. And I'm trying to ---
 24 A. We received them.
 25 Q. So is it correct, then, that you received rods at

1 Dr. Dement PAGE 44
 2
 3 different times?
 4 A. Yes. We did.
 5 Q. And on each occasion, when you received rods, did
 6 those rods come from the same source?
 7 A. Except for the used rods, they all came from the
 8 same source.
 9 Q. As I understand it, the testing that you did was on
 10 rods which are described as being Hobart rods.
 11 A. They were described to us as that. Yes.
 12 Q. There were rods that were described as being
 13 Westinghouse rods.
 14 A. Yes.
 15 Q. And then there were rods which apparently had been
 16 used for welding purposes, then sent to you.
 17 Correct?
 18 A. That's right.
 19 Q. And do you know the alleged manufacturer of those
 20 rods?
 21 A. No. I do not.
 22 Q. For purposes of our discussion, is it agreeable to
 23 you that I refer to these as the Hobart rods, the
 24 Westinghouse rods and the used rods, or burned
 25 rods?

1 Dr. Dement PAGE 45
 2
 3 A. Yes.
 4 Q. With respect to the Hobart rods, can you be any
 5 more particular in terms of when you received those
 6 rods?
 7 A. No.
 8 Q. Do you have any idea how many of those rods you
 9 received?
 10 A. At least two. But I can't tell you any more than
 11 that.
 12 Q. Did you receive Hobart rods on more than one
 13 occasion?
 14 A. I really can't tell you. We were receiving some
 15 materials at different time periods. And I can't
 16 tell you.
 17 Q. When you say "receiving materials," what do you
 18 mean?
 19 A. Rods.
 20 Q. Materials ---
 21 A. Welding rods.
 22 Q. At any time, have you receive welding rods other
 23 than the Hobart rods, the Westinghouse rods, or the
 24 burned rods about which we have already spoken?
 25 A. I can't tell you all the manufacturers of the rods

1 Dr. Dement PAGE 46
 2
 3 that we looked at.
 4 Q. I take it from your answer, then, that you at some
 5 time have in fact received rods other than the
 6 Hobart, the Westinghouse, or the burned rods.

7 MR. JACOBS: Objection to the form.
 8 A. I can't tell you.
 9 Q. You don't recall?
 10 A. I just don't recall. I really wasn't paying a
 11 whole lot of attention to whose rods they were,
 12 frankly.
 13 Q. Do you still have any rods from any source?
 14 A. No.
 15 Q. What did you do with the rods when you were
 16 finished with them?
 17 A. They were shipped back.
 18 Q. Back to who?
 19 A. I think we shipped -- as I recall, these rods were
 20 all sent back to Ness Motley. That's my
 21 recollection of the deposition of the rods.
 22 Q. Other than having received at least two Hobart
 23 rods, you don't recall when you came into
 24 possession of those. Correct?
 25 A. Other than the time frame we have mentioned, in the

1 Dr. Dement PAGE 47
 2 fall of 1994.
 3 Q. Did you do any testing on the Hobart rods other
 4 than what you have described in this report?
 5 A. No.
 6 Q. How is it that you come by the notion that there
 7 were, in fact, rods manufactured by Hobart Brothers
 8 Company?
 9 A. That is what the information that I received said.
 10 Q. How did that information come to you?
 11 A. Just a listing with a number, a batch number.
 12 Q. Do you know who prepared the listing?
 13 A. No. I don't.
 14 Q. Was that listing sent to you with the rods?
 15 A. It would have been with the rods, just listing the
 16 batch numbers. Yes.
 17 Q. And do you have any idea who assigned the batch
 18 number to the Hobart rods?
 19 A. No. I don't.
 20 Q. Do you have any information about the source of
 21 these rods other than this list that you have
 22 described?
 23 A. No. These were rods that were sent to us to take a
 24 look at. And I frankly didn't try to find the

1 Dr. Dement PAGE 48
 2 source, and I really didn't care about the source.
 3 Q. I take it that you don't have any idea how old the
 4 Hobart rods were?
 5 A. No. I do not.
 6 Q. Would it be fair to say that you don't have any
 7 idea how old any of these rods were? And when I
 8 say "any," I mean the Westinghouse and the burned
 9 rods as well.
 10 A. I don't know the age of the rods, no. And, you
 11 know, obviously the application of asbestos stopped
 12 at some point in time. So you assume it was before
 13 then.
 14 Q. Fair enough. I take it, from what you said, that
 15 you have no idea of the history of any of these
 16 rods such as where they had been before they came
 17 into the possession of Ness Motley, and before they
 18 came to you?
 19 A. I can't testify to any of that. I was simply sent
 20 rods to do some experiments with.
 21 Q. Do you have any idea, with respect to whether these
 22 rods were in a condition where one could actually
 23 make a successful weld with them?
 24 A. Well, from my looking at them, they were certainly

1 Dr. Dement PAGE 49
 2 intact.
 3 Q. When you say "intact," does that mean -- please
 4 tell me what that means.
 5 A. Well, the coatings on the rods weren't damaged. It
 6 looked like, from my inspection of the rods, they
 7 could have been used for welding.
 8

9 Q. I take it you did not perform any test of the rods
 10 to see whether they would, in fact, weld?
 11 A. We didn't weld with the rods. No.
 12 Q. Would you describe for me, please, any transmittal
 13 documents that accompanied the rods when they came
 14 to you?
 15 A. Simply just a listing of identification was all.
 16 Q. Was there a cover letter from somebody?
 17 A. Not that I recall.
 18 Q. Had you spoken with someone on the phone about
 19 receiving these rods, or talked to someone in
 20 person about getting the rods?
 21 A. Just Cheryl Ingram, was the person I talked with.
 22 Q. And who is Cheryl Ingram?
 23 A. She is an attorney with Ness Motley.
 24 Q. Did she send the rods to you?
 25 A. Somebody who was working with her. I'm not sure

1 Dr. Dement PAGE 50
 2 that Cheryl herself did.
 3 Q. And to your knowledge, there was no cover letter
 4 from anyone that accompanied the rods?
 5 A. Not to my knowledge.
 6 Q. So the rods show up and with the rods is a list.
 7 Is that right?
 8 A. Identification list. Yes.
 9 Q. Were the Hobart rods accompanied by any other rods
 10 when they came to you?
 11 A. I couldn't tell you. We received in some cases
 12 more than one type of rod. They were individually
 13 packaged. They weren't in the same container.
 14 Q. Describe for me the packaging, please.
 15 A. Usually it's a ziplock bag.
 16 Q. So you would receive from Ness Motley at least one
 17 ziplock bag. And in that bag, or one of the bags,
 18 are a quantity of Hobart rods. Is that correct?
 19 A. Yes.
 20 Q. And is there something in the bag or on the bag
 21 that tells you that these are the Hobart rods?
 22 A. Just the sample identification number on the sheet
 23 that was sent.
 24 Q. A sample identification number and what?

1 Dr. Dement PAGE 51
 2 And the sheet identifying the rod.
 3 Q. Is the sample identification number on the rods
 4 themselves? Or on the bag?
 5 A. It was on the bag.
 6 Q. Inside or outside?
 7 A. The outside of the bag.
 8 Q. Do you know how it was affixed to the bags?
 9 A. I think it was just a stick-on label.
 10 Q. And did the label contain any information other
 11 than a number?
 12 A. I don't recall whether or not it had the name -- it
 13 certainly had a number. I can't recall whether or
 14 not it had the name Hobart or Westinghouse on it or
 15 not.
 16 Q. And then you have a sheet of paper, as I understand
 17 it, that says something on it that tells you that a
 18 particular sample is a Hobart or is supposed to be
 19 a Hobart rod.
 20 A. Yes. That's right?
 21 Q. Is that just one sheet of paper?
 22 A. Well, I'm sure we had more than one sheet, because
 23 they were sent at different times.
 24 Q. When the Westinghouse rods came to you, were they

1 Dr. Dement PAGE 52
 2 packaged the same way?
 3 A. To my knowledge, yes.
 4 Q. Same identification process?
 5 A. Same process. Yes.
 6 Q. And a piece of paper that said Sample No. whatever
 7 it was are Westinghouse rods. Correct?
 8 A. That is correct.
 9 Q. Where are the identification papers now?

11 A. I really can't tell you whether or not they were
12 sent back with the materials, or whether or not we
13 have them in our files. I haven't looked for them.
14 Q. Do you have files pertaining to this project that
15 you have not produced?
16 A. No. This project is pretty much self-contained. I
17 mean, this is the report and my results.
18 Q. I don't recollect that you produced for us, Doctor,
19 anything in the way of an identification list from
20 your source indicating which rods were supposed to
21 be in which batch. Have I missed something? Or is
22 that piece of paper in these reports?
23 A. I don't recall whether or not we stuck that in here
24 or not. I don't think it's attached to our report.
25 Q. Let me ask you to do this, please. I think when we

1 Dr. Dement PAGE 53
2
3 set up this deposition some months back, we did
4 serve a Duces Tecum, which would have covered all
5 of your file materials pertaining to this project.
6 A. No, sir, you did not. This project was part of a
7 consulting study. And I don't think you asked for
8 any of that.
9 Q. Well, I think that the Duces Tecum that we served
10 on counsel specifically covered any material that
11 related to testing that you might have done. And
12 without arguing with you about it, let me ask you
13 if you will please go back and review your files to
14 determine whether there is any paperwork of any
15 kind that pertains to this project that hasn't been
16 produced to us, and whether you will produce that
17 paperwork.
18 A. I will say for the record, I will go back and see
19 if I have the numbers for the specific rods that
20 were tested in part of this report. The other part
21 of what we did is part of the consulting project,
22 and I will not divulge any of that material.
23 Q. Without getting into the details of that consulting
24 project, will you tell me what the nature of that
25 project was?

1 Dr. Dement PAGE 54
2
3 A. It was just receiving rods and have them looked at
4 for asbestos. But that was not part of this
5 report. Only three rods are part of this report.
6 And I'm not going to divulge that at this point.
7 Q. Well, what did you do with rods that you received
8 that weren't tested?
9 A. They were looked at for asbestos, really. And we
10 didn't test them. They were sent back.
11 Q. You or your staff, your team looked at them?
12 A. No. We sent them outside. We sent some material
13 outside to have it looked at for asbestos.
14 Q. When you say "material," do you mean rods?
15 A. Coatings of rods.
16 Q. So it wasn't actually rods themselves that were
17 sent, but rather ---
18 A. Some coatings that we scraped off the outside.
19 Q. And where were those sent?
20 A. NAS, I think it was, probably.
21 Q. Who is NAS? Is there a person particularly
22 associated with that?
23 A. Well, Bill Longo is the president of NAS.
24 Q. Well, did you get reports back on those?
25 A. I'm sure we had some reports back.

1 Dr. Dement PAGE 55
2
3 Q. Did those reports indicate that there was asbestos
4 in those rods?
5 A. Some did, some didn't.
6 Q. Was there any particular reason why you did not
7 test any of those rods?
8 A. Well, we chose the rods to test.
9 Q. I beg your pardon?
10 A. We chose a few rods to test based on the fact they
11 had asbestos or didn't have asbestos in them.
12 Q. How did you make the decision on which rods you

13 would test?
14 A. I think primarily we needed two asbestos-containing
15 rods at the same time.
16 Q. I'm not sure I understand that. When you say
17 "asbestos-containing rods at the same time," what
18 does that mean?
19 A. Well, if you're going to bump two rods together,
20 you want to make sure they're at least the same
21 manufacturer.
22 Q. Well, and as I understand it, the Hobart rods that
23 you bumped together were the same kind, at least,
24 as you understand it?
25 A. They were identified to us as the same kind. Yes.

1 Dr. Dement PAGE 56
2
3 Q. Why is it that you chose the Hobart rods rather
4 than some other rod that you had?
5 A. I think that was -- I don't remember all the
6 details. But it seems like that was the only two
7 that we had that were rods of the same kind that
8 had asbestos in them.
9 Q. Do you remember the names of the other
10 manufacturers, at least as reported to you, of rods
11 that you had?
12 A. No, other than Hobart and Westinghouse.
13 Q. Let me ask you to do this, Doctor. Without waiving
14 my right, the belief that I have the right to ---
15 MR. JACOBS: I object to this.
16 Q. --- to examine any of the material that you have
17 that pertains to welding rod testing, I would like
18 you to produce, please, any paperwork of any kind
19 or other data that you may have in whatever form
20 that pertains to the three rods that you tested as
21 described in these two reports.
22 A. I will go back in my files and find out if I have
23 anything with regards to those.
24 Q. And can you give us a timeframe within which we may
25 expect to hear from you regarding the results of

1 Dr. Dement PAGE 57
2
3 your search?
4 A. A few days.
5 Q. Let's take five.
6 (BRIEF RECESS)
7 Q. Doctor, do you know who affixed the sample number
8 labels to the plastic bags that had the rods in
9 them?
10 A. No. I do not.
11 Q. Do you know whose sample numbers these were? In
12 other words, who assigned the sample numbers to a
13 particular group of rods?
14 A. No. Ness Motley was working with a number of
15 different groups on this project. And I can't tell
16 you who the person who sampled -- who attached the
17 numbers to the bags.
18 Q. Do you know which groups they were working with?
19 A. No. I mean, probably if you gave me a name of
20 somebody, I might recognize it. But my primary
21 contact was with Cheryl Ingram.
22 Q. Would it be accurate to say, Doctor, that you have
23 no way of knowing whether what were described to
24 you as Hobart rods were in fact manufactured by
25 Hobart Brothers?

1 Dr. Dement PAGE 58
2
3 A. No. I had to rely on materials that were provided
4 to me.
5 Q. Would the same be true with respect to the
6 Westinghouse rods?
7 A. All of the rods. I mean, they were sent to me, and
8 I had to accept what was sent to me.
9 Q. All right. You have described the rods as being in
10 plastic bags. I presume the plastic bags were in
11 some sort of container when they were sent to you?
12 A. Yeah. Probably a Fed-Ex box.
13 Q. They weren't hand-carried to you, I take it?
14 A. No. They were sent, usually by Fed-Ex or one of

15 the air carriers.
 16 Q. So your best recollection is that it came to you by
 17 one of the express carriers?
 18 A. Yes.
 19 Q. When you received the Hobart rods and the
 20 Westinghouse rods, did you examine the bags?
 21 A. Yes. I did.
 22 Q. And were the bags intact?
 23 A. Yes.
 24 Q. Anything in the bags, other than the rods?
 25 A. No. Just rods.

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 2
 3 Q. No residue in the bags?
 4 A. I didn't really -- I didn't sample inside the bags
 5 for residue.
 6 Q. As I understand it, you returned the rods in
 7 question from your testing to Ness Motley.
 8 A. I believe they have all been returned, to the best
 9 of my knowledge. And I'll look at that, too, and
 10 make sure that's the case.
 11 Q. And just so I am clear, that would include the rods
 12 from which flux material was broken?
 13 A. Yeah.
 14 Q. The test that is outlined in Exhibit No. 1 ---
 15 A. Yes.
 16 Q. --- is residue test, correct, rather than an air
 17 test? Air sampling test?
 18 A. You're talking about Attachment ---
 19 MR. JACOBS: Exhibit No. 1 is the other.
 20 A. Oh. Is that Exhibit No. 1?
 21 MR. JACOBS: This is Exhibit No. 1. You were
 22 looking at Exhibit No. 2 up until now. Exhibit No.
 23 1 is labelled as your March 26, 1996, letter.
 24 Q. (By Mr. Davies) That's my fault, Doctor. I
 25 inadvertently got them mixed around when we put

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 2
 3 Exhibit No. 1 and Exhibit No. 2 on. So Exhibit No.
 4 1 is later in time than Exhibit No. 2.
 5 A. Yeah. This was analysis of some residues after the
 6 study with the used rods.
 7 Q. Was any of that residue returned to Ness Motley?
 8 A. No. I think we -- all of that went to the
 9 laboratory, the material that we could collect out
 10 of the bottom of the chamber.
 11 Q. And when you say "went to the laboratory," you are
 12 referring to Dr. Longo's laboratory?
 13 A. Yes.
 14 Q. Now, it's my understanding that you had some
 15 discussions with one or more people at Ness Motley
 16 before you began this testing. Is that correct?
 17 A. Yeah. We had some discussions. Sure.
 18 Q. And did those discussions include what it was that
 19 you were going to do with the rods?
 20 A. Well, I guess it was just a general outline of what
 21 we would do.
 22 Q. Did you tell them what you were going to do, or did
 23 they tell you what to do?
 24 A. I was simply asked to design a small experiment to
 25 evaluate whether or not welding rods contained

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 2
 3 asbestos fibers.
 4 Q. They asked you to do that?
 5 A. That is correct.
 6 Q. Is that the sum and substance of the discussions
 7 that you had with them prior to your doing the
 8 testing?
 9 A. Well, I gave some thought as to how that would
 10 occur, and then had a discussion with them about
 11 basically this protocol, that this was how we were
 12 going to do it.
 13 Q. And did they have any input with respect to the
 14 protocol?
 15 A. No. I was primarily apprising them of what we were
 16 going to do.

17 Q. I assume there was a charge associated with the
 18 work that you did here?
 19 A. Yeah. Duke, my employer, billed them.
 20 Q. Do you have any idea what the bill was when the
 21 total testing that was done?
 22 A. I don't know. I don't recall.
 23 Q. And it's your impression, I take it, that the bill
 24 was paid?
 25 A. As far as I know.

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 2
 3 Q. Where would we go if we wanted to find any of the
 4 billing records?
 5 A. I guess I'd have to go back to Duke billing. And I
 6 assume they could specifically pull out the bill,
 7 but I couldn't tell you.
 8 Q. Are you on salary at Duke, or were you at the time
 9 of these experiments?
 10 A. Yes.
 11 Q. Did you receive any portion of the proceeds that
 12 were sent to Duke for this testing?
 13 A. No. I receive a salary. Duke billed for the time
 14 and the expense.
 15 Q. Is your compensation in any way based upon the
 16 amount of consulting work that you do during a
 17 given period of time?
 18 A. No. I am salaried. I am a salaried employee. We
 19 all -- at the end of the year, if we happen to be
 20 in the black, we might get a small bonus at the end
 21 of the year.
 22 Q. Did you receive a 1995 bonus?
 23 A. Yeah.
 24 Q. As part of your employment relationship with Duke,
 25 are you expected to generate a certain number of

1 Dr. Dement PAGE 63
 2
 3 dollars in research grants or consulting work per
 4 year?
 5 A. You know, we're like any other faculty, you know.
 6 We don't live here for free. And if you don't
 7 support yourself and the people working with you by
 8 consulting, by research grants, teaching, you don't
 9 stay at any university for very long.
 10 Q. I understand that. Now, my question to you is, are
 11 you expected to generate a certain number of
 12 dollars per year?
 13 A. No.
 14 Q. Or a certain percentage over and above your gross
 15 salary?
 16 A. Oh, no.
 17 Q. Is there any formula that is in place, to your
 18 knowledge, or was in place at the time of this
 19 testing, that pertains to the amount of money you
 20 are expected to generate per year?
 21 A. No. There is no requirement that you be
 22 productive. You can be productive in other ways.
 23 Q. Is there any type of incentive program at the
 24 university, other than this bonus that you have
 25 described?

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 2
 3 A. Each department and division is pretty much
 4 different. But within our division, you know, we
 5 have -- we all consult. And it goes into a pool
 6 and it pays expenses and hopefully, we'll be in the
 7 black at the end of the year.
 8 Q. Doctor, before you began your testing of what has
 9 been described as the Hobart rods, did you check
 10 the rods for surface contamination of any kind?
 11 A. They were tested for asbestos content. I don't
 12 know how you would actually test a rod for surface
 13 contamination, since it already has asbestos in it.
 14 Q. Is the answer to my question, then, "no," you did
 15 not test for surface contamination of any kind?
 16 A. No. We didn't test. In fact, I don't know how you
 17 would -- given an asbestos-containing material, I
 18 don't know how you would sample and say that it was

19 this material versus the rod.
20 Q. Is that the case as well with respect to the
21 Westinghouse rods and the burned rods?
22 A. Yeah. With the Westinghouse rod, we found in our
23 analysis, as I recall, had no asbestos in it. And
24 so, we sampled the whole material.
25 Q. With respect to the burned rods, is it the case

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2
3 that you did not test for surface contamination of
4 any kind?
5 A. That is correct. We -- for the same reasons we
6 couldn't do it with the asbestos-containing rods.
7 Q. Did any of the testing that was done by you or by
8 the laboratory to which you sent material confirm
9 that sodium silicate had been used as the binder in
10 these rods?
11 A. No. I don't think we really looked at that. We
12 were analyzing for asbestos.
13 Q. My memory of a discussion that you and I had back
14 on January 3 is that you agreed that generally, it
15 is sodium silicate that was used as the binder in
16 these types of rods. Is that correct?
17 A. Yes. It's my understanding, again, based on review
18 of the literature, primarily. It's like a water
19 glass.
20 Q. And I think we agreed at least to some extent that
21 sodium silicate serves as an encapsulant.
22 A. Well, I think we -- encapsulant, I think we
23 disagreed on the terminology, as I recall. It's
24 the binder material that sort of holds it together,
25 yes.

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2
3 Q. Well, I think you and I can disagree on the extent
4 to which it encapsulates. But can we agree that at
5 least to some extent, in the binding process, it
6 encapsulates not only the asbestos but whatever
7 other ingredients may have been in the flux of the
8 rod?
9 MR. JACOBS: Objection as to form.
10 A. Well, it certainly -- it flows around the asbestos
11 material. I think my testimony before is, I don't
12 think it does it completely. It's sort of like
13 other products that are made with binders that hold
14 them together.
15 Q. If I recall your earlier testimony, you did agree
16 with me that, at least to some extent, the sodium
17 silicate would wet the asbestos. Correct?
18 MR. JACOBS: Objection as to form.
19 A. It would some -- at least in some ways, make its
20 way to the structure. Yes.
21 Q. Did you have any discussions with anyone at Ness
22 Motley regarding the results of the testing that
23 you did, or the results of the testing that Dr.
24 Longo did?
25 A. I read the report and sent it to them. I frankly

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2
3 don't -- I don't remember any discussion
4 afterwards.
5 Q. Was there any communication or correspondence
6 between you and that firm, other than your
7 transmitting reports to them?
8 A. No. Let me back up. Not on these tests.
9 Obviously, we have been looking at welding rods to
10 gather materials for a number of -- probably for a
11 number of years, really. I have had a file on
12 welding rods. I think I may have sent them copies
13 of some of the documents that you had listed here
14 last time, in reference to the last time.
15 Q. The documents you're referring to are the articles
16 that were on the list that you prepared?
17 A. That is correct.
18 Q. There is a letter in Exhibit No. 2 which suggests
19 that the burned rods came to you from Dr. Millette.
20 A. Yes. They did.

21 Q. Is that correct?
22 A. Yes.
23 MR. JACOBS: Do you know what page that is?
24 THE WITNESS: That's Page 8.
25 Q. How did Dr. Millette ship the rods which are the

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2
3 subject of his December 6, 1994 letter to you?
4 A. Probably they also came in a ziplock bag, shipped.
5 Q. And was there any type of sample number on those
6 rods?
7 A. Just the numbers designated here, his numbers.
8 Q. And when you say "his numbers," to which document
9 are you referring?
10 A. Well, he refers to his sample ID number on the
11 second page.
12 Q. Is that the page that we have marked 9?
13 A. Yes.
14 Q. I see in the -- on the bottom right of that page,
15 "that" being No. 9, the date December 27, 1993. Do
16 you agree with that?
17 A. Yes, sir.
18 Q. And this purports to be a polarized light
19 microscopy asbestos analysis. Is that right?
20 A. Yeah. This particular analysis is by PLM.
21 Q. And was there any other documentation that
22 accompanied these three burned rods?
23 A. No, sir.
24 Q. In Dr. Millette's letter he discusses a controlled
25 experiment. Do you have any idea what was involved

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2
3 in that?
4 A. No.
5 Q. And you have seen no reports regarding that
6 experiment?
7 A. No. I have seen no reports.
8 Q. And just so I'm clear, I take it you don't know
9 whether Dr. Millette or any of his people burned
10 the rods?
11 A. I couldn't tell you.
12 Q. And again, you have no idea where they came from or
13 what their history was?
14 A. No. They were sent to me as usual with the data
15 here.
16 Q. How much of these rods had been burned?
17 A. Well, I don't recall. I think the material that we
18 had was about six or seven inches long left.
19 Q. Were all three burned approximately the same
20 amount?
21 A. As I recall, yes.
22 Q. Was there any residue in the bag that you recall?
23 A. Not that I recall. Again, I'll have to say, I
24 didn't sample inside the bag the visible material.
25 Q. Visible material, you don't recall?

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2
3 A. No.
4 Q. Have you had any discussions with Dr. Millette
5 about any of the testing that you did?
6 A. No. I have not. I know Dr. Millette, and I think
7 we had a discussion that he was going to send his
8 material before. But I don't know about his
9 experiment.
10 Q. Did you relay the results of your experiment to
11 him?
12 A. No. I haven't sent it to anybody besides the
13 client for which I was working.
14 Q. Well, what I'm trying to understand is, the
15 circumstances by which these rods appear from Dr.
16 Millette -- you test them and send your results not
17 to Dr. Millette, but to Ness Motley. Could you
18 describe that for me?
19 A. No. I couldn't. You'd have to ask Ness Motley, I
20 suppose, whether or not they have some relationship
21 with Dr. Millette. I can't tell you.
22 Q. Who instructed you to send the results of this

23 testing on the burned rods to Ness Motley?
24 A. I was working with Cheryl Ingram. And that's the
25 person that was my contact with the client.

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2
3 Q. Is it correct that all of the sampling you did
4 during the rod testing was conducted at 12 liters
5 per minute?
6 A. Yes. It was.
7 Q. Why was 12 liters per minute chosen?
8 A. Well, we knew we had a short-term experiment. And
9 we tried to sample as much air volume as we could
10 in the time period. It's also consistent with some
11 of the sampling that's used, for example, by the
12 EPA in some of its clearance sampling, and uses a
13 higher volume.
14 Q. If one were doing individual air sampling involving
15 a cassette on a worker's lapel, what would be the
16 air flow?
17 A. It can range up to around three to -- well, two to
18 five liters a minute. Its limitation is primarily
19 the battery-operated pump that hangs on the belt.
20 Q. Let's talk for a few minutes about the Hobart rods
21 that were tested.
22 MR. JACOBS: Back on Exhibit No. 1 now?
23 MR. DAVIES: Exhibit No. 2.
24 Q. Looking again at Page 3 of Exhibit No. 2 ---
25 A. Yes.

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2
3 Q. --- the cassette in question here would have
4 identification number 4. Is that right?
5 A. Yeah, the filter itself. Yes.
6 Q. And just to take care of some housekeeping here,
7 would you look at Page 12 of that same report?
8 A. Yes.
9 Q. As I understand it, this is a summary sheet that
10 came back to you from Dr. Longo's laboratory. Is
11 that right?
12 A. That is correct.
13 Q. And he has client numbers 3 through 10 listed on
14 that report. Correct?
15 A. Yes.
16 Q. And is it your understanding that those numbers on
17 Page 12 match up with your numbers on Page 3?
18 A. Yes, sir. They do.
19 Q. Did you give any instructions to Courtney Smith as
20 to the manner in which she was to bump and rub
21 these rods together inside the test chamber?
22 A. Well, this is not -- wasn't intended to be a
23 destructive test, simply for a period of about 15
24 minutes to rub the rods together with -- you know,
25 with a little bit of pressure, but not to a point

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2
3 of trying to destroy the rod.
4 Q. And what about the pumping? How was that?
5 A. Just tapping, not to a point, again, of trying to
6 actually break off material, but just gently
7 tapping together.
8 Q. Well, during this 15-minute period when she was
9 bumping and rubbing the two Hobart rods, did any of
10 the flux material fall to the bottom of the
11 chamber?
12 A. I don't think we saw -- and we didn't collect
13 samples, as I recall, of flux material in the
14 bottom of the chamber that we could see with our
15 eye.
16 Q. Why was 15 minutes chosen as the period for the
17 bumping and rubbing?
18 A. It's as long as anybody can bump and rub.
19 Q. Well, if you think I'm touching that one, you are
20 sorely mistaken.
21 A. Well, it's chosen just as a period of time which we
22 felt that if we were to get enough material off the
23 rod to sample, that given a flow rate, we should be
24 able to at least have a reasonable detection level.

25 That's all.
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2
3 Q. And of course, the pump is running and air is being
4 pulled during that 15 minutes, correct?
5 A. Yes. It is.
6 Q. The fan is not on during that initial 15 minutes?
7 A. No. The fan was turned on after sort of the last
8 five minutes of the sample, after the bumping and
9 rubbing was complete.
10 Q. My understanding is that at the conclusion of the
11 15-minute period of bumping and rubbing, the test
12 is not stopped ---
13 A. No.
14 Q. --- and a filter removed at that point?
15 A. No. It's the same filter.
16 Q. So we have 15 minutes of rubbing and bumping. The
17 rubbing and bumping stops, the fan is turned on for
18 five minutes ---
19 A. That's right.
20 Q. Is that correct? Are the rods simply put back on
21 the bottom of the chamber during that five-minute
22 period?
23 A. Yes. They are.
24 Q. At the end of five minutes, the fan is turned off.
25 Correct?

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2
3 A. That is correct.
4 Q. And then it seems to me I read somewhere that the
5 sampling continues for another 10 minutes.
6 A. Yeah. The entire sampling period, we tried to
7 total a half hour or 30 minutes.
8 Q. Was there any particular reason why 30 minutes was
9 chosen as the sampling time?
10 A. Well, again, looking at the flow rates in the time
11 period, the idea was to get sufficient volume to
12 have a reasonable detection limit. And also, by
13 the time you run this sample, you -- for 15 minutes
14 after the close of the experiment, you would have
15 had a number of air changes in the chamber.
16 So you would expect that, after a period of
17 time, that you would have evacuated the chamber a
18 number of times, and the concentration would drop.
19 Q. At 12 liters per minute, do you have any idea how
20 many air changes, complete air changes, would occur
21 within that chamber in 30 minutes?
22 A. We did look at that. I don't remember the number.
23 It would have been a few air changes.
24 Q. What is your range of "few"?
25 A. I don't recall the number. We calculated the

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2
3 volume of the chamber and the flow rate, and we
4 knew that we were getting some air -- a fair number
5 of air changes.
6 Q. To the best of your knowledge, are there any
7 government regulations that pertain to sampling for
8 asbestos that call out a 30-minute sampling period?
9 A. Well, if you're going to sample for -- if you were
10 to sample, for example, for the OSHA short-term
11 exposure limit, you could use a sample period of
12 that time.
13 Q. Is that spelled out in the regulations?
14 A. Yeah. Usually 15 to 30 minutes is determined
15 short-term exposure limit. But we weren't trying
16 to sample against OSHA standards.
17 Q. You mentioned OSHA standards. Let me just ask a
18 couple of questions about that as it pertains to
19 this testing that you did. You mentioned short-
20 term exposure limit.
21 A. Yes.
22 Q. How is that defined under OSHA?
23 A. Well, it's a concentration. And I think OSHA uses
24 a 15-minute period of time that the concentration
25 is not to exceed in any 15 minutes during the whole
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2
3 time.
4 Q. Is there a current STEL for asbestos?
5 A. Yeah. Yeah. It's one fiber per cc by the phase
6 contrast method.
7 Q. How long has that one fiber per cc STEL been in
8 effect?
9 A. Well, the original OSHA standard in 1986 didn't
10 have a STEL. They were sued by, I think, one of
11 the unions to put in place a STEL. And I think
12 that came in place around 1987 or 1988. They went
13 back through the rule-making process.
14 Q. Prior to the setting of the STEL, what was the
15 controlling OSHA standard?
16 A. Well, at the time, it was .2 fibers per cc on an
17 eight-hour time-weighted average basis.
18 Q. When you say "at the time," what time period are we
19 talking about?
20 A. 1986.
21 Q. And the time-weighted average takes into account an
22 exposure period over an eight-hour workday?
23 A. That is correct.
24 Q. And was .2 fibers per cc the permissible exposure
25 limit under OSHA?

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2
3 A. Yes.
4 Q. And that's referred to as a PEL?
5 A. That is correct.
6 Q. Was there a PEL for asbestos before the .2?
7 A. Yes. There was.
8 Q. What was that?
9 A. It was 2 fibers per cc, actually starting in 1976.
10 Q. And what is a -- strike that, please.
11 Is it correct that the PEL contemplates the
12 eight-hour time-weighted average?
13 A. Well, the -- usually the PEL does. In some cases,
14 depending on the material, they may have shorter
15 than eight hours. It's just OSHA's permissible
16 exposure limit. And then they can define that time
17 period. For example, some materials have acute
18 effects, and they might have a shorter time period.
19 Q. Asbestos is not one of those materials, is it, that
20 has a short-term effect?
21 A. Well, that's the reason for the ceiling, or for the
22 short-term exposure limit.
23 Q. Okay. But again, just so I understand this, when
24 we talk about the OSHA PEL from 1976 until 1986
25 being 2 fibers per cc, we are talking about an

1 Dr. Dement PAGE 79
2
3 eight-hour time-weighted average.
4 A. That is correct.
5 Q. Was there a PEL before 1976?
6 A. Starting in 1970 -- actually, December of 1971,
7 with the emergency temporary standard, that number
8 was 5 fibers per cc on an eight-hour time-weighted
9 average basis.
10 Q. And how about before 1971?
11 A. There was no real OSHA standard. For a short
12 period of time, they adopted the 68 threshold limit
13 values, but then they went to the emergency
14 temporary procedure rather immediately.
15 Q. What was the 1968 threshold limit value that OSHA
16 adopted until 1971?
17 A. Well, it was 2 million particles per cubic foot on
18 12 fibers per cc. That was part of the original
19 start-up standards.
20 Q. 12 fibers per cc?
21 A. Yes.
22 Q. Is it correct that Courtney Smith did all of the
23 bumping and rubbing of Hobart rods?
24 A. She did all the bumping and rubbing of all the
25 rods, to try to control at least one variable.

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2
3 Q. After the bumping and rubbing of the Hobart rods,

4 and while the fan was blowing, were you able to see
5 any particulate moving in the chamber?
6 A. I don't recall that you could, no.
7 Q. How far from the fan was the filter?
8 A. Probably around 18 inches or so. The fan is
9 located in the upper right-hand corner of the
10 chamber, and the sample was down in the bottom
11 right corner.
12 Q. In which direction was the open face of the filter
13 pointed?
14 A. It was pointed inward.
15 Q. Was the filter cassette itself horizontal, or
16 vertical, or -- how would you describe it?
17 A. It was in the horizontal position.
18 Q. After the 30 minutes of air sampling is completed
19 on the Hobart rods, my understanding is that Ms.
20 Smith puts her hands back into the gloves, closes
21 up that filter, and tapes it.
22 A. That is correct.
23 Q. Correct? And she has already got the blank filter
24 ---
25 A. Which is laying in the bottom of the chamber,

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2
3 sealed up.
4 Q. Taped. At that point, then, is the chamber opened?
5 A. Yeah. The process then is, everything is -- an
6 attempt to wash down, wipe down, materials before
7 you open the chamber. And also, we let it purge
8 after the -- after we stopped the fan. We let it
9 purge, get the air exchange a bit more.
10 Q. Well, let me stop you there. Is it the case that
11 the wipe-down of the water bottle and the ring
12 stand and whatever else may be in the chamber
13 occurs while the chamber is still sealed?
14 A. Yes. It occurs while it's sealed. The objective
15 there is, of course, to not allow anything out into
16 the room.
17 Q. And does the wipe-down of the interior portion of
18 the chamber occur while it is still sealed?
19 A. Yes. It does.
20 Q. Was anything done to determine the effectiveness of
21 the cleaning that was done?
22 A. Well, yeah. We collected background samples
23 between studies, which was under control.
24 Q. Beyond that, was anything done?
25 A. No. The background samples, we thought, were the

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2
3 most important.
4 Q. How long did it take to complete the wipe-down of
5 the inside of the chamber and its contents?
6 A. 15, 20 minutes or so.
7 Q. And after that 15 or 20 minutes, you continued to
8 pull air through?
9 A. Not the filter.
10 Q. Through the filter?
11 A. Not the sampling filter, but the chamber, yes.
12 Q. And how long did that go on?
13 A. Probably ran that for another 15 to 20 minutes.
14 Q. And then was the chamber opened.
15 A. Then the chamber was opened.
16 Q. Let me step back to while the testing is going on.
17 Is the outlet portal of the chamber where the HEPA
18 filter is located closed off?
19 A. Yeah. During the actual sampling that the -- what
20 we call the purging filter, is cut off. It has a
21 damper, or slide, that's cut off.
22 Q. So the only -- during the testing, the only air
23 that is getting out of the chamber is going through
24 the filter cassette?
25 A. That is correct.

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2
3 Q. Picking up the story where we left off, you have
4 now opened the chamber.
5 A. Yes.

6 Q. What is taken out?
 7 A. Well first, of course, is to take out the sample
 8 and filters. The rods are back in their bag.
 9 Q. They have been put back in while it was sealed?
 10 A. Yes.
 11 Q. The chamber was sealed?
 12 A. Uh-huh (yes). And then, of course, the bag is
 13 wiped down on the outside so that, basically,
 14 materials are taken out of the chamber, the rods
 15 and the samples themselves. Most of the other
 16 material is left in the chamber where they take it
 17 out to the laboratory.
 18 Q. So the bag containing the rods that were used in
 19 the test is removed?
 20 A. That is correct.
 21 Q. The two filter cassettes are removed?
 22 A. That is correct.
 23 Q. A new bag of rods is put in, and two new filters
 24 are put in.
 25 A. That's sort of the process. Yes.

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 2
 3 Q. The chamber is then sealed?
 4 A. That is correct.
 5 Q. And then one of the filters is put into place to
 6 pull air?
 7 A. We would go through another purge cycle after
 8 everything is put in place. We would go through
 9 another purge cycle for the chamber. Then, after
 10 the purge cycle, for 25 minutes or so, we would
 11 then do another background sample. Well, back up.
 12 You have to go through the calibration process,
 13 first.
 14 Then you do the background sample, and then
 15 you do your bumping and start the process over
 16 again.
 17 Q. The second test that you performed was on the
 18 Westinghouse rods. Correct?
 19 A. Yes.
 20 Q. And your understanding, from the test results that
 21 you reviewed, is that these rods did not contain
 22 asbestos?
 23 A. That is correct.
 24 Q. And would you have gone through the same procedure
 25 during that test as that which we have already

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 2
 3 reviewed with respect to the Hobart test?
 4 A. Exactly the same.
 5 Q. And was there any residue seen on the bottom of the
 6 chamber after the Westinghouse rods had been bumped
 7 and rubbed for 15 minutes?
 8 A. Not that I recall, no.
 9 Q. When the fan was running with respect to the
 10 Westinghouse rods, could you see anything -- any
 11 particulate blowing around in the chamber?
 12 A. You couldn't see visible material. The filters
 13 themselves found some material. I mean, some
 14 residue from the rods. Not visible dust.
 15 Q. And is it correct that you concluded the testing of
 16 the Westinghouse rods in the same fashion that you
 17 have described for the Hobart rods?
 18 A. Yes.
 19 Q. Then the entire chamber and contents are purged in
 20 -- strike purged. Are cleaned in the same manner
 21 that you have already described?
 22 A. Same procedure for wiping down, taking the filters
 23 out.
 24 Q. And then in come the burned rods.
 25 A. Yes.

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 2
 3 Q. And they're in a plastic bag.
 4 A. That is correct.
 5 Q. And you have got two more cassettes coming in.
 6 Correct?
 7 A. Yes.

8 Q. And the chamber is sealed. Correct?
 9 A. Yes.
 10 Q. And you then purge the chamber for a period of 20,
 11 25 minutes?
 12 A. Right.
 13 Q. Then you set up and draw another blank?
 14 A. That is correct. We calibrate the filter again,
 15 and do the blank.
 16 Q. And after the blank is drawn, it is -- that
 17 cassette is sealed, and you then set up to do the
 18 testing on the burned rods.
 19 A. That is correct.
 20 Q. And is the bumping and rubbing on the burned rods
 21 done in the same fashion as with the earlier two
 22 tests?
 23 A. Yes, sir. We attempted to try to go through the
 24 same process with each sample.
 25 Q. And do you recall whether there was any residue on

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 2
 3 the chamber floor after the burned rods were bumped
 4 and rubbed?
 5 A. Yes, sir. We did observe residue on the chamber
 6 floor. And we did collect a sample of that
 7 material.
 8 Q. Tell me when in the process that sample was taken.
 9 A. It was after the test was done, after all of the
 10 background sample, the air sample from the test,
 11 the whole process in terms of purging, at least,
 12 was done, but before cleaning.
 13 Q. So I take it, then, that when the sample was
 14 collected from the floor of the chamber, the
 15 chamber was still sealed?
 16 A. Yes, sir. It was.
 17 Q. Describe for me, please, the process of collecting
 18 this residue.
 19 A. Basically, all we did was -- the material had
 20 collected in the bottom of the chamber, we took the
 21 same bag, plastic bag with the rods that come in,
 22 two to rods that we had originally for the bumping.
 23 We collected material from the bottom of the
 24 chamber into that sample bag.
 25 Q. How -- what did you use to pick up the residue from

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 2
 3 the bottom of the chamber and get it into the bag?
 4 A. We just scraped it in the glove.
 5 Q. So the bag would be held open against the bottom of
 6 the chamber ---
 7 A. Exactly.
 8 Q. --- and one hand was used to scrape it in?
 9 A. Scrape it in.
 10 Q. Any idea of the quantity of the material that you
 11 collected?
 12 A. Well, that -- the quantity was reported back to us.
 13 We obviously didn't weigh the material ourselves,
 14 but we sent it directly to the lab. They then went
 15 through a process of extracting. And the weights
 16 are in the subject report.
 17 Q. Did the lab report back to you on the total weight
 18 of all residue that was sent to it?
 19 A. Yeah. I think they used all the material, because
 20 it -- to my knowledge, they used all the material
 21 that we had. I mean, we tried to collect as much
 22 as we could to send to the lab.
 23 MR. JACOBS: For clarification, are we talking
 24 about the Exhibit No. 1 the test?
 25 THE WITNESS: That is correct.

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 2
 3 Q. Was the filter cassette in essentially the same
 4 position for all three tests?
 5 A. Yes, sir. We kept that consistent. That was the
 6 reason for having the ring stand in the chamber.
 7 Q. With respect to the burned rods, what did you do
 8 with the third rod that Dr. Millette sent you?
 9 A. We didn't test it. We didn't have another one to

10 bump against it, so we didn't do anything with it.
 11 Q. Was it returned to Ness Motley?
 12 A. To my knowledge. I mean, I think all the rods were
 13 returned.
 14 Q. Now you -- as I understand it, you used the bag
 15 that the rods, the burned rods, had been in to
 16 collect the residue to send to Dr. Longo.
 17 A. Yeah. And I think perhaps even those rods were --
 18 the residues were sent to him. I mean, the actual
 19 -- the actual rods themselves were in the bag.
 20 Q. And how were they sent to him?
 21 A. Sent by just Federal Express.
 22 Q. Do you have any idea what he did with the rods when
 23 he was finished with his testing?
 24 A. We asked him to look at the residue. We didn't ask
 25 him to do anything with the rods themselves.

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 2
 3 Q. If I asked you this earlier, I apologize for
 4 repeating myself. Did you ever have any
 5 discussions with Dr. Longo or any members of his
 6 staff regarding the results of his tests?
 7 A. No. I called him and spoke with him before sending
 8 the samples down. But I -- just the reports.
 9 Q. You were kind enough a few minutes ago to tell me
 10 about the PEL and STEL for asbestos. And you
 11 mentioned that there was a TLV for asbestos that
 12 was in place as early as 1968. Correct?
 13 A. The ACH TLV. Yes.
 14 Q. And TLV means threshold limit value?
 15 A. Yes.
 16 Q. And that's a term that is owned by the ACGIH?
 17 A. Yes, as a registered trademark of ACGIH.
 18 Q. If you know the TLV values for asbestos from 1968
 19 forward, could you recite them for me?
 20 A. Well, they've gone through some changes. The TLV
 21 was dropped to 2 fibers per cc. I don't remember
 22 the exact dates. Recently, they adopted the .2
 23 fibers per cc. That was done in the last couple of
 24 years. Frankly, after passage of OSHA, I didn't
 25 follow TLV's and their change, because it really

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 2
 3 didn't have the force of law.
 4 Q. Is it your understanding that when the TLV for
 5 asbestos changed from 2 fibers per cc, it went to
 6 .2 fibers per cc?
 7 A. There was an intermediate step, as I recall. And
 8 they made some distinction initially between
 9 chrysotile and amphiboles, and then they changed
 10 their mind and have treated them all the same.
 11 Q. But as you said, the TLV is not the law.
 12 A. No. It's just a number put together by a group of
 13 people volunteering their time.
 14 Q. But the PEL and the STEL are the law. Is that
 15 right?
 16 A. They are. Yes.
 17 Q. And the PEL and the STEL are part of the OSHA
 18 regulations.
 19 A. Yes.
 20 Q. For purposes of determining PEL and STEL, does OSHA
 21 define a fiber?
 22 A. For purposes of a count based on that method of
 23 sampling, yes.
 24 Q. For purposes of counting, what's the OSHA
 25 definition?

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 2
 3 A. Well, basically, they define a fiber as being a
 4 particle of an aspect ratio that has a
 5 length/diameter of at least three to one. And for
 6 counting, using the phase contrast method to count
 7 fibers, longer than five micrometers.
 8 Q. Does OSHA take into account a diameter measurement
 9 for counting purposes?
 10 A. Well, they -- in the original standards they did
 11 not. The most recent one, they talk about

12 respirable fibers, or less than three, three and a
 13 half micrometers in diameter, which almost every
 14 sample you can collect comes short of -- less than
 15 that. So, it's not really a -- it's on the books.
 16 But it's not really very practical.
 17 Q. Are you familiar with the NIOSH 7400 and 7402
 18 counting methods?
 19 A. Yes.
 20 Q. Does NIOSH 7402 have a minimum diameter
 21 measurement?
 22 A. A minimum measurement?
 23 Q. Yes.
 24 A. 7402, you're talking about the electron microscopy
 25 method?

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 2
 3 Q. Yes, sir.
 4 A. It's based on the resolution of the microscope.
 5 That's the minimum counting.
 6 Q. Are you familiar with any standard that indicates,
 7 for counting purposes, a fiber must have a diameter
 8 of .25 microns or greater?
 9 A. For purposes of counting fibers?
 10 Q. Yes.
 11 A. Not really. You would lose -- you would actually
 12 lose a lot of asbestos fibers by that, by such
 13 a --
 14 Q. So as far as you are concerned, there is no
 15 counting method under NIOSH that says for counting
 16 purposes, a fiber must have a diameter of .25 or
 17 greater?
 18 A. Apparently, NIOSH discusses .25 as being sort of
 19 their limit of resolution of the phase contrast
 20 method. And that's the reason for that discussion,
 21 because you can't see fibers much smaller than that
 22 with phase contrast anyway.
 23 Q. Well, under OSHA, for a fiber to be counted, must
 24 it have a diameter of .25 microns or greater?
 25 A. It's not used. Counting -- basically, the

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 2
 3 definition I've said is what's used.
 4 Q. So your understanding of the OSHA counting method,
 5 then, is that any fiber which is greater than five
 6 microns and has a length to width ratio of three to
 7 one or greater is a countable fiber.
 8 A. Yeah. They have some specifications on diameter
 9 respirability. But again, for practical purposes,
 10 it has no -- it's on the books. But airborne
 11 fibers collected are going to always have fibers
 12 diameter's less than that. They're just not going
 13 to --
 14 MR. JACOBS: Objection to the series of
 15 questions as to form, only because you talked about
 16 two different types of methods of counting in the
 17 series of questions. We just got through talking
 18 about it.
 19 Q. Doctor, you mentioned that under the OSHA counting
 20 method, there is something on the books that has to
 21 do with respirability.
 22 A. Yes.
 23 Q. Correct? Can you tell me what that is?
 24 A. Well, in the OSHA standard, and in some of NIAR's
 25 documents, talk about what is a respirable fiber.

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 2
 3 And it's primarily a function of its diameter. And
 4 most people agree that a fiber will be respirable
 5 if it's less than three or three and a half
 6 micrometers in diameter.
 7 And so, yeah, it's discussed. And it's
 8 actually part of the counting process. But for
 9 practical purposes -- I've sampled thousands of
 10 asbestos situations. Nearly all the fibers,
 11 airborne fibers, are going to be less than that
 12 respirable upper limit.
 13 So it has no practical value.

14 Q. In the reports that came back to you from Dr. Longo
15 regarding his testing, did he distinguish between
16 fibers which he found which were greater than five
17 microns and those which were less than five
18 microns?

19 A. He reports his data in terms of structures per cc
20 as a total count. Attached to the report are
21 actually results of the count in terms of size.

22 Q. Let's turn to the earlier report, Doctor, and talk
23 about some of the specifics there. And that is
24 what's marked as Exhibit No. 2.

25 A. Yes.

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2
3 (BRIEF RECESS)

4 A. I want to clarify one point. We talked about
5 counting of fibers of minimal diameter of .25.

6 Q. Uh-huh (yes).

7 A. And again, the only reason for that is, if you want
8 to do electron microscopy counts, and you want to
9 make that comparable to so-called phase contrast
10 counts, then that's sort of the criteria that's
11 used, because that's considered more or less the
12 limit of resolution.

13 We have done some work ourselves with regard
14 to phase contrast and trying to relate that to TEM
15 counts. We don't necessarily agree. We think you
16 can actually see fibers by the phase contrast less
17 than .25. That is what's called a resolution of a
18 microscope, and its ability to define two circles
19 as independent, the distance between two circles.

20 But to count a fiber, you don't have to do
21 that. You just have to see it as an elongated
22 particle. So, that is background information.
23 Q. Well, let me ask you a general question, then. If
24 I am using transmission electron microscopy to
25 determine fiber size, and I'm looking for OSHA

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2 fibers ---

3 A. Right.

4 Q. --- would I count something that has a diameter
5 less than .25 microns?

6 A. If you just go by the -- what I'm saying is, the
7 standard resolution of a microscope, you would say
8 between 2/10th's and 2/5. I mean, that's sort of
9 the theoretical limitations. But in reality,
10 fibers are counted by the PLM that are less than
11 that.

12 You can see them, especially an elongated
13 particle. You can see the diameter.

14 Q. Is there an answer to my question?

15 A. No. There's no precise answer to your question,
16 because there's a gray area in there that there is
17 actually some disagreement of whether or not you
18 see or don't see it.

19 Q. Well, let's take this hypothetical. If I'm looking
20 at fibers using TEM, but I want to count OSHA
21 fibers, and I have a fiber that is greater than 5
22 microns in length, and is .1 microns in width,
23 would that be considered an OSHA fiber?

24 A. In my -- based on my experience, yes. It would be.

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2 It would be a fiber that would likely be seen by
3 most PLM microscopes.

4 Q. Same hypothetical, but instead of a diameter of .1,
5 the diameter is .05. Would that be an OSHA fiber?

6 A. Well, yeah. Defining OSHA fiber as some fiber
7 that's -- if you want to define OSHA fibers, you
8 have to go back and use PLM. But no, you're likely
9 not to see that with phase contrast microscopy.
10 You have to realize that the OSHA counting, based
11 on the NIOSH method, is only an index of exposure
12 to fibers, anyway.

13 In fact, in textile mills, where I have done a
14 lot of work, if you look at airborne fibers and

16 count them by phase contrast versus what's really
17 there, you're only counting a small piece of it.
18 So, it's always viewed as an index of exposure, not
19 necessarily to define fibers that have biological
20 activity versus those that don't, but based on a
21 practical sampling.

22 Q. When counting OSHA fibers, should one use the NIOSH
23 7400 and 7402 methods?

24 A. It depends on your objective. I mean, I prefer to
25 use the best analytical method I can, especially if

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2 you're doing the type of study that we're referring
3 to here.

4 Q. Well, does OSHA call out, or specify, the method
5 that is to be used for sampling that is done under
6 the OSHA regulations?

7 A. It does, for purpose of regulatory sampling. It's
8 the phase contrast method, because it's cheap and
9 it's readily available, and all those things that
10 go into regulations.

11 Q. Is that the 7400, NIOSH 7400 method?

12 A. It's the 7400 with some modifications. They
13 actually, in 1986, slightly modified the 7400.

14 Q. How was it modified in 1986?

15 A. Well, they talked about different counting, some
16 different counting, A&B counting rules, for
17 example. I don't think they accepted the B
18 counting rules. They also specified this, called a
19 CAWL, that's a sampling set.

20 I'm sorry. I didn't catch that.

21 A. A CAWL. It's an elongated tube, actually in front
22 of the sampling cassette.

23 Q. Let me turn to the report that is marked Exhibit
24 No. 2. Would you look at Page 3?

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2 Yes.

3 Q. Please. In the third line from the top, you
4 reference 40 CFR 753 sub-part E, Appendix A.

5 A. Right.

6 Q. What is that?

7 A. That's the EPA rule. It's actually part of the
8 asbestos in school regulation. This is called the
9 EPA interim counting method.

10 Q. Is that an AHERA method?

11 A. Yeah.

12 Q. A-H-E-R-A?

13 A. Yes. It is.

14 Q. Was that method used in any of the counting that
15 was done?

16 A. That's actually the structures, the method
17 specifies counting fibers and structures. And
18 that's actually the way the data is presented in
19 the packaged report.

20 Q. Is that the method that Dr. Longo used in the
21 counting that he did?

22 A. From my understanding, yes, that's the method that
23 was used.

24 Q. In the report that you have submitted, you have

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2 included Dr. Longo's count sheets. Correct?

3 A. Yes. I have.

4 Q. On Page 4, five lines from the bottom, you say that
5 filter blanks and chamber background samples
6 collected prior to each experiment did not detect
7 the presence of chrysotile and so forth?

8 A. Yes.

9 Q. You reference filtered blanks there. When you use
10 the word "blank," what does that mean?

11 A. Well, one of the filters that was used here, the
12 one that was used for calibration, and was also
13 submitted, was also not found to contain asbestos.
14 Q. Well, let's look for a second, just so I am clear,
15 at Page 3 again.

16 A. Right.

18 Q. Sample ID 10 is a field blank. Correct?
 19 A. Right.
 20 Q. And does that mean that there was no air ---
 21 A. That is correct.
 22 Q. --- pulled through that?
 23 A. That is correct.
 24 Q. And it was submitted for analysis. Correct?
 25 A. Yeah. Mainly as a check for the background of the

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 2
 3 filter itself. But I think more importantly is the
 4 calibration filter and all of the blank background
 5 filters which have air pulled through them also
 6 were found to contain asbestos.
 7 Q. Is it correct that only one filter that had no air
 8 pulled through it was tested?
 9 A. Submitted for analysis, yes.
 10 Q. On Page 6, at the top is the heading "Materials
 11 Analytical Services, Inc."
 12 A. Right.
 13 Q. Who is that?
 14 A. That's the same group who did the other analysis.
 15 It's Bill Longo.
 16 Q. And do you have any idea who put the writing on
 17 this particular form?
 18 A. No.
 19 Q. In the lower left corner it talks about the number
 20 of structures.
 21 A. I guess there's an analyst that's sort of in the
 22 dark area that signed, back up to your question.
 23 Q. Can you make that out?
 24 A. No.
 25 Q. In the lower left corner it talks about structures.

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 2
 3 Correct?
 4 A. Yes.
 5 Q. Does that tell us anything about whether the
 6 structure is a matrix, or a bundle, or a cluster,
 7 or an individual fiber?
 8 A. No. This was just looking for the presence or
 9 absence of asbestos.
 10 Q. Does it tell us anything about the size of the
 11 structures?
 12 A. No.
 13 Q. Looking at Page 12, again, this is a summary that
 14 came from Dr. Longo's lab. Is that right?
 15 A. That is correct.
 16 Q. In the left column, under the heading "Phase
 17 Contrast Microscopy," ---
 18 A. Yes.
 19 Q. --- there is a listing for structures per cc.
 20 Correct?
 21 A. Yes.
 22 Q. Is it correct that phase contrast microscopy does
 23 not tell us whether a particular structure is
 24 asbestos or not?
 25 A. That is correct.

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 2
 3 Q. Can you make that determination using techniques
 4 available under transmission electron microscopy?
 5 A. Yes. You can.
 6 Q. What are those techniques?
 7 A. Well, first of all, it's sort of the morphology of
 8 a particle to define it as a possible fiber of
 9 interest. Then, most people look at it by energy
 10 to disperse of X-ray analysis as one technique, or
 11 electron defraction is another.
 12 Q. Is one of those two better than the other at
 13 determining whether a structure is asbestos or not?
 14 A. Not necessarily. They're both useful, and the labs
 15 use different techniques, and sometimes both.
 16 Q. Would you look at Page 13, please?
 17 A. Yes.
 18 MR. JACOBS: Of Exhibit No. 2?
 19 MR. DAVIES: Yes.

20 Q. (By Mr. Davies) Now, in the upper left corner it
 21 indicates that this is Sample ID 3. And as I
 22 understand it, from Page 3 of your report, that
 23 would be one of the filters that was used for
 24 sampling the background. Is that right?
 25 A. That is correct.

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 2
 3 Q. And in that portion of the report that refers to
 4 asbestos concentration data, the initials BAS
 5 appear. Correct?
 6 A. Yes.
 7 Q. What does that mean?
 8 A. I think it means it's below the analytical
 9 sensitivity as evidenced by the -- as are evidenced
 10 by the results that were presented back.
 11 Q. In the lower right corner of Page 13, there is the
 12 heading "Analytical Sensitivity Structures per cc."
 13 Correct?
 14 A. Yes.
 15 Q. And for this particular sample, that is given as
 16 0.013.
 17 A. That is correct.
 18 Q. I understand that to mean that although no asbestos
 19 structures were found, the analyst could not rule
 20 out the possibility that such a structure may have
 21 been present. Is that ---
 22 A. You can never rule out the negative. What the
 23 analyst does is, goes through a routine, a
 24 standardized process, and based on the volume of
 25 the air sample, the area, the number of grids

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 2
 3 counted, determines how low they feel they can
 4 detect and quantify material.
 5 And that's as low as it could go.
 6 Q. Well, is the analyst saying that although I did not
 7 find any asbestos fibers, there could be a
 8 concentration as great as .013 fibers per cc?
 9 A. No. That's not what he's saying. He's just saying
 10 it's below his ability to define it. Beyond that,
 11 it's anybody's guess.
 12 Q. Would you look, please, at Page 15?
 13 A. Yes.
 14 Q. And this is Sample 4 which, according to your
 15 records, is the filter taken from the Hobart test.
 16 Correct?
 17 A. Yes.
 18 Q. In the upper left corner it says, under "Analytical
 19 Protocol Level II," Roman Numeral II, what does
 20 that mean?
 21 A. I don't know what it means. It's the lab's
 22 identification of their protocol. If the protocol
 23 is micron microscopy, a level I may be phase
 24 contrast. I can't tell you.
 25 Q. Would you also look in conjunction with that at

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 2
 3 Page 16?
 4 A. Yes.
 5 Q. And is Page 16 the count sheet which corresponds to
 6 the data reported on Page 15?
 7 A. Yes.
 8 Q. Looking at Page 16, can you tell me how many
 9 crysotyle asbestos structures are found?
 10 A. Well, he counted a total of nine structures.
 11 Q. And are any of those structures fibers that would
 12 be counted under OSHA?
 13 A. Well, if you look at the columns width and diameter
 14 -- I mean, excuse me, length and width, Number 7
 15 would have been a countable structure.
 16 Q. I note, under the column -- again, on Page 16 --
 17 under the column titled "Structure," there is the
 18 letter M and the letter B.
 19 A. Right.
 20 Q. What does that mean?
 21 A. It's a matrix/bundle.

22 Q. And the M and the B are both circled. Correct?
 23 A. Circled?
 24 Q. There is a circle ---
 25 A. It's not circled on my page.

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 2
 3 MR. JACOBS: 16? No circles on my pages.
 4 Q. May I see yours? Do you have the original report,
 5 Doctor?
 6 A. Yes. That's the one that was photocopied against.
 7 That was exactly the one that's ---
 8 MR. JACOBS: And I'm the one who gave it from
 9 my copy.
 10 Q. (By Mr. Davies) I stand corrected. There are no
 11 circles. Thank you. When one is dealing with a
 12 structure that is a matrix, how are the dimensions
 13 recorded?
 14 A. Well, if you're looking at it by phase contrast,
 15 you would simply look at its widest dimension
 16 versus its length, its longest dimension.
 17 Q. And ---
 18 A. It's hard to see a bundle with the phase contrast,
 19 because they appear to be usually one type of
 20 fiber.
 21 Q. Well, as I understand it here, Dr. Longo or his
 22 people were looking at these structures under the
 23 transmission electron microscope. Correct?
 24 A. Right.
 25 Q. Referring to Structure No. 7 ---

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 2
 3 A. Okay.
 4 Q. --- which has a length in microns of 7.0 ---
 5 A. Right.
 6 Q. --- does that 7.0 represent the gross length of the
 7 matrix?
 8 A. That's usually the rule when it's used, yes.
 9 That's the minimum and maximum, length and width.
 10 Q. And using that same structure, then, the 0.6 micron
 11 width would represent the gross width of the
 12 matrix.
 13 A. Yes.
 14 Q. Would you look at Page 17, please, Doctor?
 15 A. Yes.
 16 Q. And is this an X-ray energy dispersion spectra?
 17 A. Yes, it is.
 18 Q. Spectrum?
 19 A. Yes, it is. I'm sorry.
 20 Q. Is there any way for you to tell us which structure
 21 reported on Page 60 is shown by the spectrum on
 22 Page 17?
 23 MR. JACOBS: Say it one more time. We can
 24 have it read back.
 25 Q. Let me try it another way, Doctor. My impression

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 2
 3 is, that the spectrum that is shown on Page 17 is
 4 an edax of one of the structures that is reported
 5 on Page 16. Is that your impression as well?
 6 A. That is correct.
 7 Q. Are you able to tell me which of the nine
 8 structures reported on Page 16 is shown on the edax
 9 spectrum on Page 17?
 10 A. Well, the only thing you can look at is the column
 11 where he has EDS. And it would have been either
 12 fiber 1 or 2, but I can't tell you which one it is.
 13 I don't see a designation on this, on this chart.
 14 Q. When you say the column marked "EDS" you're
 15 referring to the extreme right column on Page 16?
 16 A. Yes.
 17 Q. Looking at the spectrum on Page 17, near the lower
 18 right of the spectrum, the letters capital B
 19 capital F capital S. and then the "equals 32"
 20 appears. Correct?
 21 A. Uh-huh (yes).
 22 Q. Do you know what that means?
 23 A. It's probably a file that they store this material

24 in. I don't think it refers to any particular ---
 25 Q. It doesn't have to do with the edax itself?

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 2
 3 A. No. The edax itself is trying to identify the
 4 peaks. I don't think it -- usually these things
 5 are stored to disk.
 6 Q. Okay. So that appears to be a reference to a disk
 7 where it may be stored.
 8 A. That's my understanding of it.
 9 Q. If you would, please, would you turn to Pages 26
 10 through 30?
 11 A. Yes.
 12 Q. Page 26 refers to Sample 9. Correct?
 13 A. Yes. It does.
 14 Q. And it referred back to some of the earlier pages
 15 that would be the testing that was done on the
 16 burned rods. Correct?
 17 A. Yes.
 18 Q. Does the report from Dr. Longo's laboratory
 19 indicate how many OSHA fibers were found in this
 20 test?
 21 A. Well, it does give you a count of structures longer
 22 than five.
 23 Q. And how many OSHA fibers did he find?
 24 A. I don't know the number. He found a concentration.
 25 He reported a concentration of .036.

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 2
 3 Q. Well, looking at Page 26, just below the center of
 4 the page in the middle column, there is a heading,
 5 "greater than 5 microns." Correct?
 6 A. Yes. It is.
 7 Q. And the report under that is that three such fibers
 8 were found.
 9 A. I'm sorry.
 10 Q. Is that right?
 11 A. Yeah. He has counted them up. Yeah. I mean, you
 12 could go back to the attachments to the report to
 13 find out which three they were.
 14 Q. Well, I don't propose to take the time to do that.
 15 But is it a fair statement to say that of the total
 16 103 asbestos structures that were found, three of
 17 them were OSHA fibers?
 18 MR. JACOBS: Objection to the form.
 19 A. Well, longer than five. And so, about 3 percent.
 20 You see that in a lot of asbestos operations.
 21 Q. Well ---
 22 A. 3 percent longer than five.
 23 Q. Is my statement correct, or incorrect?
 24 A. Yeah. But I'm -- yeah. It is correct. But what
 25 I'm saying is, it's just not -- it's fairly typical

1 Dr. Dement PAGE 113
 2
 3 of what you'd see in an asbestos plant.
 4 Q. Uh-huh (yes). Would you look at Page 27 ---
 5 A. Yes.
 6 Q. --- Doctor? Structure No. 14, which is shown there
 7 ---
 8 A. Yes.
 9 Q. --- has a length of 8.5 microns. Correct?
 10 A. Yes.
 11 Q. And it is described as being a matrix-bundle.
 12 Correct?
 13 A. Yes.
 14 Q. And on page 28, Structure No. 26 is described as
 15 having a length of 5.7 microns. Correct?
 16 A. Yes. It does.
 17 Q. And it is a bundle as well?
 18 A. Yes.
 19 Q. And on that same page, Structure 31 has a length of
 20 24 microns. Correct?
 21 A. Right.
 22 Q. And it, too, is shown as a matrix-bundle. Correct?
 23 A. Yes. It is.
 24 Q. Considering the length and width of that particular
 25 structure, do you have an opinion as to whether

1 Dr. Dement PAGE 114
2
3 that would be respirable?
4 A. Yes. It would.
5 Q. Is it correct, Doctor, that in all of the testing
6 that Dr. Longo did, he confirmed the presence of
7 crysotyle asbestos and no other variety?
8 A. That is correct.
9 Q. Would you look at Page 49?
10 A. Yes.
11 Q. Now, is this one of your forms?
12 A. Yes. It is.
13 Q. In the box about a third of the way down the page,
14 I find a sentence, "Please provide TEM photographs
15 of typical fields."
16 A. Right.
17 Q. Did you receive those?
18 A. No. We didn't get TM's of this. We did get TM's
19 of the dust, settled dust.
20 Q. By that you're referring to ---
21 A. Well, attached on the back. That's the only TM's
22 we got on this sample.
23 Q. Page 50?
24 A. Right.
25 Q. Is it correct that what is shown on Page 50 is not

1 Dr. Dement PAGE 115
2
3 what you asked for on Page 49?
4 A. No. It's not correct. It's part of what we asked
5 for. It's just that I'd like to have more. But
6 that's what we got.
7 Q. Well, what do the micrographs on Page 50 show?
8 A. Well, they show what we asked for, is typical
9 fibers as seen in this material.
10 Q. Did you ask for typical fibers, or typical fields?
11 A. Typical fields. It's the same thing.
12 Q. Fields and fibers are the same thing?
13 A. That's what you find fibers on, are fields.
14 Q. Is there any way to look at the micrographs that
15 are shown on Page 50 -- I should say, the
16 photocopies of micrographs shown on Page 50 -- and
17 correlate back to the testing that was done so that
18 we can know which structures are shown in these
19 micrographs?
20 A. No. I don't think so.
21 Q. Would you look again, please, at Page 15, Doctor,
22 of Exhibit No. 2?
23 A. Yes.
24 Q. Is the concentration of asbestos structures greater
25 than 5 microns in length less than the PEL that was

1 Dr. Dement PAGE 116
2
3 in effect up until about 1986?
4 A. I guess it is.
5 Q. And would you look again, please, at Page 26, again
6 focusing on the asbestos concentrations for
7 structures greater than 5 microns?
8 A. Yes.
9 Q. Is that concentration less than the PEL that was in
10 effect up until about 1986?
11 A. Yes. It is.
12 Q. Referring to Exhibit No. 1, which is the second
13 test that you have reported on ---
14 A. Yes.
15 Q. --- other than the collection of the residue, was
16 all of that testing performed by Dr. Longo?
17 A. Yes. The analytical work was done there.
18 Q. Referring to the pages that we have lettered, G
19 through M, are these count sheets?
20 A. Yes. They are.
21 Q. On any of those count sheets, is there anything to
22 indicate whether edaxing or diffraction testing was
23 done?
24 A. Well, they didn't indicate on the sheets. No.
25 Q. The count sheet indicates that 200 fibers -- I'm

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2

3 sorry, 200 structures were measured. Correct?
4 A. Yes.
5 Q. Do you know how many of those structures are OSHA
6 fibers?
7 A. I haven't gone back and tried to calculate the
8 percentage. No.
9 MR. JACOBS: Same objection as to form with
10 respect to that.
11 (BRIEF PAUSE)
12 Q. Doctor, just to confirm my understanding, the only
13 physical activity involving the rods in any testing
14 that you did was the rubbing and bumping of the
15 rods. Is that correct?
16 A. That is correct. And as I said, the original work
17 that Lori Todd and I did together was just taking
18 materials and sending them for analysis to
19 determine if they had asbestos in them.
20 Q. What did you do there? Did you break some of the
21 flux away?
22 A. We just broke a piece of flux away and sent it to
23 the lab.
24 Q. How was it broken?
25 A. I think with a pair of pliers. Yes. A pair of

1 Dr. Dement PAGE 118
2
3 wire cutters.
4 Q. But that had to do with bulk sample testing to
5 determine whether there was asbestos?
6 A. That is correct. It was simply a presence or
7 absence, and roughly how much.
8 Q. One last question regarding Page 16.
9 A. Yes. Of 2?
10 Q. Of Exhibit No. 2.
11 A. All right. Okay.
12 Q. And I apologize if I'm repeating myself. Referring
13 to Structure No. 7 ---
14 A. Yes.
15 Q. --- the indication there is that it is a matrix-
16 bundle. Correct?
17 A. Yes. One point of clarification, too, is that I
18 didn't calculate the percentage longer than five.
19 There is a graph in this report that gives a
20 distribution of the fiber length.
21 Q. You're referring to Exhibit No. 1?
22 A. Yes, sir.
23 CROSS EXAMINATION BY MR. JACOBS:
24 Q. Matrix and bundle, which is in this report for the
25 crysotyle particles, do you understand what is mean

1 Dr. Dement PAGE 119
2
3 by that with respect to that type of analysis?
4 A. Yes.
5 Q. What is it? What is the difference between a
6 bundle and a matrix, I guess?
7 A. Well, a bundle usually refers to a particle that
8 appears to be a fiber. When you look at it in the
9 transmission electromicroscope, you actually see
10 it's made up of, like, a bundle of fibers. Matrix
11 means that it's usually a particle, a fiber
12 attached to a matrix of other materials.
13 Q. Okay. With respect to crysotyle, the type of fiber
14 that we're talking of here, is it unusual that
15 those fibers which are counted by light microscopy,
16 under electron microscopy, appear to be bundles?
17 A. No. It's just -- it's very common. That's the
18 case, because you don't see, or you have limited
19 ability to see that. With optical microscopy, we
20 can look at them in higher magnifications. That's
21 what you see.
22 MR. JACOBS: That's all.
23 (THEREUPON, THE WITNESS WAS DISMISSED.)

Page
State of North Carolina
County of Lee

C E R T I F I C A T E
I, Kimberly A. Petrarca, notary public/court
reporter, do hereby certify that John Dement's said

deposition was taken and transcribed under my supervision; and that the foregoing pages numbered 1 through 119 constitute a true and accurate transcript of the testimony of the witness.

I do further certify that I am not of counsel for, or in the employment of either of the parties to this action, nor am I interested in the results of this action.

In witness whereof, I have hereunto subscribed my name this 8th day of April, 1996.

Kimberly A. Petrarca, CVR
Notary Public for the State of
North Carolina

My commission expires:
March 13, 1998

**** NOTES ****

**** NOTES ****

PAGESAVER KEYWORD INDEX - SINGLE FILE INDEX

IN RE: ASBESTOS LITIGATION

DEPOSITION OF: JOHN DEMENT, PH.D.

DATE(s): MARCH 12, 1996

COMMENTS:

NOTES:

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AFTER	HAVEN'T	=====	=====	=====	=====	=====	=====	=====	=====
ALL	HE	OF							
ALREADY	HE'S	OFF							
ALSO	HER	OK							
AM	HERE	OKAY							
AN	HERS	ON							
AND	HIM	OR							
ANOTHER	HIS	OTHER							
ANSWER	HOW	OUR							
ANY	=====	OUT							
ANYTHING	I	OVER							
ARE	I	=====							
AS	I'D	P	P	P					
AT	I'M	=====							
=====	I'VE	PERHAPS							
B	IF	PM							
=====	IN	PUT							
BE	IS	=====							
BECAUSE	ISN'T	Q	Q	Q					
BEEN	IT	=====							
BEFORE	IT'LL	QUESTION							
BUT	IT'S	=====							
BY	ITS	R	R	R					
=====	=====	=====							
C	J	RIGHT							
=====	J	=====							
CAN	JUST	S	S	S					
CAN'T	=====	=====							
CORRECT	K	SAID							
COULD	K	SAY							
=====	KNOW	SHE							
D	=====	SHOULD							
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DEPOSITION	L	SOME							
DID	LET	SOMEPLACE							
DIDN'T	LIKE	SOMETHING							
DO	LOT	=====							
DOES	=====	T	T	T					
DOESN'T	M	=====							
DON'T	M	THAT							
=====	MADE	THAT'S							
E	MAKE	THATS							
=====	MANY	THE							
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=====	MAYBE	THEM							
F	ME	THEN							
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FAR	MISS	THEREFORE							
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G	MUCH	THIS							
=====	MUST	THOSE							
GET	MY	TO							
GO	=====	TOO							
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GOT	N	U	U	U					
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H	NO	US							
=====	NOPE	=====							
HAD	NOT	V	V	V					
HADN'T	NOW	=====							
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8][73,16][73,21][74,11][74,	PORTION(3)[62,11][81,17][105	3,5][53,6][53,15][53,21][53	RATHER(4)[54,17][56,3][59,16
22][75,6][75,11][75,16][76,	,3]	,24][53,25][57,15]	[79,14]
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,10]	11][41,4][41,6][42,7]	PROPER(1)[19,3]	REACHED(1)[12,21]
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16][70,25]	POSSIBLE(1)[104,8]	9][18,12][18,20][19,6][19,7	REAL(1)[79,11]
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93,19][93,22][96,9][96,14][	PREPARED(2)[47,13][67,16]	[20,5][20,7]	REASON(10)[14,21][31,4][34,1
96,16][98,10][98,16][99,9][	PRESENCE(7)[28,12][29,6][42,	PULL(6)[28,20][36,3][37,23][	3][34,16][55,6][75,8][78,21
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SELF-CONTAINED(1)[52,16]	SIMILAR(1)[19,18]	SPELL(2)[7,24][8,23]	[43,14][53,7][60,6][99,3]
SEND(6)[49,24][70,7][70,16][70,22][88,22][89,16]	SIMPLY(10)[33,9][33,24][37,4][48,20][49,15][60,24][72,23][74,20][108,15][118,6]	SPELLED(1)[76,13]	SUB-PART(1)[100,5]
SENDING(2)[90,7][117,18]	SINCE(5)[7,15][9,16][11,4][24,6][64,13]	SPOKE(1)[90,7]	SUBJECT(3)[17,17][68,3][88,16]
SENSITIVITY(2)[105,9][105,12]	SIR(12)[6,14][9,20][53,6][68,17][68,23][72,18][86,23][87,5][87,16][89,5][93,3][118,22]	SPOKEN(2)[45,24][49,18]	SUBMITTED(4)[100,25][101,14][101,24][102,9]
SENT(42)[20,13][20,18][38,3][42,15][42,17][43,4][43,6][43,9][43,12][43,16][43,18][43,22][44,16][46,20][47,15][47,24][48,20][50,24][51,24][52,12][54,10][54,12][54,12][54,17][54,19][58,7][58,8][58,11][58,14][62,12][65,8][66,25][67,12][69,14][70,12][88,14][88,18][89,8][89,18][89,20][89,21][117,22]	SITUATED(1)[16,12]	SQUARE(2)[21,7][28,10]	SUBSTANCE(1)[61,6]
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SERIES(5)[7,8][41,8][42,4][94,14][94,17]	SIX-INCH(1)[28,10]	STANDARD(7)[77,9][77,15][79,7][79,11][93,6][94,24][97,8]	SUCK(1)[28,21]
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SERVED(1)[53,9]	SIZEWISE(1)[20,24]	STANDARDS(4)[76,16][76,17][79,19][92,10]	SUFFICIENT(1)[75,11]
SERVES(1)[65,21]	SKETCH(8)[10,15][10,18][10,20][25,18][28,5][28,17][32,15][34,14]	START(1)[84,15]	SUGGESTS(1)[67,18]
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SETTING(2)[13,9][77,14]	SODIUM(4)[65,9][65,15][65,21][66,16]	STAYNER(1)[8,22]	SWITCH(1)[33,3]
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SEVEN(2)[38,15][69,18]	SOLID(5)[24,15][24,19][40,5][40,7][40,10]	STEP(4)[19,15][42,21][82,16][91,7]	=====
SEVERAL(2)[28,15][29,16]	SOLVENT(1)[31,3]	STEPS(1)[37,20]	T T T
SHARED(1)[20,11]	SOMEBODY(4)[43,4][49,16][49,25][57,20]	STICK(1)[26,5]	=====
SHEET(9)[16,18][50,23][51,3][51,17][51,22][51,23][72,9][107,5][116,25]	SOMEONE(2)[49,18][49,19]	STICK-ON(1)[51,10]	TAKE(26)[19,24][25,12][28,5][28,16][30,15][31,12][33,16][35,8][42,5][46,4][47,24][48,4][48,15][49,9][57,5][58,13][61,23][69,8][72,6][82,4][83,7][83,16][87,13][92,8][97,20][112,14]
SHEETS(4)[101,3][116,19][116,21][116,24]	SOMEWHERE(2)[36,10][75,4]	STILL(9)[6,13][11,16][11,17][14,5][37,18][46,13][81,13][81,18][87,15]	TAKEN(6)[30,17][39,5][83,6][83,14][87,8][106,15]
SHERRY(1)[20,18]	SORELY(1)[73,20]	STOCK(1)[26,24]	TAKES(1)[77,21]
SHIP(1)[67,25]	SORRY(6)[9,6][14,7][99,21][109,19][112,9][117,3]	STOP(2)[37,19][81,10]	TAKING(4)[19,3][21,14][85,22][117,17]
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SHORT(2)[79,11][92,14]	SOURCE(10)[9,13][27,24][32,18][44,6][44,8][46,13][47,21][48,3][48,3][52,20]	STOPS(1)[74,17]	TALKED(6)[7,13][49,19][49,21][94,15][96,4][99,16]
SHORT-(1)[76,19]	SPECIFIC(1)[53,19]	STORE(1)[110,23]	TALKING(10)[12,23][19,5][36,13][59,18][77,19][78,25][88,23][92,24][94,17][119,14]
SHORT-TERM(5)[71,8][76,10][76,15][78,20][78,22]	SPECIFICALLY(3)[43,6][53,10][62,6]	STORED(2)[111,5][111,7]	TALKS(2)[102,19][102,25]
SHORTER(2)[78,14][78,18]	SPECIFICATIONS(1)[94,8]	STORY(1)[83,3]	TAPE(2)[39,7][39,9]
SHOW(3)[50,7][115,7][115,8]	SPECIFICS(1)[95,23]	STRIKE(2)[78,10][85,20]	TAPED(2)[40,25][81,4]
SHOWN(12)[28,17][32,4][34,13][109,21][110,3][110,8][113,6][113,22][114,25][115,15][115,16][115,18]	SPECIFIED(1)[99,19]	STRUCTURE(15)[66,20][103,6][103,23][104,13][105,20][107,15][108,12][108,25][109,10][109,20][113,6][113,14][113,19][113,25][118,13]	TAPES(1)[80,21]
SHUT(1)[36,19]	SPECIFIES(1)[100,18]	STRUCTURES(22)[95,19][100,17][100,18][102,20][102,25][103,11][103,19][105,12][105,19][107,9][107,10][107,11][108,22][110,4][110,8][111,21][112,16][115,18][115,24][116,7][117,3][117,5]	TAPPING(2)[73,5][73,7]
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