IN THE CIRCUIT COURT OF THE
FOURTH JUDICIAL CIRCUIT, IN AND
FOR DUVAL COUNTY, FLORIDA.

ERNEST D. McDONALD,

Plaintiff,

VS.

CASE NO: 93-03937-CA
DIVISION: CV-D

CSX TP-WSPORTATION, INC.,
a corporation,

Defendant.

STATE OF FLORIDA

COUNTY OF DUVAL

DEPOSITION OF:	MARK E. BADDERS, CIH
TAKEN:	Pursuant to Notice Instance of Plaintiff
DATE:	Tuesday, August 9, 1994
TIME:	Commencing at 1:25 p.m.
PLACE:	500 Water Street Jacksonville, Florida 32202
BEFORE:	RONALD E. ROHRER Stenographic Court Reporter and Notary Public, State of Florida at Large

ASSOCIATED STENOTYPE REPORTERS
904/356-0401

ORIGINAL

A P P E A R A N C E S

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Appearing on behalf of Plaintiff.

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Appearing on behalf of Defendant.

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EXHIBITS

[No Exhibits Were Marked]

MARK E. BADDERS,
the Deponent herein, being first duly sworn, was examined and testified as follows;

DIRECT EXAMINATION

BY MR. SHAPIRO:

Q My name is Rick Shapiro and I represent the plaintiff, Ernest McDonald, in a case that's pending here in Jacksonville State Court. I'm going to be asking you some questions, Mr. Badders, and if you don't understand anything I ask or the question seems ambiguous, I'll be happy to rephrase it. Just ask me, okay?

A Okay.

Q Also I want to state at the beginning here that, as you know, I'm going to be asking questions that pertain to Ernest McDonald's case pending here. But a number of the questions will deal with policies or procedures of the entire railraod with respect to silicosis or silica dust or the general matters in the case. So if I ask a question about what the defendant has done or what CSX has done, I'll be referring to not something they've done just for Mr. McDonald but anything the railroad has done on the particular issue of silicosis or silica dust.

Do you understand that, or try to at least?

A We'll try.

Q Mr. Badders, what is your position with CSX

Railroad?
A Director, industrial hygiene.
Q Are you certified as an industrial hygienist?
A Yes.
Q By what body?
A The American Board of Industrial Hygiene.
Q when did you first become a certified industrial hygienist?
A 1990.
Q Was that the first time that you attempted to become certified?
A Yes.
Q I had requested a copy of your resume.
Is that something that you can produce through your lawyer at the first break we have?
A Yes.
Q It would have made some things quicker, but since I don't have it in front of me let me ask you, are you a college graduate?
A Yes.
Q Where did you graduate?
A Indiana State University.
Q What year was that?
A Actually graduated from there twice, 1975 and 1978.

Q Indiana State University, is there one campus at that school or is it located in several cities in Indiana; in other words, what campus did you graduate from initially?
A Terre Haute, Indiana.
Q And what was your degree?
A Life sciences and environmental health.
Q Is that the name of the degree or was that a minor? Imean what was the degree?
A The degree was in life sciences and the second degree was in environmental health.
Q Was the second degree the one that was 1970 what?
A 1978.
Q Was that an undergrad degree or graduate degree?
A Undergraduate.
Q Were you going full time up until 1975 and then you got your first degree?
A Yes.
Q All right.
How old were you when you got that degree in 1975, approximately?
A 22, 23.
Q And you attended full time for the years preceding 1975, that one school?
A Yes.

Q were you working between 1975 and 1978 or were you just attending school?
A i was working during part of that time, attending school part of that time.
Q What kind of job were you doing during the period 75/78?
A Working in a lumber yard.
Q So it wasn't really related to industrial hygiene or anything like that?
A No.
Q Life sciences degree in 1975 and in 1978 it was environmental, did you say health?
A Yes.
Q Do you have any other postgraduate degrees?
A No.
Q What was the first experience you had that related to the industrial hygiene field once you were graduated from college?
A As far as work, it was with the state of Wisconsin. They were doing a study on formaldehyde in mobile homes.
Q What was your position with the state?
A I don't recall. I worked for the health department. I was one of their technicians, I guess you'd say.

Q Did you do some sampling or anything like that or testing or what kind of technician work did you do?
A I did air sampling and also performed pulmonary function tests and other testings associated with the, with that research program.
Q Did you have any other jobs before you came to CSX to work?
A No, other than internships associated with school.
Q What year did you begin with CSX?
A 1980.
Q And what was your first position with CSX?
A Industrial hygienist.
Q All right.
Now, naturally you've been deposed previously. First let me ask you this: Have you been deposed in any case where a plaintiff was claiming any claim relating to silicosis or silica dust in the past?
A Not that I can recall.
Q I'm familiar with some other depositions I've seen. Not necessarily on silica. But you haven't been deposed in the last year involving silicosis or silica dust?
A Not that I recall that was specifically on silica. They may have asked a question or two during a

deposition regarding it but not on silica itself, no.
Q Isn't there another case pending in Florida where Marty Jackson or the firm of Jones and Groenjay (phonetic) has a silica claim?
A I don't know.
Q You don't recall?
A No.
Q I'm interested in looking at some of your prior testimony.
Do you keep any record of when you are deposed?
A No.
Q Well, to attend a deposition do you have to fill out any paperwork that indicates that you'll be sitting in a deposition?
A No.
Q When was the last time you were deposed, last week, a month ago?
A It was probably a month ago, maybe six weeks.
Q What case was it?
A I don't recall.
Q How can we go about getting you to produce the name of that case? What will you have to refer to?
MR. LEACH: If he knows.
BY MR. SHAPIRO:
Q In other words, not necessarily this moment, but

I'll probably ask your attorney to provide me with the information.

How would you have to go about finding it? Would you just have to look at your calendar for a certain day to see the reference or what?

A I'd have to look at my calendar to see what I had and I would not normally reference a case, I'd reference the attorney that I've been dealing with on that particular case.

Q So you'll have certainly the name of the defense lawyer, Mr. Leach or whoever, right?

A Yes.

Q I would ask you if you could provide any depositions that you've testified in over the last 12 months through your lawyer; is that something that you can put together within a few days?

MR. LEACH: Let me just object. That's something we would object to producing in that it's not something regularly kept by Mr. Badders. I think that he just testified that he doesn't keep deposition transcripts.

MR. SHAPIRO: No, not the transcripts, I just want the reference to the cases Mr. Badders has testified in.

MR. LEACH: He doesn't create any documents that

has references to cases.

MR. SHAPIRO: He knows the cases he's testified in. I'm going to ask that you produce the names of the cases or the defense lawyer on any cases he's testified in in the last 12 months. I'm not asking that it be produced today, but I'm going to ask for it.

MR. LEACH: I'm just telling you we're going to object to it. That's okay.

BY MR. SHAPIRO:

Q The last case that you testified in -- I'll take as long as you all want me to on this. We can make it real quick and you can agree to do it or else I'm going to go into what the case was about, when he testified, and we can make it hard, we can make it easy.

Do you want to tell me about the last deposition you had, what the case was about?

A I don't recall specifically what the deposition

MR. LEACH: Let me just say on the record, Mr. Badders is deposed routinely in cases. He's testified he doesn't keep records of the names of the cases and he doesn't have deposition transcripts. I don't understand --

MR. SHAPIRO: Most of the rules now provide that

the plaintiff or the defendant is entitled to the names of the cases that the witness has testified in in the last three years, particularly the federal rules. It's relevant. The judge is going to let me know, if he doesn't know the style of a case, Eric, all he's got to do is tell you the defense lawyer and what he knows about it and I can call the defense lawyer and try to obtain the transcript. But I'm goint to go down that road. I don't want to waste an hour going into it now if you all agree --

MR. LEACH: It's up to you. It's your time.

BY MR. SHAPIRO:

Q Mr. Badders, when you testified a few weeks ago, who was the defense lawyer in the case?

A This is on a deposition, right?

Q Yes. Any deposition.

MR. LEACH: If you know.

A I don't recall for sure, exactly.

Q Was it here in this building?

A Yes, it was probably here.

Q And was it a case involving a lung disease or just involving an industrial accident, what was it about?

A It probably involved hearing loss.

Q Who was the defense lawyer? Is your memory coming back to you?

A No.
Q But you'll have a reference to it on your calendar, right?
A I hope to have it on my calendar. I don't necessarily keep calendars for extended periods of time either.
Q Do you usually meet with the defense lawyer before you're deposed in a case?
A Sometimes.
Q You met with Mr. Leach before this deposition, didn't you?
A Yes.
Q Was that yesterday? Well, I'm not gqing to ask you what you talked about, but I want to know the times you met with him specifically to prepare for this deposition.
A I met with him yesterday.
Q Did you meet with him on prior occasions to discuss silicosis cases?
MR. LEACH: Let me object. That's work product and I'm going to instruct him not to answer any questions about conversations he may have had with me.
MR. SHAPIRO: I agree. But I'd like to know the dates and how many different times he's met.
MR. LEACH: I'm going to instruct him not to answer that question. You can take that up with the

Court.
MR. SHAPIRO: So you're going to instruct him not to tell me the different dates that he's met with you.
MR. LEACH: Correct.
MR. SHAPIRO: On what basis.
MR. LEACH: If you want to know when he met with me in preparation for this deposition, I don't have any problem with that.
MR. SHAPIRO: That's what I said. But when he met with you and, say, Mr. Ringer, that had to do with this case, if you dealt with all the silicosis cases.
MR. LEACH: Again I'm going to object on attorney/client privilege grounds and work product grounds and instruct him not to answer that question.
MR. SHAPIRO: Why was I able to ask him if he met with you yesterday?
MR. LEACH: Because I think you're entitled to is know what he's done to prepare for this deposition. The fact that he's met with me, I think that potentionally could be relevant.

BY MR. SHAPIRO:

Q Well, you know, Mr. Badders, what do you remember about that last deposition you had besides the fact it was hearing loss?

MR. SHAPIRO: We can play hide the ball all day,

it's just that we're going to be here until evening.
MR. LEACH: Let me object to the continual badgering of the -- that's a ridiculous question. He's been deposed in hearing loss cases , toxic encephalopathy cases, other cases that have absolutely nothing to do with this case.
MR. SHAPIRO: It's up to me to decide whether it has something to do with it, Eric. If it will lead me to discoverable evidence. I mean --
MR. LEACH: You've already asked him, does he have any transcripts or any records indicating which depositions have been taken of him and he said no.
MR. SHAPIRO: No. I'm not asking about transcripts. I don't care if he ever has one transcript. I want the names of the cases or what he recalls. Now, if you all want to say he doesn't recall anything, I'll just continue to ask the questions to find out what he recalls.
MR. LEACH: It's up to you.
MR. SHAPIRO: Okay.

BY MR. SHAPIRO:

Q What do you remember about the last deposition, Mr. Badders?

A The best I can recall it was a hearing loss case.

Q Was it a case pending here in this court, do you

reinember?
A I don't know where the case was pending.
Q were you questioned by the Plaintiff's lawyer in the case?
A Yes.
Q Do you remember who he was?
A No.
Q What was the last deposition before that deposition that you testified in?
A Again probably another hearing loss case.
Q Did you meet with the defense lawyer before that deposition?
A I'm sure I did.
Q Do you keep a calendar?
A I keep -- I keep a calendar, but I don't necessarily keep it for very long. I may keep it for a month or so.
Q Do you keep your calendar on a computer or a hard copy in a regular book?
A I normally keep it on, either in a daytimer, usually in a daytimer.
Q Do you have a computer calendar? Our firm has one on computer now. I was just wondering.
A No.
Q So it's all manual?

A Yes.
Q Do you schedule your own appointments or do you have a secretary?
A I have a secretary, but usually depositions are scheduled through me, although some have been scheduled through her.
Q You've had no prior deposition on a case that was primarily involving a silicosis claim; that's your testimony, correct?
A I don't recall any deposition that I have ever given before on silicosis.
Q When you attended Indiana State University, did you take course work on industrial hygiene?
A No. It was environmental health and it had probably some mention of some of the areas that included industrial hygiene, but not specifically industrial hygiene, no.
Q Did you have any courses that dealt with any industrial hygiene matters?
A As I just said, the courses at Indiana State touched on areas that included industrial hygiene, but no specific classes on it.
Q Did you have any textbooks at college that were typical industrial hygiene textbooks?
A No, not from Indiana State.

Q Subsequent to those degrees, what training have you had in industrial hygiene?
A I have taken graduate courses in industrial hygiene at the University of Minnesota.
Q When did you do that?
A I did that in 78/79.
Q You just took course work, you didn't get a degree?
A Yes.
Q What were those courses, just best you recall some of the names of the courses?
A The course work was actually in environmental health, but the course work included courses on industrial hygiene, toxicology, epidemiology, sampling methods used in industrial hygiene.
Q Was this graduate school or undergrad?
A Graduate.
Q And it was University of Minnesota?
A Yes.
Q What city is that?
A Minneapolis.
Q Can you recall any of the textbooks that you utilized in any of those courses, bcause some of those, I take it, you may still use occasionally?
A There's a textbook called The Industrial

Environment, Its Evaluation and Control.
Q Any others?
A There was a textbook on Industrial Ventilation.
Q Is that the title, as best you recall?
A Yes, as far as I can recall that's the name of it.
Q Any other textbooks that you studied, say at the University of, was it Minnesota?
A Yes.
Q University of Minnesota that you have found useful as you've gotten much more involved in it?
A I also have an industrial ventilation manual that I used at Minnesota. As far as the other books, I can't recall any other books specifically that I had. There were a number of books that we used out of the libraries.
Q Did you take any other courses after you went to the University of Minnesota, that was during 78/79?
A Yes.
Q Did you take any other course work on industrial hygiene after that?
A I regularly attend short courses and seminars associated with industrial hygiene conferences.
Q Are any of those listed on your resume that you're going to provide through your lawyer?
A No.

Q Do you have a regular, like as a CIH, do you have to attend a certain amount of credit per year or anything like that? What's involved?

A I have to maintain certification points. Part of those certification points include attending or can include attending classes, professional development classes and things such as that.

Q Flipping back to when you were at University of Minnesota: After that you took a number of different courses, how many different courses did you take there, about?

A Probably at least 20.

Q Over a two-year period?

A It was actually one calendar year.

Q Did you ever study Paddy (phoenetic) industrial hygiene? He's got an industrial hygiene textbook out. It's been out for a number of years.

A Well, we didn't use it as a textbook. It was one of the reference books in the library that we used quite frequently and I have used that book, yes.

Q I noticed that you, through your production in this case, included just a short excerpt of the book, do you recall that?

A No. But I may have copied something out of Paddy's, we use Paddy's.

Q That's one you use from time to time, I take it?
A Yes.
Q Do you consider that a recognized industrial hygiene textbook?
A I think it's generally recognized as an industrial hygiene source of information.
Q Let me ask you this: What's your definition of industrial hygiene?
A Well, there are a number of definitions out there. I guess the one that I relate to the most is the art and science of -- relating to going into the workplace, looking at how people do their work, determining if there's exposures that need evaluation, making those evaluations and then recommending control measures when appropriate.
Q What are the control measures designed to accomplish?
A To reduce the exposure of the individual to is whatever agent I'm trying to reduce exposure from.
Q Such as a harmful substance or a bad chemical that could cause health hazard, something like that?
A Well, it could be from a chemical or it could be from noise. It could be from any physical or chemical agent that I have done the evaluation on.
Q All right. When you first started with CSX you mentioned you were an industrial hygienist at that time,

which was 1980 or 1981?
A 1980.
Q Were there any other industrial hygienists working for CSX?
A No.
Q Was it CSX Transportation, Inc. then or was it a different actual title of the railroad?
A It was actually a different company.
Q What was the name that you worked for then, which named railroad?
A When I was hired I worked initially for Seaboard Coastline Industries, Incorporated.
Q And that predated the existence of CSX Transportation, right?
A Yes.
Q What states did that railroad serve generally?
A It served, primarily, the southeast United States. So that would include Louisiana, Mississippi, Alabama, Kentucky, Tennessee, the Carolinas, Georgia, Florida, also went up into the Midwest and included Illinois and had some trackage in Indiana. I can't recall. I don't think they had anything in Ohio.
Q So it was Seaboard Coastline Railroad at that time in 80 or 81; is that what you said?
A Well, Seaboard Coastline Railroad didn't -- I

don't think it existed in 81.
Q What was the exact title then? I'm sorry.
A Seaboard Coastline Industries was who I was working for at the time.
Q Did they have any industrial hygienists on staff prior to you coming on board?
A No.
Q So it was a new full-time position with the railroad?
A Yes.
Q I take it prior to that time they had people that were in titles like health or safety or something like that but no one who was actually at this titled industrial hygienist?
MR. LEACH: Object to the predicate. If you know.
BY MR. SHAPIRO:
Q Is that true?
A There was a safety department beforehand.
Q When you came on board, what department did you get put into?
A Hazardous Materials Control.
Q That was an existing department?
A Yes.
Q Who was considered your immediate superior?

A Peter Gill.
Q Peter Gill?
A Yes.
Q What was his function or title?
A He was manager of Hazardous Materials Control.
Q What was his background and training?
A Mainly in fire prevention.
Q He didn't have an industrial hygiene background per se, did he?
A No.
Q What railroad and when did Seaboard merge with next?
A Okay. I really don't understand.
Q When was the next merger? I want to move forward as quickly as I can to when you became CSX Transportation, Inc. but when was the next, datewise when was the next merger of Seaboard with any other railroad? Some of this gets into -- I want to follow up is where the industrial hygienists came from and who was there certain dates. In other words, after 1980 or 81, you were employed by Seaboard.
When was the next merger where the name changed at all?
A Okay. 1981 the railroads, meaning the L&N Railroad, the Georgia Railroad, the Clinchfield Railroad,

the Seaboard Coastline Railroad merged under one company name, although I think the individual railroads maintained their legal names at this time, Family Lines System. Somebody figured out six months after that that they forgot a railroad, so they made it Family Lines Rail Systems six months after that.

Then in about 1984, I believe, maybe 85, Seaboard System Railroad was created which merged all the railroads. And I think at that time the railroads actually lost their individual identities, and as far as the formation of CSX, exactly when that happened on a high corporate level, I have no idea when the actual papers were actually signed. When it became effective that I was working on the system was probably late 86, early 87.

Q When these mergers started happening, now, I'm not asking you exact years or whatever, and there were a number of railroads that were merged, soon after you joined Seaboard did any of those other smaller lines in the first couple of mergers have an industrial hygienist on staff?

A No.

Q So all those ones you mentioned between 80 and 85, those various mergers, you were the only IH or industrial hygienist, right?

A Yes.

Q When does Chessie come in? I didn't hear the

name Chessie. Wasn't there one of the mergers involving Chessie?

A When CSX Transportation was formed, that was a result of the merger of the Chessie System and Seaboard System Railroads. That occurred around 86, 87.

Q So after 85 when Chessie got involved and merged, Chessie did have an industrial hygienist somewhere on their staff, didn't they?

A Yes.

Q Who was the industrial hygienist at the time when the merger happened with Chessie?

A Jay Rupp.

Q Do you know where Jay Rupp is now?

A He's in the Baltimore area.

Q Is he still working or is he retired?

A He's still working.

Q What does he do?

A He's an industrial hygienist.

Q You're chief industrial hygienist, or what is your relation to him on the hierarchy?

A He doesn't work for CSX.

Q I'm sorry?

A He doesn't work for CSX.

Q What happened to him when the mergers occurred?

A He resigned and stayed in the Baltimore area.

Q So he hasn't been working for CSX Transportation since the merger or did he have a buy out soon after the merger or what?
A Soon after the merger he resigned. I don't know if he had a buy out, but he left the company.
Q Do you know how long he had been with Chessie approximately from what your understanding is?
A I think he was there about three or four years.
Q That was his whole tenure there?
A Yes.
Q About how old was he, is he now?
A I would guess probably in his mid 40S.
Q Did you all ever interact together at any time to coordinate anything after this merger?
A We talked on the phone occasionally and beforehand we worked on a committee where we were combining the personal protective equipment catalogs.
Q That would have been about what year?
A Probably 86.
Q And that was, well, that was several years after you had done your initial reporting on silica dust testing in the early 1980s, correct?
A Yes.
Q Had Chessie done any silica dust testing of any kind that you're aware of?

A I'm not aware that Chessie had done any themselves, no.
Q What are you aware of, any other railroad that they absorbed had done any silica dust testing?
A No.
Q Is that a topic that you and Mr. Rupp ever discussed at any time prior to his resignation?
A We probably discussed at one time the testing that had been done.
Q By you?
A No.
Q By who?
A We probably did discuss what testing I had done, yes.
Q Well, are you aware of any other testing that Mr. Rupp had any supervisory authority over of silica dust?
A No.
Q What do you remember about your discussions with him about silica dust testing by 1986?
MR. LEACH: Object. It's over broad.
A We had -- I'm sure we had talked at least some regarding my test results that I had done in the early 80s.
Q Right. Well, had he done -- had he conveyed to you that he had done any silica dust testing or any of the Chessie lines or its acquired railroads had done any silica

dust testing, whether in locomotive cabs, sandblasters or track maintenance workers?

A He didn't indicate that he had any sampling results like that. I don't recall ever seeing any sampling results that indicated that.

Q Well, you've said that you had some discussion with him about coordinating, I presume, the respiratory protection manuals because you were merging the railroad, correct?

A The personel protective equipment catalog is what I think I specifically mentioned.

Q Okay. Did he give any imput about personal protective equipment for workers exposed to ballast or silica dust, if you recall?

A I don't recall that he stated anything specific about that, no.

Q You can't be sure or -- I don't want to characterize your testimony, but I want to get it on the record.

You're saying you have no knowledge of whether Mr. Rupp had supervised any silica dust testing?

A I don't recall seeing any data that Mr. Rupp had created when he was working for Chessie System regarding exposure to silica dust on the railroad.

Q Who do you report to? Who is your immediate

supervisor now?
A Dr. Goldman.
Q Is he in the medical department?
A Yes.
Q What is his title in the medical department?
A Chief medical officer.
Q How recently has he become chief medical officer?
A He started about a month ago.
Q What is Dr. Tomasino's status?
A He is one of the staff physicians.
Q Why has there been a change? What's your understanding?
A The company hired a new chief medical officer.
Q Is Dr. Tomasino near retirement or is there any other reason you're aware of why he would be removed as chief medical officer?
MR. LEACH: Let me object. Don't speculate on anything. That calls for speculation.
MR. SHAPIRO: Right, I don't want him to guess.
BY MR. SHAPIRO:
Q If you're aware of the reasons?
A I'm not aware of any specific reasons.
Q What is Dr. Goldman's first name?
A Steve.
Q Prior to a month ago you reported to Dr.

Tomasino?

A No.
Q Who was in charge of you?
A Dr. Cook (phoenetic).
Q And he's associate or what's his title?
A He is associate chief medical officer.
Q There's a job description somewhere for your job, isn't there, a piece of paper in writing?
A Yes, I'm sure there is.
Q Can you produce that through your lawyer? I have seen a prior deposition where I believe you produced it. Is that something you can produce through your lawyer?
A I think our manager of medical administration is the one that has that and I think she's out today.
Q No. I don't mean this minute, but through your lawyer can you come up with it in the next couple of days so you can produce it for me?
A We can come up with it. I don't know what the reason is this person's out. They may be out on vacation or something, so I don't know until they get back. Her files are locked up.
Q You don't keep a copy of your own job description?
A I'm pretty sure I don't have a copy of it.
Q You started with the railroad, what was the month

and the year?
A January of 1980.
Q What caused you to decide to do silica dust testing in 1981? There had to be something that made you decide to test.
A Actually I think it was as a result of observation that I had seen in operation where they were dumping ballast.
Q Were you just out patrolling the troops, so to speak, or what caused you to go and look?
A I was becoming familiar with various railroad operations, and when I saw that particular operation I thought it needed to be evaluated so I did.
Q And what was it that you saw that made you decide to evaluate it, was it the clouds of dust coming up?
A I saw that it was dusty, at least when unloading ballast.
is
Q Tell me what you visually saw that made you decide to do the testing?
A It was 13 years ago so I can't tell you exactly but it was probably that I probably saw clouds of dust as a result of unloading ballast.
Q Before I get too far out of something I started to ask you before, I was asking you about some industrial hygiene textbooks. You said that Paddy on Industrial

Hygiene is one that you certainly refer to. You have it here in your office, right?

A Yes, I have used it. Also when you asked earlier about some of the reference books, there's a book on toxicology by Cassert and Douel that I used.

Q Casserat?

A Cassert.

Q How do you spell that?

A I think it's C-a-s-s-e-r-t and Douel, D-o-u-e-1, I think. It's on toxicology.

MR. LEACH: That was back in school?

BY MR. SHAPIRO:

Q That was University of Minnesota or more recently?

A I used that at Minnesota.

Q Do you still refer to that?

A I haven't looked at it in a while because it's kind of dated.

Q What about Fundamentals of Industrial Hygiene, Plogg; is that something you have?

A I don't recall if that's the name of the book. There's a book called Fundamentals of Industrial Hygiene that's put out by the National Safety Council and that may be the one.

Q Is that the one you're referring to (indicating

document)?
A Yeah, that's the one, the National Safety Council.
Q Is that the one you refer to you have in your library?
A I have a copy of that in my library.
Q Is it a generally accepted textbook on industrial hygiene?
A I don't know if I could say, you know, if it's generally accepted. But it is one of the textbooks that's used in industrial hygiene.
Q Did you mention the one by Drinker and Hatch called Industrial Dust? Is that one you have ever seen?
MR. LEACH: Are you talking now back in school?
MR. SHAPIRO: Yes.
BY MR. SHAPIRO:
Q At University of Minnesota?
A I don't recall seeing it.
Q Is that one you've used presently?
A I don't recall using it but I may have.
Q You've heard of it? This is the cover sheet.
A No. I probably didn't use a book that was published in 1936.
It probably has some reprints.
MR. SHAPIRO: You want a take a break for a

couple minutes?

(Whereupon, a short recess was taken.)

BY MR. SHAPIRO:

Q Referring to the time when you started with the railroad, I think back to the time actually the next year when you started to do this silica dust testing, once you saw the problem that you said you wanted to test relating to the ballast dust, at that time what did you know about the disease silicosis?

A I think I just knew some general parameters, basically that silica exposure, regular silica exposure at fairly high concentrations at fairly long periods of time can lead to a disease called silicosis in sensitive individuals.

Q Had you heard about any of that in any of the industrial hygiene course work that you had before or do you recall how you knew that?

A It may very well have been mentioned in some of the course work. I don't recall specifically.

Q I looked at your report and I'm going to pull it out and go through a few things, questions on that.

You referred to the disease in the first report that you wrote. What did you use to write your notes about the disease, do you remember?

A I don't remember offhand. It could have been the

toxicology books from Cassert and Douel. It could have been any number of references.

Q You had those available then, though, naturally, to refer to them?

A Those were my personal books, so, yes I had those.

Q What was the second one you mentioned?

A The Industrial Environment, Its Evaluation and Control.

Q Do you know who writes that?

A Actually it's a book that has a number of different authors. I think it comes out from -- I think it's published by the government, probably by NIOSH, N-I-O-S-H.

Q Is that the one you're talking about (indicating document)?

A Yes.

Q I noticed that a number of these textbooks, they're sort of a cross between a medical and, I don't know what you'd call it, medical and industrial text. They get into some medical discussions is what I'm trying to say.

Do you have any others that are sort of the medical side?

A No. When it gets very heavy into the medical side, I defer to a doctor.

Q Now, as a general -- there are some general principles that apply to industrial hygiene techniques once you have a hazard or a health problem that you're trying to control; is that correct?

A There are some general principles or techniques, most of which were developed in a fixed facility type of environment. some of those techniques are not applicable or are very difficult to implement on a global work force like the type work force I deal with.

Q Sure.

Wouldn't it be fair to say that every health hazard has a different set of controls that may be required?

A Well, it's not only the health hazard but it's how the work is performed. Most of the techniques were developed in fixed facilities where you have some kind of a physical plant and you've got a person working at a fixed point. They may move around inside that plant but you know pretty much where they're at. And they're not dealing with several thousand miles of track and trying to track people down all over the place. So you might have to use slightly different techniques.

Q Clearly it's more difficult due to the mobile mature of the work to apply some of those principles?

A In some cases I'd even go beyond the point to say

that is was extremely difficult and possibly in some cases not even possible to do.

Q Well, when we're talking about these general principles, would you agree that there's a hierarchy of industrial hygiene principles that generally would start with engineering controls would normally be the best industrial hygiene method to first attempt to control whatever health hazard you're dealing with?

MR. LEACH: Let me just object to the question as to vagueness. I think we're here to talk about maintenance of way workers and silicosis. I think we need to be a little more specific.

MR. SRAPIRO: Well, at this moment I'm asking him about the general then we're going to the specific.

BY MR. SHAPIRO:

Q I asked the question, to summarize the question was, as a general principle of industrial hygiene when we're talking about control of whatever, a health hazard, isn't it a generally accepted principle that engineering controls are the first and best control to attempt? I didn't say that it would work every time. I said to attempt. Isn't that generally accepted?

MR. LEACH: Same objection. Doesn't define the work being performed, the workers and the type of controls.

Go ahead if you can answer it. If not . . .

A As far as a control measure, if you can develop an effective engineering control that will work in the type of work environment that you're dealing with and with the personnel that you're dealing with, that that is more effective and more desirable to put an engineering control in place when possible.

Q Would the next best generally accepted industrial hygiene control be an administrative method?

MR. LEACH: Same objection as to vagueness.

MR. SHAPIRO: I understand.

A Again it's dependent on how well you can implement the administrative control. But if the administrative control can be implemented, based on the type of work that's being done and where it's being done and all the work conditions, then that's probably the most -- that's the next most acceptable control measure.

Q What would be the last preferable industrial hygiene control method?

A Kind of the last control method that you have is usually the use of personal protective equipment.

Q Such as a respirator or mask?

A Yes.

Q And the reason that is considered the least effective is because it is subject to the fact that the

worker may or may not use it in a proper fashion, for one thing, it may not fit the worker in the proper fashion and all those other types of situations that are controlled by the worker himself?

MR. LEACH: Same objection. We're dealing with silica and maintenance of way exposure. I think you could be a little more specific.

But if you can, answer the question.

A The problem with personal protective equipment of any kind is that you're depending on the people who are using it to use it properly.

Q Now, in your experience since you've been with the railroad in 1981, tell me what jobs -- I guess I just should ask the question broadly in terms of what types of jobs on the railroad do you perceive as involving possible exposure to silica dust?

MR. LEACH: I'm not going to object to that question. But to the extent you ask questions that deal with outside silica maintenance of way exposure, we've got a pending objection as to the discovery of those matters. But I think as to that question that would be fine.

A The areas where I think we may have some exposure to silica would include the -- some machine operators in the maintenance of way department. We may have some heavy

equipment operators who are part of the engineering department, trackmen during certain activities, primarily when they're dumping ballast, mechanical forces when they're sanding locomotives at certain locations, and on very rare occasions you will find it in transportation.

Q Well, I guess there's still some sand applied in locomotives, isn't there?

A Yes.

Q For traction?

A Yes.

Q Is that the kind of possibility you're referring to?

A That's a possibility, yes.

Q I didn't ask this so I better ask this now:

Prior to you doing the test in 1981 on the ballast regulators and the trackmen unloading ballast rock from rock trains, did you check or determine whether any of the railroads that you were working for, I say plural because around that time there was a combination of these railroads, did you check to see whether they did any silica dust testing at any time prior to that time that you did yours?

MR. LEACH: As to maintenance of way workers?

MR. SHAPIRO: As to anybody.

MR. LEACH: We would object. That's the subject

of a pending objection that the Court has not ruled on yet. We're not going to be answering any questions that relate to crafts other than maintenance of way workers today. So I would object and instruct him not to answer. But that has not been deemed reasonably calculated to lead to admissible evidence by the Court.

MR. SHAPIRO: What you're saying is the defendant has decided arbitrarily that it's not --

MR. LEACH: Well, I think the Court has decided that in the prior order.

MR. SHAPIRO: There has not been an order that has limited your response to maintenance of way. You objected.

MR. LEACH: I think that's the subject of your pending motion to compel in this case. So that is --

MR. SHAPIRO: You know the federal court has already said that you're going to have to turn it over, so what's the big deal?

MR. LEACH: I'm just telling you in this case that's not what Judge Beverly said.

MR. SHAPIRO: Your objection deals with written documents, Eric. I'm asking the man if he knows whether there was any testing. Now, if you can get a ruling that you don't have to turn it over in the

state court, that's fine.

MR. LEACH: You weren't at the hearing but the Court --

MR. SHAPIRO: Let's go off the record.

MR. LEACH: I want to go on the record because I want to make sure it's clear as to what the Court ruled.

MR. SHAPIRO: All right.

MR. LEACH: And the Court distinguished between silica maintenance of way exposures and other potential silica exposures. Mainly I believe we were dealing with sandblasters at the hearing. And she was of the opinion that that would not reasonably lead to admissible evidence.

So that's our objection but I wanted to place that on the record.

We can worry about that at another hearing another day. I'm just telling you that's our objection.

MR. SHAPIRO: I understand your objections there. And I'm certainly preserving your right to object to any portion of the deposition that you can get the Court to agree with you on. But I asked him if he knew of any silica dust testing prior to his 1981 testing.

MR. LEACH: And as that relates to maintenance of way workers, I would ask him to answer that. Go ahead as it relates to maintenance of way workers.

A No, I'm not aware of any.

MR. SHAPIRO: But you've directed your witness not to answer beyond that knowing that I'm going to ask for costs and fees if I have to come back to Florida for that point.

MR. LEACH: That would be perfectly fine. It is our objection and I'm instructing him not to answer any questions that deal with exposures other than silica maintenance of way workers.

BY MR. SHAPIRO:

Q As you know, I'll be taking your deposition on another federal case in a few weeks and I'll simply ask the same question and get it. It might save time in the future, but that's fine, we can handle it this way:

With respect to the work areas that you mentioned as having a possible exposure to silica dust, based on what you know now, do you think or is it your belief that if the workers in the area of the track maintenance jobs that you just gave an opinion about, the machine operators and the guys unloading the ballast rock, if those workers were exposed long enough to the silica dust in those jobs, do you think that could lead to silicosis disease, if they had

no protection whatsoever?
A If they had exposure on a regular basis, regular meaning daily or at least several times a week at exposures -- and that would be for several years, that they may be at an increased risk of developing silicosis.
Q Is that one of the reasons that you did the testing, to start trying to figure out what controls might need to be taken to protect the workers, right?
A Well, initially the testing was to determine what the exposure was and following that determination then control measures were recommended.
Q Have any of your texts that you generally refer to discussed what the effect of workers smoking cigarettes may be combined with their being exposed to silica dust in their job?
A I don't recall that being mentioned in any of the texts that we've talked about earlier. But I have heard -- I have heard that there is possibly some added effects but I don't recall specifically what source I heard it from.
MR. LEACH: Object to the predicate. It calls for a medical conclusion.
BY MR. SHAPIRO:
Q Nothing that you have in your text that you generally refer to, I take it? It would be something you heard about from the medical side?

A I don't recall specifically where I heard it. I may have heard it at a conference. I may have heard it in some conversations.

MR. LEACH: Same objection. It's a medical question.

BY MR. SHAPIRO:

Q How do you generally keep abreast of health and safety in industrial hygiene issues in your day-to-day job?

A Most of it actually occurs at the conferences that I go to, although I also receive the American Industrial Higiene Association Journal and a magazine, Occupational Safety and Health. Also if --

Q Is it called Occupational Safety and Health journal or magazine or what?

A Occupational Safety and Health.

Q And what was the first publication that you just mentioned?

A Journal of the Industrial Hygiene Association.

Q What about computers? Do you have a computer on your desk?

A Yes.

Q And are you on line with any services that provide information in your field?

A I'm not on line with any services, no.

Q Do you have a modem where you can hook up to any

services that provide information?
A I have a modem.
Q What are some of the computer services that you can tap into?
A I don't really know what's out there as far as being able to tap in remotely. I don't routinely tap into remote sources because you have to subscribe to services for that.
Q You don't have any that you subscribe to?
A No.
Q Does anyone in your department have a subscription for any of those?
A No.
Q Are there any other industrial hygienists now that work for the railroad besides yourself?
A Yes.
Q Who are they?
A Bill Combs and Ben Rupinta.
Q How long have any of those guys been with the railroad?
A They started, Bill started in 1990, Ben started, I think, in 1973.
Q The fellow who started in 1973, what's his name?
A Ben Rupinta.
Q How does he spell his last name?

A R-u-p-i-n-t-a.
Q Which railroad did he start with in 1973?
A I think he started with Seaboard Coastline Railroad.
Q I thought you said that when you started in 80 or 81 you were the only industrial hygienist that -- I must have misunderstood.
MR. LEACH: I don't believe he was an industrial hygienist back then, with respect to Ben.
MR. SHAPIRO: Let me ask the questions.
BY MR. SHAPIRO:
Q I must have misunderstood your prior answer when you said you were the only industrial hygienist in 80 or 81.
A That's correct.
Q Mr. Rupinta was the only other one?
A No. Mr. Rupinta was not working as an industrial hygienist during that time.
Q What was he doing from 1973 to 80 or 81?
A I don't know that I can tell you everything he did, but I know he worked as a machinist and worked as a shop engineer.
Q You said he first became an industrial hygienist when? I take it he went and got course work after he was already with the company?

A He started working in the industrial hygiene department and was doing industrial hygiene work starting in 1990.
Q Mr. Rupinta, Mr. Combs?
A Combs.
Q C-o --
A M-b-s.
Q When did he start working as an industrial hygienist?
A He started working for CSX as an industrial hygienist in 1990.
Q But prior to you in 1980 or 81 coming on board, there was no other industrial hygienist?
A No.
Q We were talking about how you keep abreast in the industrial hygiene field. You mentioned the Journal of American Industrial Hygiene, American Industrial Hygiene Association, Occupational Safety and Health magazine?
A Yes. And also if there are articles of interest in the Journal of Occupational Medicine, usually the chief medical official or one of the medical officers will share that with me.
Q They'll put you on a circulation list, right?
A Yes.
Q What about the Occupational and Safety Health

Reporter? Is that something that you tend to look at?
A I subscribed to that in the past.
Q Are you subscribing to it now?
A No.
Q Who is subscribing to it now, the medical department or another department?
A I'm not sure if there are any departments who are currently subscribing to the occupational and Safety Health Reporter.
Q When did you stop?
A A little over a year ago.
Q Why is that?
A We went with another service. We went Regscan (phoenetic), and Regscan does have a monthly electronic news letter, so I do use that to help on keeping abreast.
Q That comes in through your computer?
A It comes in on a disk.
Q And it brings you abreast to all the current regulations and things that are going on in industrial hygiene and the occupational safety area?
A Primarily talks about regulatory developments.
Q You stopped the OSHR, the reporter, last year. Did you keep that from the time you started with the railroad until last year?
A No. I started it sometime in, I think, about the

mid 80s and stopped it about a year ago, maybe a little more than a year ago.

Q How do you keep up with Occupational Safety and Health Administration regulations? Is it just through Regscan or do you have any other source that particularly advises you about OSHA?

A Primarily through Regscan, but also when attending conferences and things like that there's often discussions of current regulatory developments.

Q Are you on a circulation list also with the medical department of certain articles?

A I'm in the medical department. I don't know that I'd say I'm on a circulation list. If there are articles that the physicians see in some of their journals that they think may be of particular interest to me, they'll pass those along.

Q What national organizations are you a member of?

A Member of the American Industrial Hygiene Association, the American Academy of Industrial Hygiene, the Florida section of the --

Q Have you been a member of those organizations since 1981?

A Finishing my last answer: the Florida section of the American Industrial Hygiene Association.

As far as 1981, I became a member -- I was a

member of the American Industrial Hygiene ASSOCiation in 1981. I became a member but I wasn't a member of the other organizations at that time.

Q American Academy of Industrial Hygiene, when did you first start becoming a member?

A 1990.

Q I'm going to turn my attention to the testing you did in November of 1981. Was this the first, this ballast regulator silica testing, was this the first testing that you had done for any silica dust?

A I can't remember if I did the ballast regulator first or the ballast dumping first. It was one of the two.

Q I think this was it. Who actually put the device on the regulator operator to do the test?

A I did.

Q Did you calibrate the actual machine?

A Yes.

Q So you were the actual technician also?

A Yes.

Q or one of the technicians?

A I was the technician.

Q What product did you use to do the test?

A I think it refers to it in the report.

Q I see it says you did NIOP Procedure P and CAM106. I don't see the name of the product that you used.

Do you remember?

A The sampling pump was a Bendix, probably a BDX44.

Q BDX44? Did you use any other type of machinery to take these samples in the field first of all?

A Well, I used the Cyclone that was mentioned there and I think that was probably a Bendix Cyclone.

Q Any other products involved with taking in the samples?

A I don't remember the brand of the filter that was used but it was -- the filter was probably supplied by the lab. That's normally where I get them.

Q You mentioned, is it Stauffer Chemical Company, as doing some analysis for you? If not in this one, it was in the one that was a couple months later?

A Stauffer Chemical did do some analysis of dust exposure.

Q I have not seen the raw data. And is there a reason it has not been produced?

MR. LEACH: We didn't produce it. It was testing done on L&N slag that was used only on the L&N line, on some branch lines, I believe.

MR. SHAPIRO: I'm referring to the November 1981 testing on the ballast regulator.

MR. LEACH: I understand, but the results of those, I'm telling you you can ask him about that,

were for the only thing --
MR. SHAPIRO: You're not making an objection here, let him go ahead and testify.
MR. LEACH: That's my objection. That's why we didn't produce the document, not Mark. I'm just telling you why. You asked him why. I'm giving you the answer. If you want to ask Mark what that testing encompassed, he can tell you.

MR. SHAPIRO:

Q My question is: this is a report. I have looked at a lot of your different testing. I generally know what raw test data looks like. There is no raw data in this November 10th, 1981 report. How come I don't see the particular listings?
MR. LEACH: I thought you were asking about Stauffer Chemical. I'm sorry.
A You're asking why you don't see the sampling data sheets?
Q Sure.
A They're in the employee's medical files. And at that time I put them strictly in the employee's medical files and did not attach them to the report.
Q Can you produce those?
A No.
Q You don't know where they are?

A No.
Q How many tests did you take? You refer to, okay, it was breathing zone of a ballast regulator operator.
Was this a single person that you tested?
A Yes.
Q So this whole report deals with one person's exposure on a particular day?
A Yes.
Q What month and year did you start with the railroad? I probably asked you that twice. I apologize. I didn't write it down.
A January of 1980.
Q Between January and this date, have you done other types of testing and given reports to the chief medical officer?
A No, probably not.
Q Was this your first time you did a major report like this?
A This is the first time -- I don't know -- that's not the first time I did a report for the chief medical officer, no.
Q A report of testing, actual testing out in the field?
A No, that's not the first one.
Q You were referring to results of your silica

testing here under results. And you present the sample in a certain way where you have ten over percent, I guess that's silica dioxide, 10/2 equals time waited average?

A Yes.

Q Where did you obtain that formula right there from?

A From the OSHA permissible exposure limits.

Q Why did you refer to the OSHA permissible exposure limit in 1981 when you were testing the silica dust?

A Well, it was identical to the threshold limit value from the American conference of Industrial Hygienists, so I used the same value. I don't know that I actually pulled it from OSHA. I may have used a CPIH recommended value. Those were the only exposure calculations I was aware of.

Q You said that the ballast regulator was overexposed to silica, that the results indicate an exposure of 69 in 456 percent greater than the calculated time waited average for silica.

once you did this test, what concerns did you have as to the ballast regulator's exposure to silica?

A Well, if you'd let me look at the document, I'm sure that I stated it in the document.

Q Sure.

A Well, based on that exposure measurement, I recommended that control measures should be implemented to reduce the exposure to an acceptable level.

Q And as we discussed earlier, the first control that you recommended was an engineering control, correct?

A That's correct.

Q And what is an engineering control? We didn't really define it and I want to hear what you consider an engineering control, particularly with reference to silica dust.

A Well, in reference to the ballast regulator operator, it would involve isolating the cab of the ballast regulator operator from the immediate environment where the silica dust was being generated.

Q Such as enclosing the cab, air conditioning it so the silica dust could not get inside to the pressurized cab?

A Right. It would also have to be pressurized.

Q What do you mean pressurized?

A That the pressure inside the cab is slightly greater than the atmospheric pressure outside so that if there is any leakage, it blows material out of the cab instead of allowing it to be pulled into the cab.

Q That would take a pretty good seal inside the cab, right?

A The better the seal the rnore likely you're going to be able to do that.
Q That's why you recommended in your report here having some sort of covers over the controls so that the dust did not seep in that gap, right?
A I recommended that they look at those and see if they could be installed.
Q In fact it was a number of years before CSX ever put in any air conditioned ballast regulators, wasn't it?
A Yes.
Q What was the first year that CSX actually introduced any, wasn't it 1990s?
A Yes, it was in the 1990s.
Q But those were commercially available, I mean they were being sold by Kershaw by 1981, weren't they?
MR. LEACH: Let me object to the speculation.
A I don't know if they were or not.
Q Didn't you investigate it? You've referenced in here that air conditioning be installed?
A I referenced it to the engineering department to investigate it.
Q Didn't you check into that?
A No.
MR. LEACH: I object.
MR. SHAPIRO: Your objection is stated.

BY MR. SHAPIRO:

Q You didn't personally check into that?

A No.

Q You recommended respirators in 1981 in your report, didn't you?

A Yes.

Q Now, you particularly mentioned the 3M brand 8710 respirator and you said it would cost, at that time, $275 a year.

How did you figure out the annual cost?

A Again that's quite a long tiine ago, but I think I based it on the cost of the respirator and how much it would cost to have that respirator provided to the employee based on the number of days that he worked per year.

Q But were you talking about a replacement every day?

A Probably actually more than once a day. Probably at least twice a day.

Q At that time wasn't the cost of the mask approximately 60 cents apiece or less to the railroad?

MR. LEACH: Object to the predicate.

If you recall.

A I don't recall. I don't know what the cost was at that time.

Q At $275 a year, how 'many work days a year were

you figuring for your typical worker?
A Again I don't recall the calculations. That's an approximate value. That's not exact.
Q Well, a typical worker has something in the area of 260, 240 work days?
MR. LEACH: Let me object. He's answered the question. He doesn't recall how he came up with his calculations.
MR. SHAPIRO: I'm asking a different question.
BT MR. SHAPIRO:
Q I'm asking now, men working in the railroad now. How many work days a year does the typical maintenance of way worker have, do you know?
A No, I couldn't tell you.
Q Would a worker need -- if a ballast regulator operator needs protective equipment under your recommendation here, this was a type of mask, describe that 8710 mask.
A It's a single-use, disposable dust respirator. It has elastic straps. There's no adjustment on the head straps whatsoever. You put it on your face. There's a metal, a piece of metal across the top that's soft and you can bend it around the bridge of your nose.
Q Sort of a papery material on the inside and on the outside it has a little bit, I don't know if it's a

plastic or foam material.
Does that describe it?
A It's a paper-like material that, as I recall, 3M has an electrostatic charge on it.
Q What's the significance of an electrostatic charge?
A Helps make it -- helps attract particles to the filter itself as opposed to allowing it to pass through.
Q That's a disposable mask like a disposable lighter. If it's used up, you throw it away and you get another one, right?
A I don't know if I would call a respirator like a lighter, but it's disposable. When it gets dirty or it becomes difficult to breathe through, you throw it away. We don't ask them to clean them.
Q In the sense that you don't clean it?
A That's right.
Q That type of mask, a 3M 8710, doesn't have a solid pressurized fit upon the face, does it?
A I don't know exactly what you mean by a solid pressurized fit.
Q Well, it won't create a negative pressure inside the mask all the time, will it?
A It's regarded as a negative pressure respirator.
Q Well, you will agree it certainly doesn't create

as solid a fit as a more durable plastic face mask respirator that there's a fit test to be sure that there's no leakage in the seal?

A There's a fit check that you can perform with that respirator and it -- and also it can be -- but it does not have the -- it's not the type of respirator that you could use to do a positive or negative pressure fit check.

Q That's because it sort of looks like a painter's mask, doesn't it? If someone has perspiration or a moustache, maybe even if the mask edge is bent from improper use you can have a little gap coming in through some portion of the mask, correct?

A I wouldn't think that particular mask you could easily deform. It would be more likely to be able to deform one of your plastic masks you were talking about, having it sit in a truck and let the sun beat on it for a little white, have a crescent wrench on top, you probably would bend that plastic mask more than you would them.

Q But I guess the bottom line is what you mentiond, you can't get a positive or negative pressure test on a disposable 3M 8710 mask, can you?

MR. LEACH: Object to the characterization of the testimony.

A You can't do a positive, negative pressure fit check on that mask. The fit check that you'd do for that

one is slightly different.
Q Are you aware of why the railroad didn't go to air conditioning in the ballast regulator until the 1990s?
MR. LEACH: Object to the predicate.
MR. SHAPIRO: What's the objection? He already testified they didn't start until the 1990s.
MR. LEACH: Are you asking if he knows why?
MR. SHAPIRO: I'm asking if he's aware why the railroad didn't start using an air conditioned ballast regulator until the 90s.
MR. LEACH: If you know.
A I don't know.
Q You had recommended it by 1981?
A Yes.
Q Now, in your report you said that the silica -- I guess you're referring to the silica dust that you tested during the ballast regulator dust test -- you said comes from the ballast rock used as ballast.
You did this test in Tampa, right, Hookers Point, Tampa, Florida?
A If that's what it says on the report.
Q Was that a representative area of track line in that -- was the ballast there typical of ballast on the CSX line? I'm sorry. At that time it wasn't CSX. It was Seaboard.

A It was ballast typical of that area and it was granite ballast. And when I talked with the engineering department they said that they used granite ballast on a substantial percentage of the track. They didn't tell me what that meant.

Q Well, it's been confusing for me. Hopefully you can settle this for me. As of 1981 when it was Seaboard, was granite the specified rock for the ballast at that time for Seaboard based on your investigation?

A I don't know if -- I don't know that that's the case and I don't recall specifically asking if there was a standard. I know granite was one of the types of rock that was used as ballast and there were other -- there was other material also used as ballast.

Q What other types of rock were used? I'm talking about 1981, that time period. Did you say lime?

A I think limestone was used in part of the railroad and there was also slag that came out of, I believe out of the steel industry, although I'm not exactly sure. I don't recall exactly where that slag came from. That was used on some of the branch lines and some of the smaller industrial yards.

Q Not on the main line of the railroad?

A No.

Q When you did this test with the ballast regulator

operator I take it it was during dry conditions. It wasn't raining?

A That's correct.

Q And you said that while the ballast regulator was sweeping, the operator closed the doors and the dust was enough that it completely hid the ballast regulator from an outside observer. I take it you meant standing at a distance you couldn't even see the machine in the cloud of dust?

A I had observed him brooming one time while I was outside the cab. And at that time when he was brooming it obscured most of the machine and possibly at times even all the machine during the brooming operations.

Q That brooming operation is one typical operation of the ballast regulator when he does his job, isn't it?

A That's one of the things that a ballast regulator does, yes.

Q You also mentioned the other respirator option, air power hood, cost of $350, a nickle cadmium rechargeable battery which supplies power and an annual replacement of $150 at that date.

What do you mean by air powered hood?

A It's a powered air purifying respirator.

Q So there's an actual oxygen source separate from the outside air for that particular hood?

A No.
Q It filters the outside air and pumps it through the hood?
A Yes.
Q There's an attachment that was produced with some of the documents that showed some 3M products but these photos didn't include the air powered hood, right, that you were suggesting?
A Go to the next page it does.
Q So it was this 3M brand air hat helmet that you were referring to and I guess you attached that with your memo?
A Yes.
Q And those were available in 1981, weren't they?
A Yes.
Q Did the railroad adopt your suggestion?
A I gave them several options on the recommendations. They decided to go with the disposable dust mask respirator.
Q It was less money, wasn't it?
MR. LEACH: Object to the characterization.
MR. SHAPIRO: I'm just asking him the question, Eric. What did I characterize? I said did it cost less.
MR. LEACH: Go ahead.

A It cost less the first year but it cost more in the subsequent years, because in a two- to three-year period it equalized out in cost or actually started costing less.

Q Did you explain that to the chief medical doctor Mead?

A I don't recall discussing that with Dr. Mead. I do recall discussing it with the engineering department, Mr. Richardson.

Q And what was their reaction?

A Well, apparently they decided they wanted to go with the dust mask respirator because that's what they went with.

Q But in fact it's less protection and over the long haul it would cost more, wouldn't it?

A over the long haul it would cost more. As far as the lesser protection, the problem -- one of the concerns they had about using a powered air purifying respirator, and I brought this out when I was talking to Mr. Richardson as well, is the fact that you're depending on the people to check the flows on a daily basis, to make sure that they have the battery fully charged. There was a problem with battery life, with nickle cadmium batteries at the time, that they wouldn't last for ten hours like our normal work day is.

So there were other problems associated with it that they would have to use in addition to the powered air purifying respirator, they would also occasionally have to use the single-use disposable dust mask as well. So instead of having two respirator systems they elected to go with one.

Q Why would they have to use the 8710 on certain occasions?

A The battery would get down to a level that the flow wouldn't be sufficient for the use of the air hat.

Q And the Ni-Cad battery has to be like plugged in to recharge in a regular outlet or something normally?

A As I recall they had a regular -- the battery charger needs to go in a regular outlet, yes.

Q There was a replaceable filter in the air supply, whatever you want to call it, air powered hood also, right?

A Yes.

Q Is that a disposable filter or is that cleaned out or how did that work?

A It's disposable.

Q But it would still come out possibly cheaper over the long haul with that disposable filter?

A Yes.

Q Have they ever adopted for any track maintenance workers this air powered helmet?

A We did try it out on three ballast regulator operators about three years ago.
Q What happened with those tests?
A They worked out fine. And the operators didn't have any problems using it and they were consistently good at checking the air flows and doing the things that they should have done. That would have been perfectly acceptable except the engineering department, through their work with Kershaw, the supplier of the ballast regulators, come up with a modification to our ballast regulators that could be done where we could air condition the cabs and pressurize them. And as you stated before, that's a better control measure.
Q When did the railroad start working with Kershaw to do that? How early after 1981 did they go to Kershaw and start doing this?
MR. LEACH: Object to the predicate. You're asking about what another department did.
MR. SHAPIRO: I'm asking what he knows.
BY MR. SHAPIRO:
Q Do you know?
A I don't know specifically. It was either probably early 90s or late 80s.
Q Who with the railroad in the engineering department was working with Kershaw toward this solution,

if you know?
A I don't know specifically who was working on it in the engineering department. I know at one time Roger Cross had some involvement with it.
Q What's his title with the engineering department?
A They've changed titles recently. I don't know what his title is.
Q He's in the engineering department?
A Yes.
Q Is he here in Jacksonville?
A Yes.
Q Whols in charge of the engineering department as of the last few years?
A Mr. Schmidt.
Q Is he involved at all in supervising this?
A I don't know if he had any direct involvement in this or not.
Q But you're aware that Mr. Cross was dealing with Kershaw at some time on it?
A I'm aware that Mr. Cross was -- had some involvement with Kershaw but I think he was involved somewhat with this as well.
Q You then did a similar memo February 10th, 1982 directed to Dr. Mead and you tested the ballast unloading process, the unloading of rock out of the train cars.

What caused you to to evaluate that? Was it just that initial assessment that you had done where you were looking at the track maintenance work?

A Actually, as I recall, as I was driving back from doing the ballast regulator work. I was driving along a highway that had a railroad parallel and I think I saw them unloading ballast at the time.

Q Saw clouds of dust?

A Well, I saw them unloading ballast and there was some dust present.

Q Now, at this time you had Stauffer Chemical Company involved in this analysis with you?

A No. Stauffer Chemical did their sampling for their own reasons.

Q Was this on their property or something?

A No. They did it on L&N property.

Q What were they testing for?

A They were testing for crystalline silica.

Q I don't understand why they were interested in the results. Was there a side track that went to their property or something or what?

A No. They didn't have -- well, they may have a side track going to their property. But that wasn't the reason they were interested in it.

Q What was the reason?

A They sold us slag.
Q okay.
calcium silicate slag, that's some of the stuff that you used on the ballast line?
A That's some of the stuff that was used in some of the branch lines and also in some of the smaller yards.
Q Are you aware of generally what percentage silica was found to be in the calcium silicate slag? Not the respirable, but in the composition of the actual slag?
A I don't recall.
Q You don't recall approximately?
A It was low.
Q Lower than that in granite?
A Yes.
Q You did the actual respirable dust surveys yourself again? It mentions you had some other people there, though.
A I think I mentioned that I had contact with some other people and they assisted me.
Q Who are Mr. Pregnal, Freeman and Lamb (phonetic)?
A I think they were in the division engineer's office on the Tampa division.
Q Actually did you go to Louisville, Kentucky, Baldwin, Florida and Loughman, Florida to do these tests?
A I went to Baldwin and Loughman.

Q Who took the other one for you?
A The other one was done by Stauffer Chemical on the L&N. I'm trying to remember. I'd have to look at the report. I can kind of recall where T did the actual sampling. Okay. I did the sampling in Florida both at Baldwin and Loughman. The Louisville sampling was done by Stauffer.
Q Did they use the same type of equipment that you generally had described that you used before, the Bendix equipment?
A I don't know if they used Bendix sainpling pumps but they used personal sampling pumps.
Q I take it you calibrated the machinery before you did the test?
A Yes.
Q You said the samples and suitable blanks were sent to acertified industrial hygiene lab for analysis. Have you turned over those results to us?
A No. I'm not sure that I have those results any longer.
Q Do you recall definitely one way or the other?
A I recall looking for them and couldn't find them.
Q Under your results you distinguished significantly between wet and dry ballast. Clearly dry ballast rock is the rock that would tend to have the higher

levels of silica in the dust, correct? Or dust, period, I guess. The higher level of any dust, right?

A When it was wet there was less dust present.

Q Sure. And you talk about OSHA and the PELS. I take it that you were utilizing the occupational and Safety Health Administration reference levels as your guideline?

A Yes. Although, as I said earlier, it's also the threshold limit of value was the same at that time.

Q For OSHA and for who?

A The recommended level, the threshold level of value from American Conference of Governmental Industrial Hygienists.

Q Is this the same, this formula that you have here on the top of the second page, is that the same as the present OSHA formula for silica?

A Under the general industry standard the standard is different.

Q Okay. Explain that.

A Under the general industry standard --

Q You're talking about OSHA general industry standard, right?

A OSHA general industry standard it's .1 milligrams per cubic meter of air.

Q What other standard would there be besides the general industry standard?

A There's a construction industry standard which is actually what would be applicable here. And that's -- well

MR. LEACH: Go ahead and finish.
MR. SRAPIRO: Go ahead.

A I think it's 20 million particles per cubic foot, I think is the standard. I'd have to look it up.

Q You referred to two different standards.
When did the two different standards come into effect?

A The two standards were always there. At this time I was using strictly the general industry standards. Although based on experience over the last several years since that time, I have found that that area is actually covered under the construction standards as opposed to the general industry standards.

Q What OSHA standard deals with construction industry, do you know the sections?

A 29 CFR 1926.

Q I didn't know that railroad track work was construction.
Can you enlighten me as to how you make that determination?

A Well, whenever we've dealt with OSHA regarding track maintenance activities, if they've cited any standard

it's been under the construction standard. So I'm assuming that's where OSHA feels that it is the applicable standard. our law department has a debate with them about their applicability anyway.

Q When you said OSHA cited, has OSHA ever cited CSX or its predecessor railroads with any violation relating to silica dust at any time, anyplace?

MR. LEACH: Again we would allow him to answer as to maintenance of way workers.

MR. SHAPIRO: You're telling him to withhold any answer besides maintenance of way workers?

MR. LEACH: Correct.

A We haven't been cited by OSHA for -- under the silica exposure, permissible exposure level.

Q What have you been cited by OSHA under?

A For the maintenance of way employees we were cited on the availability of material safety data sheets on site, part of the hazard communication program.

Q Where was that? Where did the violation arise from?

A I think it was in Georgia.

Q And what particular area in Georgia?

A I think north Georgia somewhere.

Q When was that violation cited?

A I want to say it was 1992.

Q And the railroad first instituted a hazard communication program when?
A The railroad first instituted hazard communication program for maintenance of way employees in the actually spring or first quarter of 1992.
What was the nature of the program?
A We had videotapes that were used in the first quarter training and they went over the hazard cominunication regulation, what a material safety data sheet is, how to read it. The fact they could go to their supervisor and obtain a material safety data sheet.
Q That's referenced in the videotape?
A Yes.
Q Do you have a copy of that videotape available in your office?
A I don't think I have one in my office but I have one available I can get.
Q Can you produce that through your attorney?
A Yes.
Q Has there been a videotape for the years 93 and 94 also for maintenance of way workers?
A The same videos have been used.
Q So it's one videotape. What about written handouts? In the request for production materials that were turned over by your lawyer I did obtain, I think, two

different two- or three-page handouts. One was called Silica -- let's see. Make sure I have all the prograin materials. This one here, Silica Program Outline.

When was that first provided? Was that provided in 92 or later?

A Well, this particular thing was never provided to employees.

Q Was that provided to -- note for the record it's entitled Silica Prograin Outline. It's a one-page document.

Was that an outline for supervisors or what was that?

A It's an outline that we -- that I wrote to work on a training video for silica.

Q Have you promulgated or distributed that for use yet to the track maintenance workers?

A No, but that's currently under production. We're working on the script currently.

Q Let me show you another document that was produced by your lawyer. It's one, two, four pages.

Is that something that was part of any of the programs that began in 1992 or later?

A No. This is the first draft of the video that we're talking about.

Q So referring back to we've been talking about the hazard communication standard. You said in 1992 that's the

first time the railroad began a hazard communication program?

A With the maintenance of way employees. That's the first time that it was included in first quarter training. There may have been aspects of that program discussed at earlier times, but that's the first time that I know that it was done in first quarter training.

Q You'll produce that videotape, as you said, but was there any discussions specificallly of silica or silicosis in the videotape?

A I think the only mention that there was of silica, silicosis, is in a portion of the tape involving sandblasting.

Q Did you give to the maintenance of way workers beginning in 1992 any material safety data sheets that were from any distributors to the railroad of products containing silica?

A No, but they were available upon request.

Q If the worker knew about it to ask?

A In the printing program we specifically told them that they could ask.

Q So in other words there's a general reference that if you want to see a material safety data sheet on some specific product you can ask and get a copy?

A That's correct.

Q No reference to silica is in the videotape except with reference to sandblasters and their particular trade, correct?

A Yes.

Q You're in the process of changing that and you're going to be producing another videotape that deals with silica for maintenance of way workers?

A It will certainly include maintenance of way workers. A large portion of the video involves maintenance of way work.

Q I was provided also in connection with this particular case something called an information sheet which I think was actually given to the track maintenance workers. And I'm referring to these two documents. One is entitled Information Sheet - Silica Exposure and it says 1/1/94 at the top of the page. It's a one-page document. And then there's another document entitled Ballast Dust and below that What You Should Know. It's a one-page document.

Are you familiar with those two pages?

A Yes.

Q Mr. Badders, I have shown you two documents here and I -- you had just said you recognized them.

Were those first provided to the track maintenance type workers in 1994?

A No. The first one was.

Q The one entitled Ballast Dust?
A The one entitled Ballast Dust and What You Should Know was presented during the first quarter training in 1992 and it was actually read by the trainers.
Q All right. So it was not handed out but it was read?
A That's correct.
Q What about the other one, the one entitled Information Sheet - Silica Exposure? It's dated January 1, 94. Was that the first time it came out or a revision?
A That's when it was created. It actually didn't get distributed until a little bit later than that. And some of the earlier classes didn't have this as a handout. We published a book with additional material safety data sheets that went out to the engineering department and this was included in that book, which is at every engineering work department worksite.
Q When was that distributed out?
A This second one?
Q The information sheet, yes.
A This year, 94.
Q So doesn't the hazard communication standard as you understand it require the railroad to give written information to the workers of whatever the particular health hazard may be?

A No. If an employee requests a material safety data sheet it has to be readily available.

Q So your understanding of the program is what?

A You need to have a written program that says how you're going to accomplish the goals of a hazard communication program and you have to have a mechanism where the employees can obtain copies of appropriate material safety data sheets. And then you do training regarding the hazards associated with exposure to various materials. You can use general categories, which is what we have used.

Q As respect to silica dust and the track maintenance personnel, was the first time that you began the program in 1992 with the videotaping and what not?

A In 1992 during the first quarter training we read the document that's identified as Ballast Dust, What You Should Know. During 1992 that was discussed at the first quarter training meetings. At that time the material safety data sheets would have been available to anyone who requested it.

Q Where would they be maintained?

A They're maintained on a PC that has access -- our electronic mail system anywhere on the system.

Q So if a track maintenance worker, like a trackman working somewhere in Virginia, some small town, says to his

foreman, I want to see a material safety data sheet, where does he go?

A The foreman would go to the nearest terminal, CSX mainframe computer terminal, which is normally within about 30 aor 40 miles, and he would submit the request. The PC program reads the request periodically, about every five minutes, processes it and drops the message, which is the material safety data sheet, back to the originator's electronic I.D. number and then he prints it out.

Q So he can see it on the screen or print it out?

A Yes. He can do either one.

Q Does every track, like maintenance hole, all the guys call it, or terminal, do all of them have a computer?

A I think they all do now because that's where they receive a lot of their information.

Q As of what year did those very small terminals and things have a computer like that?

is

A I don't know.

Q Prettyl recently, the last few years?

A Again, I don't know. Because when you talk about -- you talk about the hole, I talk about a terminal. That terminal is probably a train yard. In that train yard they've had computer terminals there for a very long time. He would have had access. He could have gone up to the yard office or something like that.

Q Are there written copies maintained at each of those offices, too, or just on the computer?

A Just on the computer.

Q When did you get the program in place that all the material safety data sheets were actually on line on the computer?

A I think they actually went on line in 19- -- it was either 87 or early 88.

Q Even the track maintenance material safety data sheets with respect to silica dust?

A Yes.

Q Do you have any recollection as of that time what material safety data sheets, 88, you had received at the railroad on silica products?

A I don't know specifically. And I don't -- you know, when we talk about the material safety data sheets on that computer system, I don't know if in that first group of MSDSs that went an that system that there was one for ballast. I think there was but I'm not absolutely sure.

Q Well, I have looked at a number of things that your lawyers produced, some of which I have gotten from other subpoenas, and I see there are MSDSs from all the rock quarries by a certain time.

Did you have those by 1988?

MR. LEACH: Let me object. I think he answered

the question already.

MR. SHAPIRO: I think I asked something a little different.

BY MR. SHAPIRO:

Q The MSDSs from rock quarries, I have seen every one by now. What I'm getting at, when did they start giving them to the railroad? Do you have a general understanding of when you had gotten material safety data sheets from the major rock quarries?

A I started receiving some material safety data sheets in the rock quarries in the late 80s. And I don't know that I have received material safety data sheets from every single rock quarry. But I have safety data sheets for granite ballast and for limestone ballast.

Q The railroad is a member of the American Association of Railroads; is that correct?

A CSX is a member of the Association of American Railroads.

Q Does that by virtue of their membership allow you to participate in any particular groups or sub committees or whatever in the AAR?

A I have had some interactions with the AAR.

Q Do they put out publications of any kind on a monthly or annual basis?

A They put out publications periodically.

Q What kind of publications?
A Large number of different types. Some on engineering matters, some on -- mostly technical. Industry wide standards so that if something goes from CSX and we switch it off to Southern Pacific so that everything fits together the same. They have manuals for how you make various types of equipment, specifications for various types of equipment. They also have -- they publish emergency action guides which involve some of the chemicals that we transport.
Q I skip around a lot in discovery deposition in case you haven't noticed.
Going back to the February 10th, 1992 memo on the second page, I guess the last complete paragraph at the bottom. You took or had processed ten samples in various places unloading ballast rock. Two thirds of the samples exceeded the OSHA permissible exposure levels that you were using as a reference guide; is that correct?
A Actually on two thirds of the air samples when it was dry ballast was being unloaded exceeded the calculated PEL.
Q The wet ballast, of course, being there's almost no dust coming off wet ballast, right?
A There was no silica detected on the filter so the exposure was -- you put zero down at the bottom the

exposure becomes 5 milligrams per cubic meter of air based on that calculation.

Q And naturally the direction of wind when the workers are unloading ballast rock comes into play, correct?

A Certainly can in some cases.

Q And you obtained information about this time that when the ballast was wet that very small amounts of dust were generated.

You learned that at that time, right?

A That's what some of the employees told me when they were unloading the wet ballast at Baldwin.

Q And you basically agree with that analytical comment by the workers?

A Those are the people who do the work so I assume that they've seen wet rock from time to time. I trust --

Q But that's been born out by oodles of tests that you've done, that wet ballast would generally generate far less dust than dry ballast, right?

A I wouldn't say oodles of tests, but I would say that I can count on employees being able to tell me that they can look at it and say it's less dusty when the ballast was wet as opposed to when the ballast was dry.

Q But to clarify I'm asking you a second question:

Since that day you have actually done a lot of

testing through a contractor called Techcon and you've found that wet ballast rock will generate far less dust than dry ballast rock?

A We have done testing and Techcon is one of my contractors. And the sampling when done with wet rock does produce lower dust concentrations than with dry rock.

Q You could have said yes, but okay, you explained it.

A It depends on how many cars you're unloading that day and any number of things. You're not just talking ballast is wet or dry. It's all the other conditions, too. But if it's wet, it's usually less dust.

Q I knew it would kill you to say yes. Anyway, I've got another point here:

You said normally ballast is unloaded when a section of track will be serviced by a system T&S crew, or a division surfacing crew. According to several road masters this activity is done about every five or ten years depending on local conditions. Here's my question:

It may be that that activity of a specific length of rail is actually -- I don't know what you would call it -- reballasted, but where they come in and reballast a whole area every five or ten years. But a trackman who is moving around the track to the locations where the railroad wants the ballast unloaded, could be in fact unloading

ballast every few days for a month on end, couldn't he? In other words, he's not doing it every five to ten years, that's not what you're trying to say, right?

A No. An individual who works on a section gang, and the way that we handle unloading of materials, the section gang is going to that area, the section gang unloads it. When they're unloading for that particular timbering and surfacing gang could come by once every five to ten years, they may unload for several days, maybe even two or three weeks. They may unload ballast at least part of the time during that day, each one of those days.

Q What if the rail master moves them a hundred miles down the track to another area where the rock trains are coming to unload ballast rock, they could then go another month, couldn't they, if they were moved?

A You can't do it. Those are bid-in section jobs. Once he bids in on the section, that's where he stays unless he bids and rolls onto another section. A section

Q There are section gangs --

MR. LEACH: Hold on. Let him finish his answer.

MR. SHAPIRO: I'm sorry. Go ahead.

A A section gang is a bid-in job. It's for a specific area of track called a section, a section of track.

Q A lot of times trackmen actually get placed in with T&S gangs and might work with a T&S gang and then they may get located to another area, right?

A You can have trackmen who bid onto a job with a T&S gang and they would move with the T&S gang; however, they're not the ones unloading ballast typically. The section gang that's assigned to that particular area is the one who unloads ballast.

Q Have you taken any of the track maintenance or T&S individual workers and analyzed how often they've unloaded ballast rock over a period of a year? Have you taken any actual employees and looked at their job?

A Not specifically with individual employees. I have talked with some supervisors and asked on a typical section how often would you expect to unload ballast.

Q And what answers have you gotten?

A They say it will range depending on what the maintenance has been on that track. If you just had a T&S gang through there like the year before, they're probably not going to be doing all that much ballast unloading because the track's in real good shape. If it's been a number of years and you've got undercutters coming in and you're replacing or cleaning up rock in a particular area where you have poor drainage, they may dump ballast for a few days at a time, maybe five or six times a year. If

they're changing out switch points or changing out a switch or a frog, which is associated with a switch, they may dump one or two cars of ballast at that time.

Q As far as taking --

A So we're talking maybe a total of 15 or 16 times a year that they're unloading ballast. And each one of those times usually is going to be for a day or less than a day. And, however, if they have a timbering and surfacing gang in their area that's going to be doing work, they may be unloading ballast for a slightly longer period during that time.

Q Well, isn't that a real rough average not based on any particular employee that you've reviewed the records?

A There's something in the neighborhood of about 3- or 4000 employees. It would be pretty hard to do individual. I'm giving you a general idea of the experience of road masters who have years of experience that say that their crews unload ballast and I'm depending on that.

Q Wouldn't that have to be to a specific person's own experience?

MR. LEACH: Let me just object. I believe he answered your question and talked about experience of the masters.

BY MR. SHAPIRO:

Q Well, we have some plaintiffs, including the fellow whols in this case, he's testified that -- my memory, I can't recall if he testified to it or if it's in one of my discussions with him because it's been a while since his deposition. But he estimated on separate days a couple hundred times he's unloaded ballast rock. If you're talking about any part of one day over a 18- or 20-year period, he's estimated hundreds of days he's unloaded ballast rock.

A Well, over a 20-year period if he unloaded 200 days that's ten days a year.

Q You're right. Well, just depends on the particular person.

A In fact my estimate was higher than yours. We'll use your estimate if you want to.

Q Each person has a different exposure is what we're saying, I suppose.

You mention in your recommendations as administrative controls wetting the ballast?

A Yes.

Q After you did the report, did the railroad go out in 1982 and fill up any of the rock train cars with water and see what it would do?

A They looked at what would be involved in wetting

down the cars. And as I recall the discussions, because I never saw any written material on it, as I recall the decisions, they had, number one, had problems wetting the cars and then getting the cars actually out to the site where they were going to be dumped and keeping the rock wet. Because it takes, if it has to move 20, 30, 40, 50 miles from the place where it's wet, where you wet down the car, it may take a train like a work train a day or two to get there. And in south Georgia sun, high temperatures, that can dry out pretty quick. Also these cars are not sealed on the bottom and the water's going to drip out so you're not going to have any residual in there. So they had some problems with actually delivering it at the site wet.

The cars that I did in Baldwin, we had a real nasty thunderstorm the day before and it had dropped, it was my understanding it had dropped a lot of water in the area where those cars were. This was actually surmised between the trackman and I because I asked him. The other ones I had seen had been dry. He said, oh, yeah, we had a thunderstorm yesterday. And they already had the cars spotted out on the track on the siding so it didn't take very long from the time that the rain was applied, compliments of mother nature, to where they could unload the rock. It isn't like we had it in a facility and you

had to flood the cars and then move them for a day or two to get to the point where they were going to be unloaded. By that time you'd have at least some drying and probably most of the rock would be dry by that time.

So there was a problem with the delivery of the rock and getting it to the place where it was going to be unloaded wet. We still have that problem.

Q So after February of 82, was there any testing of wetting the ballast rock in 1982?

A Again, they looked at it.

Q Did they look at it with any of the rock quarries that deliver rock to the railroad?

A What they did with the rock quarries, that's a whole different matter. What they did with the rock quarries, they went back to our suppliers of rock and emphasized to them that we wanted our ballast washed when it was being loaded to reduce the fines that would be in the rock when it was delivered to us.

Q Where are those letters? I have not seen one letter from 1982 for a number of years to a rock quarry.

A I have not seen anything from the engineering department either. I don't know if they've kept those letters.

Q Because I requested anything that deals with this type of issue and I don't remember if it's one of your

answers or one of Mr. Ringer's answers in another case against CSX but there was an answer that said we asked the quarries. There was some discussion about wetting the rock but I have no idea when it is.

MR. LEACH: You're asking Mark about documents that engineering would have. I think he's telling you he doesn't know.

MR. SHAPIRO: Well, my production request was not to a particular department, with all due respect. It was to the railroad. I would just like, if there is something, let's make an inquiry and produce it if there is something. Is that fair enough?

MR. LEACH: Again you're asking Mark. You should be asking me.

MR. SHAPIRO: I am to both of you.

MR. LEACH: I haven't seen any of those documents so I'm not sure if they exist or not but we can certainly take another look.

MR. SHAPIRO: Off the record.

(Whereupon, there was a discussion held off the Record.)

BY MR. SHAPIRO:

Q So when you make an inquiry to check on any documents relating to discussing with the quarries about wetting ballast rock --

MR. LEACH: Again I'm going to ask Mark not to

make an inquiry because he's extremely busy and he's already made a very thorough search of his files for any documents. If you're asking us to go back and talk to engineering to see if there are any letters, we will do that.

MR. SHAPIRO: All right.

BY MR. SHAPIRO:

Q Referring to the February report, I want to make sure of something because we've gone back and forth here a couple times.

on the wet ballast test that was from Baldwin, I see the column here where it says exposure of milligrams per cubic meter. I'm seeing .12, .10. Is this the column that should be .1 or less under the OSRA PEL or am I reading this wrong?

A No. What you're reading is the respirable dust concentration.

Q Oh, that's just respirable dust?

A Right. That's not silica.

Q Which one is the silica?

A Well, it was a calculated permissible exposure limit at that time. So using the percent silica and the above formula, the OSHA PEL, the calculated PEL for the first sample is .5 and the exposure was 3.8. And that's for the respirable dust.

Q You didn't break it down by just crystalline silica here?
A No, it wasn't broken out. At that time the analytical methods didn't break out crystalline silica.
Q It includled respirable dust total.
A You took a sample where you obtained your percentage of silica. And then using that bulk sample you then calculated what your permissible exposure limit was and that permissible exposure limit was what it would be for that partuclar dust sample. And in this case it was .50 milligrams per cubic meter and our exposure was 3.8.
Q That first was way over the limits. But in other words, this test didn't have a time waited average at that time?
A Yes, that's the time waited average.
Q Oh, it is. What has changed? You said there's a separate one for the construction industry. But hasn't the basic one changed also for crystalline silica for general industry?
A For general industry it has changed. Yes. It's now .1 milligrams per cubic meter of air.
Q What is it for construction?
A I think it's 20 million particles per cubic foot.
Q And you're saying that the construction standards, which are obviously more lenient or you wouldn't

have brought them up, went into effect later, right?

MR. LEACH: Let me object. I haven't said anything a couple of times. We don't need any editorial comments. If you want to ask questions, he'll answer them. I don't want to sit here and move to strike all your comments. He mentioned them, I think he said, because OSHA had specifically referenced those to CSX.

BY MR. SHAPIRO:

Q When did those go into effect, those construction standards?

A I think the construction standards were in effect back in the 70s sometime.

Q Why didn't you refer to them in 1982?

A Because at the time I was generally working in shops and was most familiar with general industry standards and did not -- did not know that the construction standards would have been the appropriate standards to compare against at that time. So I used the general industry standards, which also agreed with the threshold limit value from the American Conference of Governmental and Industrial Hygienists. So it was an acceptable standard to me so that's the one I used.

Q By the way, you agree to produce the OSHA citations or violations from 1992?

MR. LEACH: Ask him about it because it has nothing to do with this case.

Tell him about the OSHA violation for the HazCom in northern Georgia.

A It involved a material, a tie plugging compound.

Q A tie plugging compound?

A Yes. And we did not have a material safety data sheet on site for the tie plugging compound and also the operator was not using impervious gloves. He was using leather gloves. We were cited by OSHA for that.

Q Was this a maintenance of way operation?

A It was a maintenance of way production gang.

MR. SHAPIRO: Well, I would request that your lawyer produce it.

MR. LEACH: When you make a request, I'll take a look at it and see if that comes within discoverable material.

BY MR. SHAPIRO:

Q So referring back to these limits, Mr. Badders, on the February 82 report, explain something to me here.

Why is the OSHA PEL for these Baldwin tests 5.0, but the other test -- oh, it's based on the -- so in other words, you couldn't detect a silica in that sample so PEL goes to this number there?

A Yes.

Q That's pretty bizzare. Okay, I see.
Does that mean that you are still in violation of the PEL?
A No.
Q oh, right, right. Way under the PEL. Okay.
Can you tell me what this document is, please?
A I had this in my file.
Q It appears to be silica dust testing from 1982 but there's nothing with it to explain it or what not.
A It is silica dust testing. It's not any testing that I had done and not any testing that had been done on the, at that time, Family Lines Rail System. I think this may have been testing that was done by the state of Maryland.
Q You weren't merged with the Chessie line yet, were you? What part of the line was for Maryland at that time?
A This was part of the Chessie system and I have the files from the Chessie industrial hygienist.
Q When you merged, you merged the records together also?
A Yes.
Q So when we talked about Mr. Rupp earlier, this may have been something that could have tied in with the type of work that he had done?

A He could have done this, but as I recall when I talked with him he said this was -- I think he said this was done by the state of Maryland. He didn't have any -- there was no report or anything. Just the information that's provided there.

Q And this is, for identification, at the top of the page it says Dust Sampling Parameters and Results Table 3. Date seems to be from 1982.

You have not had occasion to discuss this with Mr. Rupp at all? We may take his deposition, by the way.

A I don't know if I discussed this specifically with him or not. I think I probably did.

Q Did he say the state of Maryland had -- do they have a state OSHA department that came in and did some testing or what?

A Actually at that time the state of Maryland had a railroad safety section of their -- I think the Department of Health. And the individual whols in the railroad safety section at that time was a good friend of Mr. Rupp. And I think he is the one who did the sampling.

Q Was it on Chessie personnel or other personnel?

A Again in the particulars, I'm not absolutely positive. I think it was on Chessie personnel.

Q He may know more about it?

A He may know more about it.

MR. SHAPIRO: We're off the record here.
(Whereupon, there was a discussion held off the Record.)
BY MR. SHAPIRO:
Q When did you first take part in the silica working group under the AAR?
MR. LEACH: Let me object to any contacts, conversations or any dealings that Mr. Badders had in anticipation of silicosis litigation to be filed or filed against CSX. I don't know if that question deals with issues that are unrelated to litigation, but I'm going to instruct him not to answer any questions that invade the work product doctrine.
So that's my objection. I'm going to instruct him not to answer.
MR. SHAPIRO: I would think your objection could only get down to any questions where he's getting into -- well, the question's been raised in another case also. And I want to find out if there were any attorneys present at these meetings.
MR. LEACH: Again I'm going to instruct him at this time not to answer any questions that deal with any conversations, conferences or dealings he's had with anybody in anticipation of silicosis litigation filed or to be filed against CSX.
BY MR. SHAPRIO:

Q When was the first time that you -- did you form the silica working group in the AAR? Your name was listed on a document as being the coordinator who telefaxed information to other parties.

MR. LEACH: Same objection. I'm going to instruct him not to answer.

MR. SHAPIRO: Eric, it doesn't even get into work product. He's got to answer whether he was involved in it. I'm not asking him what they talked about.

MR. LEACH: I think it invades --

MR. SHAPIRO: The judge is going to make him tell me the basics. If it gets to a question about what they talked about, it's one thing. I've already got the documents. How can you claim a privilege? The document's already out.

MR. LEACH: We've claimed the privilege and I have instructed him not to answer any questions that invade the work product doctrine or attorney/client privilege.

MR. SHAPIRO: I asked him when he first was involved with the silica working group. Are you trying to say that that is privileged?

MR. LEACH: I believe that it may be. I don't need to get into a discussion with you. I'm just raising an objection and instructing him not to answer

any questions that deal with that group.
MR. SHAPIRO: You're saying I can't ask him any questions about the silica working group, period?
MR. LEACH: Correct. I think that deals with matters that are covered by the attorney/client and/or the work product doctrine.
MR. SHAPIRO: Were you present at any of the meetings or was an attorney for CSX present at any of the meetings?
MR. LEACH: I have raised my objection. If you want to continue off the record, I guess we can.
MR. SHAPIRO: Let's go off the record.
(Whereupon, there was a discussion held off the Record.)
BY MR. SHAPIRO:
Q Have you created any videotapes, photographs or any other media depicting any of the track maintenance processes that may generate dust?
MR. LEACH: Other than this anticipation of litigation, you can answer the question.
MR. SHAPIRO: I specifically want to know if they have any videos, photos or media that the railroad intends to -- I want to know first of all if they have knowledge of the creation of any of those documents for purposes of presenting their side of the case. Now, if you're just going to look at it for your own

purposes of your attorney, that's fine. But if they have any intention of using it in litigation as evidence, I want to know about it.

MR. LEACH: The way I would respond is we would object to the question as it relates to materials that were prepared in anticipation of any litigation as opposed to any videos --

I think you've already testified about a video that was to be used in the general course of business. With those parameters you can answer.

But I will instruct him not to answer about any materials that were prepared in anticipation of any litigation, potential, threatened or to be filed against CSX.

Other than that you can answer.

A As far as the videos, we're writing the script.

Q I'm not asking any questions about a safety video. I'm saying are you aware of any videotapes that you have shot showing the ballast unloading process or ballast regulator operators or any other machine operators that you want to bring them into a trial to show this is what the operation looks like?

MR. LEACH: First of all, Mr. Badders doesn't decide what's brought into a trial.

MR. SHAPIRO: I'm asking if he shot them. He

might not decide.

MR. LEACH: I've instructed him not to answer any questions that relate to materials that may have been produced or created in anticipation of litigation or to assist in the litigation process.

MR. SHAPIRO: What I'm saying is, Eric, I'm not asking him for anything that you guys might want to look at, and it could be for anticipation of litigation. But if you have prepared anything, just like if you had taken a photograph of the scene of an accident and you think you're going to use it, that's what I'm asking about.

MR. LEACH: And my point was until a photograph, it is determined that the lawyer is going to use that photograph at trial, is work product, just like the creation of a video or other materials would be work product. So we've raised our objection and I instruct him --

MR. SHAPIRO: It's a speaking objection, number one. And number two, I'm not going to be revealed anything if he says yes. The Court would still have to rule on it. But you're cutting off the whole process by saying don't answer the question.

MR. LEACH: I'm instructing him not to answer the question. Go ahead. We can argue about it but I'd

rather continue on.
A I haven't been involved in shooting any videos as far as for anticipation of litigation.
Q I don't even really want to know that. I was just wanting to know -- .
MR. LEACH: I think he's just short circuiting the process.
A If your question was have I shot videos for training purposes or general business purposes, no, not yet.
Q But you've said you're in the process of doing a video for training?
A Yes.
Q Do you have any training in administering, like, mobile pulmonary function tests?
A No, not specifically. I mean I have done some pulmonary functions tests many, many years ago.
Q Was that when you were at Wisconsin?
A Yes.
Q Are you like a registered tech to do those kinds of things now?
A No.
Q What technicians has CSX -- or let's go back to, say, 81 when you started with the railroad, the predecessor railroads:

What technicians has the railroad used to do any mobile pulmonary function testing of track maintenance workers?

A As far as the pulmonary function testing of track maintenance workers, we have hired an outside firm that uses respiratory therapists.

Q Is that Quality Services?

A Yes.

Q Have you used any other company besides Quality Services that you're aware of?

A We've used our occupational health nurses to do some of the testing as well.

Q That work for the railroad?

A Yes.

Q That's been the exception, not the rule, right? In other words, you've done that on many less occasions than you've used QSI, right?

A We've used Quality Services when our nurses could not cover that particular training site where we were doing the pulmonary function testing of the track maintenance employees.

Q When was the first time you did any pulinonary function testing on track maintenance or T&S gangs?

A I don't know if I can tell you when the first one occurred because I don't know if the chief medical officer

may have ordered it for a specific employee in the past.
Q Generally I guess on a -- not an individual person but a group basis, when did you start doing that?
A The first group was in 1992.
Q What about actual administration of chest x-rays on a mobile basis, well, not necessarily mobile, but on a group basis of any track maintenance or T&S workers, when did you first begin doing that on a group basis?
A 1992.
Q What caused you to start both of those tests in 1992?
A We were starting a medical surveillance program for employees potentially exposed to silica. And the decision as to what tests were done and utilization of those tests was made by the chief medical officer.
Q Was that some reference to OSHA regulations?
A There are no actual OSHA regulations regarding medical surveillance for silica, so no.
Q Is there any other external reason that you're aware of that they began in 1992?
A It was the decision of the chief medical officer based on my sampling results that we needed to start a medical surveillance program, so he did.
Q The group chest x-rays, who had those -- have those all been sent to -- we're talking about the group

chest x-rays that began in 1992.

As far as the initial analysis or radiological review, has it all been that firm in Tampa, the radiology group in Tampa, Florida?

A I'm not sure if Quality Services may have used someone else. It was a reader that Quality Services provided for reading the chest x-rays. I know one of them is in Tampa, I don't know if they have any others.

Q Do you know where the chest x-ray films are being maintained?

A Yes.

Q Where, here in the medical department?

A The 1992 ones are in the medical department.

Q And the 1993 ones also?

A There were none taken in 1993.

Q How often are you planning on doing those?

A Every two years.

Q Have you consulted or retained any toxicologist with reference to the silica dust issues?

MR. LEACH: Let me raise an objection. Work product to the extent, as I said, Mr. Badders has information or was involved in any conversations in anticipation of this litigation and other silica related litigation, I would instruct him not to answer. If you want to know prior to the beginning of

this type of litigation
MR. SHAPIRO: I don't want to know about the specific case if you've talked or consulted with someone to prepare the defense with your lawyer. I want to know since 1981 you've had any dealings with any toxicologists to analyze anthing.
MR. LEACH: Prior to litigation?
MR. SHAPRIO: Yes.
A No.
Q All right.
What about petrographic or geological analysis? I think I have seen some documents involving that.
A We had asked the suppliers of our rock to send us an analysis of their rock.
Q And when did you first do that?
A I think I did it like 1992.
All right. That's a pretty good guess.
What were you looking for? I saw the letter and you wrote the same letter to a lot of the quarries?
A Yes.
Q And I think you asked specifically about cristobalite, right?
A Yes.
Q You're asking about cristobalite and trying to find out if the quarries could show that there was no

cristobalite in the granite, for example, correct?

A I don't know that I specifically asked that they could not show. I wanted to know if the cristobalite was present. I think that's how I stated it. If you show me one of the letters I can tell you if that's what I wrote because it was a form letter that I used.

Q You said something in the letter about that's one of the worst or more, I don't remember what your phrase was, but it was one of the kinds that you didn't want to have if you could avoid it, basically. Now, what was your thinking in doing that?

MR. LEACH: Can he have the letter? Can you look for it now?

MR. SHAPIRO: I don't need the letter. I just asked him a question: what was his thinking behind the letter. Because he doesn't say that in there.

MR. LEACH: He asked you to take a look at the letter so he could tell you what his thinking was.

MR. SHAPIRO: Can you go ahead and answer without the letter? I'll look for it, but I thought we were trying to be expedient here and it might take me a few minutes to find it.

A As far as the letter that went out, is that one there?

Q Here's one. That was produced by Vulcan.

What was your thinking behind writing the letters?

A If we were looking for suppliers that were providing ballasts that had cristobalite, and if as a major constituent of their ballasts and if that was the case we were going to ask that they be either switched to another quarry or eventually they could actually be removed from our materials and purchasing system.

Q How many different quarries were supplying rock in 1992? Just approximately. I think we have a list, but I wanted to ask you the question.

A I want to say about a dozen, but there may have been a few more, plus or minus.

Q Did you find that any of them had cristobalite in their granite?

A Most of them reported there was no cristobalite but I think there was one or two that reported very small quantities.

Q There's a different permissible exposure level for cristobalite in the cristobalite-type of silica as opposed to other types of silica, isn't there?

A There's a different permissible exposure level, yes.

Q It's half the level, right?

A Yes.

Q A person can develop silicosis even if they've never been exposed to cristobalite, though, couldn't they, if the exposure was long enough and of a significant amount of silica dust, right?

MR. LEACH: objection, calls for a medical conclusion.

A Well, a person whols exposed to crystalline silica for an extended period of time at levels considerably higher than the permissible exposure limit I believe may be at increased risk of developing silicosis-related diseases.

Q Let me show you this. This is a July 88 cover letter from Davidson Mineral Properties I guess introducing their material safety data sheet. And this was something that you produced.

Have you seen that before?

A Looks familiar.

Q Scan through that material safety data sheet. It's from a rock quarry.

Does the type of warnings that were outlined there seem rather similar to several that were produced by the actual rock quarries that did send material safety data sheets around that time?

A As I recall there was not a rush of material safety data sheets that came in from the suppliers.

Q In other words, they didn't all come in the same month. They were spread out over a few years even, possibly, right?

A They've been spread out over a period of time, certainly.

Q When you saw that one in 1988, did it impart any information to you in the warnings that you were not aware of with respect to silica?

A No, I don't think it gave me any additional warnings.

Q You knew about those general warnings since the time you had written the memo in 1981 when you described silica and silicosis, didn't you?

A Yes.

Q This was in the materials that you produced also. And it says NIOSH at the top, Recommended Standards. The only thing I wanted to ask you about that one was: I couldn't find a date and I wanted to know if you had any idea when that may have been, within a year or two, when you think you obtained that or if you know where it came from.

MR. LEACH: Just for the record, we didn't produce these, to my knowledge.

MR. SHAPIRO: This was in the documents you produced.

MR. LEACH: Maybe one of the other cases.
MR. SHAPIRO: No, no, no. It was in the stack. I specifically brought the stack.
MR. LEACH: Well, you can ask Mark. He can tell you better than I could.
A This was not sent to me from NIOSH.
Q It looks pretty old. That's why I --
A I can't recall specifically who sent it. I think one of the quarries, when they sent out some of their information they included the NIOSH recommended standards. So I'd say late 80s, early 90s.
Q Do you know what this Refractories Institute is? This is something you guys produced. Is that like a national-organization-type thing or what?
A I'm not exactly sure. I know that it was sent by -- it was either sent by one of our suppliers of sand or by one of the suppliers of ballast rock as part of the informational material that they sent.
Q Do you know approximately when this was received?
A Again, it's probably early 90s sometime, possibility of late 80s, but more than likely early 90s.
Q Apparently you or someone just copied a couple pages from this book just to show you had this textbook on silica entitled Dangerous Properties of Industrial Materials.

MR. LEACH: I don't recall us producing that.
MR. SHAPIRO: It was in the very bottom of the documents.
MR. LEACH: Is that something that came from your files?
THE WITNESS: I have this reference book and I don't specifically recall copying this, but I could have. I have that reference book.
BY MR. SHAPIRO:
Q Now, I have some quick questions about this. This was produced. I'm not sure where this came from. I don't remember if this was in your stack or not. This was the rock quarry list and I was able to decipher the -- it looks like it's done by year down here and it lists all the -- have you ever looked at this before? I don't want to ask a lot of questions for nothing. It lists a lot of the rock quarries. This was produced by CSX. It may have been

MR. LEACH: That's by a different department.
A This is from a different department. I'm not sure --
Q The only thing that I wanted to ask you: do you know if this column, one of these is, I presume, total rock and one might be payments to the quarry or do you know?
A I don't know.

Q Let me ask you this, though:
Currently who are the largest rock quarries, three or four rock quarries that CSX buys its granite rock from? I can sort of tell from here, but I want to be sure.
MR. LEACH: If you know.
A As far as the top three or four, I'm not sure, other than I think Vulcan is in that group.
Q What about Davidson Mineral Properties?
A They're one of the major suppliers. They may still be. The rock quarries tend to change as far as who the major supplier is depending on where we're doing track maintenance.
Q Are most of the track -- what part of the track currently is made up of granite, do you know?
A I don't know a percentage but I think most of our main line track and most of our major yards are granite. That's been my observation.
Q And based on -- do you have or -- do you have a research and testing department with the railroad?
A There's a test lab.
Q What's the title? Is it called --
A It's test lab for the mechanical operations group.
Q Is that located in Georgia?
A Yes.

Q What city is that in?
A Waycross.
Q Is there a manual or a standard for the purchase of ballast rock?
MR. LEACH: object to the predicate.
If you know.
BY MR. SHAPIRO:
Q For this railroad?
A I believe there's a standard for the purchase of the rock but I believe that comes out of either the engineering department or the materials and purchasing. I think materials and purchasing will probably have a copy of it.
MR. SHAPIRO: I'm going to ask Mr. Leach to produce a copy of that. In my litigation with Southern they have a seven-page ballast rock specification. I am presuming that there must be one for CSX. I saw a couple documents that refer to certain ballast didn't meet the standard. I'm sure they have it.
BY MR. SHAPIRO:
Q In any case, have you reviewed any documents from the time you started with the railroad to now that have analyzed, I guess you'd call it technically, the petrographic analysis or composition of the granite that

you're buying from the various quarries?
A I have seen the results that the quarries that responded to my letter sent back.
Q From some documents that I have seen it appears that within maybe 5 percentage points one way or the other, the typical composition of the granite that's being purchased is somewhere in the 60 percent of silica; is that your understanding?
A I don't think it's quite that high but I'd have to look at the documents.
Q What did you think it was?
A I thought it was more down around 25 percent.
Q Total silica in the granite rock?
MR. LEACH: You want to look at the documents, did you say?
MR. SHAPIRO: Off the record.
(Whereupon, there was a discussion held off the Record.)
BY MR. SHAPIRO:
Q Is this one of the petrographic analyses that were done on some granite from CSX? I'm handing you a document. First page is with Tarmac dated October 5, 1992?
A This is one of their responses. I think this is one we may have provided you.
Q What percent silica was the granite that was submitted to you from this particular quarry, Tarmac?

A The pink granite particles consisted of 10 to 15 percent clear quartz, 60 to 70 percent potassium and sodium feldspar, which is not crystalline silica.
Q Quartz is a type of silica, correct?
A Right.
Q And then 20 to 30 percent for the granodiorite, 20, 30 percent quartz and the rest of it is feldspar and the ferromagnesium metals. And pyrite or dark pink quartz was 10 to 15 percent, which is about in the range that I recall. But I didn't write down a table to average them or anything like that.
Q I only saw this one. I might not have brought every document. As a matter of fact, I picked through and I didn't bring every one.
But you got one of these from every one of your quarries?
A Some of the quarries did not respond.
Q If you haven't produced every one of these, will you produce the rest for me through your counsel?
MR. LEACH: Just for the record, I've gone through and we produced every petrographic analysis.
A Every one that I have I produced to -- I gave to Mr. Leach.
Q Is Martin Marietta one of your quarries, also?
A I don't know off the top of my head.

Q I've seen them listed. For example I'm looking at something that they produced to Norfolk Southern. Which I'm not saying you have. I just want to comment on here and see if we get anywhere.

It said that they supplied -- total silica content for granite type rock is generally in the range of 60 to 75 percent. Quartz is significantly less. The SIO-2 content of these two locations are as follows, and the numbers. You see right there? This is a letter to Dick Zimmerman of Norfolk Southern that was written by Martin Marietta.

But again, as I said, the same quarries supply rock to CSX?

MR. LEACH: Are you asking him about it or telling him?

MR. SHAPRIO: I'm asking.

BY MR. SHAPIRO:

Q Do you see how those were from those various quarries. Do you know if you all got any rock from any of those quarries, Martin Marietta?

A I don't know specifically if we have or not, no.

Q Do you notice that he makes the comment that -- I don't want to misphrase it. He said total silica content for granite type rock generally ranges 60 to 75 percent. Free silica in the form of quartz is significantly less.

Quartz is one type of silica, correct?
A Quartz is a chrystalline silica, which is what we're talking about.
Q All right.
A The other items are silicates, which is a major component of the earth's crust and not all of those are chrystalline.
Q Those other types then wouldn't have a permissible exposure level like quartz?
A That's correct.
Q You said that the department in Georgia that does the testing of rock is called the testing department or --
MR. LEACH: Let me object. It mischaracterizes. He didn't say for the testing of rock. He said they had a testing laboratory in Waycross.
MR. SHAPIRO: All right. I'm sorry. Whatever.
BY MR. SHAPIRO:
is
Q What's the name of that laboratory?
A It's the Waycross test laboratory in the mechanical operations group.
Q What testing, if any, have they done that respects silica in any of the ballast rock?
A None.
Q So your railroad hasn't done any of its own compositional testing of ballast rock?

A I'm not aware that we have, no.
Q Whols the head of the testing department in Georgia?
A Mr. K. E. Davis.
Q Whols Mel Hicks?
A I don't know a Mel Hicks.
Q You don't? Do you know a Mr. Hicks?
A Yes.
Q And is he with the testing lab?
A No.
Q What does he do with the railroad?
A The Mr. Hicks that I know is head of the environmental operations group for mechanical operations.
Q Where is his office?
A Here in Jacksonville.
Q I saw some correspondence between Martin Marietta and Mr. Hicks regarding dust supporession or ballast rock or what not.
Are you aware of any --
A That may be a different Hicks, too.
Q Do you know a Sam Carter?
A No.
Q But Mr. K. E. Davis is head of the testing laboratory?
A Of the mechanical operations test laboratory,

Waycross.

Q Are they the department that supervises the specs of ballast rock?

A No.

Q Who does that?

A It would be the engineering department.

Q well, just so we don't go in the wrong area here, the research lab or the testing laboratory really would have nothing to do with the ballast rock composition or the testing or issues of silica dust?

A To the best of my knowledge, they've never been involved in it.

Q What about the engineering department, have they been involved at all?

MR. LF-ACH: If you know.

A As far as testing the rock, I'm not aware that they've done any tests. I'm not aware of any tests they've run.

Q Who checks the specs of the ballast rock, like to make sure the fines, grit, whatever, who does that?

A That's strictly done by the engineering department. And they're basically looking at, what I understand they're looking at, at the size of the rock. And basically its physical characteristics and not its chemical characteristics.

What about wetting ballast rock in the ballast trains, would that fall under their purview along with yours?

A Well, since they don't wet rock, I don't know that it does.

Q I mean coordinating it with the quarries, if there was any effort to do that?

A They would normally contact the quarries through the materials and purchasing department, I believe. But you'll need to talk to somebody in engineering and materials and purchasing as to how they do their coordination.

Q Are you aware of who in materials and purchasing has looked into wetting the rock or dust supression issues from the rock quarries?

A No. It probably would be the purchasing agent if anyone has done it recently.

Q And who would that be as far as the quarries are concerned?

A I'm not sure whols assigned to that now. It used to be Mr. McKeithan.

Q Is it M-c-K-e-i-t-h --

A Your spelling guess is probably as good as mine.

Q Is it McKeithan?

A Yes.

Q What's his first name?
A I want to say it's Billy, but I'm not sure.
Q What about with engineering, who would have had some involvement with you and someone else with silica issues, controlling, dust suppression, ballast regulators, anything like that?
A Well, as far as silica exposure control, I have talked to Jim Cashwell.
Q What's his title?
A Director, safety.
Q Okay.
A And I've also spoken to Roger Cross.
Q What's his title?
A As I told you earlier, they've changed. I'm not sure what his current title is.
Q What's his general field?
A I think he's one of the regional managers of engineering operations.
Q Isn't there a specific, like, maintenance of way department also? There are so many departments I can't keep them straight. Is there a maintenance of way division of the engineering department?
A To be honest, they've reorganized so much I don't know for sure, you know, if there's an individual maintenance of way department. There's someone whols over

all maintenance of way activities.
Q Have you coordinated anything with them on the silica area in trying to find remedies?
A I've talked to the people that --
Q Engineering you just mentioned?
A In engineering that I just mentioned. I also talked with the man who runs our engineering shop in Richmond, Virginia.
Q With respect to the ballast regulators?
A Where they're doing the ballast regulators.
Q Who is that?
A George White.
Q I know these people are going to hate you for giving their name out, but don't worry. They'll survive.
What is his title?
A He's general -- I think he's general manager or general supervisor, work equipment.
Q Why is he based there, you just have a particular office there?
A That's where the maintenance of way equipment is repaired. That's our big repair shop.
Q Is that that new shop where you all are doing your own modifications to some of this equipment? I hear there's a new something, that they're doing equipment repairs or modifications or something?

A it's our new work equipment shop.

Q Is it actually in Richmond?

A Yes.

Q They're doing some of these modifications there to the ballast regulators?

A Yes.

Q Do you go up there and visit and see how they're doing these repairs or modifications?

A Not specifically for that but I've been to the Richmond facility.

Q What was the occasion of your visit?

A Basically general industrial hygiene and occupational safety and health issues with their exposures at that shop while making the repairs.

Q Have you ever seen this booklet before, this NIOSH Respirator Decision Logic booklet?

A I think I have seen it at like a conference.

Q Not something you keep in your office, though?

A No.

Q What would you refer to when you had a particular possible health hazard, silica dust, whatever, and you were trying to determine what masks or respirators would be appropriate for a worker with a particular exposure?

A Well, with my training and experience I have a pretty good idea of what's used in most cases. For those

few cases I wouldn't have an idea what to use, I have a guide from 3M where they talk about specific chemicals and what kind of respirator's recommended.

Q Do they reference OSHA or NIOSH, what do you call it, approval codes or whatever?

A Since it's a 3M book they mostly reference 3M products.

Q I mean as far as whether it meets certain standards of OSHA or NIOSH.

A I don't recall in that book that they specifically mention it. I think they use -- they may have the NIOSH approval numbers somewhere in the sections.

Q I reviewed a large stack of information which is this Technical Safety and Health Consulting, Inc. testing. I noticed that the first document that was produced was from March of 1990.

Why is it that this group started doing their testing in 1990 as opposed to say a couple years before that or some other time?

A The main reason is before that time they were working in our mechanical facilities and in 1990 I expanded their scope of work to include the engineering department operations.

Q You mean maintenance of way work and stuff like that?

A The mobile operations including maintenance of way.

Q So how long had they been doing work for CSX or its predecessors?

A The first work that they did I believe was in 1987.

Q Was there a different outfit before them that was doing the testing?

A No.

Q So in 87 they started doing some things that were not maintenance of way and then you expanded it in 1990 to the maintenance of way?

A Yes.

Q What I'm trying to drive at here is was there any silica dust testing of the maintenance of way workers done between the 1982 testing that you were intimately involved with and the Techcon in 1990?

A No, I don't think so.

Q Why not?

A In 1982 I had gone out and had sampled the operations, had recommended control measures. And at that time I was the only industrial hygienist, as you've pointed out, and that once I had addressed a problem I went on to something else, which is what I did.

Q Did you think that the safety concerns were

completely solved by virtue of the -- between 1982 and 1990?

MR. LEACH: As to the workers that --

MR. SHAPIRO: As to workers in the maintenance of way with silica dust.

A Well, you say completely solved, I don't know that you can ever say completely solved. However, I thought that the major exposures to crystalline silica had been identified and that the employees who were doing those operations were being offered adequate protection using the respiratory protection that we provided.

Q Which was what?

A Dust mist respirator. Although some people actually used dust mist fume respirators.

Q You're saying if someone requested a more protective type respiratory equipment, they could get that?

A Yes.

Q If they had asked for an NiCad fancy hood thing that we talked about with the powered air supply, would you have gotten it for them?

A In fact part of the reason why we did the test in 1990 with the air purifying respirators was as a result of the operators on that particular division asking if they could try those out. So, yes.

Q Isn't there a requirement that's pretty strictly

enforced that workers canft use a respiratory device thatfs not on an approved list by CSX?

A If there's a device that's not on the approved list, then they have to go through either me or one of the safety directors so that they could obtain the material for tests and then eventually use it for their own exposure control.

Q So a typical trackman would have to go to his foreman or to a supervisory person who would have to contact you about a particular item that was not on the approved list? I think that's what the memo said, didn't it? There were memorandum when the new manual was put out. There were a couple. I'm not going to go hunt for them. It said workers are supposed to use this particular -- the particular devices on the attached list. If you want an exception you have to do a couple of things.

Isn't that what the gist of it was?

A Generally the employees will use the personal protective equipment that's been identified in our personal protective equipment catalogue. However, there are any number of mechanisms under which they can obtain alternate personal protective equipment. And in fact some of the equipment thatfs been in the catalogue or has been placed in there has been a result of an employee request.

Q Getting back to my original question now, which

was they would have to go to a supervisory person who would have to contact you to get an exception, right?

A That's one of the mechanisms, yes.

Q What other one would there be if it wasn't on your list of approved equipment? They can't just get it and use it. That would be a violation, wouldn't it?

A They cannot go and get that equipment by themselves. Because it has to be evaluated by somebody who can look at the equipment and determine if it's the proper equipment.

Q What was the other route they could take besides going to the supervisor and you?

A The easiest route that they would have would be to talk to their safety committeemen, of which there are several safety committeemen.

Q And they can contact you?

A They can contact me or they can go through their contact versus like the director of safety for engineering and he could approve their purchase of the respiratory protective equipment. Usually if it involves respirators, whoever ends up with the request, it will eventually get to me.

Q Where would a trackman go to find a respirator in 1984 if he was working on a ballast regulator?

A Held go to his supervisor.

Q Held go to a foreman, or you mean a gang supervisor or foreman or what?
A Either be a foreman or in some cases it may be a road master or an assistant road master.
Q Is there a standard place that respirators were kept?
A A lot of times they were kept actually on the trucks that the section gangs took out.
Q To get to the worksite you mean?
A Yes.
Q And so there'd be a box of the respirators. How many come in a box? Those 3M 8710s were used for a long time, right?
A I think there's 20 of those in a box. There may be ten. I don't recall.
Q Is that still the mask used by ballast regulator operators and people unloading ballast rock trains?
A No.
Q You've switched. Is that Moldex now or which one are you using now?
A We're using a number of respirators.
Q What kinds?
A Using a 3M 8715.
Q What's the differences in that and 8710?
A Has a broader piece of foam across the nose

bridge which aids in the sealing of the respirator. We use a Moldex 2200.

Q Let's get the year on each of these changes. The 8715, when did that go into effect, just approximately, 90s or later? I mean 1990 or later?

A I'm going to say late 80s.

Q What about the Moldex?

A Moldex 2200, early 80s.

Q That was offered as an alternative to the 8710 or did it replace it?

A Alternative.

Q And are there any other ones?

A Moldex 2300.

Q What's that?

A That's a dust mist respirator with an exhalation valve.

Q What would be the purpose of using that over the others?

A You're not having to exhale back through the filtering element of the respirator. You exhale out the valve.

Q Is it better?

A It reduces the work of breathing so it's more comfortable.

Q Is that standard operating equipment for a

ballast regulator operator or do they have to request that?
A Well, they have any of those respirators available to them. They just ask for which one they like.
Q Where are they available to them?
A As far as I know, yes.
Q They're available at the local terminal or who makes it available? What's the standard procedure?
A They obtain it through their supervisor.
Q But at the present time which -- you mentioned, I think, the 8715 3M brand, the Moldex, two models.
All three of those are currently available?
A Yes. However, at any one particular location they may only have one or two versions of those respirators because those are the only ones that the employees are requesting. If they want something else, they have to ask for it.
Q Now, what about before 1981? There were no masks at all being used by anyone that's a ballast regulator operator or someone unloading a rock train, right?
A I don't know that that's the case.
Q If they made a specific request, they could probably get one, but there was no company procedure before 1981 that said these folks are supposed to be using a mask, right?
MR. LEACH: object to the predicate.

If you know what the various departments and supervisors and foremen were doing, you can answer it.

A Before my 1981 memo I don't know of anyone else, although there may have been in isolated locations.

Q It was not an usual procedure for them to wear masks before you got on board, right?

A Again before 1981 I don't know if they used it or not. And I don't know if it had been available other than if they asked for it.

Q And was there a respiratory -- like equipment catalogue in existence before 1980?

A There was a publication put out by the safety department that I think had some respirators in it and it may have been around before 1980.

Q Was that produced by you guys in your response?

A I don't know if it even exists any more. I haven't seen a copy of it in a long time.

Q I want to make sure that there's a position that, hey, these guys were supposed to use one before that date, and if it's in that manual I'd like to have it. I don't think I've seen anything like that.

MR. LEACH: Are you addressing that to me or to Mark?

MR. SHAPIRO: Both.

MR. LEACH: I don't think Mark would know, but

there may be. We can take a look. I don't know what the procedure was out in the field. It may have been that they were available and made known to the employees.

(Whereupon, a short recess was taken.)

BY MR. SHAPIRO:

Q Going back to the wetting of the ballast rock and efforts to examine wetting the rock trains at the quarry. You talked before about some of the problematic areas in doing that.

Are you aware of any efforts of anyone with the railroad to examine wetting of the rock and the rock trains in coordination with any quarries?

A other than just the general coordination that the materials and purchasing does with the rock quarries where they say one of the specifications is that they wash the ballast.

Q I have some documents in other litigation, Southern, where they were doing a lot of tests starting in 92. And I know that you know about that from the off limits area that your lawyer won't let you talk about. What I'm asking you, for CSX have you done any of that that you're aware of, and your answer is no?

A No.

Q Simple.

Does CSX own any what they call a water truck? It holds water and it's like a water cannon. Does CSX own any of those?

A I'm not aware that they do.

Q Have you ever seen one before?

A No. The only only water cannons I have ever seen have been associated with fire departments.

Q What other efforts has CSX taken to try to control the track maintenance workers' exposure to silica besides the areas that we've talked about? I'll try to hit a few of them, and if I miss, let me know. We talked about ballast regulator change in the cab, in the air conditioning. We've touched on wetting the ballast rock. We've touched on the personal respiratory equipment.

Can you think of anything else of a nature of health or safety that you've looked at since 81?

A We have purchased remote control ballasts on loading cars for our large-scale ballast unloading which can allow the employee whols unloading the ballast to stand back from the area where the dumping is actually occurring.

Q When did you first hear about those remote controls?

A I want to say about 1992 is when I heard that they were looking at purchasing it. I think we obtained it either late 92 or 93, the first set of cars.

Q And that will allow someone -- that cuts down the total personnel to have to unload the cars plus they can stand a distance away, correct?

A I don't know if it reduces the number of personnel needed to unload the car. It may. But it does allow for the person whols doing the unloading not to have to stand right next to the car while the unloading is occurring.

Q Anything else besides the remote control ballast cars? Were those available in the 80s?

A I'm not aware they were available in the 80s.

Q Anything else you can think of?

A No.

Q Has the general constitution of the ballast on the CSX lines stayed the same, as far as you know, since the early 80s?

A As far as I know, yes.

Q Did it change during the 70s in any material way?

A I don't know. Not that I know of.

Q The railroad's been using basically the same type of granite on the lines for years on this railroad, as far as you know?

MR. LEACH: Object to the predicate. Prior to 1980 I think you said.

BY MR. SHAPIRO:

Q Well, at least in the 70s, as far as you know?
A I'm not aware of any changes but then that was before my time.
Q This Techcon testing that started in 1990, why didn't they start doing this testing in 1983?
A Techcon didn't exist in 1983.
Q Why didn't another company do some testing and surveying of what the exposures were after you did your tests in 81 and 82?
A I did not have any outside consultant that could do the testing. I was the only industrial hygienist doing the testing at the time.
Q There were a lot of contractors around. You could have found one, couldn't you?
MR. LEACH: He's asking you was there a need to do testing. Did you feel there was a need to do testing.
BY MR. SHAPIRO:
Q Well, I'm just probing, examining your thinking here.
MR. LEACH: Are you talking about ballast regulator operators?
BY MR. SHAPIRO:
Q I'm talking about ballast regulators, unloading the ballast rock trains. You did it extensively starting

in 90. But I'm saying why not in 83 or 84?

A I had done the sampling in 82 and we had found silica exposure, had addressed that silica exposure using the respirators. And as I stated earlier, there were other parts of the railroad I needed to look at so I thought that problem was pretty well resolved so I went on and tested and looked at other areas of the railroad.

Q If that makes sense, why are you going and doing everything in the world or every area starting in 1990 but not in 1983? What changed?

A The biggest change is I had more manpower to be able to do the work. And we were looking more at creating an exposure data base to determine what is a wide-spread exposure that we have.

Q Starting in 90 you produced records where there was testing just a lot of different areas of the line.

Is there a rhyme or reason what Techcon did? Are they trying to hit every general area of the track maintenance operation over the course of a few years or what is the rhyme or reason to these locations and places?

A Most of the locations that they selected were where timbering and surfacing gangs were doing their work. So the location is very dependent on where the timbering and surfacing gangs were assigned to do work at the time that the testing was done.

Q But I guess during, let's say calendar year 1990, were you trying to get some testing of every T&S gang on the railroad? It's just a matter of where they were or how were you doing it?

A Basically what I told Techcon was that I wanted some testing of timbering and surfacing gangs and I wanted X number of tests this year, and had them set up with the engineering department, meet those gangs wherever they were doing the work at the time that Techcon was going to do the testing.

Q But the goal was not oriented to try to get testing on every single track maintenance worker. In other words, you weren't looking at your A to Z list of all your workers and saying let's go to each area and make sure we get each one of these guys tested?

A No.

Q Well, what was the reason that you did the testing starting in 1990? Was it for the safety of the workers?

A Well, it certainly involved the safety of the workers. It gave me more information regarding the exposure of workers to silica. And also in the late 80s there was a publication by IARC, the International Agency for Research on Cancer, where they indicated that it may be a possible carcinogen. And based on that I wanted to have

more sampling data to get a better characterization of what our exposures actually are on the railroad.

Q I went through every one of these between 1990 and 1994. And is it fair to say that on certain occasions, not every occasion clearly, but on some of these occasions, a handful, I don't remember exactly how many, there were exposures that were over the OSHA referenced limits to various workers doing ballast regulating, for example, or unloading rock trains in dry conditions on some occasions?

A on some occasions when the exposure measurements for persons unloading ballast or operating a balance regulator did exceed the permissible exposure limit.

Q There were days when they were below the limits, too?

A Yes.

Q And then you also tested for modification of equipment to see how that was working out, also, right?

A Yes.

Q You also sent some of the samples to some labs. Let me make sure I'm understanding what labs you used. Besides Techcon do you know the names of any outside labs that you actually sent samples to?

A I didn't actually send any samples to any labs.

Q So Techcon did?

A Right.

Q so in other words, you didn't organize any of that. This R. J. Lee group was retained by Techcon?
A Yes, although I did talk with R. J. Lee.
Q What was your understanding of what this lab report was looking at?
A They were looking at respirable particulates and crystalline silica.
Q What did this show that was not on their regular reports?
A On whose regular reports?
Q Techcon's. They talked about the PELs and the levels they found in most of their reports.
In other words, what was the necessity of this?
A Those were the analytical results that were provided to Techcon that were then entered into the sampling data sheet.
Q Every time Techcon did something they had to send it off to one of these groups before they would prepare their report?
A Yes.
Q Did they use this R. J. Lee group repetitively, as far as you know?
A Yes.
Q Which location were they using, do you know?
A I don't know. But if you're looking at the

sampling data sheet, I'll read it off for you.
Q That has a number of locations on it and I didn't know.
Is it the Manassas, Virginia?
A I'm pretty sure it was Manassas, Virginia.
Q You said you talked to them. What did you talk to them about?
A I talked to them at one of the conferences regarding analysis for silica. Because one of my consultants, I think it was Techcon, had mentioned that they were looking at sending those samples to that lab and I know of other railroads that are sending their samples to the lab.
Q This particular lab?
A Yes.
Q Which column of this, referring to this R. J. Lee Group, Inc. lab report, does it have a date on there, March 4, 1994?
A Right.
Q Which column on there is the one that is the OSHA PEL or, I'm sorry, the final level of free silica after all the breakdowns?
A Well, here on the bottom they have the dust concentrations.
Q Right.

A They have the quartz. Cristobalite, which was nondetectable. Tridymite, which was nondetectable. Respirable dust.

Q I guess you're primarily looking at the quartz and cristobalite and, well, tridymite, but those are the three columns you're looking at, right?

A We don't even record the tridymite. The ones we're really looking for are the nuisance dust, which is the respirable dust, the quartz and the cristobalite.

Q So it looks like some of these levels were certainly very low or nondetectable but a few were over the -- this one I'm pointing to here, is that over the OSHA PEL?

A Depends on how long that sample was taken, but I would guess that it probably was.

Q In other words, every time a sample was done, to know whether that's over the PEL you have to know how long that sample was taken?

A Yes.

Q So if it was taken over eight hours or an eight-hour period, it's obviously over, right?

A Yes.

Q What if it was taken for an hour, what does that tell you?

A If it was taken for an hour and there was no

additional exposure during that day, then their exposure would be below the permissible exposure limit as an eight-hour time waited average.

Q How do you tell that from the printout?

A You don't from that printout.

Q Who would have the record say on this one as to how long a period of time that was taken over?

A That's on the Techcon sampling data sheet.

Q Does that usually appear on the reports that they were producing?

A Yes.

Q I'm looking at one here from, it might have been one of their first ones, March 90. This is it up here, right? Start time and stop time under the air sampling record?

A Yes.

Q So are they automatically breaking it out based on the time waited average? This was 7:30 in the morning to, what, 1:15? Does it automatically bring it in to this printout or do you have to do another computation?

A To calculate the eight-hour time wait average, I would actually have to take the exposure time and divide by 480 and then multiply that times each sample result to actually get the eight-hour time waited average.

Q So you have to take which number, total?

A Total time.
Q Which here, for example, is 465?
A Divide that by 480.
Q Okay. And then what?
A And then multiply it.
Q Is that the minutes in an eight-hour day or something?
A Yes. Then multiply that times the air concentration. If this gang worked four ten-hour days then I may divide it by ten hours, which would be 600 minutes.
Q And then you take that total time divided by 480 or 600 times, you said. Then what do you do with it, times the air concentration category?
A Right.
Q Which normally you would look at quartz, right?
A Right.
Q And that would give you -- that gives you the number you need.
So why is this even printed out in that format then?
A This shows the actual exposure rate during the time that the sample was running.
Q But if you're going to make a reference to a time waited average, you always have to do a computation on that number, right?

A Yes.
Q Unless that covers an eight-hour period, right?
A We typically do full-shift samples.
Q Right. But that's not, right? The one that was right here, because it was less than 480.
Are you assuming zero for the remainder of the time?
A Yes.
Q You're assuming zero for the remainder of the time?
A Yes.
Q So that particular exposure on that particular day was well in excess of the exposure limit, correct, for quartz?
A For quartz.
Q Even assuming zero for the remaining time?
A Yes.
Q Prior to your starting with the railroad and when you took over all the data and whatever industrial hygiene department materials you had, did they already have any data collected on the dangers of silica dust in your department when you took over?
You said you brought a certain amount of knowledge from your prior schooling. But I'm saying in your department when you came to work, had they collected

any material that you were aware of prior to your coming on board with respect to silica or silicosis that you became aware of?

MR. LEACH: If you know. Don't guess.

A Not that I'm aware of.

Q Those respiratory protection catalogues, where are those kept for say a guy's a track maintenance worker in North Carolina. Where does he go to see one of those catalogues?

A Well, the personal protective equipment catalogue will be kept by supervisors who can actually do the ordering.

Q That's not something the trackmen actually see?

A No, although they may see it.

Q It would be unusual?

A No, it wouldn't be unusual at all.

Q Where would they see it?

A A number of places. The supervisor may actually take it out there with them and say, well, which one do you want? At that point he'll say, I like that respirator.

Q They don't get the manuals as part of their materials when they work for CSX, though, the trackmen, that is, right?

A No, we don't send the trackmen copies of the personal protective catalogue.

Q Have you assumed ever since 1981 that OSHA permissible exposure limits applied to the railroad?

MR. LEACH: Objection. Calls for a legal conclusion.

MR. SHAPIRO: No, it doesn't. I'm asking him his assumption as per his work place.

MR. LEACH: You're asking him to guess. It's a legal conclusion.

MR. SHAPIRO: No, I'm not.

MR. LEACH: If you can, answer, Mark, if you know the answer to the question.

A I have always used the OSHA permissible exposure limits as guidelines. However, it's been my understanding from just about the first day I started with the railroad through now that there's some question regarding where OSHA has jurisdiction and where FRA has jurisdiction.

Q Well, you've certainly learned that OSHA has had jurisdiction over all the shops, because that's already been -- well, I saw that in one of your prior depositions, quite honestly, and you've assumed it applied to your shops, haven't you?

A There are several areas in the shops that OSHA has jurisdiction. There are certain areas of the shop where they do not.

Q That hazard communication standard, you said that

in 1992 you started the safety program videos.
Were you aware of the hazard communication standard regulations being passed in the mid 1980s?
A They were passed in the mid 1980s for certain industries up through SIC Code 39. And they didn't become applicable to the railroads until later on when they expanded the SIC codes.
Q To all industries?
A To additional industries. I don't know that they still include all industries.
Q So you heard about it but didn't understand that it applied to the railroad until when?
A It was either 86 or 87 when it became applicable to the railroad. I think it was 87. May have been 88.
Q What about those years in between then, in 1982? Why was there a delay in getting the silica dust into the safety program?
A As far as what, why silica wasn't included in it?
Q Right.
A We were not doing the maintenance of way employees at that time.
Q You just weren't including them in the program?
A No.
Q You mean you agree you were not including them in the program? When you said no, I don't know what you mean.

You mean, yes, you were not including them in the program until 92?

A We did not do the training for the maintenance of way employees until the first quarter of 1992. We had the material safety data sheets available to anyone who asked for them from about 1987 on.

Q Some of those applied to silica, I mean they -- those are some of the ones that were from the rock quarries or whatever you're referring to?

A I don't recall if material safety data sheets from the rock quarries had come in at that time. If they were, they would have been in the first batch.

Q But you had something that applied to silica or sand dust as of 1987?

A I think I might have had something for sand but I don't know for sure if I had something for crushed stone. I think crushed stone came in later. But there may have been one in 1988. If I had a safety data sheet for it, I would have added it into the system at that time.

Q You said that the MSDSs that you got in 87, 88, whatever it was, I'm not holding you to the exact year, didn't add anything new to your knowledge of silica disease or silica dust from 1981 until that time you knew it?

A As far as knowing that silica exposure -- routine silica exposure on an unprotected individual exposed day in

and day out for a number of years puts them at risk for silicosis.

Q That didn't change?

A That didn't change.

Q You also certainly knew by 1981 that granite rock such as in ballast contained silica because that was in your memorandum, right?

A Yes.

MR. SHAPIRO: I think that's all I've got.

MR. LEACH: Just a few follow-up questions, Mr. Badders.

CROSS EXAMINATION

BY MR. LEACH:

Q CSX doesn't mine or supply its only ballast rock; is that correct?

A That's correct.

MR. SHAPIRO: I'm sorry. Repeat that question.

BY MR. LEACH:

Q CSX doesn't mine or supply its own ballast rock?

A That's right.

Q In your opinion would the suppliers of CSX's ballast rock be in the best position to test the composition of their ballast rock?

A Yes.

Q Would there be any reason for CSX to conduct

independent testing separate and apart from their suppliers that you can think of?

A No, not as far as a breakdown of the constituents.

Q Your testimony today, and I'm paraphrasing now, was that regular heavy exposure to ballast dust at exposures much higher than the OSHA permissible exposure limits could put susceptible employees at an increased risk of developing silicosis related diseases; is that right? Just paraphrasing.

A Yes. I think that's a paraphrase of what I said.

Q Based upon your experience working in this industry and in conversations with knowledgeable individuals in our company and also your knowledge of railroad operations, in your opinion were any of CSX's maintenance of way employees exposed to regular heavy exposures of silica dust at levels much higher than OSHA permissible exposure limits?

A At times. But when they were, they were in areas where respirators were required, at least since 1981.

Q You're talking about the ballast regulator operators and the folks that were unloading ballast?

A Yes.

Q Recognizing that they had -- and I believe the testing showed that there were some exposures that exceeded

the OSHA permissible exposure limits.

Based upon your experience, would ballast regulator operators and individuals unloading ballast be doing that type of work day in, day out throughout their railroad career?

A No.

Q I presume that CSX has had maintenance of way employees working at the present time and for predecessor railroads for many, many years?

A Yes. They take care of the track.

Q And they have for many decades?

A Probably at least many decades.

Q If CSX maintenance of way workers were developing the industrial disease silicosis from exposure to ballast dust, is that something that would have come to your attention in your current job position?

MR. LEACH: I'm going to object to the question because it totally calls for speculation. It doesn't mean -- a worker could retire. Held never hear from the man and he could have silicosis. It's totally speculative. But with that objection, go ahead.

A If it was reported or came to the knowledge of the chief medical officer, then I would probably be aware of it.

Q And in your review of industrial hygiene -- well,

strike that.

CSX in fact performs medical monitoring on maintenance of way employees in 1992; is that correct?

A In 1992 we did monitoring or medical surveillance of our most highly exposed groups, which are production gangs.

Q Did the results of that medical monitoring reveal any cases of confirmed silicosis diagnosis?

MR. SHAPIRO: I'm going to say for the record here I'm going to object to any introduction of that evidence. But getting it on the record that I am objecting to it as evidence that's purporting to show an absence of injuries and it doesn't involve the Plaintiff in this case.

MR. LEACH: Go ahead.

A I have not been told of any reported silicosis.

Q The recommendation that was provided in the early 1980s relating to respiratory protections for certain employees, was that a preventive recommendation as opposed to what you would consider a reactive recommendation?

MR. SHAPIRO: I'm going to object to the question. It has no meaning. It can't be defined what the word -- there's no predicate. What's the word reactive mean and what's preventive?

BY MR. LEACH:

Q Were you reacting to a known problem or recommending a preventive measure at that time?

A Well, I was reacting to the results of my sampling data that indicated that I had the possibility of exposures to silica above the permissible exposure limit. And to reduce that exposure I recommended respirators, which was a control measure that we used to reduce that employee exposure, or those employee exposures.

Q You were asked about alternative control measures.

Were you satisfied with the use of respirators as a control measure for ballast regulator operators and individuals dumping ballast?

MR. SHAPIRO: Well, the objection is if he was satisfied doesn't matter because it isn't probative of any issue about whether the Plaintiff in this case was protected.

But go ahead and anser.

BY MR. LEACH:

Q In your opinion was that a reasonable control measure?

A Yes, particularly for dumping ballast because it's an infrequent operation. With a ballast regulator operator it was adequate and acceptable for the time. And as we were able to obtain necessary engineering from the

manufacturers of the ballast regulators to either purchase new or modify our existing regulators so they could be climate controlled, which would be a better control measure. That is more acceptable now.

Q In fact you talked about some of the problems with wetting the ballast as a control measure.

Would the recommendation as to air conditioning of cabs be something that was handled in your department or something that would have been handled by another department?

A They would have been handled by another department to determine the engineering feasibility.

MR. LEACH: That's all I have.

MR. SHAPIRO: I have a couple quick ones because of the questions you answered.

REDIRECT EXAMINATINO

BY MR. SHAPIRO:

Q Let me ask you this, Mr. Badders: Do you feel that if the Plaintiff in this case had stopped working let's say in January 1992, which he didn't, because I think this particular guy is still working. But if he had stopped working in January 1992, do you think any of the testing of exposure levels amongst track maintenance workers done by this testing outfit after that date would be relevant to his case?

MR. LEACH: Object to the predicate. Asking for a legal conclusion.

MR. SHAPIRO: No. I want to probe what he means if he thinks it is.

BY MR. SHAPIRO:

Q What would it show that would tend to help or hurt either side if it was after the date he stopped working?

A Well, the exposure information collected from 1990 on may be reduced for the ballast regulator operators because we have some modified ballast regulators now. Where we had the unmodified ballast regulators, the exposures that we measured may actually be higher than what they were in the past. Because it's my understanding that the production gangs are having more on-track time than what they formally had had.

Q So I guess what I'm saying is -- well, I saw some of the testing here and there's a problem with the air conditioning. If the guy's not keeping it on it was actually worse and they didn't realize it, and there's all these problems. But I guess you're working those out, right?

A We've instructed the ballast regulator operators that if -- the only reason that they will be excused from the mandatory respirator requirement for operating a

ballast regulator is if a ventilation system is on.
Q Didn't the testing show if it was off it was actually -- the level would be very high inside the cab?
A No. I don't think they showed that they were very high but they were above the permissible exposure limit. They may have been as high as double the permissible exposure limit.
Q But once it's running and it's pressurized properly, it did reduce the levels in the cab?
A Usually below the limits of detection.
Q Last point, the respirators:
My Plaintiff in this case says that even though CSX may have put out a memo in the early 1980s that said the respirators should be used, that in fact nobody was enforcing the requirement until the late 1980s; is that true?
MR. LEACH: Object to the predicate. You're asking him to comment on the credibility of your Plaintiff.
MR. SHAPIRO: Well, I want to probe the issue. I mean I'm just asking if it's true.
A At times in the 80s when I used to do a lot more traveling and would go along side the railroad where certain highways would run, I have seen ballast regulator operators. And since they were close to the road and since

I was interested in seeing if they were indeed using the respirators, because they had nobody around them to make sure that they use them when they're supposed to, in fact every time that I observed it they were using respirators.

Q Okay. Well, that's good.

However, Mr. McDonald says that none of the foremen were enforcing the rule until the late 1980s when supervisors told them that people would be marked up for not using the respirators.

Have you ever heard that?

MR. LEACH: Objection. Calls for speculation on his part as to what somebody else may or may not have done.

MR. SHAPIRO: Well, I'm asking if he ever heard that that was happening.

A No.

MR. SHAPIRO: That's it.

MR. LEACH: We'll read.

THE WITNESS: Yes. I'd like to read that.

(Witness Excused)

(Whereupon, the deposition concluded at 5:40 p.m.)

REPORTER'S CERTIFICATE WITH ACKNOWLEDGMENT

STATE OF FLORIDA

COUNTY OF DUVAL

I, Ronald E. Rohrer, a duly authorized Court Reporter and Notary Public in and for the State of Florida at Large, certify that I was authorized to and did stenographically report the foregoing proceedings; and that the transcript is a true and correct transcription of my computer stenotype notes and/or electronic recording taken at the time and place indicated therein.

I further certify that am not related to any of the parties or their counsel; nor interested in the outcome of the foregoing litigation, either financially or otherwise.

Dated this 17th day of August, 1994.

Ronald E. Rohrer

STATE OF FLORIDA

COUNTY OF DUVAL

The foregoing certificate was acknowledged before me this 17th day of August, 1994, by Ronald E. Rohrer, who is personally known to me.

ic, State of Florida-

CHARLES E.O'CONNOR
COMMISSION #CC 348065
EXPIRESMAR19,1998
BONDEOTHAU
ATLANTICBONDINGCO..INC.

CERTIFICATE OF OATH

STATE OF FLORIDA

COUNTY OF DUVAL

I, the undersigned authority, certify that Mark E. Badders was duly sworn by me.

WITNESS MY HAND AND SEAL this 17th day of August, 1994.

Ronald E. Rohrer, Notary Public.

NOT.
CON
EXP.