

REPORTER'S RECORD
VOLUME 1 OF 1 VOLUME
TRIAL COURT CAUSE NO. 03CV0588

LOUISE ALTIMORE,)
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)
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VS.)
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)
QUIGLEY, INC., et al.,) 405TH JUDICIAL DISTRICT

EXCERPT OF TESTIMONY
OF BRUCE LARSON

On the 30th day of April, 2004, the
following proceedings came on to be heard in the
above-entitled and numbered cause before the
Honorable
Wayne J. Mallia, Judge presiding, held in Galveston,
Galveston County, Texas:

Proceedings reported by machine
shorthand.

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BRUCE ALLEN LARSON,
having first been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. RADCLIFFE:

Q. Good morning, Mr. Larson.

A. Good morning.

Q. Can you state your full name, please?

A. My name is Bruce Allen Larson.

Q. Where do you live?

A. I live in Edinburgh, Virginia.

Q. Were you born and raised in Virginia?

A. No. I was actually born and raised in
Houston. I'm retired now and live in Virginia.

Q. You are retired at this time?

A. Correct.

Q. What was your occupation? What was your
profession?

A. Industrial hygienist beginning with OSHA
initially in my career. And then during my career I
also worked for both Exxon as well as Mobil.

Q. Are you married?

A. Yes, I am.

Q. Do you have any children?

A. I have a daughter.

Q. When did you leave the Texas area? When
did you move away from Texas?

A. It was in 1981.

Q. And you said you are retired from the

petrochemical, from Exxon and Mobil? You retired?

A. Correct. I worked for Exxon for several years and then worked the remainder of my career with Mobil. And then when the merger took place in 2000, I retired.

Q. Do you do any work now?

A. I have a small farm in Virginia and I've been doing some consulting for Exxon Mobil.

Q. How many years did you spend working in the petroleum and chemical industry?

A. It would have been approximately 22 years.

Q. And during all that time did you work as an industrial hygienist?

A. I worked about half that time as an industrial hygienist. I maintain my currency in industrial hygiene, but I did hold some other jobs that had to do with product safety, making sure that products at Mobil manufacturing were used properly. But it didn't require an industrial hygiene background. So, in that sense I guess you could say most of my career involved at least industrial hygiene as a discipline.

Q. During the time -- you said you worked for OSHA. During the time that you worked for OSHA, did you work as an industrial hygienist or some other profession?

A. As an industrial hygienist, uh-huh.

Q. And you worked for Exxon. During the time

that you worked for Exxon, did you work as an industrial hygienist or some other profession?

A. As an industrial hygienist, correct.

Q. Where did you get your undergraduate degree?

A. I graduated from the University of Texas in Austin in 1972.

Q. And you have a graduate degree? Do you have a graduate?

A. Yes. After that, I also attended the University of Texas School of Public Health in Houston and received a Master of Science Degree in 1976.

Q. You mentioned you're an industrial hygienist. You're a certified industrial hygienist; is that true?

A. Correct, uh-huh.

Q. What does that mean, certified industrial hygienist?

A. To be a certified industrial hygienist, you have to have the equivalent of three years experience and a degree in the sciences and you have to take a two-day 16-hour exam and successfully pass that. So then if you successfully pass it, then you become board certified. And you have to maintain that certification every year by attending special courses or by writing publications or by teaching. And so, it's an ongoing process to maintain that

certification.

Q. What years -- you mentioned that you worked for OSHA. What years did you work for OSHA?

A. That would have been from 1973 to 1976.

Q. And then where did you work after OSHA?

A. I was recruited by Exxon and worked for Exxon from 1976 to 1978.

Q. And where did you work after Exxon?

A. Then from 1978 to 2000 when I retired, I worked for Mobil.

Q. Have you kept your certified industrial hygiene standing current as of today?

A. It's -- it was current as of the year 2000 when I retired.

Q. While you were working in the petroleum and chemical industry did you belong to any organizations or committees that had to do with that industry?

A. Yes. I belonged to the American Industrial Hygiene Association and the American Board of Industrial Hygiene. I'm also certified as a safety professional. So, I was also a member of the Board of Certified Safety Professionals and the American Society of Safety Engineers.

Q. Are you the type of industrial hygienist that sits in an office and does research and writes papers or are you the type who was out in the field?

A. I'd say for 90 percent of the time I was basically hands on. I was in the field working with

the plant people and the employees observing work practices and helping develop programs to protect employee health.

Q. Can you define -- I don't think that we've had this definition yet. So, can you define industrial hygiene? What is industrial hygiene?

A. Okay. If you want to put it really briefly, it's the recognition, evaluation and control of occupational health hazards. And that can involve a range of potential hazards from dusts, mists, gases, radiation, noise, even biological factors. So, it covers a broad range of potential hazards. But it's a science and art actually recognizing, evaluating and controlling those potential hazards so that an employee can work basically a working lifetime, 40 to 45 years, without experiencing any harmful effect.

Q. The potential hazards that you're going to work during recognition and evaluation and control, would those hazards -- the potential hazards include asbestos?

A. That could very well be one of those, yes.

Q. If I owned a refinery or a chemical plant and I was interested in making sure that my equipment didn't break down and that I didn't lose any of the very expensive equipment that I had purchased to run the refinery chemical plant, would I hire an industrial hygienist for that job?

A. That would fall primarily I guess in the safety side. Industrial hygiene is primarily involved in human well-being. So, to that extent I guess equipment and assets is really not the subject of industrial hygiene. Industrial hygiene is protecting human health.

Q. Is there any reason for an employer to hire an industrial hygienist other than to protect human health?

A. That's the primary purpose of industrial hygiene.

Q. Now, you mentioned that you consulted with Exxon. Exxon has asked you -- the lawyers for Exxon have asked you to be here today, right?

A. Correct.

Q. What did we ask you to come down here and talk about?

A. To review Exxon's programs as it related to protecting employee health during the handling of potentially asbestos-containing materials, to review the programs that were in place historically by reviewing historical documentation and by the conversations I've had over the years with employees that were involved with those programs historically, people like Jim Hammond, their first industrial hygienist who I knew and other people that I worked with at Exxon.

Q. Did we also ask you to review any of the

fact of the Altimore case?

A. Correct. I did.

Q. Have you consulted with Exxon in other cases?

A. I've testified one other time and I've made several other depositions.

Q. How many other cases? Is this something you're doing 40 hours a week?

A. No, not at all.

Q. How many times have you done this at Exxon's request?

A. Just one.

Q. And you have done it at Mobil's request also?

A. I gave a deposition when I was a Mobil employee back in 1996.

Q. Are you getting paid for the time that you spend assisting us?

A. I'm getting paid an hourly rate.

Q. What is that hourly rate?

A. It's \$300.

Q. Let me go back to your work with OSHA. You started in '73 you told us. What was your job at OSHA?

A. I was a third compliance officer. As an industrial hygienist it was my job to go out and inspect all the industries within a geographical area surrounding Houston. And at that time it extended

over to the Golden Triangle, including Orange, Beaumont, Port Arthur, up to Austin and back down to Corpus Christi.

Q. Why were you inspecting these various industries? What was the purpose of the inspection?

A. Well, OSHA was enacted by Congress in 1970. And hopefully you have at least some idea what OSHA is. It's the agency that's responsible for enforcing workplace safety and health regulations. And the Government employs full-time professional safety and health personnel that are deputized to basically go out and do unannounced inspections to see if the various companies are in compliance with all the rules and regulations that OSHA has developed. And so, that's basically what I've spent virtually all of my time doing is out in the field working with, in some cases, employee representatives as well as the employer to inspect their facilities.

We do walk-through inspections and in a case of industrial hygiene we take measurements. We do like noise surveys to find out if people are being exposed to too much noise. So, if it was a foundry, we'd do measurements to see what the dust exposures to things like silica were. I went to several asbestos vinyl tiles. Of course, we were interested to find out what the asbestos exposure was there. So, it was all hands-on work.

Industrial hygiene inspections typically

took a lot longer than just safety because we had to stay there over a period of days and do what we called workplace monitoring. In the case of dust, we put a portable air pump on the employee and a filter where his breathing zone would be and let him wear that pump for the entire shift. And we would send those samples off to a laboratory, a Federal laboratory and have them analyzed. And then we compare that to the exposure limits that OSHA had established.

Q. Did you do that kind of work, that kind of sampling for asbestos during this time?

A. I did from time to time, yes.

Q. Now, are you here to say that you went to the Baytown refinery or the Baytown chemical plant that Exxon owned and did sampling there? Did you do that?

A. I was in the Baytown refinery on a joint safety and health inspection, but I did no sampling at that time. We didn't find any reason to do any sampling.

Q. All right. So, your experience with Baytown comes after you left OSHA?

A. Primarily, yes.

Q. Now, while you were with OSHA, what was OSHA's view of asbestos? Was it just another hazard? Did it have a special significance at that time?

A. Asbestos was considered -- by that time

asbestos was considered as a potential hazard and it was part of one of OSHA's special emphasis programs. And so, we did do inspections specifically for asbestos. And, of course, by that time there was also an OSHA asbestos regulation which had specific requirements that we would examine when we did those inspections.

Q. Now, as an employee of OSHA were you required to be aware of the regulations for exposures to asbestos and other materials?

A. Absolutely. That was 100 percent of our job, to know what the Federal requirements were.

Q. While you were working with OSHA, did you develop any expertise in sampling for asbestos, recognizing potential hazards, things of that nature?

A. Right. We attended -- OSHA has their training institute in Rosemont, Illinois, outside of Chicago. And we were required to attend a one-month training course when we were initially employed that went over the sampling methods for all of the various substances and specifically for asbestos. Then after I returned from that one-month training program, I was basically an intern and worked with an experienced employee in doing sampling for various materials, including asbestos. And then finally after that, then I was permitted to start my own inspections.

Q. I don't think we covered this, but when did

you get your Bachelor's Degree? What year?

A. 1972.

Q. What did you do between 1972 and 1973?

A. I worked at MD Anderson Hospital and Research Institute in Houston as a biochemist.

Q. Did that have anything to do with asbestos?

A. No.

Q. When you were working for OSHA, was it your job -- what was your job in relation to the health of workers?

A. My job was basically to make sure that the employers were upholding their responsibility under the Occupational Safety and Health Act to provide a safe workplace. And so, I was there to basically ensure, since I knew what the requirements were, that the employees were being protected.

Q. Let me go back to industrial hygiene. You told us about recognition, evaluation and control. I've talked to the jury about something called dose. Dr. Lemen has talked about dose. Dr. Hammar has talked about dose. Are you familiar with the concept of dose with respect to asbestos?

A. Yes, I am.

Q. And what is the significance of dose from an industrial hygienist's point of view when we talk about potential exposures to asbestos?

A. Well, dose really determines when a potential hazard can actually become a hazard. And,

for example, a relatively high exposure level for a very short period of time is not necessarily a problem. Also a relatively low exposure level for a long period of time is usually not a problem. However, if you have a high exposure for a long period of time, that's when your potential hazard becomes a hazard. That's when you actually have an effect in terms of a cause and effect relationship. But it takes a relatively high exposure for a relatively lengthy period of time.

Q. Today in 2004 is there a dose that OSHA says is okay for exposure to asbestos in the workplace?

A. Today in 2004 that level would be 0.1 fibers. And that's in units per C.C. And that's the level they've set that a person can safely be exposed to for 40 hours a week, 12 months a year for 40 to 45 years and presumably not have any kind of a health effect. But that's --

Q. Are there any guarantees that you won't have a health effect at that level?

A. I don't think anybody can say there's -- there's not a guarantee, no, but that's generally believed to be a safe level for most people.

Q. How does this level compare to the level that was in existence in 1977?

A. In 1977 the standard was 2.0 fibers per C.C.

Q. And --

A. So that's a difference of about, what, 200?

Q. Two hundred or 20?

A. I'm sorry. Twenty.

Q. And Mr. Altimore started work at Exxon in 1942. Was there a dose that was thought to be protective in 1942?

A. Yes, there was. There was a threshold limit value which was considered to be the safe exposure limit.

Q. And what was that level?

A. It was expressed in units of 5 million particles per cubic foot.

Q. And just so I understand, when we talk about these dose levels during the relevant timeframes, are we talking about the level when a potential hazard can become a hazard?

A. Yes.

Q. You left OSHA in 1976 approximately?

A. Correct.

Q. And you went to work at Exxon, right?

A. That's correct.

Q. Where were you employed? What was your office or your location?

A. I was employed by Exxon on the Houston Ship Channel at a plant they called the Houston Chemical Plant. They primarily manufactured oil field chemicals. And we -- that particular facility they

handled probably 2000 different raw materials. Had many, many chemicals that went into their products.

Q. Did you have -- in that job did you have any responsibility for the Baytown refinery or the Baytown Chemical Plant?

A. Not initially, but Exxon began building a new facility in Baytown, the Baytown olefins plant. And I was given the responsibility for developing the industrial hygiene programs for that plant.

Q. Now, the Baytown olefins plant is different than the Baytown poly olefins plant, right?

A. That's correct. It was built later but -- and it's also a different plant.

Q. It a different plant. The Baytown olefins plant was built in what year?

A. 1978.

Q. And you left Exxon in what year?

A. The same year.

Q. In '78?

A. Uh-huh.

Q. In your work for Exxon did you have the opportunity to go visit the Baytown refinery or chemical plant?

A. Yes. When I first went to Exxon in 1976, I was given initially an orientation program. They wanted me to really understand the programs they had in effect before they actually basically turned me loose. So, they sent me to Houston where they had

their headquarters medical and industrial hygiene group and I stayed with that group for one month learning about the various programs they had for protecting employee health, one of which was control of asbestos exposures.

Then from there they sent me to each of their refineries, the major refineries, Baytown being one, Baton Rouge, and then Bayway, New Jersey. And I spent two weeks with each of those refineries so I could learn what each refinery in turn was doing at the site level. They wanted me to know what was going on actually in the field. So, when I went back to my plant, I would have a pretty good understanding of what company policies and procedures were.

And after the plants, then I went up to Lyndon, New Jersey, where Exxon had their corporate medical research group. And I spent a month with them learning about what they were doing in terms of research and to possible occupational health hazards from the materials that Exxon handled at their refineries and chemical plants.

So, after that, I guess that would have been almost three months, I had a pretty good understanding of what Exxon was doing not only at the company level, but also down in the plants. At that point then I started work at the Houston Chemical Plant.

Q. So, what you're saying is that when you

started with Exxon, they actually wanted you to learn the current programs and what they had done historically?

A. Correct.

Q. Well, let me show you what's been introduced into evidence in this case already as Defense Exhibit 337. Have you seen that document before?

A. Yes, yes. In fact, I reviewed this document when I was in Houston during that one-month orientation.

Q. Is that a document that was provided to you in an effort to teach you what had gone on historically?

A. Basically this document addressed what had been done historically, but it was actually intended to comply with the OSHA asbestos regulations. It was a company-wide guideline that had been implemented to make sure that each of the sites was complying with the OSHA asbestos regulations. And it's a fairly thick document.

Q. When you went to Baytown, did you -- were you there to learn what Baytown had done historically with respect to industrial hygiene?

A. Historically and what programs were also currently in effect.

Q. While you were at Baytown did you learn what had been done historically with respect to

industrial hygiene control, recognition and evaluation for asbestos at Baytown?

A. Yes. I was able to observe some of the data and procedures, yes.

Q. Well, did you meet the industrial hygienists at Baytown?

A. Baytown actually had three full-time industrial hygiene people.

Q. Baytown had three industrial hygienists full-time?

A. Yes.

Q. What was their job?

A. Their job was to develop programs and train employees or assist in training employees to make sure that they met company safety and health guidelines and all OSHA regulations that applied to the facility.

Q. Did you meet members of the -- well, did Baytown have a medical department when you went there?

A. Yes, it did. They had a complete medical clinic.

Q. Did you meet the folks who were employed at the medical department at Baytown?

A. Right. They had three full-time doctors.

Q. When you were hired by Exxon as an industrial hygienist, what did you understand you were going to do? What was your job going to be?

A. My job initially was to be the industrial hygienist for this plant on the Houston Ship Channel to basically implement all the company programs that I had reviewed, to make sure again that we were protecting employee health and meeting all regulations and requirements of OSHA and any other agency that had jurisdiction over that facility.

Q. Were you told that you had to follow company policy, period, no matter if you agreed with it or not?

A. Yes.

Q. What if there was a company policy that you thought was endangering the health or safety of a worker?

A. Well, obviously if it was something of a safety health nature, that would be questioned, of course.

Q. Did you have the ability to make changes to the health and safety policy to protect workers?

A. If there was an employee protection issue involved, yes, of course. That was the whole point of our job was to protect employees. And, I mean, I don't recall that ever coming up because our programs were involved to protect the employee, not to, you know, cause any harm.

Q. Can you think of any reason to hire an industrial hygienist other than to protect employee health and safety?

A. No. And that was particularly true before even OSHA came along when the company had full-time industrial hygienists because then it was simply to protect employee health. There wasn't even a rule or regulation that required them to hire people.

Q. Now, in addition to the work that you did while you were at Exxon and learning about its policies and procedures for employee health and safety, since you've started to consult with Exxon recently, have you reviewed documents as well?

A. Yes, I have.

Q. And are some of those documents -- let me just see what we have here. Is this one of the documents that you've reviewed, Exhibit 5, the Bonsib Report?

A. Correct.

Q. When is the first time you saw this?

A. The first time I saw that -- I don't think I -- I think it was fairly recently. I think it was probably two or three months ago.

Q. Here's another document. It's Plaintiff's Exhibit 11, a safety manual. Have you reviewed that?

A. Yes, I have.

Q. Here's another document, Plaintiff's Exhibit 21, a safety handbook. Have you reviewed that?

A. Yes.

Q. I hope that's 21.

Here's Defense Exhibit 277, an accident prevention manual. Have you reviewed this?

A. Yes, I've been through it.

Q. When you were -- you mentioned when you went to Exxon and you were learning about its health and safety program, did you have the opportunity to speak with any Exxon employees involved with health and safety?

A. Well, of course. With the orientation, I met with all of the industrial hygienists that were based in Houston. There were, I think, four or five of them. There was the director, Jim Hammond.

Q. Did you meet him?

A. Yes. I've known Jim Hammond since before I came to Exxon. I've known him since 1973 when I went to work for OSHA through the -- there was a local group called the Gulf Coast Industrial Hygiene Council in Houston where all the government and industrial hygienists basically met and shared information. And I met Jim Hammond through that organization.

Q. I'm sorry. You shared information?

A. Yes.

Q. Was Exxon sharing information with the government?

A. Yes. On a professional level, yes.

Q. Did you meet other industrial hygienists who were employed by Exxon during this timeframe?

A. Yes. Mr. Diserens and Bill Meyer, Eric LeBrocq, and I think that's all I can recall at this point.

Q. And were these industrial hygienists people that were employed by Exxon I guess in 1970 when OSHA started or had they been there for some time?

A. I think most had been there previously. Eric LeBrocq may have come after OSHA, but the other ones I mentioned had all been there since, in fact, in the case of Jim Hammond, he had been there since, I believe, 1946.

Q. And did you have -- the jury was actually able to view a deposition -- part of a deposition from Mr. Hammond. Did you have the opportunity to speak with Mr. Hammond and learn firsthand about Exxon's historical approach to health and safety specifically with respect to asbestos?

A. Sure.

Q. And what is your understanding from Mr. Hammond as to the approach that Exxon took historically in the '40's, '50's and '60's with respect to exposure to asbestos?

MR. HEARD: Excuse me. Your Honor, I object to that question on two grounds. First of all, once again we have another witness who was never at Exxon during the time period he's being asked questions about, has no personal knowledge, witnessed absolutely nothing. Secondly, Mr. Hammond, they

brought him for deposition with a big stack. They picked the deposition parts they wanted to play to the jury and we've already heard from him. So, it's cumulative because Mr. Hammond has asked these very questions. And the person to ask about what Mr. Hammond thought is Mr. Hammond. And they've already done that for the jury. So, I object on those two grounds.

THE COURT: Objection overruled.

Q. (BY MR. RADCLIFFE) Do you remember the question?

A. No, I don't.

Q. Based on your discussions with Mr. Hammond, what is your understanding of the Exxon approach to health and safety with respect to asbestos from the '40's, '50's and '60's?

A. Well, I think even as early as the '30's Exxon realized that asbestos could be a potential hazard and programs were implemented to minimize employee exposure to the extent possible. And I think that's reflected in this one document that was dated 1937 by Roy Bonsib entitled, "Dust-producing Operations in the Petroleum Industry." And they went through some fairly elaborate procedures which ironically, or maybe not ironically, are very similar to the same procedures that OSHA established when they developed their asbestos regulations in 1972.

And I think Jim Hammond's philosophy was,

you know, would I feel comfortable letting my only son work in an Exxon facility for a working lifetime? And if he could answer yes to that, then he felt he was doing the right thing.

Q. What's your -- do you remember when Mr. Hammond got to Exxon, when he first started to work for Exxon?

A. I believe it was 1946.

Q. Let me get you to help me write a program for Exxon.

A. Okay.

Q. I want you to tell me based on 2004 information for Exxon, if we're going to write a program to protect worker health from potential exposure to asbestos, what are some of the key elements that we're going to include based on what we know right now in 2004?

A. Well, I would say the first thing you would want to do is wherever possible to eliminate the use of any asbestos-containing material. Of course, obviously if there's not asbestos, there's not asbestos exposure.

Q. If we can't eliminate it, if the only problems available at the time contained some levels of asbestos, what else should we be doing?

A. Then you go through a series of control measures and training and medical surveillance --

Q. Okay. A little bit too fast.

Control measures, is that control of exposures?

A. Control of exposures to -- examples would be like isolation, ventilation, wetting asbestos so it doesn't give off loose dust.

Q. And then you mentioned --

A. Training.

Q. -- training?

A. So people are aware, you know, of the fact that this stuff really can be a potential problem and that it can really definitely hurt their health if they don't follow the procedures and use the equipment that's provided.

Q. And we're training the users; is that right?

A. The users.

Q. Okay. Did you mention --

A. Medical.

Q. Medical?

A. If someone is working around an asbestos-containing material, even if they are following all the procedures, we want to be able to make sure that they're not having some problem as a result of their working with the material. And that would involve things like chest x-rays, pulmonary function. And that would go on as long as they worked with an asbestos-containing material.

Q. Anything else?

A. I think that covers --

Q. What about a use of a respirator?

A. Oh, well, that would be a last resort.

Q. Last resort. Why is -- well, that kind of doesn't make sense to me. Why is the use of a respirator a last resort?

A. Because just by virtue of the fact that you would be using a respirator meaning that there potentially could be some airborne exposure. And actually you would like to eliminate that to the extent possible so you don't have to rely on something that an employee has to wear while he's working. It's not a pleasant thing to do, especially to have to wear it for a period of time.

You also have to make sure that it fits properly, to make sure it's worn properly so, you know, it can be effective. But you don't want to use that as a permanent solution.

Q. Now, Dr. Lemen, I think I mentioned already Dr. Richard Lemen was here and he testified there was over a hundred potentially toxic substances in a refinery and chemical plant like Baytown. Do you agree with that?

A. Oh, yeah, certainly. Probably more.

Q. Probably more. And he listed -- he could come up with a couple asbestos, benzene, toluene, hydrocarbon byproducts, distillation byproducts. Are there other --

A. Hydrofluoric acid.

Q. Was Exxon recognizing -- what did you say?
I forget. Recognizing, evaluating --

A. And controlling.

Q. -- and controlling. Thank you.
Recognizing, evaluating and controlling these
substances when you got there --

A. Absolutely.

Q. -- in 1976? Did that include asbestos?

A. Yes.

Q. Did Exxon have a program in place where it
said, well, let's protect against benzene and let's
protect against toluene and hydrocarbons, but we're
not going to protect against asbestos?

A. Of course not.

Q. Would you have gone along with a program
like that?

A. No.

Q. We heard from Dr. Lemen that -- he talked
about visible dust. Well, let me cover this real
quick. Do you agree that there's a -- is there a
background level of exposure to asbestos in a city
like Houston or Galveston?

A. Oh, there's -- at some level there's a
detectable level, certainly.

Q. It's a low level?

A. It's a naturally-occurring mineral.

Q. Is it some -- have there been ranges of

background levels reported as high as .01?

A. Yes, I would think so.

Q. But there's lower levels as well, .001 or .0001?

A. Right. In fact, in some areas, in fact, in Washington, D.C. the levels get up to as much as .03.

Q. To .03?

A. Uh-huh.

Q. All right. So, if we do the math at -- that's a pretty low level, .001?

A. Absolutely.

Q. That's in compliance with today's OSHA standards?

A. Correct.

Q. If we're exposed, and I did the math but I'm no good at math. For a year I calculated that that means a person can breathe about 630,000 asbestos fibers. Does that sound right to you?

A. It sounds like a big number, but I think that's correct, yes.

Q. Visible dust, Dr. Lemen talked about visible dust. He said numerous times, absolutely, if you see visible dust, you're above the TLV. Do you agree with that statement?

MR. HEARD: Excuse me, your Honor. I object to that unless there's some kind of reliable foundation for this witness' testimony like an accepted scientific or medical journal or article

that he can produce, then that would be fine. But just his bald-faced assertion that that's wrong is inadmissible. There's no foundation and there's no predicate for it.

THE COURT: Mr. Radcliffe?

MR. RADCLIFFE: I can rephrase the question. He's an expert in industrial hygiene. He works with exposures to dust. He has expertise. He worked for OSHA on exposures to dust. He did that for three years. He developed the expertise. He was trained by OSHA. He was in the field. He's not an epidemiologist like Dr. Lemen who just reads papers. He's in the field doing this stuff and he has his opinion just like Dr. Lemen had his opinion.

MR. HEARD: Well, your Honor, in order for an expert witness to testify, there has to be some sort of reliability to his opinion. The rules are very clear. A bald-faced assertion by an expert witness hired by a party is not enough. That's why we have reliability standards for our jurors to hear. If he has no reliable data upon which to fix his opinion as Dr. Lemen did, then the opinion should not be allowed and I object to it.

MR. RADCLIFFE: Well, I have a disagreement with Mr. Heard. Dr. Lemen just made the assertion that -- as I recall that all he did was make the assertion that visible dust --

MR. HEARD: The assertion is in Exxon's

own document from 1937, Judge.

THE COURT: Objection sustained.

Q. (BY MR. RADCLIFFE) All right. Mr. Larson, have you been in occupational environments in the past where there's visible dust?

A. Yes.

Q. Have you monitored people working in environments where there's visible dust?

A. Yes.

Q. Are you aware of the method by which you can determine whether visible dust exceeds the TLV or the PEL?

A. Are you talking about total dust or dust-containing asbestos or both or --

Q. Let's talk about -- well, is the TLV a standard for total dust, that means all the dusts including asbestos and all the other stuff, or is it a standard that only applies to the asbestos in that dust?

A. It's specific to asbestos.

Q. Are you familiar with the way to measure to determine if a visible dust, if visible dust surpasses the TLV?

A. Yes.

Q. Have you personally compared results from visible dust to the TLV to determine if a person was exposed above the TLV?

A. Yes.

Q. All right. Is it true to say if you see visible dusts, that automatically means the person is exposed above the TLV?

A. No.

Q. Why isn't that true?

A. Well, first of all, if you're speaking specifically about asbestos, you would have to know if that dust contained asbestos. It may or may not. So, certainly, first of all, you have to know does this material contain asbestos. Beyond that, you'd have to determine the actual amount of asbestos in that total cloud of dust. And that's done by using a microscope to actually examine the particles to see if there are specific asbestos fibers present. And what they do then, they actually count the fibers and then convert that to a concentration in the air. So, that would be the method for doing that.

Q. As an industrial hygienist who is practicing in the field, who is protecting worker health, do you look at visible dust and say, "Oh my gosh," automatically? "That's horrible. I've got to do something about it"?

A. No.

Q. What do you do if you see visible dust?

A. I would evaluate it by collecting air samples to determine the nature of that dust.

Q. Let me take the opposite. Is it safe as an industrial hygienist to say, "Well, I don't see any

visible dust. Therefore, there's no problem and I'm just going to walk away"?

A. Again, it's -- that can be very deceiving because some particles are so small that they are invisible to the eye. For example, sandblasting, silica dust can be so small, in fact, that's the part that's really the most hazardous, that you can look 50 yards beyond the sandblaster and not see anything, yet if you were to collect an air sample, you could find dust levels three times what's considered to be a safe limit. So, the opposite is also a concern.

Q. Could you say the same thing for asbestos? Just because you don't see any dust doesn't mean that there's not asbestos in the air?

A. I would say in a case if it was 100 percent asbestos that that would probably be true.

Q. Mr. Heard mentioned an Exxon document that I guess he thinks says that visible dust means you're above the TLV. You're familiar with the Bonsib document?

A. Correct.

Q. And you're familiar with this statement at the end here starting with, "One common sense answer"?

A. Yes.

MR. RADCLIFFE: Can we get the Elmo started, please?

Q. (BY MR. RADCLIFFE) First of all, let's put

this quote in context. Up at the top in this first indented paragraph, it says, "In the maze of uncertainties connected with almost all phases of the causation and diagnosis of dust disease, about the only really well-determined fact available is that breathing large quantities of dust or possibly of certain dust over extended periods is likely under some conditions to be harmful to health and that subsequent alleviation or cure is difficult or possible."

Does that mean that visible dust is above the TLV?

A. Well, it goes to the whole matter of dose in terms of the exposure at a high level over a period of time.

Q. Okay --

A. Maybe I misunderstood your question.

Q. No, you didn't. Anything in that sentence, do you interrupt anything in that sentence, if Mr. Heard stands up here and argues to this jury that that sentence means that visible dust is absolutely over the TLV, is he correct?

A. No.

Q. Well, let's go down to the bottom. "One common sense answer is that any atmosphere in which dust is visible to the naked eye is certainly too dusty to be breathed with safety by human beings. And the wise, far-sighted human employer will

immediately start to decrease the dust content in any atmosphere where dust is visible." First, this is written in 1937. Do you think that's a good idea?

A. I wouldn't agree with that.

Q. Why not?

A. Just as we discussed earlier, it would depend on what the nature of the dust was. In the case of a dust possibly containing asbestos, you'd have to actually measure the quantity of asbestos to know if that indeed was a hazardous material. If it was something like an inert dust like flour or a poly olefins --

Q. Or poly olefin dust?

A. Right. Then, no, it wouldn't be a problem.

Q. All right. So, are you saying that Mr. Bonsib was not saying something that was a good idea or he was going too far or what do you mean?

A. Well, certainly, just from a hygiene standpoint, you don't want to purposely be generating dust. Okay? But that doesn't necessarily mean that that dust is inherently hazardous.

Q. So, Mr. Bonsib in saying, hey, let's reduce dust. That's pretty good common sense?

A. It's a good practice.

Q. Okay. And I think, speaking of common sense, is that what he says? Yes. "One common sense answer is that any atmosphere in which dust is visible to the naked eye is certainly too dusty to be

breathed with safety by human beings. And the wise, far-sighted human employer will immediately start to decrease the dust content in any atmosphere where dust is visible." You agree with that concept?

A. Yes. Just from a housekeeping standpoint you wouldn't want a mess of dust.

Q. Does that mean if someone were to stand here and try to argue to this jury that that means visible dust that contains asbestos at any level is too -- is hazardous? Is that correct?

A. No.

Q. So, what do you have to do with dust? If you see dust or if you can't see dust, what do you have to do to determine if it's at a hazardous level?

A. Well, you have to measure it, first of all, and then you have to characterize the exposure in terms of is it a one-minute exposure, is it an eight-hour-a-day exposure for a full week, over a working lifetime? Now, if you find a significant level of asbestos and that's the case, then, yeah, that's definitely a potential hazard.

Q. All right. And just to be --

A. But again, it depends on the dose.

Q. And just to be clear, you're not suggesting that you or anyone else at Exxon would say we're going to expose people to asbestos up to a level because we think that's a good idea?

A. Oh, no, no. Absolutely not.

Q. What was the goal at Exxon to expose them just barely below the level that was thought to be safe or was it some other goal?

A. Well, ideally we minimize it to the lowest possible exposure, things like using wetting methods, ventilation.

Q. Are there -- if you see visible dust, are there -- if we had the same concentration of dust, could you see it inside maybe and not see it outside, or could you see it in some light and not see it in other light?

A. I think light would have -- would have an influence on being able to see the dust? I mean, I certainly can see dust at certain times of the day when you have direct sunlight come in through a window. So, yes, that would make a difference.

Q. Okay. Is this your 2004 state of the art report for protecting worker health with respect to asbestos?

A. Right.

Q. And it's pretty brief. I'm not suggesting that this is all that you would say. But are these the high points?

A. Those are the key elements of it, yeah.

Q. You have exhibit, I think it's 337 in front of you. That's Mr. Hammond's 1972 "Asbestos Control Guidelines," right?

A. Right.

Q. Are you familiar with that document?

A. Yes. That's the one I reviewed when I first went to work for Exxon.

Q. How does Mr. Hammond's 1972, 32 years before 2004, how does that document compare to your 2004 state of the art report?

A. It's very similar. I'd say that the one significant difference would be in 2004 the exposure limit is recognized to be much lower than it was in 1972. But as far as all the things that you would do to minimize exposure and protect employees, they haven't changed.

Q. Does Mr. Hammond say, "Eliminate use of asbestos where possible"?

A. That was part of the program. There was an engineering standard, in fact, that was published by Exxon in 1972 that required the refineries to eliminate the use of asbestos wherever substitutes were available.

Q. Is that part of that document that you have there?

A. I believe so.

Q. Does Mr. Hammond say, "Control exposures using isolation, wetting and ventilation"?

A. Correct, among others even.

Q. Does Mr. Hammond say anything about training the users?

A. Yes. Actually we left off I think one

other key point, and that's warnings.

Q. Warnings. Is that part of training or is that -- can we make that different?

A. It's separate.

Q. Okay.

A. Like putting up signs wherever asbestos material is being handled to keep people out of the area.

Q. Okay. Number 4, medical monitoring, is that part of Mr. Hammond's 1972 report?

A. Yes.

Q. Respirator use, is that part of Mr. Hammond's report?

A. Correct.

Q. And warnings, is that part of Mr. Hammond's 1972 report?

A. Yes.

Q. All right. Let's go next to 1937, the Bonsib document, which is Exhibit 5. You're familiar with that document?

A. Yes, I've read it.

Q. All right. I don't want to test your memory, but to your recollection does Mr. Bonsib talk about eliminating the use of asbestos where possible?

A. Yes, I believe he does.

Q. Does Mr. Bonsib talk about, well, we've already discussed the control methods. At the end he says reduce the dust, right?

A. Correct.

Q. Are those control measures?

A. Correct.

Q. Does Mr. Bonsib talk about training the users of products?

A. Yes.

Q. Does Mr. Bonsib mention anything about medical monitoring?

A. I believe he does, yes.

Q. Okay. What about respirator use and warnings? Does Mr. Bonsib mention any of those -- of that information?

A. I believe he does.

Q. Is this the only document that Mr. Bonsib wrote about potential exposure to asbestos?

A. As far as I know it is.

Q. Was Mr. Bonsib employed by Exxon?

A. Yes, he was.

Q. And did he remain in Exxon's employ after that date?

A. I believe he did.

Q. Let me show you a document that's marked as Defense Exhibit 320. Have you seen that before?

A. Yes, I did.

Q. And what's the title of this document?

A. It's called, "Safeguarding Petroleum Refineries and Their Workers."

Q. And was this published?

A. Yes, it was, in the Industrial Safety Survey in 1943.

Q. Is this the type of document -- the type of source that industrial hygienists working back in the 1940's would consult for assistance in health and safety issues for petroleum refineries and their workers?

A. Yes, I believe it would be. It would be in the literature that they would review.

Q. And I don't want to put you on the spot, but do you recall whether or not Mr. Bonsib discusses dust exposure in this document including asbestos?

A. I believe he discusses dust, but I don't recall seeing anything specific to asbestos.

Q. Page 54 he begins to talk about occupational health hazards, right?

A. Yes.

Q. And that discussion goes on for --

A. Several pages.

Q. -- several pages. He discusses at page 60 comparative health of petroleum refinery workers?

A. Okay.

Q. And the paragraph that begins with, "According to Dr. McConnell"?

A. All right.

Q. Can you read that?

A. Yes.

Q. Can you read it out loud? Sorry.

A. Oh, okay. Would you like me to read the entire paragraph?

Q. Actually -- well, go ahead and I'll just stop you.

A. Okay. "According to Dr. McConnell, the chief reason for low incidence of occupational affections among petroleum workers may be credited to the enforcement of the industry's progressive measures for the prevention of exposure to toxic gases and vapors. Any exposure that does occur is usually the result of accidents and irregularities in the operations."

Q. That's good enough. That's good enough. So, a dust isn't a gas or a vapor, is it?

A. No.

Q. All right. But he's talking about the low incidence of occupational affections or afflictions? I can't tell.

A. He actually calls it affections. I don't think we use that word today.

Q. We don't use that today. Would a disease caused by exposure to asbestos be called an occupational disease?

A. Correct.

Q. Okay. And he's talking about the low incidence of occupational diseases among petroleum workers?

A. That's correct.

Q. And that's published in 1943?

A. Yes.

Q. Does he talk later on page 63 about respirator use?

A. Yes, he does.

Q. Actually, I'll get you to go to page 62. And that's, "Personal Protective Equipment Against Gases, Vapors and Dusts"?

A. Yes.

Q. So, and he lists the various types of materials that are respiratory protection that's available?

A. That's correct. It goes through hose masks, self-contained breathing apparatus, supplied air respirators, canister-type gas masks, chemical cartridge respirators, filter-type respirators and I believe that's it.

Q. And is that a state of the art document in 1943 in terms of protection against dust?

A. I would say it is, yes.

Q. And this wasn't a secret -- do you understand that this is a secret Exxon-only document?

A. No, it was published in the journal.

Q. Mr. Larson, in the 1940's and '50's and '60's, do you have any information as to whether there was visible dust at Baytown?

A. Do I have any information about visible dust?

Q. Yes.

A. Obviously I can't speak from personal experience, but I would assume from time to time there would have been.

Q. Well, I want you to assume that some co-workers of Mr. Altimore have come in and they've described visible dust from insulation and that Mr. Altimore worked near it or perhaps even under it and that he even worked personally upon occasion removing some insulation. What's -- if you were to try right now to determine if he had an above or an excessive exposure to asbestos because of that, and I know it's a brief description, what additional information, if any, would you need to know?

A. Well, going back in to what we talked about a few minutes ago, dust by itself doesn't necessarily mean you're being exposed to asbestos. You would have to know if that dust contained asbestos fibers. And so, we would need to have some idea of the type of insulation, if it was insulation. It may have been road dust for all I know. But if it was insulation, we would have to know what type of insulation it was.

And to give you an idea, insulation containing asbestos was only one of several types of insulation that's used in a refinery. The insulation that contains asbestos is normally used for only the very highest temperature operations in a refinery.

Temperatures usually exceed like a thousand degrees Fahrenheit. Anything below that, other types of insulation are used. There's mineral wool. There's fiberglass. There's ceramic fiber.

And to just generalize, I guess, it's been my experience if you take a typical refinery in, say, the 1960's that possibly 30 percent of the insulation that's in use would be insulation that contains asbestos. The other 70 percent would be a mix of either mineral wool, rock wool, ceramic fiber or fiberglass.

Q. Here's Exhibit No. 360, Defense Exhibit No. 360. Does that provide any information as to whether or not there were insulation-type materials at the -- which refinery?

A. This was the Baton Rouge.

Q. Baton Rouge refinery that did not contain asbestos?

A. Yeah. It just goes through the various types of insulation that were in use. Some of these did contain asbestos, but there were -- I would say probably the majority would not. We have what they call Sponge Felt, fiberglass, foam glass, cellular silicate, there's a couple that I couldn't say one way or the other. It's a brand name, so I couldn't say if it contained asbestos or not. Just examples of different types of insulation, some containing asbestos, some not.

Q. Okay. What about Exhibit 364? Does that bear on whether or not all insulation materials contained asbestos?

A. Again, it lists things like rock wool, refractory cement, Thermobestos, which is an asbestos-containing insulation. So, again some containing, some not.

Q. Some did. Some did not?

A. Right.

Q. Here's actually from Exhibit 365. Let me put this up on the Elmo. We can look at it. That's from Baytown in '66. And this goes to what you were saying that, I think you used a thousand degrees, but here Baytown is saying up to 450 degrees on piping which was exclusively fiberglass?

A. Yes.

Q. Is that what that says?

A. Yes.

Q. So, anybody who is working on piping at Baytown, at least as of 1966, what's the insulation they're going to be working around?

A. It would be fiberglass.

Q. All right. And over -- just to be fair, over 450 degrees, you've got products that did contain asbestos, correct?

A. Correct.

Q. All right. And so, is that what you mean when you say you've got to figure out if the dust

contained asbestos?

A. Right, sure.

Q. What else do you need to know? We're talking about whether or not Mr. Altimore had an excessive exposure. And what is an excessive exposure to asbestos in your opinion?

A. Well, I'd say at any point in time it would be a level that exceeded the permissible exposure limit that was in effect.

Q. If somebody says that he was exposed to visible dust, a cloud of dust, does that -- do you have an opinion as to whether or not that exceeded the permissible exposure limit?

A. The only way to really know is to actually monitor the exposure to see what these asbestos levels were, if any.

Q. All right. So, should we include that as something else that you would like to know?

A. Measured exposure.

Q. Anything else that you'd like to know in trying to determine if Mr. Altimore had an exposure to asbestos above the TLV or the PEL?

A. Obviously you'd want to know the length of exposure to determine dose. It's the level times time is your dose basically, is what you're trying to get to.

Q. All right. So, if Mr. Altimore personally -- let's say he worked in the refinery for

about 17 years. And let say he personally is working on some hot piping that had asbestos and he spends ten minutes taking off five or six inches of insulation, what does that mean in terms of dose? How do we figure out if that's a significant length of time or not? How does dose play into that?

A. Well, again, the reference standard would be the time-weighted average exposure. And obviously if you have a very brief exposure, your time-weighted average is going to be relatively low. On the other hand, if he was working on that piece of insulation for eight hours a day, I mean, if that was his full-time job, 40 hours a week for a long period of time, then that could be considered a significant exposure. But if it was an intermittent short-duration activity, I feel fairly confident that his dose would be very small.

Q. You bring up a good point. Was there a trade or craft at the refinery, at the chemical plant who did work with insulation? It was their full-time job?

A. Yes.

Q. What trade or craft was that?

A. Insulator.

Q. Based on your review and investigation, were the insulators at Baytown educated and informed about the potential hazards of excessive exposure?

A. Certainly.

Q. Was that a prudent and reasonable thing to do?

A. Sure. And -- well, I was just going to go on to explain, you know, that the insulators' job and it was their -- that was their expertise is working with insulation basically. And they were expected when there was field work being done by mechanical people, whether it be a machinist or a pipefitter or a millwright, that they would go in prior to the actual mechanical work and remove the insulation.

Now, can I say in a hundred percent in every single case that that was done? No, probably not. There probably were exceptions. But that was their job to do.

Q. If somebody testified that upon occasion Mike Altimore removed a small amount of insulation, you're not going to quibble with that?

A. I'm not going to argue with that.

Q. Were the insulators at Baytown monitored?

A. Yes.

Q. That's medical monitoring?

A. Right. Air monitoring was done. They were in a medical surveillance program. And also their long-term health was determined by doing epidemiology studies to see if they over time developed any kind of disease that was related to asbestos exposure.

Q. I want to go back to your state of the art report. Were there efforts at Baytown to eliminate

the use of asbestos by insulators?

A. Yes.

Q. And were there efforts at Baytown to control the exposures of insulators?

A. Yeah. They were the primary focus of the asbestos-control programs since they were the ones that were potentially exposed as part of their job. Again, they didn't always work on asbestos insulation. They worked on other types of insulation as well, fiberglass and the other types.

Q. Were insulators -- and efforts to control exposures, did that include specific work practices?

A. Correct.

Q. And were insulators given training in the use of respirators?

A. Correct.

Q. Now, you included warnings as a separate category on your state of the art report. Is that what you meant up here by they were educated and warned about excessive exposures?

A. Well, I meant that more in terms of training. Warnings in a separate category would be like signs and letters.

Q. Were the insulators -- was that done for the insulators at Baytown?

A. It was part of the 1972 program.

Q. Was it done before then?

MR. HEARD: Objection.

A. (CONTINUING) I'm going to say at that point I couldn't say for sure.

THE COURT: Hold on.

A. (CONTINUING) Oh, sorry.

MR. HEARD: I'm sorry. It sounds like he's going to say the same thing I was about to say.

A. (CONTINUING) I'm going to say I really -- I can't say. I can't say.

Q. (BY MR. RADCLIFFE) But as part of your investigation and research, you did learn that the insulators were educated and told about the potential effects of excessive exposure?

MR. HEARD: Objection, leading.

Q. (BY MR. RADCLIFFE) As a part of your training and investigation were you told or did you learn that insulators were educated and warned about the potential health effects of excessive exposures?

A. Yes.

Q. This program that was in place at Baytown, did that start in '72?

A. Well, no. We've already gone back and talked about recognition and programs that were instituted as early as 1937.

Q. Let's get back to education and warning. How come Exxon should not have just set every single employee, the typists, the security guards, the guys who worked unloading oil from the ships, the guys who were in the control room, why shouldn't Exxon have

just put all of those people in the room and say, "Here are the exposures that we" -- "here are the potential health hazards that we know about with respect to exposure to asbestos"? Wouldn't that have been a good thing to do at that time?

A. Well, asbestos obviously is a potential hazard, okay. But then again, as we talked about, there's probably three to 400 potential hazards that one might find in a petroleum refinery. So, you don't want to use a shotgun approach and warn everyone, even if they don't have any potential concern with the exposure. Certainly a person working in the office, head office isn't going to be too concerned about many of the chemicals that are produced in the refinery. And they're not going to be concerned about insulation unless they were going out into the refinery.

So, no, you try to tailor your program to the actual potential hazards that might exist for the particular person. You don't want to overwhelm them with too much information because then you'll dilute what they know is important to them. They'll be overwhelmed with information.

Q. For a person who worked as a machinist, should their health and safety training have been tailored? Is it your -- do you have an opinion as to whether or not their health and safety training should have been tailored to the then known hazards

for machinists?

A. Yes.

Q. And what is your opinion?

A. Yes, as for any other job.

Q. Let me show you Exhibit 362. This is from -- this is from Baton Rouge, but this information here at the bottom, is this an example -- I'm sorry. Let me -- this is from 1962, 1962 at Baton Rouge. Is this an example of some work practices that were meant to control the release of dust to prevent excessive dusty conditions?

A. Yes.

Q. Now, here they seem to be focused with the cost of the insulation rather than with health and safety?

A. Well, not -- No. 5 says insulation should be carefully cut and removed from valves and manifolds. So, I think there was a safety aspect to that as well.

Q. All right. But --

A. Yeah, cost and safety, sure.

Q. But the fact that they don't want to waste insulation, does that mean that they weren't concerned about the health and safety issues?

A. No.

Q. You mentioned -- you mentioned monitoring. Was there monitoring done by Exxon for exposure to asbestos?

A. Yes.

Q. Here we have Exhibit 351. This is way back, October 25, and this is Mr. Venable. Mr. Venable worked at Baton Rouge, right?

A. That's correct.

Q. Is it surprising to you that we have documents that are over 50 years old from this location?

A. I would -- yeah, I would say probably, yes.

Q. Well, we haven't seen any documents from Baytown. Is it your experience that it's common to have these old documents or uncommon to have these old documents, 50 years old, 40 years old?

A. I know from experience working for both Exxon and Mobil and even with OSHA that most companies have like a records retention policy and it calls for retention of records for a certain period of time after which they're usually -- I don't know what they do with them, discard it or whatever. So, yeah, to go back how many years is that, 40, 50, 53 years, yeah, that's pretty unusual.

Q. All right. What he's saying is he's saying that sentence. "It is felt that maximum exposures to these dusts may occur during handling operations such as unloading stock and shipping." Now, as an industrial hygienist do you want to measure maximum exposures or do you want to measure minimum exposures?

A. Well, you want to know maximum because if you measured the maximum exposure and found that it was within or below what's considered to be a safe level, then you're pretty confident that the exposures that you think would be less than that are also acceptable, are also safe.

Q. And then there's actually some monitoring data where they say five laborers were used in unloading operations. Two dust samples were collected. And this was back, I guess in the million particle per cubic foot days, this data --

A. So, the limit there would be 5 million particles per cubic foot would be the limit.

Q. All right. Here we have inside the railroad car. Is that -- do you know whether or not the inside of a railroad car is an enclosed space?

A. It would be.

Q. Is inside railroad cars back in those days, did they have ventilation?

A. No.

Q. Inside a railroad car unloading bags of asbestos, is that going to be a maximum-type exposure?

A. It would certainly be I think one of them, yes.

Q. And when the results come back at 2.9 million particles per cubic foot, what does that say to the industrial hygienist? What does that mean to

the industrial hygienist?

A. Well, it says that there's obviously some exposure. 2.9 million particles per cubic foot is exposure, certainly. But it's still well below the standard of 5.

Q. And here we're talking about Exhibit 356, we're talking about Mr. Eugene Gray -- actually this is the second page. And it looks like it says, "To Fred Venable regarding Eugene Gray." It says, "X-ray of chest suspicious of lung irritant." Is it your understanding back in the 1950's they were doing chest x-rays of the workers?

A. And what's the date of that?

Q. 1951.

A. Yeah. Exxon started a chest x-ray program dated at least to 1945. So, they were doing chest x-rays of all their employees.

Q. Is that a good thing --

A. Certainly.

Q. -- from an industrial hygiene health standpoint?

A. Certainly.

Q. Could you check -- I think -- I don't know what that is, could you check on the degree of asbestos or other toxic dust exposures -- do you know who Mr. Hansen was, Dr. Hansen?

A. I believe he was the medical director for a refinery.

Q. And then we have December, 1951, it appears this report by Mr. Venable that they actually did go out and sample, it says he was unloading 50-pound bags, hundred-pound bags. Dust counts were made on November 1, November 27th and November 29th. Is that what it says?

A. Yes.

Q. Is that a reasonable thing to do, to sample on more than one occasion?

A. I would say yes, because then you can find out what the exposures were during different conditions so you can get, you know -- you might catch the worst case scenario.

Q. And what does he say about the results of this sampling?

A. Okay. It says, "Samples of air collected during these periods and under the weather conditions prevailing showed concentrations of asbestos and total dust to be less than the maximum allowable concentration for an eight-hour per-day exposure. It is probable that peak concentrations may exceed the accepted limit. However, the intermittent nature of the work makes the evaluation and resulting exposures difficult."

Q. All right. So, is this a situation where maybe Mr. Gray could have seen visible dust for an hour or two a day, but this eight-hour time-weighted average was within the range?

MR. HEARD: Objection, leading.

THE COURT: Sustained.

MR. RADCLIFFE: I'll rephrase.

Q. (BY MR. RADCLIFFE) In terms of visible dust and the time-weighted average, how does that -- how do those two things relate to each other in a situation like this?

A. Well, if you had a high level of -- and I take it this was asbestos. This wasn't like asbestos-containing insulation at a small concentration. So, if you did see visible levels of asbestos for a short period of time, I would consider that to be a fairly high exposure level. But if he's only handling a bag for ten, 15 or 20 minutes, when you average that level out over the eight-hour workday, it may very well have come in at below the maximum exposure limit because the maximum exposure limit is based on an eight-hour exposure, the average over the eight hours.

Q. This document says "Other workers have infrequent exposures to this type of material since labor is made available from the general labor pool. One man, Ed Valentine, is the exception to this statement as he is more or less regularly assigned to car unloading, along with E. Gray."

What is your understanding as to whether exposure to dust, products that contain asbestos was a constant thing at the refinery or intermittent?

A. It wasn't -- the only people again that would have even potential full-time exposure would be insulators. People that worked like at the loading dock or unloading dock would only be handling products as they came in, which I think -- to my understanding only occurred every two to three months.

Q. Here's another document in 1972. It has 11/72 up there. And it says, "On November 1 and 3 samples of airborne asbestos dust were collected during the turnaround on 10X Pipe Still."

"The results of the fiber analyses on these samples are given in the attached table. The number of fibers greater than 5 microns in the air ranged from 1 to 8.3." In 1972 what was the TLV -- what was the PEL for exposure to asbestos?

A. Well, in '72 it would have been five fibers per C.C.

Q. Well, right here we have 8.3. Doesn't that mean that there's a violation?

A. It could, but not necessarily. Again, it goes back to, if that was a very short period of time and you average that exposure over the eight-hour workday, it very well could come in below the five.

Q. What does it say about the rest of the provision of respirator use?

A. It says, "Workers were protected by single-use, U.S. Bureau of Mines approved, dust

respirators during this period."

Q. Was that an appropriate respirator to use at that timeframe?

A. Yes, at the time the U.S. Bureau of Mines certified respirators as being acceptable for use with asbestos.

Q. What does this last sentence right there say beginning with "since"?

A. "Since the period of actual work was short, less than 30 minutes, the TWA is well below this concentration." In other words, the eight-hour average.

Q. Is that what you were talking about earlier?

A. Correct.

Q. Times times concentrated --

A. I also might add that for the particular respirators they were wearing, they have what's called a protection factor of 10 to 1. So, if you were being exposed to a concentration, say, of ten asbestos fibers, the maximum amount you could inhale while using that respirator would be one fiber. So, it gives you a 1-to-10 protection.

Q. This is from October 5, 1981. It reads, "The attached memo of July 21, 1981, I outlined the current activities of refinery insulators from Medical's Physical Exam and Pulmonary Function Schedule. See attached table. The jobs of refinery

insulators who still work with insulation have been reviewed further."

Is that part of the monitoring program? Do you know whether or not that's part of the monitoring program?

A. Could you repeat that?

Q. You had talked about medical monitoring of insulators?

A. Right.

Q. Do you know, is this -- is that what this is talking about?

A. Right. It's talking about the medical surveillance program for insulators.

Q. And here we have a document, "The Status of Insulators from Physical Exam and Pulmonary Function Schedule." What kind of tests should the insulators have been getting as part of your state of the art 2004 recommendations?

A. Well, essentially the medical surveillance has not changed. It would be the chest x-ray as well as the pulmonary function. That has not changed.

Q. Were there -- was there air monitoring going on in Baytown in 1976 when you visited?

A. Yes, there was.

Q. Had there been air monitoring for asbestos conducted at Baytown prior to 1976?

MR. HEARD: Objection. Calls for speculation.

Q. (BY MR. RADCLIFFE) Mr. Larson, based upon your investigation and review, in your opinion had there been air monitoring at Baytown prior to when you visited there in 1976?

MR. HEARD: It's -- I still object to his opinion, Judge. It's complete rank speculation on behalf of somebody who wasn't there. Unless he can show us the documents where people at Baytown, workers at Baytown were monitored, we would enjoy seeing those documents. But without such documents, it's hearsay. It's speculation and he can have no idea about it.

THE COURT: Objection overruled.

A. (CONTINUING) Okay. Going back to this orientation program that I went through with Exxon when I first joined the company, I was aware of the general types of monitoring programs that were being conducted throughout Exxon when I spent the month in Houston. And then the first stop I made after the one month in Houston was the two weeks at the Baytown refinery. And, again, they went through each of their programs, the major programs that they had implemented there at the refinery. And, again, it covered things such as hearing conservation, like giving the audiometric exams, that type of thing, the monitoring that was being done for noise. They were doing monitoring for benzene. And, of course, one of the programs was for asbestos.

And they talked about what they were currently doing. In fact, they showed me their program that was based on the '72 document that was developed. And then they also discussed some of the work that they had been doing previous to that historically. And I actually reviewed some of that data.

Q. (BY MR. RADCLIFFE) You reviewed some of the air monitoring data from Baytown?

A. That's correct.

Q. Do you remember whether any of that data showed exposures in excess of the then existing TLV or PEL?

A. Quite frankly, I really don't recall.

Q. You don't recall? That's fine.

Here's a document that's Plaintiff's Exhibit 16. And this is from Mr. Venable to Mr. Hammond. This is the Jim Hammond that we talked about earlier, right?

A. Yes. He's the one that started back in the '40's and he was the head of the program when I joined the company.

Q. And he's saying -- this is Mr. Venable saying, "Here's our list of the employees that we're following for potentially toxic exposure by department"?

A. That's correct.

Q. And does he list the potentially toxic

exposures on the next page?

A. Yes, he does. It looks like it's listed alphabetically beginning with aniline and I believe the third material is asbestos.

Q. Okay. And then does he also include in Plaintiff's Exhibit 16 that there's a program for following employees potentially exposed to hazardous substances?

A. Correct.

Q. What does that mean to you that there's a program for following employees potentially exposed to hazardous substances?

A. Well, it goes back to this -- the whole principle of industrial hygiene as it relates to recognition, evaluation and control. In order to know who is exposed to what material, you have to actually go out, in fact, if you read down through these, that's exactly what they're doing, to identify employees potentially exposed to materials or physical hazards which could result in chronic occupational disease.

And they go down to the second item, "To identify employees working with or potentially exposed materials which could cause -- could result in symptoms and disability. This information -- is assistant to the plant physician in arriving at a diagnosis of illness in an employee whose exposure in or" -- I can't read that very well -- "is brought

into the medical department in obvious distress."

It goes on to give examples of what types of programs are in effect for like sandblasters, a lead burner, silica and other examples.

Q. But asbestos was on that list that you saw?

A. Correct.

Q. So, is it your understanding that this program was in place for people with potential exposure to asbestos?

A. Yes.

Q. And based on your research and your review and your training, is this a program that was only at Baton Rouge?

A. It's my understanding that that was the approach that Exxon took in the refineries.

Q. Including Baytown?

A. Yes.

Q. Then the last page in Plaintiff's Exhibit 16 I guess in 1966, there's the toxic exposure list. And it's difficult to read, but it seems to say the number of employees on the list in the last column?

A. I believe that's what it does indicate for each material. And I guess the first alphabetically would be asbestos. And they indicate that there were 35 employees at the refinery that had potential exposure. And then you can -- obviously like noise is down further. There's quite a few other people. Noise is much more widespread than the asbestos would

be.

Q. And is this good industrial hygiene?

A. Yes. I think it's a systematic approach.

MR. RADCLIFFE: Your Honor, I think I can wrap up in a few minutes --

THE COURT: Okay.

MR. RADCLIFFE: -- if we can delay the break.

Q. (BY MR. RADCLIFFE) Just real quickly on a couple of things. This has been identified as poly olefins dust. Is that what it looks like to you?

A. It does.

Q. If I were to open this and throw it up in the air, other than getting a mess all over everybody's clothes, would there be any problem with it?

A. No. That material is used for food packaging. It's approved by the FDA for food contact. So, it's basically inert.

Q. That doesn't cause mesothelioma, does it?

A. Not to my knowledge.

Q. Mr. Stovall was here. He testified that the PO unit, the poly olefins unit, is a low-temperature unit. Do you have any reason to disagree with him?

A. No. Poly olefins are basically at, for the most part, at room temperature. So, it would be a low-temps operation.

Q. And how is that significant when we talk about potential exposure to products that contain asbestos?

A. Well, again if we talk about the insulation that's used at a refinery, the asbestos insulation is used in high-temperature operations. In parts of the refinery where you have low-temperature operations or ambient room temperature operations, if you insulate at all, you would not use an asbestos-containing insulation. You would use fiberglass, glass wool, et cetera. Similarly at that chemical plant, since it was a low-temperature operation, there would be no reason to use asbestos-containing insulation.

Q. Back in the '40's, '50's and '60's were machinists identified as a group of people who had the potential for an exposure to asbestos above the TLV?

A. No.

Q. Is it your testimony here today that Exxon in the '40's and '50's and '60's and early '70's was 100 percent perfect in occupational safety and health?

A. No, I couldn't agree with that.

Q. Can any company, can any company be 100 percent perfect, remove all risk for occupational safety and health?

A. Well, I can tell you what my experience was with OSHA. I did 300 inspections and I always found

something.

Q. Even in a room like this, if you were to do an OSHA inspection, would you find some problems?

A. Probably. We'll see.

Q. You have to worry about ventilation, right?

A. I don't see any sprinklers or fire extinguishers.

Q. No sprinklers or fire extinguishers? Is that an OSHA violation?

A. Not necessarily. Hopefully there's one near the outside of this.

Q. Is there supposed to be a certain amount of ventilation in this room per minute or per hour?

A. It would depend. If it's strictly for human occupancy, there are guidelines, but there's not an OSHA regulation per se.

Q. I would like to say the ventilation is not enough because the jury has been falling asleep when I've been talking and it's because of ventilation, not because of my questions.

A. Well, no. To answer your question, I don't think you're going to find 100 percent perfection.

Q. Okay. Well, let me get this straight. You're an industrial hygienist. Your job is to help protect workers' safety and health. What do you do? What do you look for? What is it that you want to achieve in the workplace?

A. Well, what you want to do is provide the

safest working environment that you can. And that includes physical things such as providing safety equipment. That's the physical side of it. And then you have the employer relations and training and education side of it where you hopefully impress upon the employee that there are reasons for following safe work procedures and using the proper equipment. And that's to educate them to the hazard.

You don't hide hazards from employees if you're trying to protect them. If they aren't aware of the hazard, they can't protect themselves. So, it's a combination of providing equipment and a workplace, you know, hopefully as free of hazards as possible, but then training the employee to do the right thing.

Q. And what if you have hundreds or thousands of employees? Are you going to train them about every conceivable issue or are you going to train them about things that are known or suspected to be important to them?

A. Well, you're going to train them about things that are important to them and then you're going to constantly reinforce that over and over again.

Q. What happens if you tell somebody -- what happens if you've got an employee and everyday you come in and say, "There's 10,000 things that you have to worry about here and here they are"? What's one

of the things you have to worry about in telling an employee to worry about 10,000 different potential hazards?

A. Well, then they won't be able to tell the difference from one hazard to another and what the severity of that hazard is to them as compared to somebody that works, you know, three blocks away.

Q. Do you run the risk of employees losing the significance of what's really known to be a hazard to their trade or occupation?

A. Certainly.

Q. Is it generally true that a person with a direct hands-on exposure to asbestos has a greater level of exposure than a person who is simply a bystander?

A. Yes.

Q. Is it generally true that the person who is the bystander, not the person working with it, but the person who is the bystander, if there's dust on that person's clothing and if that dust makes it home and if that dust becomes airborne and if someone then breathes that dust, is that person's breathing of that dust less than the exposure the bystander experienced?

A. I would think so. I'll admit, though, I'm not an expert in that but I just from --

MR. HEARD: Then I object, your Honor, if he's not an expert in that.

A. (CONTINUING) I would say from a common sense standpoint.

THE COURT: Sustained.

Q. (BY MR. RADCLIFFE) Is dose important when you want to talk about clothing on dust, when you want to talk about clothing on dust on clothing?

A. Certainly. If it's not there to begin with, then you can't be exposed to it.

Q. Is it important how long the exposure might take place?

A. Yes.

Q. Is it important where the exposure might take place, if it's outside with wind or if it's inside in an enclosed space?

A. Yes.

Q. Is it important at the concentration that the exposure might take place?

A. Certainly. That determines dose.

Q. You read Ms. Altimore's deposition, right?

A. Yes, I did.

Q. Did you see where she alleged direct hands-on exposure to certain asbestos-containing products?

A. I did.

Q. If Plaintiffs' expert, Dr. Jay Segarra has told this jury that direct hands-on exposure in and of itself was enough to cause her mesothelioma, do you have any basis to disagree with him?

A. No.

Q. Do you have an opinion as to whether or not Exxon's occupational health and safety program in the 1940's was state of the art, was an acceptable, reasonable program by occupational hygiene standards and scientific and medical information known at the time?

A. From everything I've read, I would have to say it was state of the art. I'll call it the premier program in the industry from the '40's to at least up until the time I was employed.

Q. And the same question in the 1950's, 1960's and early 1970's. Do you believe that Exxon's health and safety program, occupational health and safety program was state of the art?

A. Yes. And the basis for that is when I worked for OSHA I saw many, many -- I made over 300 inspections and many of those involved oil companies and refineries. And I could see a distinct difference. I think Exxon was head and shoulders above the other companies.

Q. You've got background with OSHA. You've been in the petroleum industry, working in the petroleum industry for 20 years. Your job has been to protect worker health and safety. If you had been alive and working as an industrial hygienist in 1950, from 1960 or 1945, and Exxon had hired you to come into its Baytown refinery and said to you, "Mr.

Larson, are we doing okay? Would you make any changes?" What would you have said?

A. I don't think I could have made any recommendations then. I think history has proved that out from -- I guess they will hear more about this later from all of the epidemiology work that's been done that's shown that Exxon employees are --

MR. HEARD: Your Honor, excuse me. If we now have an industrial hygienist that's starting to get into epidemiology, that's fine if they're not going to bring an epidemiologist. But he's outside the area of his expertise. He's already said that. I object to all these opinions that are outside his expertise.

THE COURT: Sustained.

Q. (BY MR. RADCLIFFE) Mr. Larson, have all the opinions that you've given here today been to a reasonable degree of scientific probability?

A. Yes.

MR. RADCLIFFE: Your Honor, I believe that's all the questions I have for Mr. Larson, if I could just check my notes? But this is probably a good time for the jury to recess.

MR. HEARD: Or I'm very happy to start.

THE COURT: Let me have the attorneys approach.

(At the bench, off the record.)

(In the jury's presence.)

THE COURT: Okay. Ladies and gentlemen, we're going to go ahead and take a break. Let me just give you a general idea of what we're going to do when you come back from the break.

We're going to work past 12:00 o'clock. But once we finish up past 12:00 o'clock, we'll be finished for the day. We're not thinking it's going to be too -- you know, at least 12:30, somewhere in there. So, if you need a snack to get you through to that time, get a snack while you're on break.

Remember, you're not to discuss this case among yourselves or with anybody else. You're not to form or express any opinions about this case. Meet back in the jury room at 11:35, 11:35.

(Jury not present.)

THE COURT: We will be in recess until 11:35.

(Short recess.)

(In the jury's presence.)

THE COURT: You may be seated.

All right. Mr. Radcliffe?

MR. RADCLIFFE: Your Honor, I've checked my notes. I have just a few wrap-up --

Q. (BY MR. RADCLIFFE) Mr. Larson, yesterday Joe Whiddon was here. He's a machinist at Baytown. He testified about working, removing some small amounts of asbestos in 1982 and he wore a 3M mask or a 3M respirator. Was that appropriate? Was that

good personal protection in 1982?

A. The 3M 8710 Respirator, I assume that's what you're referring to?

Q. He didn't give us a number. He just said it was a 3M paper-fabric-type mask.

MR. HEARD: I object, your Honor. There are different masks. And this may be a subject of testimony, but unless he can establish whether it's the 8500 he's referring to or the 8710, I think this witness acknowledged he cannot answer that question.

THE COURT: Do you know which type of mask --

MR. RADCLIFFE: I'll ask a different question.

Q. (BY MR. RADCLIFFE) Mr. Larson, in 1982 did -- was it okay for people to wear 3M, certain types of 3M paper masks when working with asbestos?

A. Yes.

Q. So, if Mr. Whiddon testified as to using a 3M paper-type mask in 1982 when working with asbestos for a short time, are you able to say that that was a violation of OSHA?

A. No.

Q. Let me hand you Exhibit 402, a C.V. Have you seen that before?

A. Yes, I have.

Q. Is that a true and accurate copy of your

C.V.?

A. Yes, it is.

MR. RADCLIFFE: Your Honor, I offer
Defense Exhibit 402 into evidence.

MR. HEARD: No objection.

THE COURT: Defendant's 402 is
admitted.

Q. (BY MR. RADCLIFFE) I'll show you Exhibit
371. Have you seen that document before?

A. Yes, I have.

Q. When did you first see that?

A. I saw that in 1976 when I joined Exxon.

Q. Is that a document that lists substitutes
available for asbestos-containing insulation?

A. That's correct.

Q. Is that a true and accurate copy of the
document that you saw in 1976?

A. I believe it is.

MR. RADCLIFFE: Your Honor, I offer
into evidence Defendant's Exhibit 371.

MR. HEARD: No objections.

THE COURT: Defendant's Exhibit 371 is
admitted.

Q. (BY MR. RADCLIFFE) Here is Defendant's
Exhibit 320. That's the Bonsib article that we spoke
about earlier today?

A. Uh-huh.

Q. Is this the type of article -- is that an

authoritative article, an article that's reasonably relied upon by industrial hygienists such as yourself?

A. Yes, it would be.

MR. RADCLIFFE: Your Honor, I offer Defendant's Exhibit 320.

MR. HEARD: No objection.

THE COURT: Defendant's Exhibit 320 is admitted.

MR. RADCLIFFE: Your Honor, I pass the witness.

MR. HEARD: May I proceed, your Honor?

THE COURT: Yes, you may.

CROSS-EXAMINATION

BY MR. HEARD:

Q. Speaking about these respirators he was just talking about?

A. Uh-huh.

Q. All right. You've got a 3M 8710. You've got a 3M 8500, right?

A. Correct.

Q. The 3M 8500 has a single band which usually is blue, correct?

A. That's correct.

Q. The 8710 has two bands and they're usually yellow, correct?

A. That's correct.

Q. The 8500 3M dust mask was never, ever, ever

approved nor intended for use to protect against asbestos; is that correct?

A. It's my understanding.

Q. Yes, sir. The 8710, the 8710, the one with two yellow bands, that dust mask does not have a protection factor of ten. That's also your understanding?

A. No. It's my understanding that it does.

Q. It's your understanding that it does have a protection factor of ten?

A. That's correct.

Q. Okay. And you were talking about protection factors earlier. Let's just clarify that. Protection factor, in case it comes up later in this trial based on your testimony here today, a protection factor is not -- if you say something has a protection factor of ten, you're not saying it protects you ten times one fiber, ten fibers. You're saying it protects you up to ten times the TLV or the PEL, correct?

A. Correct.

Q. Okay. I just wanted to make sure that we were on the same page with respect to that.

Now, and you would agree as their machinist, their supervisor, their management, employee who came here yesterday to testify in this case who had never stepped foot on the Exxon premises prior to 1978, he said that it would be a -- I forgot

the word -- reprehensible for someone to expose a worker in today's times to asbestos and asbestos-containing insulation wearing a paper dust mask. You agree with him, do you not?

A. Well, it would depend on the type. Again, 8710 is approved.

Q. You think the 8710 is appropriate today to wear the 8710, the 3M 8710 you think as an industrial hygienist, you think that that dust mask is appropriate today for people, if they have to go to Exxon and they have to go tear out old Unibestos pipe insulation and they've got to tear it out to get it out of the plant, they can wear an 8710. Is that what you're telling us?

A. Under those circumstances, no. It would be a higher class.

Q. And if anybody were to suggest that you could do so -- you would agree with their own person who came here yesterday that it would be reprehensible to allow somebody to wear even an 8710 in those kinds of circumstances sitting here today?

A. You're talking about in 2004?

Q. I am talking about 2004, yes, sir.

A. Okay. Well, I suppose I could agree. But I thought this case dealt with exposures back in the '40's through the '70's. I thought that was when he retired.

Q. That is a great point. Because you never

even went to Exxon -- this is my flip chart.

MR. HEARD: Do we have a flip chart?

Q. (BY MR. HEARD) I hate to take up all Exxon's paper. You never even went to Exxon until 1976, right?

A. Exxon, no.

Q. Okay. The Baytown facility?

A. In '76, yes.

Q. Yes, sir. You went in 1976?

A. Correct.

Q. Were you aware that by 1976 the testimony in this case is my client, my client's husband, Mr. Mike Altimore, was already working for Jesse Stovall in the shop? Did you know that?

A. Yes.

Q. You did know that?

A. Yes.

Q. And you also know and acknowledge as you did in your deposition which I took in this case that Mr. Stovall -- that Mr. Altimore worked in the refinery from 1942 until 1968, at least, were your words, correct?

A. Yes.

Q. Okay. And that he didn't go over to the chemical side until at least 1968, right?

A. That's correct.

Q. Okay. And you heard the testimony in this case about his exposure as a machinist working

shutdowns and turnarounds during the 1960's and the 1950's at Exxon?

A. I was not aware that there was any specific testimony as far as shutdowns and turnarounds.

Q. No, sir, you were not. Because let's go back. In fact, the only thing that you knew when I deposed you, and I think it's still true today, was you had read the deposition testimony of Mr. -- Ms. Altimore, correct?

A. Correct.

Q. Jesse Stovall?

A. Correct.

Q. All right. And a person by the name of Mr. Killian, correct?

A. That's correct.

Q. Okay. You did not have available to you any testimony from Mr. Roosevelt Boullion, correct?

A. That's correct.

Q. You still to this day have not read or heard or seen any testimony from Mr. Roosevelt Boullion who is a pipefitter out there?

A. That's correct.

Q. And you have not seen or heard of any testimony from Roy Calma who was a machinist out at Exxon, have you?

A. No, I haven't.

Q. All right. Now, do you know that you're the second witness besides these videotapes, you're

the second witness that Exxon has called to testify in this case live here sitting in here in the courtroom?

A. Yes.

Q. Okay. You knew that? How did you know that?

A. Because I knew that the -- I guess the Defense had just started and that I was the second live witness.

Q. Do you know who the first live witness was?

A. I believe it was a gentleman from the polyolefins facility that testified that --

Q. Mr. Whiddon?

A. Right, yesterday.

Q. Have you ever met Mr. Whiddon before?

A. No.

Q. Do you know Mr. Whiddon did not even start out at Exxon until 1978?

A. I don't think I knew that.

Q. No, sir. And now we have the second witness that Exxon has brought to testify, as you say, about the 1940's, '50's and '60's and what was going on at Exxon during the 1940's, '50's and '60's that you say is so important. And we still haven't heard from one witness from Exxon who was actually out there in the field during that timeframe. Are you aware of that?

MR. RADCLIFFE: Your Honor, that's

simply not true because we've heard from Mr. Hammond. And Mr. Hammond was there in 19 -- he started in 1946. The questions have to be based on the evidence in the case. They can't be made up.

Q. (BY MR. HEARD) Let's talk about it. Do you understand that there has not been one worker in this case called by Exxon so far who worked in the field as a machinist, insulator or pipefitter at Exxon Baytown refinery to testify what the work practices were during the 1940's, '50's and '60's? Do you understand that?

A. Yes.

Q. And now -- and by the way, he mentioned Mr. Hammond. Mr. Hammond was an industrial hygienist, correct?

A. Correct.

Q. Mr. Hammond was in charge of the industrial hygiene program for all of Exxon, wasn't he?

A. Not for all of Exxon.

Q. For what parts?

A. For the domestic part.

Q. Domestic part. Okay. Does that mean United States of America?

A. That's right.

Q. So, let's limit ourselves for the time being to the United States. As far as the United States of America goes, Mr. Hammond was in charge of all industrial hygiene for Exxon Corporation; is that

correct?

A. I believe that's true.

Q. All right. So if, if these great ideas -- and by the way, we've said they're great, too, from the very beginning that Mr. Bonsib had in 1937 -- if none of those ideas were ever implemented in the field at the refinery with the workers, the people who were there who needed to know the information, that rests on Exxon management and their relationship with Mr. Hammond, correct?

A. You're saying if.

Q. I am saying if.

A. I don't understand what you mean by if. If they weren't versus if they were? I'm not clear.

Q. Okay. Let me -- you have that 1937 document that counsel showed you, don't you?

A. Uh-huh, correct.

MR. HEARD: Would you please pull that up? It's Exhibit No. 5.

Q. (BY MR. HEARD) This is the document in evidence. The jury has seen it. We haven't read it all because we would be here for a month, but I do want to read some --

MR. HEARD: Go to page 1, the introduction. Blow that up for us.

Q. (BY MR. HEARD) The first sentence, "Because it was the duty of industry to protect its employees and because no comprehensive survey of the

hazards incident to occupational dust has been made, it was felt that here was an opportunity to render a service to the petroleum industry and its employees."

Okay. You would agree that it is the duty of industry to protect its employees, right?

A. Yes.

Q. Of course, you just testified to this jury that one of the key factors in an industrial hygiene program is to make sure that if there's a hazard that workers are exposed to, if there is a hazard, that they be fully informed about that hazard and how to protect themselves against it. That's what you just testified to this jury.

A. If they're exposed to it, yes, I agree.

Q. Right. If they're exposed to it. Well, you're not -- have you worked one day in your life as a machinist?

A. I have been around machinists quite a bit through OSHA, through Exxon and Mobil.

Q. Okay. Did you hear my question? Have you ever worked one day as a machinist?

A. Not as a machinist.

Q. No, sir. Have you been around machinists, working with machinists in the 1960's?

A. I have to think about that. Not until 1970.

Q. You graduated from college in 1971?

A. '72, but I had summer jobs that -- where I

worked around machinists.

Q. Well, you never worked as a machinist, though, you just told us?

A. I worked in a shop where machinists worked, correct.

Q. Well, you just testified you never, prior in the 1960's, worked with machinists?

A. Not in the 1960's, no.

Q. Okay. And at any time you never worked with machinists out in the field when they were working shutdowns and turnarounds and working on pumps and turbines and stuff like that, did you?

A. I'm trying to remember. I know in my OSHA days we did get involved in some cases with some turnaround activities. I'd say -- I can't recall distinctly, but there could have been. That's what -- I can't say.

Q. All right. Let me go at it this way. Okay?

A. Okay.

Q. Mr. Larson, we've heard from three or four -- three people, I think, that don't have a thing to do with this case. They're not being paid \$300 an hour. They're not sole consultants for Exxon Mobil. They're not currently employed by Exxon. But they worked for Exxon. And now they're retired. And we went out and we found them. And they've come in here and testified to this jury about what they did

and what the conditions were like at the Exxon refinery, the Exxon Baytown refinery.

Are you going -- without having read their testimony, without having heard their testimony, are you going to look at this jury and tell them that they're lying?

A. No, I wouldn't. I would never do that. But on the other hand as a machinist, they have their job to do. And I'm sure they do it well. But within Exxon, they do have a well-established safety and health program with professional safety engineers and industrial hygienists who have the responsibility for making sure those machinists are protected.

Q. And you base that upon Mr. Hammond and talking to some people out at Exxon and the documents you've read?

A. I'd say Jim Hammond was a very primary source and all the documents that he developed and implemented within the company.

Q. Right. Now, before I forget this, and we're going to come back to this subject, but I had one thing that I really wanted to touch on before I forget.

You made the statement at the very end, right before the jury took its break, you made the statement that Ms. Altimore had enough exposure, household exposure not related to Exxon, other things, to have caused her mesothelioma. You agreed

with Dr. Segarra?

MR. RADCLIFFE: I object. He said --

A. (CONTINUING) No.

MR. RADCLIFFE: -- he had no reason to disagree. Again, that's a misstatement.

Q. (BY MR. HEARD) Okay. You had no reason to disagree with Dr. Segarra is what you said, that she had enough exposure without the Exxon exposure to cause her mesothelioma. That's what you told this jury?

A. I have no reason to disagree.

Q. No reason to disagree. What was that exposure?

A. Which exposure? The household exposure?

Q. The ones you don't disagree with.

A. They were the exposures that I guess the doctor stated they were.

Q. What were they?

A. I'm just saying I couldn't disagree with what he said. I'm not even sure what he said, but I can't disagree with it.

Q. Okay. So, you don't know what the exposures were, but you don't disagree that those exposures could have caused her mesothelioma?

A. He's the expert in that field.

Q. You have no reason to disagree then that she had, you think, and you would have no reason to disagree that she could have had enough exposure to

cause her mesothelioma without Exxon asbestos dust coming into her house every day?

A. Well, let me just put it this way: If I had asbestos insulation in my ceiling that potentially could get into my home, I would have done something about it.

Q. Uh-huh. You know she went into her attic once a year to get her Christmas tree. Do you think she was taking a broom and punching the ceiling tiles and making dust --

A. I'm sorry. But she said her husband also went up there periodically to do maintenance. And I don't know about your attic, but my insulation in my attic, when I bring that door down and go up there, typically I get some that comes down on the floor.

Q. So, no reason to disagree that that exposure can cause mesothelioma?

A. I'm not going to disagree or agree.

Q. Okay. But bringing home asbestos dust on clothes every day for 35 years can't do it, right?

A. I don't think we said that.

Q. Well, do you disagree then?

A. I'm not going to disagree with that, no.

Q. Okay. How about 20 years?

A. Again, it depends on dose times only one aspect.

Q. I'm going to get back to this area we're talking about. I hope I remember it. In just a

minute I want to talk about these two documents that y'all discussed in your testimony.

MR. HEARD: 353, Defendant's, please.

Q. (BY MR. HEARD) This is the document that y'all were looking at. And you said that this type of exposure right here, I wrote down the quote, is a maximum type of exposure, right there, inside a railroad car during unloading, is what you told this jury. That is a maximum type of exposure. Do you recall that testimony?

A. Yes, I do.

Q. Okay.

MR. HEARD: Could you go back up to the top, please?

Q. (BY MR. HEARD) Do you know what these people were doing?

A. They were unloading bags of asbestos from a railcar.

Q. Right. Did you have the impression that these people being tested were mixing asbestos cement?

A. At the time?

Q. Yes, sir. They were dumping out the bags.

A. I don't see where it says that.

Q. Well, I'm asking you because you said this is a -- let's just read it. "Five laborers" --

If you don't mind, just go all the way to the top.

Let's see what this is saying. "Subject: Analysis of air samples for asbestos insulating cement dust, No. 2 Storehouse.

On the morning of November 1st, 1951, I collected air samples during the unloading of 150 bags of No. 450 Asbestos Insulating Cement at No. 2 Storehouse. The material was contained." Do you see this, "contained in paper bags"?

A. Uh-huh.

Q. And then it talks about the weather conditions. "Five laborers were used in the unloading operation. A forklift truck pallet was stacked with 20 bags and then conveyed into the storehouse" -- let's read this -- "where the pallet was stacked without removing the bags." You know what that means, don't you?

A. Sure.

Q. Okay. "Two dust samples were collected." What does that mean?

A. It means that they were contained within the bags.

Q. It was contained within the bags. And they weren't throwing the bags all over the place, right?

A. Right.

Q. So then -- anyway, so they take this dust sample that they used in this midget impinger apparatus -- by the way, midget impinger apparatus, how long has that been available to contain dust

samples?

A. How long has it been available?

Q. Yes, sir.

A. It was used from the early 1930's up until about 1970.

Q. You can get dust samples anytime you want to from the 1930's on, right?

A. It was pretty cumbersome to do it back then.

Q. Could you do it?

A. You could do it.

Q. Could you take dust samples?

A. Yes.

Q. We saw other studies where people were taking dust samples. Have you seen -- you mentioned that one time you went around with a pump --

A. Uh-huh.

Q. -- and did a dust collection?

A. Right.

Q. And this relates, I guess, to your visible -- you don't think visible dust can cause disease?

A. No, I didn't say that.

Q. Oh, you didn't say that?

A. I said in some cases it can. I used sandblasting silica as an example.

Q. Okay. How many times did you do the dust samples? As an OSHA inspector, how many times did

you physically take --

A. Probably over a thousand.

Q. Did you do it using the mechanism that you were talking about?

A. Yes.

Q. And when you collected dust samples, I think you mentioned how many hours you have to collect a dust sample for?

A. Typically we do it for the full shift if they were exposed the entire shift. Or if it was less than a full shift, from the time that they were actually being exposed.

Q. Okay. But the typical thing, we've heard this testimony already in the record, but the typical thing is if you're going to measure dust, you need an accurate count to do it for the --

A. Right. If there's a possibility of exposure. I mean, if they go into one area and handle something for an hour and then go do something completely different, there's no reason to keep sampling when you know there's going to be --

Q. Right. How many three-minute samples did you do to try to figure out what the average concentration of the day would be?

A. Three-minute samples?

Q. Yes.

A. Typically you take an eight-hour sample.

Q. That's what I thought. But that's another

subject. We've already heard about all that.

Okay. So, these people aren't taking bags of asbestos cements and dumping and mixing them?

A. No.

Q. These people are simply -- there's a forklift that's picking up a bag and taking --

A. That would be a completely different operation.

Q. Right.

A. So, when I said that was a maximum sample, it was for this particular operation.

Q. Okay. That's what I'm trying to figure out. You're saying that was a maximum sample. You're not trying to convey to the jury --

A. I'm not saying that's the most significant exposure in the refinery, no. I'm not saying that.

Q. Okay. So --

A. But the other mixing was not addressed in his report.

MR. HEARD: Now, could you go to the other one they talked about, which was Exhibit 362, Defendant's? Thank you.

Q. (BY MR. HEARD) Now, this is the exhibit where my notes say that you said this was an example of the industrial hygiene controls that were set up as of 1962 and showed how Exxon is protecting their workers. Do you remember this document?

A. I don't think that was one of the documents

we looked at earlier.

MR. HEARD: Go down.

Q. (BY MR. HEARD) Remember counsel for Exxon was asking you, it looked like he kind of read that and he was asking you questions --

A. Oh, okay. I saw the bottom part of that. Right. I pointed out five as being an example of minimizing exposure. But it was primarily a means of using insulation so you wouldn't use more than you needed to --

Q. Okay. Well, let's just read it. How about that?

A. Okay.

Q. That way the jury -- it's good to read the whole thing so we can see what it says. "The above procedures were set up," and they go through some procedures. Let's go to the top.

"The committee on maintenance materials has for the past several weeks been studying the use of insulation in the refinery. We spend over \$350,000 per year for this material. In view of this, it seems appropriate to re-emphasize some key points to remember."

Now, so far this doesn't sound like a worker protection document, does it?

A. No.

Q. All right. And then they say how to order insulation and then whether it's filled or partly

filled. And, No. 3, "Insulators" -- "Insulation will be held by the store." Go on down.

"The above procedures were set up to eliminate the need for storing insulation in the field for any length of time. The following practices will further help to conserve" -- the what?

A. "Conserve these materials."

Q. "Conserve these materials." So, they're trying to conserve the materials. They don't want the materials left out in the field because when you leave it out in the field, it degrades and all this kind of stuff is going to happen, the conditions.

A. Right.

Q. One, "The cost of insulation about equals the cost of the pipe it covers." And then we can just read. Two, "Insulation should always be stacked on end." Three, "Only one box," et cetera, et cetera.

Where -- what does this document have to do with protecting the workers from asbestos like y'all are talking about?

A. It's primarily not a document that does that, although I do point out that five is a way to minimize exposure when handling it. That's simply the only -- the only thing I would see that would be related to safety.

Q. You think right here in this document, "Insulation should be carefully cut and removed from

valves and manifolds for re-use whenever possible."
You think that what that's saying is workers ought to protect themselves from the dust hazard?

A. No. Again, this document is not primarily a safety document. But it does say they should be careful in handling it. So, I'm just saying to that extent --

Q. That's because they don't want to lose any extra insulation because it costs money.

A. I agree.

Q. That's why they're saying that.

A. I agree. I agree.

Q. When you -- you testified Exxon was the cleanest place you'd ever been in your life when you were an OSHA inspector. But you also -- did I misstate that?

A. I didn't quite say it that way.

Q. Well, the cleanest place you inspected. It sounded like a hospital to me when you talked about it.

A. Well, not a hospital.

Q. Well --

A. I said they weren't perfect. I said they did better than most.

Q. Did you ever test, do any dust samples or dust collection or test for any asbestos exposure when you went out there for OSHA at that time?

A. For OSHA?

Q. Yes, sir.

A. No.

Q. In fact, did you even go to the Baytown facility for OSHA?

A. I did once, a joint inspection with the safety officers.

Q. Joint inspection. That's right. You told us about that. That had nothing to do with asbestos exposures?

A. That's correct.

Q. Now, asbestos was a group of one of the first five things that OSHA looked at and regulated when OSHA came into existence in 1972 -- in 1971, correct?

A. Right.

Q. And y'all had a special emphasis program that y'all -- that y'all -- you were one of the inspectors for. That's what you did when you joined OSHA. You were one of those inspectors who investigated jobsites for a variety of reasons, correct?

A. Right, special emphasis program.

Q. Well, the special emphasis program was about third down on the list, wasn't it?

A. Right. After fatalities and employee complaints.

Q. Fatalities like blow-ups, explosions killing people, stuff like that was one. Employee

complaints, right?

A. Right.

Q. And then special emphasis?

A. And then after that, random generally-scheduled inspections.

Q. Scheduled inspections.

A. Four different categories, right.

Q. And what happened was the OSHA office in Houston had from down south of Houston all the way up to the Golden Triangle, correct?

A. Correct.

Q. East Texas?

A. Uh-huh.

Q. Right? And how many refineries and chemical plants and all that kind of stuff were --

A. I think I told you, several hundred.

Q. Several hundred. And y'all had how many -- when you joined the field office, how many folks, inspectors, did y'all have?

A. I think we had 12 to 15.

Q. Twelve to 15 inspectors, several hundred refineries and chemical plants. Now -- and you never took a dust sample and you've never seen the results of a dust sample taken on an insulator working at the Baytown refinery, correct?

A. At the Baytown refinery --

Q. Yes, sir.

A. -- specifically?

Q. Yes, sir. During a shutdown.

A. For that particular refinery, no.

Q. Okay. But there are other samples that I didn't hear y'all talk about. Is it your opinion that people who are exposed to pipe insulation, that that's not enough asbestos in there to cause disease? Pipe insulation?

A. For example?

Q. Well, I don't know. I've heard you say that -- well, one of the things you said is that when people are working out at the refinery and -- you were talking about Mr. Altimore and the co-workers, you were asked to assume that they said visible dust. And you said, "Well, for all I know, that dust may have been road dust." That's what you said, road dust.

A. Well, I also --

Q. Is that what you think that these people out at Baytown were being exposed to, road dust?

A. No. I also mentioned the other types of insulation like fiberglass, rock wool and mineral wool.

Q. Okay. But you said that you don't think that people like machinists -- didn't you say you don't think they have enough exposure to asbestos to cause disease back in the '40's, '50's and '60's?

A. That's my opinion.

Q. And you also said that no refinery or

chemical plant can be expected to warn people about everything that -- they only warn about the things that they need to be worried about, right?

A. That's correct.

Q. Sure. And Mr. Whiddon came and told us the same thing yesterday. He said, "We only warn people about the things they need to be warned about."

A. I agree.

Q. Okay. And in 1978, a year after my client's husband left the Exxon refinery, Mr. Whiddon went to Exxon. Do you know what he was warned about?

A. I'm sorry?

Q. Do you know what he was warned about?

A. No.

Q. Asbestos. Does that surprise you?

A. No, if he's working with it.

Q. He's a machinist. He was working with it. Have you seen Defendant's Exhibit 365? Have the lawyers for Exxon showed you that document?

A. Yes, I believe they have.

Q. May I see it so I can put it on the little machine?

A. Sure.

Q. It's 365, June 3rd, 1966. This is before your time out there by, well, ten years, just at it. Mr. Venable, medical department. "Dear Fred, the following information" -- this is from Humble Oil Refining Company. You know that to be Exxon,

correct?

A. Correct.

Q. "Dear Fred, the following information on asbestos use in Baytown is submitted for your information. We should have annual consumption figures by July 1st." Piping -- y'all went over this document, didn't you?

A. Right.

Q. So, "450 degrees Unibestos, almost pure asbestos." Let's go down to the part y'all didn't read.

"Pumps and turbines, asbestos insulating cement." Did I read that right?

A. That's correct.

Q. "Gaskets, compressed sheets, about 70 percent by weight asbestos. Millboard 100 percent asbestos, tank gaskets. Packings, asbestos-impregnated with metallic greases.

A. Correct.

Q. Now, does that indicate to you that asbestos is used in pumps and turbines, gaskets and packings?

A. Yes, it would, on the high-temperature pumps, sure.

Q. On a high-temp pump?

A. Yeah.

Q. And just like the piping, that's high-temp, right?

A. Right. Where there's high temperature, that's correct. Did you say this gentleman testified -- who does he work for?

Q. Who? Mr. Whiddon?

A. Right. Was it Exxon chemical?

Q. Exxon --

A. Exxon --

Q. -- refinery. He went into the refinery.

A. Okay. In '70 -- you said '78?

Q. '78.

A. Okay.

Q. Pretty interesting, isn't it?

A. Well --

Q. This is 1966, right? This is 12 years before Mr. Whiddon went in. And there's -- and you would agree that there are a lot of changes in work practices over the years, right, from the '40's, '50's, '60's, on up to the '80's, correct?

A. Uh-huh.

Q. Yes? You've got to -- for the record you've got to say a "yes" because we've been through this before where if a witness just nods, then what she does is she takes down the nods.

A. Sure, right. The reason I brought that up about Mr. Whiddon is that Exxon chemical had a different approach to maintenance activities. And I wanted to find out if he was a chemical employee or a refinery employee because it would have been

different.

Q. He actually became a chemical employee in March of this year, if I remember what he said correctly.

A. Okay.

Q. But he's not on tools anymore.

A. Okay. Well, if he said he received training, I have no reason to disagree with him.

Q. You think you're going to have more exposure to that kind of thing in the refinery side than the chemical side?

A. I would say generally, yes.

Q. Now, you were talking about in order to determine whether the visible dust, how much it exceeds the TLV, if it does. You want to know what the percentage of asbestos is and the product that's being manipulated in whatever form or fashion, correct?

A. Well, the primary criteria is what they're being exposed to in the air.

Q. Right.

A. It would be helpful to know the percentage in the product. But what you really care about is what they're breathing.

Q. Okay. I'm just trying to remember your testimony. I'm not trying to put words in your mouth.

A. Okay.

Q. So, that's great. Correct me if I'm wrong.

A. Right.

Q. What I heard you say was in order to determine whether visible dust, how dangerous it is or how much it exceeds the PEL, the TLV, whatever, you want to know how much -- what the percentage of asbestos is in whatever's being -- wherever the dust is coming from. Because if it's 5 percent, then that tells you one thing. But if it's 70 or 90 percent, that tells you a different thing, right?

A. Again, it's of interest to know. But the final criteria is what that person is actually breathing. And the only way to know that is to take an air sample and actually count the number of fibers that are present.

Q. Do you have any idea what the most popular brand of pipe insulation was at Exxon during the 1960's?

A. I haven't had anybody tell me that specifically, but from reading some of these documents I believe it was probably Unibestos.

Q. Unibestos, yes, sir.

A. Right.

Q. I think you have a correct recollection of that. In fact, we have documents the jury has already seen where even in one given year they ordered miles and miles of that pipe insulation and miles of --

A. I've seen a document -- well, I don't know if it was miles, but it was a lot.

Q. Well, it was miles. Do you want me to show it to you?

A. I've seen the document.

Q. Okay. You'll take my word for it?

A. I haven't done the math.

Q. Well, 31,375 feet of Pittsburgh-Corning Unibestos in 1965 alone, right?

A. Right.

Q. All right. And you understand Unibestos was made by a company called Pittsburgh-Corning Corporation, correct?

A. That's what it indicates right here.

Q. Well, you know that because you're an industrial hygienist, right?

A. I'm not an expert on all the various types of asbestos manufacturers. But seeing it here, yeah, I agree with it.

Q. You're certainly an expert on the most dangerous kinds, aren't you?

A. No, I wouldn't say so.

Q. Well, so, you just don't have any opinion as to whether Unibestos contains 12 to 14 times the amount of asbestos as a regular calcium silicate like Thermobestos or Kaylo?

A. I wouldn't disagree with that.

Q. Okay. And those products contain

chrysotile. You understand that to be true, the calcium silica products like Kaylo and Thermobestos?

A. Correct.

Q. And Unibestos is different because it contains an amphibole fiber, correct?

A. Right, amosite.

Q. Amosite.

A. Uh-huh.

Q. Okay. And did you know that Exxon knew while they were still using the product as late as 1971, that Unibestos was the worst product on the market from the dust angle?

MR. HEARD: Could you put up 22, please?

A. (CONTINUING) Yeah, I've seen this document. This was just before OSHA issued their asbestos regulation.

Q. (BY MR. HEARD) Yes, sir.

A. And they were critiquing the program they had in place at the time --

Q. Right.

A. -- to determine ways they could improve the program. And this is basically a document saying, hey, we're using Unibestos. We need to try to replace it with something that's less hazardous. In fact, it was going off the market at that time.

Q. I'm sorry. You know, I'm just one of those people who just reads the words on a document and

kind of takes it for what it says. Where does it say we're trying to go to a less hazardous material?

A. Well --

Q. Where does it say we're trying to protect --

A. It says, "We've been using Unibestos, the worst from the dust angle, but it's going off the market. Then I believe we will be using the Johns-Manville Kaylo, which is better." So, to me, that indicates they're trying to minimize the hazard.

Q. Sir, do you know how long they've been using Unibestos by 1971? Do you know that they were using Unibestos in the 1950's?

A. Probably before that.

Q. Do you think that they are -- in this document that says, "Yes, there are problems and no, we don't comply," do you think they are saying, "We're going to stop using Unibestos because it creates too much dust. Let's protect the worker and go to Johns-Manville and Kaylo"? Is that what they're saying?

A. I'm sorry. Repeat that.

Q. Do you think that they're saying in this document that we're going to stop using Unibestos because it's the most dangerous, hazardous, dustiest material out there. So, we need to stop using it. And let's go to Johns-Manville and Kaylo to protect the worker. Is that what your testimony is?

A. I'd say, yes. And the fact that -- apparently the fact that it was hazardous was that it was being taken off the market by the manufacturer.

Q. They're going to stop using it because they are taking it off the market?

A. Well, if you read the last -- "which is somewhat better."

Q. Yeah. So you take that to mean that even if they weren't taking Unibestos off the market, they were going to stop using it anyway because these other ones are safer. That's how you read that?

A. Yeah, I would.

Q. Do you know that they made a conscious decision to use Unibestos despite it was the dustiest, most hazardous material on the market? Do you know why?

A. No.

Q. Because it was harder and it didn't break up as much as the others. That's why.

A. How do we know that?

Q. Have you seen that?

A. No. But certainly no one is going to argue that there was not asbestos insulation used. But just having it doesn't necessarily mean that there's an exposure. We've gone through that. It's dose.

Q. Do you think a responsible company who knows that a product is more hazardous, is dustier and is more dangerous than all the other products, do

you think that that company should have stopped using that product long before it went off the market?

A. Well, I think we have documents showing that we had a program in place to take asbestos-containing insulation away as soon as something safer came along. And I think that reflects that.

Q. Could you show me the document, please?

A. We just went over it. We just submitted it into the record.

Q. Do you know which one it was?

A. It's a 1976 document.

Q. Oh, 1976. So, 1976, y'all were going to start trying to replace asbestos-containing materials with non-asbestos-containing materials?

A. It actually started in '72.

Q. So, it started in '72. But you know that they couldn't do anything until -- they didn't start replacing anything until 1976 --

MR. RADCLIFFE: Objection.

Q. (BY MR. HEARD) -- is that correct?

A. No.

MR. RADCLIFFE: Objection --

Q. (BY MR. HEARD) When did they first start replacing the asbestos materials with non-asbestos --

A. In '72.

Q. Okay. And is that the one that says "Asbestos Substitutes," the document?

A. No. That's a '76 one. There's actually an engineering standard.

Q. Where is that substitutes document?

A. That is a '76 document.

Q. Right here. 1976.

A. Uh-huh.

Q. Okay. Here, I can give you a copy of that. It says, "In view of the requirements of the recently issued Exxon Asbestos Control Policy concerning available substitutes for asbestos-containing insulating materials, a survey has been made to update our list of asbestos-free substitutes. Initially only suppliers in the U.S. and U.K. have been surveyed." So, what they're doing is they're surveying suppliers of asbestos insulation to see what's available to purchase to replace asbestos because, as Mr. Whiddon said, even to this day there's still asbestos out there. And when you take it out, you got to replace it with something that's asbestos-free, right?

A. Right.

Q. Okay. So, what they're doing here is they are trying to compose a list of products that are available from suppliers so they can go to those suppliers and see what the best deal is and what the best substitute would be?

A. Sure.

Q. And the date of the document is September

10th, 1976?

A. Right. And the key word here is to update the list of asbestos-free substitutes.

Q. Okay.

A. The original program predated '76.

Q. I understand. So, they started the program in 1972, right?

A. Correct.

Q. Were asbestos substitutes available prior to 1972? Excuse me. That was a terribly worded question.

Were insulation products that did not contain asbestos available commercially prior to 1972?

A. To my knowledge, they weren't for the high-temperature applications where asbestos insulation was typically used.

Q. Right. And you understand that when you're doing a shutdown, the whole goal of a shutdown as far as a worker is concerned is what? You know what it is, don't you?

A. Well, as far as a worker is concerned?

Q. Yes, sir.

A. Get the job done as quickly as possible and safely as possible.

Q. There you go. And really one of the keys to a shutdown is we got to get this thing back up and running, right?

A. Right. But you got to remember one thing. Safety is the ultimate concern with any worker --

Q. I'm not saying sacrifice safety. I'm not saying sacrifice safety.

A. Okay. Within that constraint, I agree.

Q. Right. And if the workers who performed the shutdown and working around the insulators and everybody else, if they all appreciate the hazard that is caused by the asbestos dust that's being released, then they're going to take steps to work safely and protect themselves from that hazard, correct, just like you just alluded to?

A. I wouldn't disagree with that, no.

Q. And that's a good thing, correct?

A. Sure.

Q. And that's why, as you said earlier, it is so important to give those workers a -- as Mr. Bonsib said in 1937, a sane appreciation of the risk, right?

MR. RADCLIFFE: I object.

MR. HEARD: Is that -- wrong document?

MR. RADCLIFFE: The wrong document.

Q. (BY MR. HEARD) Oh, Merewether and Price in 1930. Sorry. Seven years earlier. Mr. Bonsib did not say that. Dr. Merewether. Are you familiar with that statement, "Sane appreciation of the risk"?

A. I'm not -- I'm not going to disagree with that approach.

Q. You agree --

A. Uh-huh.

Q. -- that it is important and it is vital to worker safety to give the workers a sane appreciation of the risk, an understanding of the risks that they may be involved in in their work, right?

A. I wouldn't disagree with that at all, no.

Q. Now, do you remember the documents that you were showed about E. Gray that were up here? I forget which exhibit number, but remember there was a handwritten document, I think, on E. Gray and then some other documents the Defendants showed you?

A. It sounds familiar. I'm not exactly sure.

Q. It's an exhibit somewhere. Mr. Radcliffe was asking you questions about Mr. Gray and they had done some studies -- a study on how much exposure Mr. Gray had. And I think it was at the Baton Rouge facility. He came up to you and you said, "Yeah, that's at Baton Rouge"?

A. Okay. I remember, sure.

Q. Okay. Do you remember what his occupation was, Mr. Gray?

A. I don't.

Q. Well, I don't either, but we're going to find it here in just a minute.

And the point was that Mr. Gray, somebody had actually gone out and tested Mr. Gray's -- with what his occupation, whatever it was, and they found that his exposures were lower than the TLV, right?

Do you remember that?

A. I believe that's what it showed, yes.

Q. Yeah, okay.

MR. HEARD: Is it up here?

MR. RADCLIFFE: Yeah.

MR. HEARD: What number is it? I know there's some handwritten documents. In any event, I don't need the -- here we go.

Q. (BY MR. HEARD) Oh, he was a laborer, I think, in the storehouse. Does that sound about right, 27 years experience in the storehouse?

A. Okay.

Q. So, they went out and tested him, how much exposure he had. And they found that his exposure didn't exceed the TLV, right? Do you remember that?

A. I believe I do.

Q. Okay. Did you know that he had an abnormal chest x-ray?

A. Yes. I believe that was the reason that the medical department asked Fred Venable, the industrial hygienist, to go test and make sure that he wasn't being unprotected.

Q. So, he had a chest x-ray that was suspicious of a lung irritant, right?

A. I believe that's what it says.

Q. And his exposures to asbestos were below the PEL, right?

A. I believe so.

Q. And to be fair, we don't know what else that man did. We don't know if he was a smoker or how much he smoked if he smoked or what, right?

A. Right. We don't know what else he might have been exposed to. Sulfur dioxide is in a refinery. That's a lung irritant so --

Q. Fair enough. All right. Safety program, here's what this jury needs to hear, if I may.

MR. HEARD: Is this mine?

MR. RADCLIFFE: Yes, just use that page.

Q. (BY MR. HEARD) Back here you said one of the keys -- I don't want to miswrite it. Okay. Well, I'll guess at it then.

The key to any sound industrial hygiene program is worker -- you said worker information, or what were your words you used?

A. Training.

Q. Worker training, one of the keys. Worker training and warnings, right? Those are two -- not the key, but two of the factors?

A. Sure.

Q. Okay. Now, if I'm thinking about this case right, I would think that one of the things that anyone judging it would want to see are the documents that Exxon gave to their employees concerning their asbestos protection program during the 1930's with the opinion of Mr. Bonsib's very thorough worker

protection report, the 1940's, the 1950's, the 1960's. And then in this case, 1971 to 1972, isn't that when Mr. Altimore went to work with Mr. Stovall in the shop? I think the testimony, if I remember this correctly, is around 1972 --

A. Uh-huh.

Q. -- where Mr. Stovall called Mr. Altimore in to help him at the chemical plant?

A. Right.

Q. Okay. So now, as far as the asbestos protection program that gives the worker -- you know, that gives the workers -- the documents that give workers knowledge, okay, we will just put it that way for now, in the 1930's, what documents can we go to to look at to see what it was that Exxon was giving to the workers as part of their asbestos protection program?

A. I haven't seen anything specific to the 1930's.

Q. Okay.

A. But I have seen something from the 1950's. And obviously we have programs from the 1970's.

Q. Okay.

A. Part of that again goes back to this whole thing, you know, that's a long time ago. There are record retention programs that after a certain date unfortunately things aren't kept. And we're fortunate that we have all those documents from Fred

Venable from Baton Rouge. As I understand it, those are documents that he actually personally had in his possession.

Q. He personally kept?

A. Correct. I'm not making any excuses for not having just reams and reams of training program data, but I'm just trying to explain what -- give you an explanation why there may not be a lot of material out there.

Q. Why are you doing that? Why are you giving that explanation? I'm just curious.

A. Because that's just the way it is.

MR. RADCLIFFE: It's because Mr. Heard asked him a question. That's why he was answering the question.

MR. HEARD: Okay. I didn't ask him that question. That's why I'm asking the -- anyway he --

MR. RADCLIFFE: Your Honor, he did ask him what information was available from the 1930's. He said, "What do you have from the 1930's," and he answered.

Q. (BY MR. HEARD) Actually, you have the Bonsib Report, don't you, 1937?

A. Right. But you were asking employee specific.

Q. Right. Something that would go to the workers?

A. Right.

Q. And Mr. Hammond, I believe, has testified before. Have you read his depositions?

A. I have.

Q. Okay. And you'll remember from his -- one of his depositions, I may have to get it, that that was a report -- did that report -- he went to the library to go get that report, the Exxon Medical Library, I think. When he came on board for Exxon, he had heard about it and he went to the Exxon Medical Library and got that report. Does that sound right?

A. I don't specifically remember that, but I won't disagree with you.

Q. All right. Well, in any event, let's get back to this little chart. Okay? In the 1940's, I believe you said there was -- there's no documents, right?

A. That I have seen. That doesn't mean they didn't exist.

Q. The 1950's, you said there are some documents?

A. Yeah. In fact, one was presented as part of the deposition that I gave to you before.

Q. And which one would that be?

A. It had to do with respiratory protection --

MR. RADCLIFFE: Here it is.

A. (CONTINUING) -- with toxic materials.

MR. HEARD: Thanks.

Q. (BY MR. HEARD) Is this a copy of that?
May I show it to you?

A. Yes. Wait. Let me make sure. Yes, it is.

Q. Okay. So, in the 1950's, we're going to say Exhibit 276. So, they kept their safety programs from the 1950's, right?

A. That one apparently survived somehow.

Q. They even kept them from the 1940's, didn't they?

A. I don't know. I haven't seen anything specifically related to asbestos training.

Q. This is a deposition from your exhibit. You have seen this one. This is Larson No. 3. It's called "Accident Prevention Manual" from 1940-what?

A. Right. But this -- I think I mentioned in my deposition, this had to do with respiratory protection. And it did relate to asbestos. But I wouldn't consider that training. That's protective equipment.

Q. Okay. So, Defendant's 276, "Safety Highlights," right?

A. Yes.

Q. Okay. So, that's from the 1950's. And this would be part of, as we discussed in your deposition, part of the core safety program for Exxon in its dealings with its workers about, among other things, asbestos disease protection?

A. I agree with that, uh-huh

Q. All right. In the 19 -- that's the only one you know of in the 1950's, right?

A. Correct.

Q. In the 1960's, there was another one, wasn't there? Do you know of any?

A. I'm sure there was an accident prevention manual that talks about respiratory protection for asbestos, but I wouldn't necessarily call that a training program per se.

MR. HEARD: Your Honor, highly peculiar as it may sound, I'm offering Defendant's Exhibit 276 into evidence.

I'll be happy to put a Plaintiff's sticker on it if you want me to.

MR. RADCLIFFE: It would warm my heart if we had a Plaintiff's sticker on it. But no. No objection.

THE COURT: Defendant's 376 is admitted --

MR. HEARD: It's 276.

THE COURT: I'm sorry, 276.

Q. (BY MR. HEARD) From the 1960's can you think of any other asbestos protection program that -- in the documents that gives workers -- to the workers?

A. You know, what I can tell you is that having discussions with Jim Hammond, I think in his

deposition it's even noted, that he was personally responsible for developing programs, including training on asbestos.

Q. Right.

A. Now, have I personally seen those? I haven't.

Q. Right. Well, you know, he was deposed. He had a few depositions taken. You know that, don't you?

A. I know that, yes, sir.

Q. Okay. So, we're trying to find out where all these documents are. And so, we got one here from the 1950's. We don't have anything in the 30's or the '40's. We got one from the '50's. Are you aware of any documents that -- from the 1960's that would give us Exxon's asbestos protection program for their workers, where the workers are informed about it? The workers exposed to asbestos.

A. I would say just, to me, it makes sense that if there was a program in the 1950's, there would be one in the 1960's. I haven't seen it.

Q. Do you think these things are safety highlights, do you think they are changed every year or do you think that it pretty much just stays the same?

A. I would think that they change over time.

Q. Well, since we have that, we'll say you can't think of anything new in the 1960's. All

right? Is that fair? I wouldn't say nothing. I'll just say nothing new, okay, that you know of.

A. Okay.

Q. And maybe Exxon can then -- maybe -- that's 1960's. 1971 to 1972, now here we start getting into it, don't we, right?

A. Sure.

Q. And I think y'all were talking about a document earlier that referenced to asbestos handling guidelines of Humble Oil and Refining Company, correct?

A. Correct.

Q. Now, what I want to do with this document is go back and talk about, I think, if I can piece -- we can piece this together for the jury, how this document came about. Okay?

A. All right.

Q. And the first thing I would do is if I could, I'll hand you Plaintiff's Exhibit No. 24. I'm going to let you look at that while I remind the jury of the asbestos handling guidelines.

MR. HEARD: It's a Defense exhibit.

Q. (BY MR. HEARD) I'm going to remind the jury what we're talking about while you're kind of looking over that.

Do you know what exhibit number it is?

MR. RADCLIFFE: 277.

MR. HEARD: Try 277.

We've got everything all junked over here. We'll fix it after the day is done.

MR. RADCLIFFE: It should be there.

MR. HEARD: I'm sure it is.

MR. RADCLIFFE: 337.

MR. HEARD: Defense 337. So, Keith, we can remind the jury what this is?

Q. (BY MR. HEARD) "Asbestos Handling Guidelines," do you see this?

A. Yes.

Q. Humble Oil and Refining Company, Enjay Chemical Company. What's Enjay Chemical?

A. That's today Exxon Chemical Company. There was a name change early on. They were called Enjay, but it's basically Exxon's chemical company.

Q. And the report here is by Mr. Hammond, correct?

A. Yes.

Q. Assisted by the industrial hygiene staff at Exxon, correct?

A. Correct.

Q. And the date is September 1st, 1972?

A. Yes.

Q. This is Defense Exhibit No. 337, right?

A. I believe it is.

Q. Okay. Now, y'all talked about these are guidelines that Mr. Hammond was reporting on September 1st, 1972, right?

A. Correct.

Q. Now I have -- Mr. Hammond -- Mr. Venable had a hand in this, correct?

A. Yes. I believe most of the staff did.

MR. HEARD: Could you go to Exhibit No. 24, please?

Q. (BY MR. HEARD) And several months beforehand, before September of 1972 in March, about six months or so earlier, Mr. Venable wrote to Mr. Hammond in an Exxon memorandum dated March 9th, 1972, correct?

A. Yes.

Q. And the subject was, "Asbestos Hazard Control Program." Did I read that right?

A. Correct.

Q. This is Plaintiff's Exhibit 24. Have you seen this document before?

A. Yes.

MR. HEARD: I've got to get some water or else my throat is just going to give out on me. Would you like any water? Are you talking a lot, too?

THE WITNESS: I'm fine. Thank you.

Q. (BY MR. HEARD) Now, this is, of course, after OSHA has come out, right?

A. Correct.

Q. And at this time you're working for OSHA? Are you working there in March?

A. The following year.

Q. 1973?

A. '73.

Q. I'm sorry. So, you're about to get out of school?

A. Right.

Q. You're still at the University of Texas?

A. Correct.

Q. "The U.S. Department of Labor's Advisory Committee on Asbestos has made recommendations to the Secretary of Labor on many phases of the proposed asbestos hazard control program."

They're talking about OSHA's proposed program --

A. Correct.

Q. -- correct? "Those items included in the report of February 23rd, 1972, cover monitoring and records. Later reports will cover final recommendations of the advisory committee on the subject of asbestos standards," right?

A. Correct.

Q. "At this time we are not absolutely certain as to the scope of the committee's final recommendations to the Secretary of Labor" -- who was on that committee by the way? Do you know?

A. I do not know.

Q. Were members of industry on the committee or was it just Congressmen and people like that?

A. I do not know.

Q. "Nor can we be certain as to which of these specific recommendations will be adopted by the Secretary. There is good indication, however, that most of the recommendations of the Committee will be adopted without change." They are talking about asbestos, right?

A. Correct.

Q. "A minority of the Committee has objected to certain requirements concerning details of sampling and frequency of monitoring and the requirement for protective clothing."

Now, why would somebody object to the requiring of protective clothing? You got any idea on that?

A. I don't know what he was getting at there. Maybe it was the type of protective clothing. I can't really answer that question.

Q. No, sir. It's the requirement for protective clothing. "When dust concentrations exceed ten times, the limit has been termed unnecessarily restrictive by two members of the five-man Committee." They're not saying clothes are restrictive like preventing movement. They're saying requiring a company to provide people with clothes is unnecessarily restrictive, right?

A. I don't know about that.

Q. "However, the committee unanimously agreed

on the recommendations for respiratory protection and two members also called for a registration presumably a program of registering all asbestos users."

MR. HEARD: Go on down. This is Exhibit 24, Plaintiff's Exhibit 24.

Q. (BY MR. HEARD) 1972, March. Remember that? Right? The date of the document?

A. Yes.

Q. It's from Mr. Venable --

A. Yes, okay, sure.

Q. -- to Mr. Hammond, Exxon --

A. Yeah.

Q. -- 1972. "It would appear desirable, however, for Humble to initiate a program for controlling asbestos dust exposures without delay." What does the word "initiate" mean? Does it mean end, start?

A. I don't know how they meant that. Do they mean a compliance program? That's what I would assume it meant since this is -- they're referring to an OSHA compliance document.

Q. No, sir. What they're referring to is they're referring to beginning, starting, initiating in 1972 a program for controlling asbestos dust exposures without delay, emphasizing compliance with certain recommendations which appear to be uncontroverted.

"This program should employ a step-wise

approach depending upon the effective dates specified by the U.S. Department of Labor, work toward a complete company-wide program." "Work toward a complete company-wide program."

"Three priority classifications are suggested in the outline below." Let's look at it.

Priority No. 1: "Eliminate or use substitutes for all asbestos-containing materials." That's what you were telling us about earlier, right?

A. Uh-huh.

Q. That's a good thing to do if a substitute's available?

A. Sure.

Q. Okay. Now, this is the document that proves that what you were saying to the jury earlier is true?

A. Sure.

Q. All right. See, I'm helping you. I'm showing you the document that proves that what you said is true.

A. Everything I say is true.

Q. "Eliminate or use substitutes for all asbestos-containing material as possible."

MR. HEARD: Next page, please.

Q. (BY MR. HEARD) 1972, "Identify all materials purchased or used which contain more than 1 percent asbestos."

Number 3: "Require immediate use of

approved single use or re-usable filter respirators for all asbestos work pending development and acquisition of more acceptable supplied air respirators."

So, this says in 1972 that the program that we need to initiate without delay should require immediate use of approved single use or re-usable filter respirators. That's one of the things that OSHA was going to require everybody to do, right?

A. I believe so.

Q. Yeah. Number 4: "Immediately initiate clean-up operations around asbestos work. Employ wet clean-up and prompt removal of asbestos scrap to minimize attrition from traffic."

So, here we are in 1972 and they think it's a good idea to initiate clean-up operations around asbestos and also employ wet clean-up. That was something OSHA was going to require people to do around asbestos, right?

A. Correct.

Q. Number 5: This is something you said would be a great idea, warnings. "Rope off or restrict areas where asbestos dust is generated. Use signs stating, 'Keep out' until final wording of caution signs is issued by the U.S.D.L."

It doesn't sound like they had any signs or wet clean-up or required respirators prior to this memo being written, does it, sir?

A. I don't think with that specific wording, OSHA had specific wording that they came out within their standard. And at that time they didn't know what that wording was.

Q. So my question is: Reading this document in 1972 from Mr. Venable to Mr. Hammond, it doesn't sound like they've been doing these things, does it?

A. Well, I disagree with you. It says they're trying to standardize a company-wide program. Okay? So, they're coming up with their own language for the signs until it's known what OSHA specifically requires as part of the OSHA -- as part of the asbestos regulation.

Q. Okay. I hear you.

MR. HEARD: Go back to the first page real quick so we can remind everybody what it says before we go to Priority No. II.

A. (CONTINUING) By the way, can you show the title again?

Q. (BY MR. HEARD) Yes, I can.

MR. HEARD: Go to the top.

Q. (BY MR. HEARD) "Mr. J.W. Hammond, Asbestos Hazard Control Program," that's the subject.

A. Okay.

Q. "Subject: Asbestos Hazard Control Program. Date: March 9th, 1972."

A. Okay.

MR. HEARD: Now, go down to the bottom.

Q. (BY MR. HEARD) "It would appear desirable for Humble to initiate a program for controlling asbestos."

"Three priority classifications are suggested and outlined below."

MR. HEARD: Let's go to Priority No. II.

Q. (BY MR. HEARD) "Evaluate typical jobs involving the use of asbestos. Obtain representative fiber counts." That's dust monitoring, right?

A. Correct.

Q. "For such operations as rip-off." That's insulating, right? That's what insulators do?

A. Removing insulation, correct.

Q. Yes, sir. "Cement mixing and installation of piping insulation, hand cutting and sawing, warehouse handling of asbestos material and asbestos clean-up operations." Did I read that correctly?

A. Correct.

Q. Number 5 in the priority field: "Obtain pulmonary function studies and chest x-rays on all insulators and other employees exposed to asbestos." Did I read that correctly?

A. That's correct.

Q. That's a second priority?

A. Correct.

Q. Priority 3: "Establish a regular monitoring program for all operations involved in

asbestos. Obtain breathing zone samples according to the schedule of the U.S. Department of Labor. Obtain samples on all representative jobs from representative work groups."

Number 2 under the third priority: "Reduce asbestos dust levels by all feasible engineering means. Provide adequate dust collection and air cleaning facilities for all shop machinery working asbestos materials."

Three: "Obtain and post approved warning signs for asbestos areas."

Sir, every single one of these things that's mentioned in this memo of 1972 is something that was mentioned in 1937 by Mr. Bonsib as something Exxon ought to be doing, isn't it?

A. I believe it was what Exxon was doing at the time.

Q. My question is, it was mentioned in 1937?

A. Right.

Q. In Mr. Bonsib -- all this stuff that we just went over?

A. Sure. And according to Jim Hammond's deposition, there was a program developed and implemented that spanned 1937 to 1972. I believe what this document represents is Exxon's attempt to standardize their program with the proposed OSHA asbestos regulation.

Q. I understand what your interpretation is,

but I just want to get back to reading --

A. For example -- can I give you an example as far as medical surveillance?

Q. Sure.

A. We know -- we have documentation that we've already seen today that they had already instituted x-rays and pulmonary function, not only for insulators, but the entire company. They're just restating what OSHA had in their proposal.

Q. I understand your explanation, but what I'm asking you is, right now, is everything that we just talked about is something that in 1937 Mr. Bonsib said, "Exxon, you should do this," correct?

A. Correct.

Q. Now, in addition to that, here's something that not only Mr. Bonsib said in 1937, but you told us today and Mr. Hammond told us yesterday ought to have been done since the 1930's. "Some education and training in the proper procedures for dust sampling may be desirable in a case of safety personnel and remote operations where monthly monitoring is required. We should not overlook the fact that employees must be informed of the asbestos health problem, their responsibilities for good work practices and the need for their cooperation in every operation involving asbestos dust exposure."

That's a good important thing, right?

A. Certainly.

Q. And that's what in 1972 Mr. Venable is telling Mr. Hammond we need to do at Exxon. That's what he's saying right there. I didn't read anything incorrectly, did I?

A. Well, maybe I'm misinterpreting this, but I'm saying all those elements should be in the standardized OSHA asbestos program.

Q. Right.

A. And, in fact, it was.

Q. Right. My point exactly. So, it took an OSHA regulation to get Exxon to -- finally we have a document. We have something besides testimony of a man who was in charge of carrying out the program that contradicts every worker that we've talked to at Exxon. And we have something in writing in 1972 saying we need to do all these things that from 1937 the industrial hygienist said we had to do. That's what this is saying. I'm not interpreting. I'm just reading what the words say.

MR. RADCLIFFE: Your Honor, I object. I think Mr. Heard is getting to the point where he's asking about six questions at once. So, this is compound and cannot be answered.

MR. HEARD: Okay. I will re-ask the question, Judge.

Q. (BY MR. HEARD) Did I read the words correctly? The words on the piece of paper, did I read the words correctly?

A. I think you read them. I think it's subject to interpretation.

Q. Okay. And the interpretation you take is to choose to believe the industrial hygienists and the management of Exxon instead of all the workers who are out in the field working who have come to testify under sworn oath in this case?

A. Well, I can't say that. But I'm just saying from some of the historical documents we've seen today like from Fred Venable, the work that he did in the '50's, in the '60's and the '70's, that this program was essentially already in place in terms of medical surveillance, in terms of going out and monitoring exposures, deciding who was being potentially exposed to asbestos and requiring controls to be implemented, to require the proper respiratory protection to be used. I mean, it's documented. Thank goodness that Fred Venable kept all those documents. You're saying that Exxon waited until '72 to invent any kind of a program at all. I don't think that's consistent with the facts.

Q. Mr. Larson, we're searching for the program. Don't you understand? Because none of the workers have ever seen it or heard of it. Do you understand? That's why we're searching for the program. And all we have right now is your testimony and Mr. Hammond, who is the industrial hygienist from Exxon and an Exxon employee, all of y'all who are

being paid by Exxon Corporation. And the only people who aren't being paid by anybody for anything have come in and said they've never heard of any of this stuff out there. And the people who have come in here haven't --

MR. RADCLIFFE: Your Honor, I object --

Q. (BY MR. HEARD) -- stepped foot on the property --

MR. RADCLIFFE: I object.

Q. (BY MR. HEARD) -- while my client worked there.

MR. RADCLIFFE: I object. This is not a question.

THE COURT: Sustained.

MR. RADCLIFFE: Move to strike.

THE COURT: Overruled.

MR. HEARD: Plaintiff's Exhibit 28, please.

Q. (BY MR. HEARD) You've seen this document before, have you not?

A. Yes, I have, uh-huh.

Q. You were talking about dust levels earlier. Do you know how to convert millions of particles per cubic foot into fibers per C.C.?

A. Generally, yes, I can.

Q. Okay. I don't. Can you teach me, teach us all? Let's say I have 5 million particles per cubic foot. 5 million particles per cubic foot, right?

A. Uh-huh.

Q. Now, how would I or how would we all convert that into fibers per C.C.?

A. I believe that would be something on a range of 24.

Q. Twenty-four fibers per C.C.?

A. Uh-huh.

Q. Does it go up? Does the relationship here, that's like the number here is five times this number. Does it continue to escalate? I mean, is there a synergistic kind of effect that occurs as this number rises? Or if this was ten --

A. No. It's a one-to-one relationship.

Q. Okay. So, if this was ten, that would be around 50, something like that?

A. I believe, yeah.

Q. I know that it's an example. But it would be a little bit lower than 50?

A. Forty-eight.

Q. Okay. Now, in 1974, we do have some air samples that are being collected apparently under Mr. Venable, right?

A. Yeah.

Q. Okay. And he did this in October, 1974, I suppose probably in Baton Rouge?

A. I would believe so.

Q. And the samples that he collected were from what? Do you remember? From insulators, wasn't it?

A. Insulators, yes.

Q. Yes, sir. And the first sample number he took here, sample times 16 minutes, then four minutes, then three minutes, 15.78 and 58 fibers per C.C., right?

A. Correct.

Q. That was the result adding three, four and 16?

A. Correct.

MR. HEARD: Go down, please.

Q. (BY MR. HEARD) And on Samples 4 and 5, while a contractor's employee removed insulating from a reactor vessel, the numbers for three minutes is two -- three minutes of work of testing -- tested for 255 fibers per C.C. and 2 1/2 minutes tested for 203 fibers per C.C. on Sample No. 5, right?

A. Correct.

Q. Now, clearly these are levels that if you divided that by five, you get 40, right, 40 million particles per cubic foot?

A. Yes, correct.

Q. Now, of course, this is only for 2.5 five minutes?

A. Correct.

Q. So, but if you have levels at that -- levels of exposure, that person needs to be wearing a respirator, correct?

A. I would say yes.

Q. Sure.

A. I think it does say -- I don't know what it says --

Q. It does say they're wearing a respirator in this deal. When he went out and tested, he put a respirator on the guy.

A. Air-supplied respirator.

Q. No -- well --

A. I'm sorry. No. I'm sorry. Respirator.

Q. It's a Welsh.

A. Correct.

Q. So, they put a respirator on this gentleman and then they tested him. He was an insulator. Now, and that clearly at those levels, at those insulating levels that they found to exist in 1974, you've got to have some respiratory protection, right?

A. I would agree with that.

Q. And you would certainly hope that the refinery is engaging in all of the other industrial hygiene controls you talked about as far as getting the dust out, exhaust, isolation, warning, making sure the worker appreciates the risk, et cetera, et cetera?

A. Wherever possible, yes. Respirators are a last resort.

Q. Could you take out that document from 1937 and go to page 27?

This is still in 5.

Did you know there was a section in this document that specifically looked at insulating operations?

A. Yes, I did.

Q. I thought I heard y'all say earlier that people in refineries or people working around insulators don't get high exposures. Did I misunderstand you?

A. I think we expressed it in terms of high dose.

Q. They don't get high dose. That's right. Insulating operations, 1937, Exxon. "Insulation plays an important part in the processing of petroleum products." Did I read that correctly?

A. Correct.

Q. Okay. And then there's a whole -- we're not going to go there, the whole thing. But it talks about the different kind of mixtures. And this is actually talking about 15 percent asbestos. This is more of that calcium silicate type.

A. Correct.

Q. Now, the Unibestos had an order of five or six times that amount of asbestos in it, right, based on the document that you saw?

A. Okay.

Q. And it says here that goggles are sometimes provided and occasionally MSA Comfo Respirators. But this equipment is not used as much as it should be,

right? Did I read that correctly?

A. That's correct.

MR. HEARD: Go down to B.

A. (CONTINUING) Just one point, if you could?

Q. (BY MR. HEARD) Point out whatever you would like to point out.

A. Okay. I think it would be helpful to note that he says that these people are only exposed intermittently. It's not full-time. It's up in the next paragraph above that.

MR. HEARD: Okay. Go back up there.

Q. (BY MR. HEARD) Where would you like? Where is it?

A. Let's see --

Q. Let's just read it so the jury understands what this is all about.

A. Beginning, "They worked nine out of 14 eight-hour shifts in gangs of from two to six men."

Q. Here. I'm just going to read it so the jury understands what we're talking about.

A. Okay.

Q. "The two types of insulating material that is frequently used are Sponge Felt and a mixture of 85 percent magnesia and 15 percent asbestos. Rock wool is also used considerably to a lesser degree. In the ordinary commercial form, rock wool is used at our refineries, does not prevent a dust hazard." You agree with that, don't you?

A. I do.

Q. "It is also used for house insulation and is available in small nodules," et cetera, et cetera. "The most dust comes from dismantling" -- here I am right here. "The most dust comes from dismantling old insulation and grinding scrap material for use as plaster or" what's that?

A. Ganister.

Q. "The average service of men engaged in insulating operations is about 15 years. Most of these men have been transferred from the Common Labor Department." That means they were laborers?

A. Initially, yes.

Q. "They worked nine out of 14 eight-hour shifts in gangs of from two to six men and are actually exposed to dust for less than 60 percent of their working time. Goggles are sometimes provided and occasionally MSA Comfo Respirators, but this equipment is not used much" -- "it is not used as much as it should be. Generally speaking, about 85 percent of their work is with Sponge Felt and 15," et cetera et cetera.

All right. "At one larger southern refinery about 300,000 square feet of Sponge Felt and 50,000 feet of the other handled a year" --

MR. HEARD: Go down to B, please.

Q. (BY MR. HEARD) So, now we kind of know what we're talking about. They are kind of

teaching -- Bonsib is kind of teaching the industrial hygiene folks out at Exxon about what insulators do.

Now here, beginning right here, "What are the Principal Insulating Operations and How Much Dust is Produced During Such Operations? There is, of course, a widespread variation in the amount of insulation work and the amount of dust produced. A few examples, however, will give a good general idea."

"Insulating" --

MR. HEARD: Would you highlight that?

Q. (BY MR. HEARD) "Insulating 12-inch Steam Lines: Six by 18 inch with one and a half blocks of 85 percent magnesia are tied on the a steam line with 14-gauge galvanized wire and covered with roofing paper to make it waterproof. Oftentimes this work is performed on scaffolds 12 to 15 feet above the ground with men lying on their backs around the line part of the time."

You've seen that before? Have you seen work conditions like that?

A. I haven't actually seen that operation, but I have read this document.

Q. Okay. "Considerable dust as high as 18,124,800 particles of less than ten microns per cubic foot results from tapping the blocks into place." You know what that is, don't you, tapping the blocks in place?

A. I'm generally familiar.

Q. Do you know what they do? Do you know how they do that?

A. Not exactly, no.

Q. They're not sawing it at this point in time when they're tapping it in place. Would you agree with that?

A. Yes.

Q. "And those levels for these insulators are 18 million" -- let's just say 18 million particles. And then the average is somewhere in there. The average concentration is 6.8 million. This is information that they are -- Exxon knows about in 1937, right?

A. That's correct.

Q. With respect to insulation workers, right?

A. Right, uh-huh.

Q. Yes?

A. Yes.

Q. In a refinery, right?

A. Yes.

Q. Okay. Then the next one they -- he talks about is?

MR. HEARD: Let's go down to Insulating Cracking Coil Hot Oil Lines. And here they describe what happens. "Insulating with two-inch asbestos tubing held in place by fine copper wire. Sections of the tubing are cut. This produces 7.78 particles

of dust, with an average of 3.3." So 7.78 --

A. I need to point out something, too, here.

Q. The ten?

A. The particle size distribution of the particles --

Q. Right.

A. He actually measured those. Found out the size of the particle.

Q. Right.

A. And consistent with the fact that there's a relatively small amount of asbestos --

Q. Yeah.

A. -- he found a very low concentration of particles, five microns or greater in size.

Q. That's going to be my point.

A. Okay.

Q. I'm getting there, okay, and I'm going to let you tell the jury what that means.

A. Okay.

Q. Dismantling or removing old insulation. And here just in some dust concentrations as high as 5.89 million particles.

MR. HEARD: And the next page, Keith, real quick.

Q. (BY MR. HEARD) 2.5, right?

A. Correct.

Q. Average. Now, you were saying that the asbestos concentration of this product was 5 to 10

percent, right?

A. Correct.

Q. And how does that affect what happens over here?

A. It would reduce that substantially.

Q. And that's what you were telling the jury earlier --

A. Correct.

Q. -- during the direct testimony, I think, or sometime, is that --

A. Correct. When you actually measure the fibers in the, quote, total dust, substantially less than the total dust count.

Q. Right. So, it's fair to say in 1937 that at least some of the testing that Exxon did showed levels that ranged for insulators anywhere from 2.5 million particles per cubic foot up to 18 million particles per cubic foot?

A. Total dust.

Q. Total dust. That's right. Total dust.

A. The standard for total dust was 50 million.

Q. That's right. I'm just about to ask you.

A. Right.

Q. Total dust. Did he measure the size of the dust particles?

A. Yes.

Q. And what was the size of the dust particles?

A. Well, it varied from one sample to another. But speaking in general terms, the particles that were five microns or greater which were generally considered to be asbestos-like particles were probably 5 to 10 percent of the total dust count.

Q. Uh-huh. Okay. So, let's just look and make sure that we're looking at this correctly. What your testimony is here today is that all of this, all of these numbers relate to total dust and not just asbestos dust?

A. Well, it would be total dust plus asbestos.

Q. Total dust including --

A. Asbestos would be a component of the --

Q. That's what I'm saying. Your testimony is that this is total dust including asbestos dust?

A. Correct.

Q. And you've read the article carefully, of course?

A. Yes.

Q. And in the conclusion of the article -- let me go to the conclusion. This is what y'all were talking about earlier. And what they say in the conclusion is that, "One thing is certain. There is a very definite tendency to require compensation for industrial or occupational disease. If these compensation costs are to be kept to a minimum and the health and safety of the workers are to be promoted, it will be necessary to make further

studies and promptly adopt adequate precautionary measures." Promptly, right? I read that correctly? Promptly in 1937, right?

A. Yes.

Q. Okay.

A. Can you read on?

Q. Yeah, I am. "Many of these are now in effect. The others should be put in force as soon as possible. After years of study and direct contact with the dust problem, Mr. Dan Harrington, Chief Health and Safety Branch, United States Bureau of Mines, has come to this conclusion with which we are heartily in accord."

Now, this is Exxon in 1937, right?

A. Uh-huh.

Q. Okay -- yes? Yes?

A. Yes.

Q. And you come to this courtroom today, this is a statement, that in 1937, despite what you say in this courtroom today, Exxon was in hearty agreement with this statement, correct?

A. Right. The preface with many of these are now in effect.

Q. I understand that. And don't worry, sir, the jury has seen this like three times already in the trial.

A. Okay, fine. I won't repeat it then.

Q. My question to you is in 1937 Exxon is

in -- heartily in accord -- heartily in accord with the statement that you disagree with today, which is, "One common sense answer is that any atmosphere in which dust is visible to the naked eye is certainly too dusty to be breathed with safety by human beings. And the wise, far-sighted human employer will immediately start to decrease the dust contents in any atmosphere where dust is visible." Now, you told the jury that you disagree with that statement sitting here today?

A. Absolutely.

Q. Okay.

A. I will explain why. In fact, you can tell it from the data that's presented here.

Q. You did explain why. What you said was you disagree that dust visible to the naked eye is too dusty to be breathed safely by human beings, right?

A. In some cases. You had to know the asbestos fiber count that was actually being breathed.

Q. Right. And the last part of this chart, the asbestos content of Unibestos was, what, 60 to 75 percent?

MR. CHANDLER: 63 to 70 percent.

Q. (BY MR. HEARD) Sixty-three to 70 percent. Do you remember seeing that document?

A. Yes.

Q. Okay.

MR. HEARD: If you'll give me one second, Judge, I think I'm just about to wrap up.

THE COURT: Okay.

Q. (BY MR. HEARD) You said earlier that dangerous exposure to asbestos is one that exceeds the TLV at any given time; is that correct?

A. Yes.

Q. You still stand by that, don't you?

A. I agree.

Q. Are there any other documents that you can think of that I can look at, that this jury can examine, besides testimony from you before you ever went to Exxon that can tell us about -- that show us how the employee asbestos protection program that we've heard about from Mr. Hammar and from you was implemented at the refinery? Anything else besides what's on here? Before I leave you, I want to make sure I got it all. That you know of?

A. I think the fact that -- you had the Hammond deposition?

Q. Yes, sir.

A. They've heard that.

Q. Okay.

A. They've seen the documents from Fred Venable.

Q. Okay.

A. And he had the contents of his program in terms of monitoring and medical surveillance.

Q. You know what I meant to ask you? I forgot. How long did Mr. Hammond's son work at Exxon? Do you remember?

A. I don't know.

Q. Did you know him?

A. No.

Q. Oh, you don't?

A. No.

Q. You don't know what he did there?

A. No, I don't.

Q. 1971 to '72, anything new?

A. Again, programs that we have here.

Q. Okay. And that's entitled -- well, we had the one we just looked at, right, the asbestos hazard control program, right?

A. Correct.

Q. Okay. Nothing else that you can think of as far as documents we can look at that were some that would be shared with the workers about the asbestos protection?

A. I think we've seen what we have available to us at this current point in time.

Q. All right. So, the answer is there's nothing else that you can think of while you're sitting here today?

A. I guess not.

Q. Okay. Well, Mr. Larson, thank you very much.

MR. HEARD: I pass the witness.

A. (CONTINUING) Just one question for you.
I'm trying to --

Q. (BY MR. HEARD) Sure. One question for me?

A. I'm trying to think of the significance of the other chart that you were listing the conversion from fibers per C.C. to particles per cubic foot. I'm trying to understand what you're trying to illustrate.

Q. What I'm trying to illustrate here? Here's the question that I wanted to ask you for future testimony in this case. Okay? It doesn't really apply to you, but we're laying the foundation. But I wanted to make sure I asked you this and let's make sure it's on the record clearly, that these numbers here, okay, apply to total dust in your opinion, right?

A. Yes.

Q. Okay. And total dust is dust that includes asbestos dust, right?

A. Correct.

Q. And asbestos content of Unibestos is 63 to 70 percent, correct?

A. No. What he was counting was not Unibestos.

Q. It was not Unibestos?

A. Right.

Q. I'm not saying it was Unibestos. I have

never said it was Unibestos. I just want it on here that that is the asbestos content of Unibestos, correct? What he was counting was the 5 percent, right, the 5 to 10 percent, if I remember?

A. No, no, huh-uh.

Q. Okay. What was he counting?

A. He was counting total dust.

Q. No, no. But the insulation that was being used -- I'm sorry. I'm just -- the insulation that was being used was the calcium silica product. And that was -- what was it? 15 percent?

MR. CHANDLER: 15 percent.

Q. (BY MR. HEARD) 15 percent, right? 15 percent asbestos --

A. In the insulation. But what I'm saying is you have to look at the particle size distribution --

Q. Right.

A. If you're saying to know what the asbestos content was that a person could potentially be exposed to.

Q. Correct.

A. And you can make that calculation with the numbers that are in this report.

Q. Right.

A. Because he breaks down particles that are greater than five microns in size --

Q. Right.

A. -- which would be proportionate -- could

potentially be asbestos.

Q. Right.

A. Anything less than five microns in size would not.

Q. Correct. And in the report he's talking about less than ten microns per size.

A. In that one instance. Most of the ones break it down by above and below five microns.

Q. And the only thing I need to do for the record real quick is Plaintiff's Exhibit No. 28, which we've already seen. I'm not going to show it to the jury again, but that is with -- the number of fibers greater than five C.C. -- five fibers per C.C.?

A. That's correct.

Q. These calculations are different from these calculations in that this is a fiber count of asbestos?

A. That's specific to asbestos.

Q. So, Plaintiff's Exhibit 28 is different from Plaintiff's Exhibit 5 and the calculations that were made in Plaintiff's Exhibit 5, because Plaintiff's Exhibit 28 is actually counting the asbestos fibers?

A. Correct.

Q. Okay. That's it. Thank you.

MR. HEARD: Pass the witness.

REDIRECT EXAMINATION

BY MR. RADCLIFFE:

Q. Mr. Larson, TLV was proposed in 1938, 1939?

A. Yes.

Q. So, that was after Mr. Bonsib, right?

A. Correct.

Q. Now, the TLV requires a weighting. It's a time-weighted average, right?

A. Correct.

Q. Are these time-weighted averages that Mr. Bonsib gives us?

A. No. They'd be instantaneous, not --

Q. Instantaneous measurements?

A. Right.

Q. And so, what he said was they only work nine out of 14 days. And even the time they worked, they only worked with asbestos 60 percent of the time. If we were going to try to time-weight these averages, and I don't even know if we can do it, but what does the fact that they worked 9/14ths of the time and then only 60 percent, does that increase these numbers on a time-weighted average or decrease these numbers?

A. No. The dose would be decreased on an order of about 60 percent.

Q. Okay. 1972, help me out. What's the memo from Mr. Venable?

A. That's the one that they had.

MR. HEARD: It's No. 24.

MR. RADCLIFFE: Thank you, Mr. Heard.

Do we have 24? Do you have 24? Can we put 24 up?

Q. (BY MR. RADCLIFFE) Yes. Here it is, 1972. 1972, what's happening? March, 1972, what is Mr. Venable and what are -- what are Mr. Venable and Mr. Hammond looking forward to at this time?

A. To the proposed OSHA asbestos regulations.

Q. And does the proposed asbestos regulations make it easier or tougher?

A. Easier or tougher --

Q. Well, in terms of the level.

A. The exposure limit, it's the same.

Q. And then in 1976, what's the exposure level?

A. It's reduced.

Q. All right. And in 1972, is Mr. Hammond talking about -- Exhibit 337, is he talking about the 1976 exposure level?

A. Yes, he is.

Q. So, do you have an impression whether or not Mr. Hammond and Mr. Venable are looking forward to a lower exposure level?

A. Yes.

Q. And if you were -- if you had a program in place to monitor insulators, the people who had the potential for an excessive exposure and you then found out in 1972 that you had to expand it to

include other people, would you initiate a new program?

A. Initiate a new program?

Q. Yes.

A. You would expand the program.

Q. All right. And -- well, when Mr. -- when Mr. Venable says he wants to initiate a program for controlling asbestos dust and initiate medical monitoring, you understand that these things were already in place?

MR. HEARD: Objection, leading. He just -- I object. It's leading. Now he's putting words in his mouth.

MR. RADCLIFFE: I'll restate it.

THE COURT: Restate it.

MR. HEARD: He didn't say, but now he will.

MR. RADCLIFFE: Just waiting for Mr. Heard to finish with his objection.

Q. (BY MR. RADCLIFFE) As of 1972, as of the time of this document, did Exxon have medical monitoring, reducing exposures, controlling exposures for insulators in place?

A. Of course.

Q. Did Exxon, prior to 1972, believe that other trades other than insulators had the potential for an excessive exposure to asbestos?

A. No.

Q. After 1972 with a lowering standard, did other trades have the potential for an excessive exposure to asbestos?

A. Potentially, yes.

Q. And if their potential exists, what do you have to do? Do you have to check it, check it out?

A. You have to do monitoring. And depending upon the exposure, then they would have to be included in the other elements of the program.

Q. Now, this is Mr. Venable's writing. I know we can't get into his head, but you'd agree -- do you agree that a reasonable interpretation of what Mr. Venable is saying here is, look, we've got to -- we've got to start a program that includes other people, people other than insulators, and this is what the program should include?

A. Exactly.

Q. Is that what you were trying to say earlier?

A. Yes.

Q. Did I put words in your mouth?

A. No.

Q. Let me make it clear when -- let me make sure I understand. Was OSHA's position in 1973 when you started, that when you went to a jobsite and you saw visible dust, that you just wrote up a citation and said you're violating the PEL?

A. No.

Q. Wait a second. Dr. Lemen says, "Visible dust, it's a violation. You're done. That's it. That's over."

A. No.

Q. What was OSHA's position if you were going to measure dust? What did OSHA require you to do?

A. Two things. We would have to take a bulk sample of the insulation itself. And then monitor the employees' personal breathing zone samples with the duration of the exposure to that insulation to determine if there was an exposure above the Federal limit.

What we would do is collect the air samples along with the bulk samples, send them to OSHA's laboratory in Salt Lake City to, number one, determine the actual content of insulation, if it contained asbestos; and then, number two, to do the fiber counts to come up with a determination of the actual exposure to asbestos fiber in the air which could then be compared to the standard. For us to issue a citation for overexposure, there would have to actually be an exposure to asbestos fiber that exceeded the Federal standard.

Q. This is Exhibit 276. It's actually the one that Mr. Heard offered into evidence, even though it says Defense Exhibit. This is an OSHA violation -- well, the very front, 1956, right?

A. Correct.

Q. And then it says, "Distributed monthly to supervisory and professional personnel by the safety department"?

A. Correct.

Q. Is that a good idea?

A. Yes.

Q. Does it tell the supervisors and the professionals in the safety department what they should do around dust?

A. Yes, it does.

Q. Does it specifically include asbestos dust?

A. Yes, it does.

Q. So, if there's people from Baytown who come here and say that Exxon never said anything in the 1950's about asbestos dust, does this contradict what they say?

A. I would say so.

Q. Well, maybe they didn't know they were supposed to use a respirator if it was dusty. Is there anything in this document that suggests to the supervisors, the guys who are teaching safety, who are talking to the workers, who are instructing them in -- the safety professionals, does this document say anything about when you should use a respirator?

A. Yes, it does.

Q. What does it say?

A. It says whenever there's excessive dust exposure.

Q. And if someone doesn't use a respirator, if the safety program is followed -- and don't get me wrong. I think the evidence has been that --

MR. HEARD: I object to what he thinks the evidence has been.

MR. RADCLIFFE: I'll rephrase.

Q. (BY MR. RADCLIFFE) The evidence has been from Mr. Calma and Mr. Stovall and Mr. Roosevelt that they had safety meetings and they followed safety rules. You believe that they did that, don't you?

A. Yes.

Q. And your understanding is that Exxon had a safety program in place in the 1930's, '40's, '50's and '60's, right?

A. I think it's very clear.

Q. That's your opinion based on the research that you've done, right?

A. Yes.

Q. And if someone were to say that they were never shown the correct way to use a dust respirator, is there anything in this document that contradicts that statement?

A. Yes. The instructions are clear and straightforward.

Q. This was a Dust Foe, D-u-s-t F-o-e, respirator. Was that thought to be effective back in 1956?

A. Yes. I believe it was approved by the

Bureau of Mines for use against asbestos dust.

Q. Let me start with the 1930's. Can you read the title of that document?

A. It says, "Safety Rules and Safe Practices, Refinery Department, June 2nd, 1936."

Q. 1936. I'm not going to write on it but --

MR. HEARD: You can write on it.

That's why I was asking you.

MR. RADCLIFFE: No, I don't want to write on it.

Q. (BY MR. RADCLIFFE) 1930's, there are some documents that survived from the 1930's?

A. Yes, primarily the safety manuals.

Q. Okay. Did you -- is this one of the documents that you got to review when you were doing your research and learning about what Exxon did in the past?

A. I believe it was.

Q. Did this appear to be a true and accurate copy of the document that you were able to review?

A. It looks very familiar.

MR. RADCLIFFE: Your Honor, I move for the admission of Defense Exhibit 315.

MR. HEARD: I have no objections.

THE COURT: Defendant's 315 is admitted.

Q. (BY MR. RADCLIFFE) Very last page, Mr. Larson. On the left-hand column -- first of all,

this is a photocopy, of course. But just in looking at this, can you gauge for me how big in terms of size you think these pages were initially?

A. It looks like it was actually part of a smaller booklet.

Q. The size of the booklet that might be available to carry in your pocket?

A. Yeah. One side of this would fit in the shirt pocket.

Q. Okay. Last page on the left-hand side, does it say anything about dust respirators?

A. I guess you're talking about the next to the last page?

Q. I'm sorry.

A. Yes, it does.

Q. What does it say?

A. Okay. "Dust respirators, when and where used, on all operations where there's an excessive amount of dust in the atmosphere, such work as handling powdered chemicals, lime, soda ash, sulfur, litharge, and handling filter clays, sand," et cetera, are examples of operations where respirators must be worn.

Q. Does it then give you instructions if you're an operator -- operation, does it give you instructions how to use it?

A. Yes, it does.

Q. 1940's -- I've only got one copy.

MR. HEARD: I showed him that. So, it may be up there.

A. (CONTINUING) I think it's here, this one.

Q. (BY MR. RADCLIFFE) I've got a copy that's marked.

A. Okay.

Q. This is marked as Defendant's Exhibit 312. And Mr. Stovall pointed out there was two is's in the manual. And on the front page we see that this is the "refining" department rather than the refining department, right?

A. Apparently so.

Q. Is this a document that you got to see in your review of the health and safety program that was in existence back in the '30's, '40's and '50's?

A. I believe I also saw this one, too, yes.

Q. Does this appear to be a true and accurate copy of the document that you reviewed previously?

A. Yes.

MR. RADCLIFFE: Your Honor, I move for the admission of Exhibit 312.

MR. HEARD: Well, that certainly doesn't lay the predicate, but we don't object to it.

THE COURT: Defendant's 312 is admitted.

Q. (BY MR. RADCLIFFE) Now, again, can you tell by this document how large the original appears to have been?

A. Same size, pocket-size.

Q. All right. Page 31 of the manual, what does that talk about, if you can find it?

A. Okay. It talks about respiratory protection. It specifically refers to dust respirators.

Q. Page 135, what does that talk about there?

A. Let's see.

Q. I've got mine. It might be easier for me to flip for you.

A. Okay.

Q. Section --

A. Okay. Respiratory protection.

Q. Then page 146, what's it describing?

A. It's describing dust respirators.

Q. What does it say underneath that right there?

A. Okay. "Dust respirators must be used for all operations where there's an excessive amount of dust in the area, such work as handling powdered chemicals, lime, soda ash, sulfur, litharge and handling filter clays, sand," et cetera. The filters provided are approved for all dusts, both toxic dusts such as lead, arsenic, as well as Type A dusts such as silica, asbestos, coke, cement," et cetera.

Q. Thank you. So, 1930's, we've got something. 1940's, do we have anything?

A. Yes.

Q. 1950's we've got something. Is this -- are these documents telling an inconsistent story every time?

A. No. I would say it's basically transmitting the same message about protection against hazardous or toxic dusts.

MR. HEARD: Can we approach real quick?

THE COURT: Yeah.

(At the bench, off the record.)

Q. (BY MR. RADCLIFFE) Mr. Heard has asked questions about respirators available that Mr. Whiddon might have had available to him in 1982. Is this the safety manual for the Baytown refinery in September, 1979?

A. Correct.

MR. RADCLIFFE: For the record this is Defense Exhibit 317B.

MR. HEARD: Okay.

Q. (BY MR. RADCLIFFE) And Section 10 at page 10-1, does that say, "Personal Protective Equipment"?

A. Correct.

Q. And does it include section, that ten-page -- does it include a section at page 10-1 about dust respirators, mechanical filter types?

A. Yes.

Q. Is it your understanding that these documents -- these manuals list the available

protective equipment for employees at the plant?

A. Correct. And they were made -- obviously made available so the employees would have access to the information.

Q. And just if you could read starting here at the bottom and on to the next page?

MR. HEARD: I'm sorry. Is this dated 1978?

MR. RADCLIFFE: '79.

MR. HEARD: I can't hardly see the relevance, Judge, especially if we're trying to get out of here. This is two years after Mr. Altimore left.

MR. RADCLIFFE: I'll stipulate that the respirator that Mr. Whiddon wore is not relevant.

Q. (BY MR. RADCLIFFE) If the medical and scientific evidence shows or demonstrates that you've got to be exposed above a level to be at risk, do you need to warn people who are exposed below that level?

A. Not if they were exposed significantly below that level, no. I mean, if they were at 99 percent, sure, I would.

Q. All right. So, you're not going to split hairs?

A. No.

Q. If the level is 5 million particles per cubic foot and someone is exposed at 4.9, you're going to warn that person?

A. Obviously.

Q. But if someone is exposed at 2 million particles --

MR. HEARD: Objection, leading.

THE COURT: Sustained.

Q. (BY MR. RADCLIFFE) Well, if someone is exposed at 2 million particles per -- if someone is exposed at 2 million particles per cubic foot, is it reasonable for a company not to warn that person?

A. If that -- if you're saying it's less than half of what's considered to be a safe limit, I don't think there would be a reason to do that, no.

Q. For the reasons you discussed earlier?

A. Exactly. You can't warn everything -- about everything all the time.

MR. RADCLIFFE: Pass the witness.

RECROSS-EXAMINATION

BY MR. HEARD:

Q. And yet you don't disagree with Dr. Segarra that Ms. Altimore's exposure from her ceiling tiles could have caused her mesothelioma? After that testimony right there, you wouldn't even warn such dose to people? Let me ask you something --

A. I don't understand the question.

Q. Did you -- have you ever, in the history of all these documents -- by the way, every document that you've seen that you've gone over here today with the exception of that one, they were all given

to you by the lawyers for Exxon, right?

A. Let me think. I think most of them were, yes.

Q. Yes. They were given to you by the lawyers. And the documents that you testified here about today were given to you by the lawyers just a few months ago, right, or about a month ago, I think it was, or two?

A. No. Some of these I reviewed almost a year ago.

Q. Have you ever in your review of all these safety manuals -- and by the way, remember I showed you the 1940's one. And you said that wouldn't apply because we were talking about what they were telling the workers, right? Do you remember that, why I wrote down nothing right there, the accident prevention manual?

A. Although now that I've seen those manuals and it's obvious that they are given to the employees --

Q. Okay.

A. -- then that would have been a form of communication.

Q. Okay. I'm going to change that so we can make sure the jury has the benefit of everything that you think could have been communicated to the employees regarding safety and writing. They clearly kept their safety documents, right? They've got them

from every decade here?

A. Those they have, yes.

Q. So, they kept their safety documents. Here's 1956. Here's 1953. Here's 1936. Here's 1949. Here's 19 -- and then there's some others somewhere. They're scattered around.

Find in there where it says, "Don't carry home asbestos dust on your clothes."

A. At that point in time I don't know that that was considered to be a hazard considering the relatively low exposure levels.

Q. Is the answer it isn't in there?

A. The answer is it isn't in there because it wasn't considered to be a hazard.

Q. Yeah. Even though Mr. Bonsib, very low exposures can cause disease in his report?

A. I don't think he said that.

Q. Okay. Well, we'll go back and look at it. Not right now, though.

Let me ask you this, sir: Those documents that he just read from, the first one didn't even mention the word asbestos in it, did it?

A. It said toxic dust.

Q. Right. And the second -- in the second one in the -- was it the 1950's, the second one y'all were reading from?

A. I believe so --

Q. Okay. That one --

A. 1940's.

Q. Whatever one it was, '40's, '50's, whatever one it was, I'm going to change this right now, I'm going to put the titles of them on here. This was called, if I remember, "Safety Manual," right?

A. Yes.

Q. 1936, "Safety Manual." "Safety Manual." Okay? And then 1940's, that was "The Accident Prevention Manual"?

A. I believe so.

Q. And then I think there's one in the 1960's, wasn't there?

A. I believe so.

Q. What was that? This is important. I've got to do this right now before we get out of here. Do you know? Okay. I'm going to put -- I'm just going to put a line there until we find it and I will fill it in for the jury later.

But for this jury to determine in documents that Exxon had that employees may have -- could have known about, I'm not talking about internal memos and the industrial hygiene department and the medical and safety department. You with me so far?

A. Uh-huh.

Q. In documents that they shared with the employees if this jury wants to see whether Exxon was complying with what Mr. Bonsib said to do in 1937, these documents are where they go, right?

A. Okay. But you're only talking specific to worker training.

Q. I am absolutely talking specifically to worker training, yes, sir.

A. I haven't seen additional documents.

Q. Okay. Well, then, the answer is "yes." You can only testify to your personal knowledge, right?

A. Yes.

Q. Okay. We'll all remember "yes." Okay. This is all. And I'm going to personally go back and fill in the 1960's one. Okay?

So, without going into what all these things say, if I stand up before the jury later on in this trial and I start going through the details of these documents that are now in evidence, then that's what we're going to find about whether -- with the workers, they are complying with the industrial hygiene controls from 1937?

A. I would just have to say again, from --

Q. What you know.

A. What I know, that there was, in fact, much more detailed information available.

Q. I'm asking, the documents that this jury can look at that relate to the workers and the asbestos protection program, that's where we go, right? As far as you know? That's all you can testify?

A. As far as what we have here today, yes.

MR. HEARD: Okay. Pass the witness.

Thank you.

THE COURT: Mr. Radcliffe?

MR. RADCLIFFE: Nothing further, your Honor.

THE COURT: Any further need of this witness?

MR. HEARD: No, sir.

MR. RADCLIFFE: No, your Honor.

THE COURT: Thank you. You may step down. You are released and excused.

THE WITNESS: Thank you.

(End of excerpt.)