DAVID OTIS WILSON AND

DEBRA B. WILSON,

Plaintiffs,

vs.

THE ROE CHEMICAL COMPANY, INC.

Defendant.

_____/

TRANSCRIPTION OF SWORN DEPOSITION

ARTHUR STEELE

NOVEMBER 26

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P R O C E E D I N G S

Q. Please state your name.

A. My name is Arthur Steele.

Q. Would you tell us about your education, Mr. Steele?

A. I have a B.S. in mechanical engineering from the University of Denver in YR-45 and an M.S. from the University of Denver in mechanical engineering in YR-34.

Q. Do you have any professional recognition or licensing?

A. I'm a registered professional engineer in the states of Colorado and Nebraska.

Q. Did you have to take an examination to receive that title?

A. Yes. That's by examination.

Q. What is your post-graduate experience and education?

A. I've attended numerous seminars, and I have taught several seminars.

Q. Sir, would you tell us what your teaching experience has been, please?

A. I was a lecturer of mechanical engineering at the University of Denver for several years, where I taught design — machine design, fluid mechanics, hydraulics — all the senior laboratory courses in

mechanical engineering. I was an assistant professor at the Colorado School of Mines, where I taught engineering graphics, design, and the design of mechanical components for buildings. I was an adjunct professor at the University of Colorado, where I taught engineering of thermal dynamics.

Q. Are you a member of any professional societies?

A. I'm a member of the American Society of Mechanical Engineers. I have held several offices, including chairman of the local sections and regional offices. I'm a member of the Society of Engineers. I have held several offices in that society. I'm a member of the National Society of Professional Engineers.

Q. What sort of work do you do now, Mr. Steele?

A. I am a consultant in the areas of mechanical engineering and mechanical technology.

Q. Have you on other occasions testified about contested matters in court?

A. Yes. I have testified numerous times, mostly for plaintiffs.

Q. Mr. Steele, have you reviewed any materials in preparation for forming your opinions in this case?

A. Yes, I have.

Q. What have you reviewed?

A. I reviewed the deposition of David Wilson, the container label, and the advertising for the product, and I have, of course, examined the container.

Q. Have you formed an opinion as to what caused this accident?

A. Yes, I have.

Q. What is your opinion as to the cause of this accident?

A. A defective container and lack of proper warnings and instructions.

Q. Have you formed an opinion as to whether this accident was foreseeable to Roe Chemical Company?

A. Absolutely.

Q. In what way, please, sir?

A. The company knows that it produces a very dangerous product and that this product has to be used by farmers. It has to be extracted from the container that it's supplied in into other containers so it can be mixed and diluted before being transferred into spraying equipment. So it is very foreseeable that the product can be spilled and the company knows it. The company's advertising indicates that if the product is absorbed through the skin, it can be fatal.

Q. What is your understanding of how this material is to be used?

A. The material has to be poured into some type of container for measuring into a mixing container.

Q. In what way do you contend that a hazard is created?

A. May I demonstrate with these containers? This container is empty by the way; if it was full, it would weigh more.

Q. How much would it weigh?

A. About 50 pounds. It would be difficult to lift.

Q. You were going to demonstrate?

A. Yes. In order to extract the liquid from the container, it has to be poured. In order to pour the liquid, the container has to be tilted. When the container is tilted, the horizontal location of the end of the spout moves. Also, because the container bottom is round and has a hard edge, it presents a much smaller surface area as the can is tilted. Those combined factors make it very difficult and dangerous to pour from the Dinitro can.

Q. Do you have an opinion as to the steps that should be considered in designing a container such as this?

A. You first consider the product, in this case, the Dinitro. Consider the hazards of the use to the

person using it, to the people around, and what has to be done in order to use the product.

Q. Mr. Steele, in your opinion, can the hazards that you have referred to be designed out of a container such as this?

A. Absolutely. And if the hazards could not be designed out, there should be an adequate warning. We know from the advertising that contact with the skin with this product can be fatal.

Q. Do you have an opinion with respect to the warning on this container?

A. Yes, I do.

Q. And what is that opinion?

A. The warning is a partial warning. It does not include the information that is contained in the advertising that absorption through the skin can be fatal. Information that is only contained in the advertising may not be seen by the consumer.

Q. Are there any other complaints you have with respect to the label?

A. None that I can think of at this time.

Q. Have you attempted to design an alternative product to the can in question?

A. Yes, I have.

Q. In your opinion, how would you modify this can

to make it safe?

A. First, the process of tipping needs to be eliminated, because that creates an unstable activity with a full can. One way to eliminate the tipping is to replace the flexible spout with a spout that has a spigot on the end of it. With a spigot, the can can be laid on its side so that it's stable, and metering can be accomplished simply by opening and closing a valve.

Second, the shape of the container could be modified to have a broader base, and the forward edge of the bottom rounded. When that type of container is tilted, the size and shape of the bottom surface in contact with the support remains essentially the same.

Q. Sir, isn't it a fact that the spout is a very common type spout?

A. Oh, yes. It's common and quite safe for gasoline or water. However, Dinitro is very toxic when absorbed through the skin. Having the spout which is actually stuck down into the container encourages a person to handle the chemical. It is definitely not a safe design.

Q. Are there any other alternative designs that you would suggest?

A. Yes. I might suggest that the liquid could be extracted from the container in other methods, such as

pumping or siphoning.

Q. And how would that work?

A. Well, a bulb siphon could be utilized so that once the bulb is squeezed and the flow is started, the fluid would flow out by gravity.

Q. Do you hold any further opinions in this case?

A. Well, basically, no. Of course, there are many types of spouts that would be safer.

Q. Isn't it a fact that the type of container with which the user is the most familiar might be the safest container for the job?

A. In most circumstances. Yes.

Q. Do you have any further comments?

A. I don't believe the instructions with respect to wearing gloves are adequate. Rubber gloves would be safe, but not cloth or leather, since they would absorb the chemical and keep it in contact with the skin.

(Deposition concluded)