ROBERT JONES

MR. JONES: Thank you. I just rushed in, but my name is Robert Jones and I'm a consultant in the field of radioactive material handling, packaging, storage, transportation and disposal. My principal expertise is in used nuclear fuel and high-level radioactive waste. I have been in the nuclear field for 34 years, the last 21 of which has been as a consultant. I really want to direct my comments this morning -- or is it this afternoon -- this afternoon, I've been busy this morning -- in two areas. One is the general field of nuclear transportation safety, and then the second is a related issue of sabotage and terrorist assaults on used fuel and high-level waste.

The transportation of used fuel and high-level waste has an enviable record of safety, one that's really unmatched in the transportation business. In 50 years -- and I'm sort of taking 1949 to 1999. In 50 years of transporting these materials, there have been no content releases and no deaths or injuries due to the hazardous nature of the material. There have been a few events that might be called routine transportation accidents which are unrelated to the cargo. Thirteen such accidents -- and this is a Sandia National Laboratory statistic -- 13 such accidents, six rail and seven highway, have occurred out of many, many thousands of shipments in this country and only one could actually been regarded as life-threatening, and none of the accidents were sufficiently severe to even approach the design basis of the packages, or casks as they're called. The international record is equally impressive and the number of shipments is in the tens of thousands, greatly exceeding our domestic activity.

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Now, this superb safety record did not happen just by chance. There are many factors that collectively contributed to it. First, there's a comprehensive regulatory environment governing the design, construction, testing, operating and maintenance of these containers and their transport systems. The U.S. Nuclear Regulatory Commission and the U.S. Department of Transportation both promulgate regulations relating to the spectrum of activities associated with packaging and shipping of radioactive materials.

The casks are designed to federally-mandated accident conditions that include high-speed impact, puncture, high-temperature fire and water submergence. Acceptance criterion is no release of the radioactive contents and complete nuclear criticality safety under the sequential application of the drop, puncture, fire and submergence tests. International regulations under the International Atomic Energy Agency (IAEA) mirror those of the United States.

Second, the design and analysis of the packages are to national standards using state-of-the-art proven numerical methods that have been benchmarked against real-world conditions. The designer's safety analysis report for the package is independently reviewed by the Nuclear Regulatory Commission, and only when the NRC is satisfied that the package complies with the regulations will it issue a license or certificate of compliance. This allows qualified organizations to use the containers.

To survive the regulatory accident environment, the casks must be extremely rugged. These containers are of thick-walled metallic construction with massively bolted lids. Often there are two lids and frequently welding is used as closure in some of the containers. The lids and other components are protected by so-called impact limiters. These are large crushable structures fixed to the casks. These devices deform on impact, thus protecting vital components.

Third, all of the activities from design and analysis through operation and maintenance are governed by a rigorous quality assurance program. This QA program is based on national standards and is approved by the Nuclear Regulatory Commission.

MR. BROWN: Four minutes.

MR. JONES: Four minutes up?

MR. BROWN: One minute remaining.

1 continued

MR. JONES: Okay. Lastly of these points is that there is a safety culture that exists in the industry that is extraordinary. I mean, we don't live on another planet. We live on this earth and we want to protect our families and our relatives and our friends as well, so all of these collectively have contributed to this remarkable safety of shipping these materials and will continue to do so in the future should the Yucca Mountain Project go to completion and shipping be done. With respect -- briefly, with respect -- I might want another minute.

MR. BROWN: Well, we've got --

MR. JONES: Okay.

MR. BROWN: We've got 50 people to go.

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MR. JONES: All right. With respect to terrorist assault, I find that the casks are adequately designed to protect against what I would call any expected terrorist assault, but quite frankly, I believe that these packages are not even on the list of anyone who's interested in sabotage or terrorism. They are a target of low opportunity with a very low probability of having any effect and there are far more targets of opportunity, and no one in St. Louis or any other place in the country ought to be worried about it, that particular aspect of the movement of fuel. We've done it. We've been there, done that, as the expression goes. We know what we're doing and we will continue to do it safely in the future. Thanks.