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REMARKS OF JIM HALL
ON BEHALF OF THE STATE OF NEVADA
TO THE NATIONAL ACADEMY OF SCIENCES,
BOARD ON RADIOACTIVE WASTE MANAGEMENT
AND TRANSPORTATION RESEARCH BOARD,
STUDY COMMITTEE ON TRANSPORTATION OF RADIOACTIVE WASTE,
LAS VEGAS, NEVADA,
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Good morning. My name is Jim Hall and for almost seven years, I served as Chairman of the National Transportation Safety Board (NTSB). The NTSB is the federal agency that is charged with the investigation of major transportation accidents, or as I liked to say, is the “eyes and ears” of the American people at transportation accidents across the country and around the world. In that role, I became all too familiar with the human and economic toll caused by these accidents. As a result, the Board and I did everything possible to find ways to prevent such tragedies from recurring.

Since leaving the NTSB in 2001, I have attempted to lend my voice to important transportation safety and security issues that I firmly believe in.

Prior to heading the NTSB, I served for six years as the Director of the State of Tennessee’s State Planning Office which was charged with overseeing the Department of Energy’s clean-up of the Oak Ridge nuclear weapons complex.

As Chairman of the NTSB, I repeatedly saw the results of the failure to adequately address safety at the front end of a transportation project. From my work in Tennessee, I have an understanding of the complexity associated with the storage and transportation of spent nuclear fuel. I am here today speaking on behalf of the State of Nevada to focus our collective attention on one specific issue associated with potential transportation to Yucca Mountain – the need for full scale physical testing of the shipping casks. I believe that full-scale testing is essential for both the protection of public health and safety and the promotion of public confidence.

Before I turn to the issue of cask testing, let me briefly address two closely-related matters: the DOE’s failure to put forward a meaningful Yucca Mountain transportation plan, and the U.S. Nuclear Regulatory Commission’s limited authority to regulate shipments to Yucca Mountain.

Last summer, when Congress was debating the siting of Yucca Mountain as the nation’s nuclear repository, I was asked to comment on the safety aspects of DOE’s Yucca transportation plan. During that time, I was surprised when Secretary Abraham testified before the Congress and informed them, [DOE] “...is just beginning to formulate its preliminary thoughts about a transportation plan.” It has now been more than 17 months since the Secretary of Energy sent the Yucca site recommendation to President Bush and the DOE has yet to present a transportation plan.

Although a plan has not been presented, DOE has suggested several possible approaches to the transportation issue in its Final Environmental Impact Statement (FEIS) for the Yucca Mountain project. And, you’ve already heard Nevada consultants discussing those possible scenarios earlier today. However, I feel it is important to mention again that, as this process continues to move forward, DOE has not yet even formally declared its stated modal preference.

DOE said in their FEIS that they would issue a record of their decision declaring their commitment to rail. At the current time, DOE does not even have a schedule of when they will make that most basic decision. So, when I hear DOE spokespeople saying that there won't be 109,000 truck and 4,000 barge shipments – I wonder what I am missing? Really, we need to remember, that it was DOE who put these scenarios and numbers forward and it was DOE that stated, in their opinion, the risks and impacts of many thousands of truck and barge shipments would be legally and socially acceptable.

Finally, when Secretary Abraham and his representatives say that there will only 175 shipments per year, it is important to mention that by all accounts such a number is unrealistic. At the very least, there would be twice as many shipments per year. Conceivably, there could be as many as 2,900 cross-country truck shipments per year. And the shipments could continue for up to four decades.

One assumption we can make about DOE's transportation intentions is that DOE will likely assume title to commercial spent nuclear fuel at the power plants and thus DOE will legally own the fuel and be the shipper of record. The NRC has clearly concluded that this will be the case. Of course, DOE already owns the thousands of tons of high-level radioactive waste from defense activities and a large amount of spent fuel from civilian defense and naval reactor operations. Now why is this significant? DOE ownership at the time of shipment is significant because it limits the degree of NRC regulation, and that is no small matter.

Last May, Senator Durbin of Illinois, wrote to the NRC asking, "What role would your Agency play in the transportation of spent fuel if Congress approves Yucca Mountain?" Then NRC Chairman Meserve responded, "If DOE takes custody of the spent fuel at the licensee's site, DOE regulations would control the actual spent fuel shipment. Under such circumstances, the NRC's primary role in transportation of spent fuel to a repository would be the certification of the packages used for transport." Senator Durbin asked a second question, "How would your agency be involved in selecting modes and routes for the relocation of nuclear waste if Congress approves Yucca Mountain?" Meserve again stated, "...the only involvement NRC will have in the transport will be the certification of the transport cask."

The outgoing Chairman of the Commission has clearly taken the position that cask certification is the only aspect of DOE's transportation to Yucca Mountain that would be regulated by the NRC. Over the course of the past five months, Commission staff have repeated this position at public meetings on the package performance study, and in public presentations at professional conferences. This underscores the importance of full-scale cask testing, since cask certification is really the only area in which the Commission will be directly involved with Yucca Mountain safety planning.

Let me turn now to full-scale cask testing, and a brief comparison of the approaches put forward by the State of Nevada and by the Commission. Many government officials and transportation professionals, along with members of the general public, are surprised, indeed astonished to the point of disbelief, when informed that none of spent nuclear fuel shipping casks currently used in the United States have been tested full-scale. Yet this is indeed the case.

According to the NRC, seven spent nuclear fuel truck cask designs and nine rail cask designs are currently certified for use in the United States. NRC does not require full scale testing of these casks, and none of them have been tested full-scale to demonstrate their ability to survive severe accident conditions or terrorist attacks.

Instead of full-scale testing, the NRC relies upon scale model testing and computer analysis to assess cask performance under hypothetical accident conditions. However, many experts believe that such simulations must be validated with full scale testing before reliance can be placed in computer analysis based on scale models. To date, none of the casks that could be used for waste shipments to Yucca Mountain has been subjected to full-scale tests. DOE has no plans to independently conduct full-scale regulatory testing of the casks that would be used for shipments of spent nuclear fuel to Yucca Mountain. In addition, the NRC has no specific cask performance standards or testing requirements regarding terrorist attacks.

Earlier this year, the NRC issued a proposal for demonstration testing of two selected shipping casks as part of the ongoing Package Performance Study. The testing protocols were published as NUREG-1768 and circulated for public review and comment, with a deadline of May 30, 2003 for written comments. NRC also solicited public input at meetings in Rockville, Maryland, Chicago, Illinois, and Las Vegas and Pahrump, Nevada. NRC staff and contractors are currently evaluating the public comments, which can be accessed on the internet through the NRC ADAMS document search system (acquisition title 68FR8530 *). Based on communications with NRC staff, we expect the next public communication regarding the future of the NRC testing proposal sometime in October 2003.

After a careful review of NUREG-1768, and consideration of the additional information provided by NRC staff and contractors during the PPS public meetings, the State of Nevada concluded that the proposed testing protocols were wholly unacceptable. Nevada called upon the NRC to completely reexamine the reasons for full-scale cask testing, and to reissue new draft test protocols for public comment. Nevada emphasized the following key issues:

- (1) The proposed NUREG-1768 testing program would not determine if the selected two casks meet the accident performance standards set forth in the NRC regulations.
- (2) The proposed NUREG-1768 testing program would not determine the failure thresholds of the two casks tested.
- (3) The proposed NUREG-1768 testing program would not provide the impact and fire test data needed to validate the computer models used to evaluate the safety of cask transportation.

Additionally, Nevada believes that the NRC must provide a meaningful and substantive role for stakeholders in specifying the objectives of the tests, developing the testing protocols, selecting the testing contractors, and overseeing the implementation of the test program. The only way to assure that the testing program has relevance to real world conditions is to include the full range of affected stakeholders.

Nevada is particularly concerned that NRC, with stakeholder input, fully consider all options before selecting a cask testing contractor. Previous NRC staff statements over the past year implied that NRC had already selected Sandia National Laboratories. During the PPS meetings, NRC agreed that a competitive procurement process was desirable. We assumed at the very least that NRC would fully evaluate the comments on NUREG-1768 before proceeding to contracting. We are dismayed that NRC, with little fanfare, has already issued a solicitation for testing support services on June 27, 2003. [Check Commerce Business Daily and Federal Register for details]

In its comments to the NRC, the State of Nevada has proposed an alternative, five-part approach to full-scale testing: (1) meaningful stakeholder participation in development of testing protocols and selection of test facilities and personnel; (2) full-scale physical testing (sequential drop,

puncture, fire, and immersion) of each cask design prior to NRC certification or DOE procurement; (3) additional testing (casks, components, models) and computer simulations to determine performance in extra-regulatory accidents and to determine failure thresholds; (4) reevaluation of previous risk study findings, and if appropriate, revision of NRC cask performance standards; and (5) evaluation of costs and benefits of destructive testing of a randomly-selected production model cask.

Nevada believes that comprehensive full-scale testing would not only demonstrate compliance with NRC performance standards. It would improve the overall safety of the cask and vehicle system, and generally enhance confidence in both qualitative and probabilistic risk analysis techniques. It could potentially increase acceptance of shipments by state and local officials and the general public, and potentially reduce adverse social and economic impacts caused by public perception of transportation risks.

Nevada is currently preparing a report, scheduled for release by December 2003, which will offer more specific details regarding extra-regulatory fire and impact testing

Let me close this morning with a few comments on the cost of full-scale cask testing. For the past twenty-five years, opponents of full-scale testing have focused upon costs. Indeed full-scale testing will be expensive. NRC staff has stated that their program to test one truck cask and one rail cask will cost more than \$20 million. Nevada analysts believe the NRC proposal could cost as much as \$30 million. Nevada has proposed a plan to test all of the cask types that would be used for Yucca Mountain shipments, if the repository goes forward. That means testing one truck cask and four rail casks, plus additional testing and analysis, at a total estimated cost of \$45-70 million.

How can we put these costs in perspective? The cost of Nevada's more effective full-scale testing program would be small compared to the overall cost of the Yucca Mountain transportation system. DOE estimates the transportation system cost would be about \$8.4 billion over 38 years. The State of Nevada has estimated approximately \$9.2 billion for the same system over the same period. So Nevada's testing program is less than 1 percent of total projected transportation expenditures.

Another way to put testing costs in perspective is to compare them to the cost of cleaning up after a worst-case transportation accident involving the release of radioactive materials. DOE acknowledges that clean up could cost up to \$10 billion, and that is for one accident. State of Nevada analysts have run the same DOE computer programs and conclude that a worst case accident or successful terrorist attack could involve clean-up costs in excess of \$10 billion. Again, which ever figure we used, Nevada's comprehensive cask-testing program would cost less than 1 percent of the projected clean-up cost of a worst case accident or terrorist scenario.

In conclusion, let me thank you for this opportunity to share my views and experiences with you. It will take the cooperation of every level of this effort to make safety the primary concern. It is vital that we all remember that it is the decision making and performance of individuals, sometimes acting alone, sometimes acting as members of a team or committee that directly determine how safe an organization is.