

EDO Principal Correspondence Control

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FINAL REPLY:

Sen. Harry Reid
Sen. John Ensign

TO:

Chairman

FOR SIGNATURE OF : ** PRI ** CRC NO: 03-0135

Chairman

DESC:

Concerns Regarding the Draft Test Protocols
(NUREG-1768) with Respect to the Testing of Spent
Fuel Casks

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SPECIAL INSTRUCTIONS OR REMARKS:

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United States Senate

WASHINGTON, DC 20510

March 11, 2003

The Honorable Richard Meserve, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Meserve:

We are writing to express our concerns regarding the draft test protocols (NUREG-1768) recently released by the Nuclear Regulatory Commission (NRC) with respect to the testing of spent fuel casks. Given the extremely hazardous nature of spent nuclear fuel, the NRC should thoroughly understand the risks of nuclear waste transportation and the potential consequences of a serious accident or attack. The release of radioactive materials from a spent fuel cask could have disastrous consequences for communities along potential shipping routes in Nevada and throughout the country.

Each transported shipping cask, especially the new high-capacity designs proposed for repository shipments, would contain an enormous inventory of dangerous radionuclides. The NRC must, therefore, be especially diligent to ensure that the public is not imperiled by spent nuclear fuel as the result of accident, terrorist attack, or other events during transportation. The NRC must be able to demonstrate that any casks that might be used for shipments of spent nuclear fuel to Yucca Mountain will maintain their integrity under a wide range of conditions.

In a previous letter dated March 12, 2002, the NRC was asked to provide information regarding how it determines the safety of containers used for shipping spent nuclear waste by road and rail. Your response dated April 2, 2002, admitted that none of the sixteen casks currently certified by the NRC had been tested on a full-scale basis. Your response documented that only two casks have been partially tested with half-scale models and four others partially tested with 1/4- or 1/3-scale models. You also indicated that the NRC would conduct a series of full-scale tests on casks.

The recently proposed draft test protocols involve demonstration tests of only two shipping casks, considered to be "representative," as part of the Package Performance Study (PPS) to be conducted at Sandia National Laboratories. The planned PPS tests may provide significant information for risk assessment and risk management, but as proposed in your draft test protocols they cannot be considered as a substitute for full-scale testing of each new cask design prior to certification.

We are dismayed at the NRC's reliance on scale-model tests and computer analysis to predict how the structural integrity of cask materials might be affected by a severe impact. Material scientists and mechanical engineers note that even small variations in the atomic structure of materials under stress can cause those materials to behave unpredictably. Computer

modeling is no substitute for physical testing, especially regarding the ability of shipping casks to survive long-duration, high-temperature fires, such as those involved in the Baltimore rail tunnel fire of July, 2001.

To ensure that we fully understand the risks involved, cask designs must be tested to failure. The PPS draft test protocols released by the NRC are deficient in this regard. In addition, there are no provisions for testing the resistance of fuel casks to explosive attacks or to immersion in water. Spent fuel casks represent a target of opportunity for terrorists seeking to create a high-level "dirty bomb," and our interstate highway and railroad transportation systems traverse numerous lakes, streams, rivers, and wetlands. It is imperative that explosive and immersion tests be included in any testing program.

Finally, the PPS draft test protocols do not contain a clear provision for involvement of the public in the final selection of cask testing facilities, casks to be tested, and test scenarios. This is particularly important for the citizens of Nevada. The proposed testing program must ensure public confidence, not just contribute to it. In order to demonstrate the reliability of new cask designs and fully involve the citizens of Nevada, we request that the NRC ensure that full-scale tests are undertaken at research facilities in the state of Nevada.

Given the importance of the NRC's test program to the health and safety of all Americans, we thank you in advance for your prompt attention to our request.

Sincerely,



HARRY REID
United States Senator



JOHN ENSIGN
United States Senator

