

June 4, 2003

The Honorable Nils J. Diaz  
Chairman  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

SUBJECT: TRANSPORTATION WORKING GROUP MEETING, APRIL 2003

Dear Chairman Diaz:

During its 141<sup>st</sup> Meeting on April 22-23, 2003, the Advisory Committee on Nuclear Waste (ACNW or the Committee) conducted a follow-on to the November 2002 Transportation Working Group Meeting that was held in Rockville, Maryland. The Committee heard a briefing from representatives of the National Academies on their proposed Transportation Study and from representatives of the State of Nevada (the State) and its contractors on their concerns about the transportation of spent fuel and high-level waste. The Committee expects to receive a briefing on the Academies' report again when the report is completed.

Representatives of the State presented information and recommendations on a number of transportation issues. Many of the State's current issues, such as route selection, relate to matters that are the responsibility of the Department of Energy, Department of Transportation, or the State. It was pointed out that the Nuclear Regulatory Commission (NRC) and the ACNW have neither responsibility for nor authority for disposition of such issues. The State representatives indicated that they believe the NRC should be given greater authority in the area of transportation.

In discussing issues that are regulated by the NRC, primarily cask certification, the State representatives provided summaries of their conclusions and recommendations but did not present the supporting technical bases. In addition, they qualified the statements by noting that the information and conclusions were tentative and subject to change based on their continuing review of the issues. For example, they recommended several full-scale cask fire tests with surrogate spent fuel to test the fuel's behavior beyond regulatory fire requirements. The State representative was asked why this type of test required a full-scale cask, why not simply heat a fuel assembly in a furnace? The State representative responded that they had not considered anything other than full-scale cask testing and acknowledged that simpler alternatives might be appropriate.

The State is currently sponsoring several studies on the risk associated with spent fuel transportation. To date, these studies have not identified a safety concern that would indicate that current NRC regulations are not adequate. Nevertheless, the State believes that full-scale testing of the casks should be performed to confirm their safety and that the testing should go beyond regulatory requirements. The State representatives agreed with the Committee that testing performed to benchmark codes is quite different from testing performed to demonstrate regulatory compliance. Attempting to accomplish both objectives with a single test is probably

not possible. The Committee maintains that full-scale testing beyond regulatory requirements would not provide any meaningful information, and agrees that if full-scale testing is performed, it should not have multiple objectives.

The State is concerned that the regulatory requirements for transportation package fire testing may not be sufficient with regard to the maximum temperature and duration of the fire. The NRC staff is aware of these concerns and has initiated discussions with the State and its consultants to resolve these issues.

The Committee reviewed a report that references NUREG/CR-6672<sup>1</sup> as the basis for release fractions resulting from a rail accident. The report was prepared by a State contractor<sup>2</sup>. The Committee notes that the release fractions calculated in NUREG/CR-6672 are very high and extremely conservative. The aggregate effect of the five conservatisms identified in the NUREG/CR is to overestimate radiological releases by several orders of magnitude. Despite the conservatisms, NUREG/CR-6672 concludes that spent fuel transportation regulations adequately protect public health and safety. The Committee believes that it is unfortunate that such overestimates of consequence are published by NRC in NUREG reports, because they get separated from the caveats and are used as though they were valid best estimates.

The Committee would like to restate its position that testing or analysis of conditions beyond reality is neither appropriate nor prudent. To date, the State agrees that it has not identified any technical issue indicating that current NRC regulations are not adequate.

Sincerely,

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George M. Hornberger  
Chairman

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<sup>1</sup>U. S. Nuclear Regulatory Commission, NUREG/CR-6672, "Reexamination of Spent Fuel Shipment Risk Estimates," dated March 2002.

<sup>2</sup>M. Lamb and M. Resnikoff, Radioactive Waste Management Associates, "Radiological Consequences of Severe Rail Accidents Involving Spent Nuclear Fuel Shipments to Yucca Mountain: Hypothetical Baltimore Rail Tunnel Fire Involving SNF," dated September 2001.