May 10, 2002

The Honorable Richard J. Durbin
United States Senate
Washington, D.C. 20510

Dear Senator Durbin:

I am responding on behalf of the U.S. Nuclear Regulatory Commission (NRC) to your letter of March 22, 2002. You requested information to help evaluate the safety of transporting nuclear waste through and from Illinois to the proposed repository at Yucca Mountain.

At the outset, I would note that federal regulation of spent fuel transportation safety is shared by the U.S. Department of Transportation (DOT) and the NRC. DOT regulates the transport of all hazardous materials, including spent fuel, and has established regulations for shippers and carriers regarding, among other things, radiological controls, hazard communication, and training. For its part, NRC establishes design standards for the casks used to transport licensed spent fuel, and reviews and certifies cask designs prior to their use. NRC also conducts inspections to ensure that spent fuel packages are designed, fabricated, used, and maintained and that shipments are made, in accordance with NRC and DOT transportation safety regulations. In addition, NRC reviews and approves physical security plans for spent fuel shipments conducted by NRC licensees.

The Department of Energy (DOE), unless otherwise required by legislation, has the authority to establish its own cask certification and security requirements for the transportation of spent fuel under its authority. DOE currently voluntarily chooses to use casks certified by NRC for all of its spent fuel shipments. However, the Nuclear Waste Policy Act of 1982 as amended, requires DOE to use casks certified by the NRC when it transports spent fuel to a national high-level waste repository or a national monitored retrieval storage facility. DOE has the authority to impose its own security requirements for these shipments.

The safety record associated with the current regulatory system for the transportation of spent fuel is exemplary – approximately 1,300 shipments of civilian fuel and 920,000 miles without an accidental radioactive release. Nonetheless, we continually examine the transportation safety program. Over two years ago, the NRC began the Package Performance Study to study cask performance under severe impact and fire accident conditions. The study plan calls for full-scale testing of a cask to confirm computer models of cask response to severe accident conditions. As a part of its evaluation, the NRC staff is analyzing appropriate national transportation accidents, such as the 2001 train accident in Baltimore to determine if our transportation requirements need to be modified. Finally, NRC is sponsoring a study to update its evaluation of cask response to acts of sabotage. We intend to utilize the results of these studies to determine whether security requirements need to be modified. These studies together with any resulting changes, if necessary, will provide further confidence that our national system for the transportation of spent fuel is safe.

Additional information concerning your specific questions is enclosed. If you have questions, please contact me.

Sincerely,

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Richard A. Meserve

Enclosure:
Responses to Questions
from Senator Durbin

RESPONSES TO QUESTIONS FROM SENATOR DURBIN
(Letter to the Chairman dated March 22, 2002)

1a. How was the Nuclear Regulatory Commission involved in analyzing the transportation impacts associated with a recommendation of Yucca Mountain as a national nuclear waste repository included in the FEIS?

The U.S. Nuclear Regulatory Commission's (NRC) role on the Yucca Mountain Environmental Impact Statement (EIS) was as a commenting agency, as required by the Nuclear Waste Policy Act of 1982, as amended (NWPA). NRC is not designated as a cooperating agency (i.e., an agency designated under Council on Environmental Quality regulations to provide substantial assistance to the lead agency) for U.S. Department of Energy's (DOE) EIS; therefore, we did not actively participate in the EIS development process. As a commenting agency, the NRC reviewed DOE's draft EIS, including those sections of the draft that considered transportation, and provided comments on the draft EIS in February 2000. We also provided comments on the DOE's final EIS in February 2002.

NRC's comments on the draft EIS (letter of February 2000, Comment 3) included a comment on DOE's treatment of the proposed transportation modes and routes. In its final EIS, DOE acknowledged that additional National Environmental Policy Act (NEPA) analyses may be needed for transportation. As stated in NRC's letter of February 8, 2002, we believe that the analyses provided in the EIS appear to bound appropriately the range of environmental impacts, however, we expect that DOE's commitment to define transportation modes and routes will allow for more precise estimates of impacts that could result in revisions to the NEPA analyses. We expect that any such additional reviews will be completed in support of a license application. If the President's recommendation becomes a final decision, NRC will, of course, continue interactions with DOE and other interested stakeholders, to resolve outstanding technical and environmental issues, as needed.

1b. If Yucca Mountain is approved, what further transportation plans and Environmental Impact Statements would need to be completed?

Section 114(f) of the NWPA requires NRC to adopt, to the extent practicable, DOE's EIS prepared in connection with DOE's proposal to construct the repository. The NRC's regulations provide that it will be practicable to adopt DOE's EIS unless: 1) the action proposed in the EIS differs from the action proposed in DOE's license application and the difference may significantly affect the quality of the human environment; or 2) significant and substantial new information or new considerations render the EIS inadequate. NRC's adoption of the EIS, in whole or in part, will satisfy the NRC's responsibilities under NEPA.

In its final EIS, DOE stated that additional NEPA analyses in the area of transportation may be necessary. We expect that any such additional analyses would better define DOE's preferred option for transportation

1c. What role would your Agency play regarding transportation of spent fuel if Congress approves Yucca Mountain?

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 certification of the packages used for transport. Section 180 (a) of the NWPA prohibits the Secretary of Energy from transporting spent nuclear fuel or high-level waste to a repository or monitored retrievable storage facility except in packages certified for such purpose by the Commission. The NRC has reviewed and certified a number of package designs which could be used for transport of spent fuel to a repository, and has additional designs under review. Security requirements for these shipments would be addressed under DOE regulations.

However, if NRC licensees are responsible for shipping the spent fuel not only must the transport container be certified by the NRC, but also the shipment must comply with NRC regulations for the physical security of spent fuel in transit (10 CFR Part 73). NRC licensees are subject to inspection for compliance with the NRC's transportation safety and security regulations. The NRC also issues Quality Assurance (QA) program approvals for radioactive material packages that apply to the design, fabrication, use and maintenance of these packages. Activities conducted under an NRC QA program are also subject to NRC inspection.

1d. How would your agency be involved in selecting transportation modes and routes for the relocation of nuclear waste if Congress approves Yucca Mountain?

As stated previously, if DOE takes custody to the spent fuel at the reactor site, the only involvement NRC will have in the transport will be the certification of the transport cask. However, even if a NRC licensee is responsible for spent fuel shipments, NRC would not be directly involved in selecting transportation modes and routes for nuclear waste shipments to Yucca Mountain. NRC regulations provide our licensees with a general license to offer licensed material to modal carriers for transport, provided several requirements are met, including use of approved packaging for the mode to be used. The regulations do not specify which modes are to be used -- that selection is left to the licensee.

The U.S. Department of Transportation (DOT) regulates routing for all hazardous material transportation, including radioactive materials. NRC reviews and approves licensee plans for spent fuel shipments to confirm the planned physical protection measures are adequate, that coordination with local law enforcement authorities has been established, and that the licensee has complied with applicable DOT routing regulations.

2. In the FEIS, the DOE expresses a preference for a mostly rail scenario. How would you advise Nuclear Regulatory Commission (NRC) licensees, States, and others responsible for disposing spent nuclear fuel and high level radioactive waste to act, given the different transportation scenarios proposed in the FEIS, including the mostly rail scenario, the mostly truck scenario, and the possibility of building a rail corridor or making highway improvements to and around Yucca Mountain?

NRC would advise that decisions regarding shipment logistics be left to shippers and carriers, provided of course that each shipment is conducted in full compliance with all applicable Federal and State safety and security regulations. NRC believes that its transportation safety regulations would provide adequate protection of public health and safety for shipments of spent fuel to Yucca Mountain regardless of the type of transportation used to ship the spent fuel. As a practical matter, some reactor sites do not have rail access, making highway shipment to a nearby rail transfer station the primary option. For those sites that do have rail access, it appears that the larger capacity of rail packages could contribute to shipment efficiency.

3. What mechanisms are currently in place to coordinate with other agencies (federal, state, and local) with jurisdiction over the transportation of nuclear waste to Yucca Mountain, if it is approved as a national repository?

The DOT and NRC jointly regulate safety regarding the transportation of radioactive material at the Federal level. In this regard, the agencies have established a Memorandum of Understanding (published July 2, 1979) that delineates their respective responsibilities. 44 Fed. Reg. 38690 (1979). Basically, DOT regulates the conditions of radioactive material transport, including package and conveyance radiological controls, routing, hazard communication, and shipper and carrier training. NRC primarily regulates the approval of large-quantity and fissile material packaging designs.

NRC has also entered into a "Procedural Agreement with the U.S. Department of Energy on Spent Fuel and High-level Waste Transportation Packaging." 48 Fed. Reg. 51875 (1983). The Agreement established common planning assumptions and outlines procedures that NRC and DOE will observe in connection with the development of packaging to be used for transportation of spent fuel and high-level waste under the provisions of the NWPA.

On March 29, 1984, the NRC issued a General Statement of Policy on NRC Response to Accidents Occurring During the Transportation of Radioactive Material. 49 Fed. Reg. 12335 (1984). In this Statement, the NRC acknowledges that states have the primary responsibility for protecting the health and safety of the citizens from public hazards. The NRC provides advance notification of each shipment to Governors. In a radioactive materials transportation accident, the NRC would offer technical assistance to the states in the form of information, advice, evaluations, and information on packaging characteristics. In addition, the DOE maintains teams of technically trained nuclear and transportation specialists available to assist states, upon request. If NRC assistance is not requested, NRC activities will be primarily limited to information collection.

An additional, and less formal, mechanism of coordination that the NRC employs with broader audiences affected by spent fuel shipments is public outreach. Each year, the NRC participates in many conferences and meetings with Federal, state, local and tribal organizations in which spent fuel transportation issues are discussed. The NRC plans to continue these activities to enhance public understanding of, and confidence in, the safety basis for these shipments.

4a. Are federal, state and local officials adequately trained, prepared, and equipped with the necessary skills to execute a large-scale shipment plan to bring nuclear waste to Yucca Mountain, if it is approved as a national repository?

NRC licensees have safely completed more than 1300 spent fuel shipments over the past 20 years.That safety record is in part attributable to the training and preparedness of the Federal, state, local and tribal officials involved in overseeing, inspecting, or monitoring the shipments. Spent fuel continues to be transported presently, and NRC is confident that the current level of Federal, state, local and tribal training, preparedness and equipment can be expanded as necessary in the years leading up to a large-scale shipment campaign to maintain the spent fuel shipment safety record.

4b. What federal training, planning, and resources would be made available for federal, state, and local officials who would be involved in the transportation of nuclear waste, including first responders, if Congress approves the President's recommendation on Yucca Mountain?

Section 180 (c) of the Nuclear Waste Policy Act of 1982, as amended, requires DOE to provide technical assistance and funds to States for training for public safety officials of appropriate units of local governments and Indian tribes through whose jurisdiction spent nuclear fuel will be transported. In this connection, DOE assistance will likely supplement the Federal programs that are already in place to ensure first responders are adequately trained and equipped. For example, NRC works closely with the Federal Emergency Management Agency (FEMA) in radiation emergency preparedness in the vicinity of NRC licensed facilities. FEMA has programs specifically designed to equip and train first responders for a variety of hazards, including radiation hazards. In addition, the Department of Justice, Office of Justice Programs provides training and funding for equipment for first responders to respond to a variety of incidents, including radiological hazards. For Federal responders, NRC would rely on the full Federal response as described and agreed to in the Federal Radiological Emergency Response Plan, as published in the Federal Register as a Notice, May 8, 1996, Part III, pp. 20944 - 20970.