



UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201

March 29, 2004

Dr. Margaret S. Y. Chu
Director
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Dr. Chu:

Thank you for the Department of Energy's (DOE) support of our January 21 panel meeting on transportation strategic planning. Now that the DOE has received significant funding to develop a transportation system for Yucca Mountain, we anticipate that updates on progress in this area may become a regular feature of our future Board meetings. We also anticipate holding additional panel meetings devoted solely to transportation on a regular basis.

At the January 21 meeting, we heard that there has been significant experience in transporting spent fuel and similar materials safely, both in the United States and abroad, and that the planning and operational issues related to the movement of those materials can readily be identified. Because a Yucca Mountain transportation system would be substantially larger than those used for many previous shipping campaigns in the United States, the challenges in developing such a transportation system and operating it safely and efficiently become magnified. From that perspective, we offer the following comments on information presented at the January 21 meeting.

- The Board believes that proper transportation planning for meeting a 2010 operational start-up is a large and ambitious task. This observation is based on both the current status of Yucca Mountain project transportation planning and a retrospective view of the Waste Isolation Pilot Plant (WIPP) transportation planning and implementation. Consequently, proper strategic planning is vital at this time. Although the release of the DOE's initial strategic plan in November 2003 is commendable, the Board feels that the plan lacks the necessary detail for truly understanding the DOE's intentions and awareness of the complexity and scale of transportation planning. The Board recommends that the DOE develop and produce a Gantt chart (or its equivalent) showing the schedule for transportation planning activities according to each activity's scope, duration, resources required, and relationship to other activities. This will enable the DOE to demonstrate that a systematic approach to transportation planning is being undertaken, identify the activities that are anticipated to occur in sequence or in parallel, and acknowledge what constitute critical-path activities.

- The Board cannot stress enough the importance of collaboration and communication with a diverse set of transportation stakeholders—early and often. This set includes stakeholders at all levels of government. Although the Board believes that the DOE’s resumption of transportation planning discussions with regional government organizations represents a positive step, that is not a substitute for the need to engage in constructive dialogue with individual states and affected units of local government. Marginalizing these relationships will not only make the DOE appear disingenuous but will also become problematic when the DOE requests the future cooperation of these entities (e.g., permitting).
- The Board sees waste acceptance emerging as a key strategic planning consideration. There is a compelling need for the DOE and the utility industry to clarify the interpretation of current contract provisions regarding the type of spent fuel that can be shipped and the timetable for doing so, as well as to negotiate any changes to these provisions to satisfy both DOE and utility shipping concerns. Absent these clarifications and negotiations, cask requirements and transport logistics that are compatible with the waste to be shipped will be a formidable, if not impossible, task to define. Although the Board understands that the DOE and the utility industry have been reluctant to discuss these issues because of pending litigation, the Board encourages the DOE to seek a method for facilitating such an exchange, perhaps through the use of an objective, unbiased third party.
- A complete and accurate inventory of rail, truck, and barge access/egress infrastructure for each nuclear power plant and corresponding site interfaces is a critical-path element in the transportation planning process that the DOE needs to address. The feasibility of certain modes for servicing specific facilities and the resources required to upgrade the infrastructure to meet safety and security standards will be important determinants in mode and route decisions as well as in scoping the financial requirements for operating such a system.
- Cask procurement can be a lengthy and expensive activity, especially given the design, testing, certification, and fabrication requirements associated with the production of new cask types. Before the launching of a full-scale development program, the Board advises the DOE to conduct a thorough review of waste inventory and acceptance assumptions; anticipated shipment schedules; the ability to utilize existing cask designs and the flexibility inherent in new designs to handle anticipated waste types, modes, and volumes; interface with the Yucca Mountain surface facility; and effects on ancillary transportation equipment design.
- The DOE should not underestimate its use of truck transport of spent nuclear fuel and high-level radioactive waste, irrespective of whether rail is designated as the primary transport mode. With heavy-haul and super-heavy-haul shipments under consideration, obtaining permits, upgrading or expanding lanes on roadways, and providing enhanced security are just a few of the issues that will need to be addressed. These challenges will be exacerbated by the total reliance on trucking for the final portion of any shipment if

the Yucca Mountain project decides to receive waste shipments before a rail spur into the facility is available.

- For satisfying post-9/11 public expectations, security planning needs to be explicitly considered as part of a comprehensive transportation risk management process. The DOE should give serious consideration to adopting U.S. Nuclear Regulatory Commission security requirements, which a concerned public may view as more effective than similar DOE requirements.
- Emergency response capability is seen by states and local communities as a vital component of shipment safety and security because it ensures that they can participate in protecting the public if a transportation incident occurs. Given that the WIPP transportation program worked with states for seven years to develop community relationships and provide emergency response training before the first shipment, and on the basis of estimates from various counties of the emergency response planning and training resources required, the DOE will need to demonstrate that adequate preparatory time and financial resources will be available.
- The Board observes that the DOE can draw on considerable operational experience on how to transport nuclear waste safely. This is evidenced by previous and ongoing campaigns involving WIPP, foreign research reactor fuel, naval spent fuel, and West Valley spent fuel. However, no formal integration of transportation activities within the agency appears to be taking place. The Board encourages the DOE to establish such a mechanism, perhaps by reestablishing its Senior Executive Transportation Forum.

Thank you again for the DOE's support of our meeting.

Sincerely,

{Signed By}

Mark Abkowitz, Chair
Panel on the Waste Management
System