



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

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Frank Randall
External Affairs

Board Releases 1996 Year-End Report

In its 1996 year-end report, released today, the Nuclear Waste Technical Review Board (the Board) concludes that additional studies beyond those planned for the viability assessment (VA) will be needed to evaluate the suitability of Yucca Mountain as a potential site for a permanent repository. The three major areas of concern discussed in the *Report to the U.S. Congress and the Secretary of Energy – January to December 1996* cover the need for an east-west tunnel across the potential repository block, the distinction between the Department of Energy's (DOE) viability assessment and a technically defensible decision about the suitability of the Yucca Mountain site for repository development, and issues surrounding repository design.

The need for an east-west tunnel. The Board has been concerned that DOE site-characterization plans did not, until recently, include directly accessing the part of the mountain where the waste would eventually be placed. Data from this area will help describe how water may contact and corrode waste packages, which depends on how much water percolates through the site. The Board believes a decision about the suitability of the Yucca Mountain site for repository development should not be made until important hydrologic and geologic data is gathered and analyzed. To achieve this, the Board recommends the excavation of a tunnel, 3-5 meters wide, directly through the waste emplacement area of the potential repository block. The DOE recently agreed to excavate such a tunnel.

Site suitability vs. the viability assessment. Although the terms viability and suitability are sometimes used interchangeably, they are not equivalent. The Board believes the DOE's viability assessment in late 1998 could serve to focus and integrate the program. However, the data upon which the viability assessment will be based will not contain enough information to

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determine whether the site is suitable for repository development. Additional data from within the proposed repository area will be needed. It is unlikely that an east-west tunnel can be excavated and the data obtained and analyzed prior to the viability assessment. This means that significant uncertainties about the site will likely remain at the time the viability assessment is made, about 18 months from now.

Repository design issues. The Board is very pleased that the exploratory studies facility has been excavated and that studies are well underway in the tunnel. The Board has long encouraged the DOE to construct this underground facility and commends the DOE for the progress it has made in this important area. As new data are obtained and analyzed, it becomes increasingly important to integrate the data into the repository and waste package design process. Tunnel support, alternative engineered barriers (e.g., drip shields, fillers, and backfills), thermal loads, and other issues could influence potential designs for the repository and its operations. The Board believes significantly more design work is needed to support the viability assessment and the subsequent site-suitability decision.

This and other Board reports and information are available from the Board's Arlington, Virginia, office. Requests may be made by telephone (703-235-4473), fax (703-235-4495), or e-mail (info@nwtrb.gov).

The Nuclear Waste Technical Review Board was created by Congress in the Nuclear Waste Policy Amendments Act of 1987 to evaluate the technical and scientific validity of activities undertaken by the DOE in its program to manage the disposal of the nation's spent nuclear fuel and defense high-level waste, including activities related to the handling and transport of spent fuel and high-level waste and to site characterization.

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