



UNITED STATES  
NUCLEAR WASTE TECHNICAL REVIEW BOARD  
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## **Board Issues Report on Direction of Future Research for a Proposed Repository System at Yucca Mountain**

Today, the U.S. Nuclear Waste Technical Review Board released a report offering its views about the scientific and technical objectives and priorities of research under way and planned by the Department of Energy (DOE) as part of its program for characterizing a site at Yucca Mountain, Nevada, as a potential repository for spent fuel and high-level radioactive waste. The Board emphasizes that this report is *not* a review of the DOE's forthcoming "viability assessment." The Board intends to offer its views on the scientific and technical aspects of the VA in a timely manner after it is issued.

In its report, the Board discusses some of the remaining key scientific and technical uncertainties related to performance of a potential repository at Yucca Mountain. The Board also supports continuing focused studies of both the natural and the engineered barriers at Yucca Mountain to attain a defense-in-depth repository design and to increase confidence in predictions of repository performance.

The Board notes that the DOE has made considerable progress recently in characterizing the Yucca Mountain site and developing a comprehensible waste isolation strategy for a repository that might be located there. In general, the Board believes that the DOE has identified key areas of research whose results would improve the technical basis for making a determination about site suitability, and, if appropriate, for applying to the U.S. Nuclear Regulatory Commission for a license to build a repository.

The Board realizes that at the time a decision is made about the suitability of the Yucca Mountain site, not all scientific and technical uncertainties about a potential repository system will have been resolved fully. The Board's role in this process is to identify key uncertainties and describe the technical and scientific means by which some of those uncertainties could be reduced.

The Board's report addresses some of these technical and scientific uncertainties by examining information about the proposed repository system presented to it in meetings and other technical exchanges. The Board's report focuses on uncertainties in the unsaturated zone, which is located above the groundwater table and would form the roof, foundation, and interior of the repository; alternative repository and waste package designs; and the saturated zone, or the area that begins several hundred feet beneath the potential repository and where the rock pores and fractures are filled with water. The Board considers and comments on some of the important connections between the site's natural properties and the current designs for the waste package and the other engineered features of the repository.

The report is available from the Board's Arlington, Virginia, office and also may be downloaded as of November 20, 1998, from the Board's Web site at [www.nwtrb.gov](http://www.nwtrb.gov). Requests for copies of reports or other information may be made by telephone (703-235-4473), fax (703-235-4495), and e-mail ([info@nwtrb.gov](mailto:info@nwtrb.gov)).

The U.S. Nuclear Waste Technical Review Board was created by Congress in the Nuclear Waste Policy Amendments Act of 1987. The Board's mandate is to evaluate the validity of technical and scientific activities undertaken by the Secretary of Energy related to the DOE's program for managing and disposing of the nation's spent nuclear fuel and high-level defense waste, including activities related to site characterization and the handling and transport of spent fuel and high-level waste.

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