

TO: Julia Corrado



UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
1111 18th Street, N.W., Suite 801
Washington, D.C. 20036

For Immediate Release

March 22, 1990

Nuclear Waste Board Releases Report to Congress and the Secretary of Energy

The Nuclear Waste Technical Review Board (NWTRB) today released its first report to the U.S. Congress and Secretary of Energy, evaluating the U.S. Department of Energy's (DOE) technical and scientific work to date in characterizing the Yucca Mountain Site in Nevada.

In the Nuclear Waste Policy Amendments Act of 1987 (NWPAA), the U.S. Congress designated the Yucca Mountain Site as the candidate site for a permanent geologic repository for the potential disposal of spent nuclear fuel and high-level radioactive waste. Congress made final selection of the site subject to extensive studies of its suitability by the DOE and other conditions. In the same law, the Congress created the NWTRB to review the work of the DOE and report its findings, conclusions and recommendations to the U.S. Congress and Secretary of Energy no fewer than two times a year.

The Board makes 24 recommendations in the report, which are intended to assist the DOE in its efforts to improve the technical and scientific work being conducted to determine if the Yucca Mountain Site is suitable to be a permanent repository. The recommendations are organized according to the following categories: technical and

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scientific, strategic technical and non-technical, and science policy. A summary of the recommendations appears at the conclusion of this release.

The Board recognizes, however, that before needed scientific and technical work can begin and some of its recommendations can be implemented, the current impasse between the DOE and the State of Nevada on granting permits to conduct site characterization activities must be resolved. The Board recommends that efforts continue to resolve this impasse as soon as possible.

In the upcoming months the Board intends to explore greater use of a systems engineering and analysis approach to enhance the nation's nuclear waste disposal program. The Board plans to examine the potential advantages associated with developing a waste disposal system that combines the benefits of extended-life engineered barriers with the benefits of geologic barriers.

The Board also intends to explore the need for improvements in the federal licensing standards and criteria now in use or proposed for use in licensing a permanent repository. The Board believes such improvements may be needed to help ensure public health and safety to the maximum extent possible, while at the same time, relying on realistic and sound scientific goals and the most advanced and safe technological systems.

The advantages versus disadvantages of cooling spent nuclear fuel prior to disposal will also be studied by the Board. Last, the Board intends to review issues raised by the Secretary of Energy in his most recent report to Congress on the waste program.

Copies of the full report can be purchased by writing the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Requests should

mention the title of the report-- First Report to the U.S. Congress and U.S. Secretary of Energy from the Nuclear Waste Technical Review Board-- include a check or money order for \$4.50 per copy, and list the stock number-- 061-000-00747-4.

Also, on a first-come, first-serve basis until our limited supply is depleted, one copy of the report may be obtained at no charge by submitting a request in writing to the Nuclear Waste Technical Review Board, 1111 18th Street N.W., Suite 801, Washington, D.C. 20036. Please also include a self-addressed mailing label in your request. This will ensure that you receive a copy as soon as possible.

For further information about the Board's activities, contact: Paula N. Alford, Director, External Affairs, 1111 18th Street N.W., Suite 801, Washington, D.C. 20036.
(202) 254-4792

First Report: Summary of NWTRB Recommendations

Technical and Scientific Recommendations

- A. **Mechanical Excavation:** Maximize the use of the most modern mechanical excavation techniques in the recently initiated studies of alternative shaft and tunnel construction methods.
- B. **Ghost Dance Fault:** Intersect the Ghost Dance Fault with an exploratory drift at more than one location.
- C. **Early Exploratory Drifting:** Plan an exploratory drift in an east-west direction across the Yucca Mountain geologic block.
- D. **Exploratory Ramp:** Continue studies for incorporating an exploratory ramp entering the Yucca Mountain geologic block from the east.
- E. **Non-Welded Tuff:** Include in the exploratory program ample penetration of the softer, less permeable tuff units by borings, shafts, ramps, or tunnels.
- F. **Excavation-Testing Sequence:** Develop innovative ways of coordinating and sequencing excavation and scientific testing.

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- G. **Unsaturated Zone Recharge:** Expand and accelerate the studies of snowmelt and rainfall infiltration into alluvium and near-surface fractures.
- H. **Fracture Flow:** Continue the sampling and analysis of ^3H and ^{36}Cl isotopes to gain a better understanding of the surface features that control the deep penetration of recharge.
- I. **Hydrogeologic Modeling:** Approach hydrogeologic modeling in the program in a more systematic fashion, and validate models when new pertinent field data are made available.
- J. **Calico Hills Hydrogeologic Properties:** Explore the Calico Hills tuff unit with surface borings and with the exploratory shaft facility.
- K. **Adsorption in Unsaturated Tuffs:** Study radionuclide adsorption in unsaturated tuffs over the range of temperatures and variable conditions of pH, ionic strength, and competing and complexing aqueous ionic species concentrations expected at the site.
- L. **Radionuclide Adsorption Workshop:** Organize a radionuclide adsorption workshop to determine the applicability of available radionuclide adsorption data on tuff and to establish additional research and model development needs.
- M. **Performance Assessment Methodology:** Develop methodology to demonstrate performance assessments.
- N. **Preliminary Performance Assessment:** Carry out preliminary performance assessment calculations to demonstrate that such computations are possible and to determine if any site characteristic has been detected that would disqualify the site.
- O. **RADTRAN/TRANSNET:** Validate the RADTRAN model and some components in the TRANSNET package.
- P. **Risk Models User-Needs Assessment:** Assess the needs of potential RADTRAN/TRANSNET users with respect to what the various civilian radioactive waste program users want to accomplish and the levels of detail they require for different applications.
- Q. **^{14}C Release Mechanism:** Expand studies of ^{14}C release mechanisms and initiate a consultive program with the EPA and the NRC to examine the appropriateness of the ^{14}C limit.

Strategic and Non-Technical Recommendations

- A. **System Safety:** Initiate a transportation system safety program.
- B. **Human Factors:** Initiate a human factors program for transportation safety.
- C. **Operational Planning:** Evaluate the use of risk-based planning tools in developing a broadbased and complete transportation operational plan.
- D. **Environmental and Public Health Program:** Develop a systems approach to the Yucca Mountain ecosystem studies program so that each individual study is integrated into an overall environmental program.

Science Policy Recommendations

- A. DOE and State of Nevada Interactions: Continue efforts to resolve the present impasse on permitting of site characterization studies.**
- B. The EPA Standard: 40 CFR 191: Consider six modifications when EPA Standard: 40 CFR 191 is revised.**
- C. Consideration of Uncertainties in Setting Standards: Regulatory agencies should consider inherent uncertainties and limitations in geologic information and data projected for periods of tens of thousands of years in regard to the rigor of formulating acceptable and realistic environmental radiation protection standards.**

ATTENTION

We are currently updating our mailing list and need your help!!! Please indicate below whether or not you want to remain on our list. After completing the form, please fold along the dotted lines on the other side and send your response back to us by **MAY 11, 1990**. If we have not heard from you by this date, your name will be removed from the mailing list. Thank you for your help.

_____ Yes, I want to remain on the NWTRB mailing list and my address is correct.

_____ Yes, I want to remain on the NWTRB mailing list, but my address is incorrect. The following address is the correct address. Please print or type your complete address i.e., name, title (if any), company (if any), street address, city, state, zipcode and telephone number.

_____ No, I do not want to remain on the mailing list.

Remember, the deadline for your reply is MAY 11, 1990

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