



# The U.S. Nuclear Waste Technical Review Board

## Board Mission

The 1987 amendments to the Nuclear Waste Policy Act created the U.S. Nuclear Waste Technical Review Board. The Board is a unique federal agency: It is completely independent; it advises both Congress and the Secretary of Energy on technical issues related to nuclear waste management; and it evaluates the technical validity of all activities undertaken by the Secretary of Energy related to the Department of Energy's (DOE) continuing obligation to manage and develop an approach for the disposition of spent nuclear fuel and high-level radioactive waste.

According to the legislative history, Congress created the Board because ongoing technical peer review that is unquestionably independent is essential to acceptance by the public and the scientific community of any approach for managing nuclear waste. The Board is the only entity that performs an independent and integrated technical evaluation of all elements of the nuclear waste management system, including waste acceptance, transportation, packaging and handling, facility operation and design, and waste storage and disposal.

## An Evolving Approach to Managing Nuclear Waste: the Board's Continuing Role

For the last 20 years, DOE has focused on developing a permanent geologic repository at Yucca Mountain in Nevada. During that time, the Board has reported on the technical validity of DOE's efforts to Congress and the Secretary of Energy in twice yearly reports, in testimony, and in correspondence. (All Board documents are available on its website: [www.nwtrb.gov](http://www.nwtrb.gov).)

The President and the Secretary of Energy recently announced that the Yucca Mountain program will terminate and that waste management alternatives will be considered by a Blue Ribbon Commission. As pointed out by Secretary Chu, however, under existing law DOE continues to have responsibility for the long-term management and disposition of high-level radioactive waste and spent nuclear fuel. Similarly, the Board's statutory responsibility for conducting ongoing technical peer review of DOE's efforts and for advising Congress and the Secretary on related issues is unchanged.

The Board is ideally suited for facilitating and enhancing the technical credibility of the examination of waste management alternatives by Congress, the Secretary of Energy, or by a Blue Ribbon Commission. The Board will identify technical issues and questions that should be addressed and will create a "toolbox" of unbiased technical information products that can be used to inform the evaluation of waste management alternatives and technologies. To accomplish these tasks, the Board has refocused its performance goals and objectives for the next two years.

## Members of the Board

The Board is nonpartisan and nonpolitical. Its eleven members are appointed by the President from a list of nominees submitted by the National Academy of Sciences (NAS). The NAS makes its nominations based solely on eminence and expertise of the candidates in relevant scientific and engineering disciplines. The Board members serve staggered terms; the terms of five current Board members will expire in April 2010. The names and affiliations of the current 11 Board members are listed on the back of this sheet.

- **B. John Garrick, Ph.D., P.E.**, is chairman of the Board. A founder of PLG, Inc., he retired from the firm in 1997 and is a private consultant. His areas of expertise include nuclear science and engineering specializing in probabilistic risk assessment and the application of the risk sciences to natural and engineered systems.
- **Mark D. Abkowitz, Ph.D.**, is professor of civil and environmental engineering at Vanderbilt University and director of the Vanderbilt Center for Environmental Management Studies. His areas of expertise include the strategic and operational deployment of intelligent transportation systems, enterprise risk management methods and practices, and assessing the impacts of energy choices and climate change.
- **William Howard Arnold, Ph.D., P.E.**, is a private consultant with long experience as a top executive in the nuclear industry. He retired from a 40-year career with Westinghouse and then Louisiana Energy Services in 1996. He holds a doctorate in physics and has special expertise in nuclear project management, organization, and operations.
- **Thure E. Cerling, Ph.D.**, is Distinguished Professor of Geology and Geophysics and Distinguished Professor of Biology at the University of Utah. His areas of expertise include field geology, isotope geology, and geochemical processes occurring near the Earth's surface.
- **David J. Duquette, Ph.D.**, is John Tod Horton '52 Professor of Engineering in the Department of Materials Science and Engineering at Rensselaer Polytechnic Institute. His areas of expertise include the physical, chemical, and mechanical properties of metals and alloys.
- **George M. Hornberger, Ph.D.** is a Distinguished University Professor at Vanderbilt University where he is Director of the Vanderbilt Institute for Energy and Environment. He also is the Craig E. Philip Professor of Engineering and Professor of Earth and Environmental Sciences there. His areas of expertise include catchment hydrology and hydrochemistry and transport of solutes and colloids in geologic media.
- **Andrew C. Kadak, Ph.D.**, is Professor of the Practice in the Nuclear Science and Engineering Department at the Massachusetts Institute of Technology. His areas of expertise include fundamental nuclear engineering, reactor operations, and the development of advanced reactors.
- **Ronald M. Latanision, Ph.D.**, is emeritus professor of materials science and engineering and of nuclear engineering at the Massachusetts Institute of Technology and a Corporate Vice President of the engineering consulting firm, Exponent. His areas of expertise include materials processing and corrosion of metals and other materials in aqueous environments.
- **Ali Mosleh, Ph.D.**, is Nicole J. Kim Professor of Engineering, director of the Reliability Engineering Program, and director of the Center for Risk and Reliability at the University of Maryland. His areas of expertise include methods for probabilistic risk analysis and reliability of complex systems.
- **William M. Murphy, Ph.D.**, is professor of Geological and Environmental Sciences at California State University, Chico. His research focuses on geochemistry, including the interactions of nuclear wastes and geologic media. He also is a technical administrative judge on the Atomic Safety and Licensing Board Panel of the U.S. Nuclear Regulatory Commission.
- **Henry Petroski, Ph.D., P.E.**, is Aleksandar S. Vesic Professor of Civil Engineering and professor of history at Duke University. His areas of expertise include the interrelationship between success and failure in design, the nature of invention, and the history of technology.