U.S. Nuclear Waste Technical Review Board

The U.S. Nuclear Waste Technical Review Board was established as an independent federal agency in the 1987 amendments to the Nuclear Waste Policy Act (NWPA). The Board's role is to evaluate the technical validity of Department of Energy (DOE) activities related to implementing the NWPA and to provide objective expert advice to Congress and the Secretary of Energy. The Board is required by law to report its findings and recommendations at least two times per year to Congress and the Secretary of Energy.

Three attributes combine to make the Board unique among federal agencies: (1) the Board is an independent entity in the executive branch; (2) the Board advises both Congress and the Secretary of Energy; and (3) the Board performs an ongoing and integrated technical peer review of DOE activities related to managing spent nuclear fuel (SNF) and high-level radioactive waste (HLW), including transportation, packaging, storage, and disposition of SNF and HLW.

The Board's Continuing Role

For more than 20 years, DOE focused on developing a permanent geologic repository at Yucca Mountain in Nevada for disposing of SNF and HLW. During that time, the Board performed ongoing peer review of those DOE activities and conveyed its findings and recommendations to Congress and the Secretary of Energy in reports, testimony, and correspondence.

In January 2010, Energy Secretary Steven Chu appointed a Blue Ribbon Commission to consider alternatives to direct disposal of SNF and HLW at Yucca Mountain. DOE continues to have responsibility under the NWPA for the management and disposition of SNF and HLW even as new options for managing the waste are evaluated. Similarly, the Board's statutory responsibility for conducting ongoing technical peer review of those DOE activities remains unchanged.

Refocusing Board Priorities

In accordance with its technical mandate, the Board has refocused its priorities to reflect the transition of DOE responsibilities under the NWPA from DOE's Office of Civilian Radioactive Waste Management to its Office of Nuclear Energy and Office of Environmental Management. Some of the Board's priorities for fiscal year 2011 are:

- **Technical Experience Gained from Disposal Efforts to Date.** Based on its 20-year review of the U.S. repository program and its knowledge of disposal programs in other countries, the Board is preparing a report containing technical insights and lessons-learned that will be useful to future U.S. disposal programs.
- **Very-Long-Term Dry Storage.** The Board recently issued a white paper on technical issues related to extended dry storage of spent nuclear fuel.
- **Systems Analysis.** The Board has developed a systems analysis tool ("NUWASTE") to support its evaluation of DOE activities. A Board report will soon be issued that contains initial results obtained from NUWASTE analyses.
- **Survey of National Programs.** The Board is extending its *Survey of National Programs* report that was issued in late 2009.

More information on the Board, and all Board reports, correspondence, and testimony are available on the Board's website at www.nwtrb.gov.

Members of the Board

The Board is composed of 11 members who serve on a part-time basis. Board members are appointed by the President from a list of candidates submitted by the National Academy of Sciences. By law, nominees to the Board are selected solely on the basis of distinguished professional service and are eminent in a field of science or engineering, including environmental sciences.

The names and affiliations of the current Board members are listed below.

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.

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.

William Howard Arnold, Ph.D., P.E., is a private consultant with long experience as a top executive in the nuclear industry. He retired after a 40-year career, first with Westinghouse and then with Louisiana Energy Services, in 1996.

Thure E. Cerling, Ph.D., is Distinguished Professor of Geology and Geophysics and Distinguished Professor of Biology at the University of Utah.

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.

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, the Craig E. Philip Professor of Engineering, and a professor of earth and environmental sciences.

Andrew C. Kadak, Ph.D., is a Principal in Exponent, an engineering consulting firm. Before joining Exponent in 2010, he was a Professor of the Practice in the Nuclear Science and Engineering Department at the Massachusetts Institute of Technology.

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.

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.

William M. Murphy, Ph.D., is professor of Geological and Environmental Sciences at California State University, Chico. 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.