



*Diverse Perspectives on the  
July 1959 Sodium Reactor Experiment Accident  
Panel of Presenters*

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## **Dr. Paul S. Pickard**



Dr. Paul S. Pickard is a Senior Scientist and Engineer working in the advanced nuclear energy programs at Sandia National Laboratories. He also serves as the Technical Integrator for the US Department of Energy' (DOE)'s Nuclear Hydrogen Initiative and is Technical Director for the DOE's Generation IV Energy Conversion Program. His current responsibilities at Sandia include research programs on advanced nuclear power conversion systems for next generation reactors, thermochemical cycle research for hydrogen production using high temperature nuclear reactors, and design and development of advanced reactors. He is currently Principal Investigator for the US – French International Nuclear Energy Research Initiative's program on thermochemical hydrogen production for nuclear applications.

Past experience includes program and technical management of the design, construction, testing and operation of special purpose reactors, including the core neutronic and fuel design for the Sandia Annular Core Research Reactor. He was responsible for the Sandia Reactor Safety Experiment Program sponsored by the Nuclear Regulatory Commission on Liquid Metal Fast Breeder Reactor and Light Water Reactors in core accident phenomenology to evaluate the safety of light water and sodium cooled reactors. Other experience includes space nuclear power system design and development for National Aeronautics and Space Administration and other applications, reactor pumped laser research on high power lasers pumped directly by fission energy, medical isotope production programs for Mo-99 and I-125, and nuclear facility operations for the Sandia nuclear reactor facilities.

### **Education**

Ph.D., Nuclear Engineering, University of Arizona, 1969

M.S., Nuclear Engineering, University of Arizona, 1966

B.S., Physics, Wheaton College, 1964

### **Positions**

1974 - Present                      Sandia National Laboratories

1972-1974                          University of Illinois, Assistant Professor of Nuclear Engineering

1971                                    University of Arizona, Assistant Professor of Nuclear Engineering

## Dr. Thomas B. Cochran



Dr. Thomas B. Cochran is a senior scientist in the nuclear program and holds the Wade Greene Chair for Nuclear Policy at Natural Resources Defense Council (NRDC). He served as director of the nuclear program until 2007. He initiated NRDC's Nuclear Weapons Databook project. He also initiated a series of joint nuclear weapons verification projects with the Soviet Academy of Sciences. These include the Nuclear Test Ban Verification Project, which demonstrated the feasibility of utilizing seismic monitoring to verify a low-threshold test ban, and the Black Sea Experiment, which examined the utility of passive radiation detectors for verifying limits on sea-launched cruise missiles. He has served as a consultant to numerous government and non-government agencies on energy, nuclear nonproliferation and nuclear reactor matters. He is a member of the Department of Energy's Nuclear Energy Research Advisory Committee. Previously he served as a member of DOE's Environmental Management Advisory Board, Fusion Energy Sciences Advisory Board, and Energy Research Advisory Board; the Nuclear Regulatory Commission's Advisory Committee on the Cleanup of Three Mile Island; and the TMI Public Health Advisory Board.

Dr. Cochran is the author of numerous publications including *The Liquid Metal Fast Breeder Reactor: An Environmental and Economic Critique* (Washington, D.C.: Resources for the Future, 1974) and many publications related to nuclear weapons and weapons policy.

Dr. Cochran is the recipient of the American Physical Society's Szilard Award and the Federation of American Scientists' Public Service Award. As a result of his work, NRDC received the 1989 Scientific Freedom and Responsibility Award by the American Association for the Advancement of Science (AAAS). Dr. Cochran is a Fellow of the American Physical Society and the AAAS.

### Education

Ph.D. in physics from Vanderbilt University, 1967

M.S. in Physics from Vanderbilt University, 1965.

B.E. in Electrical Engineering from Vanderbilt University, 1962

### Positions

1973 - Present      Natural Resources Defense Council, Inc., Washington, D.C.

1971 – 1973      Resources for the Future, Washington, D.C.

1969 – 1971      Litton Mellonics Division, Scientific Support Laboratory , Fort Ord, California

1967 – 1969      Naval Postgraduate School, Monterey, California

## Dr. Richard S. Denning



Dr. Richard S. Denning is an internationally recognized expert in the fields of risk analysis, nuclear analysis, nuclear safety, and severe accident behavior of nuclear reactors. He has managed studies of the safety and risk of a variety of nuclear facilities including commercial nuclear power plants and a number of the Department of Energy (DOE)'s non-reactor nuclear facilities. He was a primary contributor to the development of methods of Probabilistic Risk Assessment. From 1973 to 1975, he directed Battelle's efforts in the prediction of severe accident behavior and radionuclide risk in the first risk assessment of nuclear power plants (WASH-1400). He was a major contributor to Nuclear Regulatory Commission (NRC)'s program to develop realistic methods for the analysis of source terms and to US Nuclear Regulatory Commission Regulation (NUREG)-1150, in which improved methods of risk analysis were applied to five nuclear power plants. Dr. Denning was a member of the NAS Committee to Review the Safety of DOE Reactors. He was a member of DOE's Advisory Committee on Nuclear Facility Safety 1987-1991. From 1990-1992 he was the Director of Environment, Safety and Health for the multi-organization consortium that designed the heavy water New Production Reactor. He was a member of the NRC's Advisory Committee on Reactor Safeguards from September 2004 to August 2006. He is a fellow of the American Nuclear Society.

Dr. Denning is a former Chair of the Ohio State University's Nuclear Engineering Program. He teaches graduate level courses on reactor safety and on Probabilistic Risk Assessment and oversees the research of a number of graduate students. He is currently working on a DOE-funded research program in collaboration with Massachusetts Institute of Technology in which he is developing methods for the analysis of accident consequences for accidents in sodium-cooled fast reactors.

### Education

Ph.D., Nuclear Engineering, University of Florida, 1967

M.S.E., Nuclear Engineering, University of Florida, 1965

B.E., Physics, Cornell University, 1963

### Positions

1999-Present OSU Nuclear Engineering Program – Professor of Nuclear Engineering

1967-Present Battelle Memorial Institute – Senior Research Leader