JOHN M. PETERSON

Environmental Health Risk Section
Environmental Science Division
Argonne National Laboratory

Education:

M.S.	University of California, Berkeley, Nuclear Engineering, 1977
B.S.	University of Wisconsin, Madison, Nuclear Engineering, 1974

Professional Experience:

1986-Present	Program Coordinator/Manager
1977-1984	Environmental Science Division
	Argonne National Laboratory

Principal investigator for radiological risk analysis for environmental restoration and waste management programs being conducted by various federal agencies including the U.S. Department of Energy (DOE), the U.S. Nuclear Regulatory Commission(NRC), and the U.S. Army Corps of Engineers. These analyses have supported the remediation of sites and facilities contaminated with radioactive and chemically hazardous substances and identified appropriate strategies for management of the resultant wastes. Specific activities include evaluating alternatives for remediation of contaminated environmental media including soil, sludges and groundwater; decontamination and decommissioning options for nuclear fuel cycle facilities and particle accelerators; handling and storage requirements of spent light-water power reactor fuel; management alternatives for uranium mill tailings; waste management concerns associated with alternative light-water reactor fuel cycles; and developing strategies for long-term management of buried transuranic wastes.

Additional responsibilities have included the development of documents meeting the requirements of the Comprehensive Environmental Response, Compensation and Liability Act and National Environmental Policy Act, including the development of cleanup criteria and selection of appropriate remedial action strategies. These analyses have been performed consistent with guidance from the U.S. Environmental Protection Agency using state-of-the-art computer codes. Provided input to environmental compliance documents prepared to support remediation activities at DOE sites under the Resource Conservation and Recovery Act. Also participated on a number of multi-organizational working groups addressing environmental restoration problems common to DOE sites and programs including the development of a standard process to evaluate radiological risks to members of the general public at inactive sites and facilities to support the remedial action decision-making process.

Summary of Previous Experience:

1984-1986 Dames and Moore Consultants, West Valley Demonstration Project, West Valley, New York

Principal investigator for analyzing safety and environmental impacts for various components of the West Valley Demonstration Project. This project is being conducted by DOE with NRC oversight and includes the demonstration of technologies for the solidification of high-level radioactive waste, decontamination of radioactively contaminated structures and equipment, and management of transuranic and low-level radioactive wastes. Responsible for shielding, safety, and environmental impact analysis for operation of a cement solidification system for encapsulation of low-level liquid and wet solid radioactive wastes. Also performed safety and environmental impact analysis for operation of a high-level radioactive waste vitrification system including analysis of the safety implications associated with cold testing of a glass melter to be used for solidification of high-level radioactive waste. Developed source terms for safety analysis of decontamination activities in the fuel reprocessing plant and estimated radiological inventories in the low-level radioactive wastes requiring disposal for input into environmental compliance documentation.

1974-1977 General Electric Company, Nuclear Energy Division, San Jose, CA

Performed various technical evaluations in support of licensing activities and operations requirements associated with commercial nuclear power plants designed by General Electric Company. Specific evaluations included nuclear fuel design, nuclear safety analysis, assessment of alternative fuel loading patterns, and analysis of the feasibility of utilizing mixed-oxide fuel in commercial light-water nuclear power reactors.

Research Interests:

Radiological risk assessment methodologies
Cleanup criteria for radioactively contaminated environmental media and equipment
Procedures to decontaminate radioactively contaminated facilities

Professional Activities:

Health Physics Society
American Nuclear Society
Registered Professional Engineer, State of Illinois, No. 062-037488
Registered Professional Engineer, State of New York, No. 061501-1
Certified Health Physicist by the American Academy of Health Physics

Publications:

Author or co-author of more than 100 journal articles, reports, and conference publications.