

CLYDE B. DENNIS

Applied Geosciences and Environmental Management Section
Environmental Science Division
Argonne National Laboratory

Education:

M.S. University of Florida, Nuclear Engineering, 1979
B.S. Union University, Physics and Mathematics, 1973

Professional Experience:

1993-Present Quality Control and Records Manager
Environmental Science Division
Argonne National Laboratory

Participated in a range of environmental assessment studies and site characterizations at hazardous materials/hazardous waste storage locations, weapons production facilities, military bases, and power facilities has provided the opportunity to study the environmental effects of chemical, radioactive, and noise contamination. Member of the team pioneering the Expedited Site Characterization methodology in which multiple scientific disciplines are melded to more effectively study the nature and extent of contaminant migration through the selection and development of improved sampling and analysis tools and techniques. Under a program funded by the U.S. Department of Agriculture, studies are underway to characterize the nature and extent of groundwater and soil contamination at former Federal grain storage facilities. Innovative remediation technologies including phytoremediation and spray irrigation are being utilized to address the contamination. Responsibilities in this program include Quality Assurance/Quality Control oversight of the sampling records and analytical results of each of the environmental investigations undertaken by the Applied Geosciences and Engineering Management Section of the Environmental Science Division and compilation of each project's master data file.

Summary of Previous Experience:

1988-1992 Environmental Research Division, Argonne National Laboratory

Participated in a series of environmental investigations at numerous Federal facilities as part of the U.S. Department of Energy Installation Restoration Program and the U.S. Department of Defense Base Closure Program. Activities included Preliminary Assessments of potential environmental concerns and Site Inspections of identified environmental problems. Responsibilities included development of Sampling & Analysis Plans, Health & Safety Plans, and Quality Assurance Plans for the investigations, as well as participating in and/or managing field sampling investigations.

1982-1987 Energy and Environmental Systems Division, Argonne National Laboratory

Performed a series of engineering design studies of power systems utilizing alternative energy resources such as ocean thermal energy conversion, municipal solid waste, and chemical fuel cells. Alternative designs of power systems based on conventional fossil fuels were also investigated, including the economics and performance effect of Waste Carbon Dioxide Utilization, Coal Cleaning & Scrubbing Technologies, and Community Energy Systems supplying district heating and cooling. Developed computer models of significant power system components for the series of design studies and participated in development of Argonne's System Analysis Language Translator, the expert system used to manipulate computer models of engineering processes which was used to simulate the innovative power systems.

1975-1981 Engineering Division, Argonne National Laboratory

Member of the engineering team which designed *StarFire*, an early design by Argonne National Laboratory of a commercial Tokamak fusion power plant. Conducted engineering design studies of reactor core structural materials and coordinated development of computer models of fusion power plant components, including development of a cost analysis program to estimate cost of the proposed commercial power plant. Performed design studies of retrofitting existing fossil fuel power plants to utilize magnetohydrodynamic power generation to increase power production. Developed a generalized engineering systems computer code, precursor to Argonne's System Analysis Language Translator.

Research Interests

Quality control aspects of management of large, multi-disciplinary databases critical to the investigation of groundwater, soil and air contamination.

Publications

Author or co-author of 100+ journal, book, report, and conference publications and presentations.