

John R. Fredlund

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Education:

University of Maryland, University College, College Park MD. M. S. Technology Management, May, 1998.

University of Maryland, College of Engineering, College Park, MD. B. S. Electrical Engineering, May, 1977. Mathematics and Physics specialty courses.

Thomas S. Wootton High School, Rockville, MD, 20850, graduated May 1973.

Previous Work Experience:

National Nuclear Security Administration, U. S. Department of Energy (DOE), April, 1990 to present. General Engineer, GS-801-14 and Electrical Engineer, GS-850-14, Supervisor: Jeff Kimball, Full-time.

Participate in nuclear facility Operational Readiness Reviews, Readiness Assessments, and other onsite reviews. Specific examples include Y-12 Wet Chemistry, Lawrence Livermore National Lab Bldg. 332, Savannah River Site Office Self-Assessment, Los Alamos TA-55, Los Alamos Weapons Engineering Tritium Facility, and TA-55 Facility Control System.

Analyze and review nuclear facility safety documentation, authorization basis, and safety basis documents, including Safety Analysis Reports (SARs), Unreviewed Safety Question Determinations, Hazard Analyses, and Technical Safety Requirements. Some examples include Subcritical Experiment Bounding Hazard Analysis, hazard analyses for the Dual-Axis Radiographic Hydrodynamic Test Facility and the Los Alamos Neutron Science Facility, the PSAR for the Accelerator Production of Tritium Facility for Savannah River, the Final SAR (FSAR) for TA-55 at Los Alamos, USQDs for all nuclear facilities at Los Alamos, the PSAR for the Nuclear Material Storage Facility at Los Alamos, the Justification for Continued Operation of TA-8-23 at Los Alamos, and the FSAR for the Replacement Tritium Facility at Savannah River.

Analyze and evaluate the design and construction of nuclear facilities and instrumentation systems. Review preliminary design reports, conceptual design reports, detailed design reports and as-built documentation. While these reviews are broad in scope, there has been concentration in the areas of instrumentation and control, nuclear safety, electronic systems, and electrical power. Specific examples include the preliminary design of the Accelerator Production of Tritium Facility, the Chemistry and Metallurgy Research Facility Upgrades project at Los Alamos, the Capabilities Maintenance and Improvement project at Los Alamos, the Facility Control System at TA-55, the Seismic Tritium Confinement System at the Replacement Tritium Facility, criticality monitors at the Idaho Chem Plant and at TA-55, control rod drive system at Savannah River K Reactor, backup power systems at Hanford, Livermore, and Oak Ridge Sites.

Contribute, on the basis of practical experience, to preparation of nuclear safety Rules, Orders, Implementation Guide, Standards and guidance. Some examples include the OLASO

Authorization Basis Review Procedure, 10 CFR 830 - Nuclear Safety Management, DOE O 420.1 - Facility Safety, DOE G 420.1-1 - Implementation Guide for Non-Reactor Nuclear Safety Design Criteria and Explosives, DOE-STD-1073 - Operational Configuration Management, and DOE-STD-3009 - Preparation Guide for U.S. DOE Nonreactor Nuclear Facility Safety Analysis Reports. Develop and disseminate technical information to DOE field and contractors. Information is developed through site visits, research of literature and experiences, and technical meetings. Specific examples include DOE-STD-3024 - Content of System Design Descriptions, DOE-STD-3003 - Backup Power Sources for DOE Facilities, several Defense Programs Safety Information Letters, and the Final Report of the Pantex Lightning Protection Project Team.

Conduct and chair the Department of Energy Backup Power Working Group meetings. These meetings provided for interaction and training among engineers and technicians responsible for diesel generators, uninterruptible power supplies, and stationary batteries. Represent the Backup Power Working Group at meetings on the DOE Technical Standards Program. Represent Headquarters on the Pantex Lightning Protection Project Team. Represent DOE/Defense Programs to oversight groups such as the Defense Nuclear Facility Safety Board, other programs and agencies, and contractors.

Vitro Corporation, February, 1982 to April of 1990. Senior Engineer. Senior Engineer for electronic instrumentation systems for nuclear power plants and military applications.

Designed, developed, and delivered electronic systems and circuitry. Technologies included microprocessor-based systems, sensors, transducers, analog measurement circuits, analog signal processing, digital-to-analog conversion, analog-to-digital conversion, electronic logic, relay logic, power conversion, and fiber optics. Scope ranged from printed wiring board assemblies to multi-cabinet distributed systems. Activities included system design, interface design, circuit design, component selection, printed wiring board design, breadboarding, prototyping, test development, and integration. Documentation included schematics, logics, block diagrams, printed wiring boards, printed wiring board assemblies, wiring, parts lists, test procedures, procurement specifications, and source control drawings.

Prepared schedules, work breakdown structures, and budgets for both project proposals and actual projects. Participated in all aspects of proposal writing, project management, and configuration management.

Analyzed electronic and system designs and documented results. Specific types of analyses included failure modes and effects, circuit stress, producibility, feasibility, reliability, accuracy, and timing. Programmed embedded microprocessor systems in assembly language.

Naval Ship Research and Development Center, June, 1977 to February, 1982. Electronic Engineer. Designed, developed, and deployed instrumentation systems for full-scale sea trials of ships and submarines. Programmed early "minicomputers" to analyze and present large quantities of test data. Prepared scientific reports on results.

#### Memberships

National Fire Protection Association Technical Committee on Lightning Protection (NFPA 780)