# CHARLES M. VOLDNESS

## DETAILED EXPERIENCE

**Independent Consultant, Nuclear Safety – Longenecker & Associates**

January 2017-Present

Provides independent review of criticality and safety basis functional areas to include document reviews such as Nuclear Criticality Safety Evaluations, Documented Safety Analyses (DSAs), Technical Safety Requirements (TSRs), Safety Evaluation Reports (SERs) and supporting documentation in addition to verifying facility readiness through the conduct of Operational Readiness Reviews/Assessments and Independent Verification Reviews (IVRs) to include development and/or approval and verification of implementation of associated corrective actions.

**Nuclear Safety Specialist/Safety Advisor, Mission Assurance Department – Department of Energy/National Nuclear Security Administration**
**Aiken, SC**

March 2011-January 2017 (retired)

Subject matter expert in the safety basis functional area. Duties primarily consisted of reviewing all documents pertaining to 10CFR830 nuclear facility safety bases including supporting documents, Documented Safety Analyses, Technical Safety Requirements, conduct and coordination of both internal and external assessments of readiness and safety basis requirement implementation in addition to serving in a broad range of ancillary roles. Skills required include a broad range of experience in nuclear safety including engineering, operations and oversight, in addition to a working knowledge of federal and Department of Energy policies and procedures.

Specific responsibilities included:

- Serving as the facility readiness to operate subject matter expert;
- Leading performance-based assessments as directed by management (e.g., Independent Verification Reviews, Operational Readiness Reviews, various functional area, program and project reviews);
- Conduct of timely reviews of various technical documents such contractor-prepared Documented Safety Analysis (DSAs), Technical Safety Requirements )TSRs), DOE-prepared Safety Evaluation Reports, and other programmatic documents;
- Differing Professional Opinion program lead.

Examples of specific achievements have included:

- Team leader for the 12 member Waste Solidification Building (MOX support facility) Readiness to Operate Assessment (2015);
- Team member for multi-functional assessment of NNSA Headquarters
- Numerous high quality reviews of key documents for SRFO including safety bases;
- The performance of several Independent Verification Reviews associated with implementation of safety basis Technical Safety Recommendations.

**Senior Technical Advisor, Nuclear and Criticality Safety Evaluation Department – Savannah River Nuclear Solutions**
**Aiken, SC**

2001-March 2011 (Retired)

Subject Matter Expert in the nuclear criticality and safety basis functional areas supporting a broad spectrum of regulatory and compliance activities. Specific activities have included:

- Conduct of nuclear safety basis reviews, ensuring that programs were developed, implemented and maintained in a manner which ensures worker and public safety in addition to meeting regulatory requirements. The scope of these reviews typically included hazard and accident analysis methodologies, logic and consistency, control selection Technical Safety Requirement development and control implementation.
- Topical nuclear safety reviews and program development projects. Examples include:
    - A sitewide review to reduce excess levels of conservatism in safety analyses which resulted in the savings of several millions of dollars annually to the site.
    - Development of a safety basis document control program which resolved several sitewide program deficiencies.
    - Development of criteria for project Major Modification determination which were incorporated into DOE Standard 1189-2008, Integration of Safety Into the Design Process.
    - Development of a broad-based initiative to improve the effectiveness and quality of site Technical Safety Requirements. The effort resulted in a significant reduction in the number of declared TSR violations at SRS and has been presented to industry-wide workshops.
    - Sitewide Unreviewed Safety Question program review (also provided USQ training to engineering personnel.)

Duties also included:

- Lead (Manager), Assessments and Safety Basis Review Group. This involved the scheduling, planning, coordinating, and oversight of a 5 person team responsible for the technical review of new or revised safety basis documents and their implementation.
- Continued participation on the Facility Evaluation Board as Nuclear Safety Basis documentation and Nuclear Criticality Safety program evaluator, primarily serving as a mentor and board member on Due Diligence (INL) reviews, Operational Readiness Reviews, scheduled SRS facility evaluations, site program and topical reviews.
- Development, issuance and interpretation of site nuclear safety performance metrics for submittal to senior management and the Department of Energy on a monthly basis.
- Technical and financial oversight of subcontracted technical tasks (e.g., safety analysis and safety basis document development including Hazard Analyses, DSAs, TSRs, Criticality Safety Evaluations, Double Contingency Analyses).
- The interpretation and implementation of regulatory requirements
- Addressing DOE and DNFSB inquiries and concerns related to nuclear safety.

Other

- Qualified as Nuclear Safety Lead Assessment Engineer

- Attained all requirements for qualification as DOE Nuclear Criticality Senior Safety Engineer and Senior Nuclear Criticality Safety Specialist.
- Six Sigma (Yellow Belt) certified
- Member of the facility and (former) site Nuclear Criticality Safety Review Committees.
- DOE-Q clearance.

**Operations Evaluation Department, Facility Evaluation Board**

1992-2001

- Primary responsibilities included the conduct of regulatory compliance and performance based operational reviews of all SRS nuclear facilities with primary emphasis on engineering functional areas.
- Subject Matter Expert in areas of Nuclear Criticality Safety and Safety Documentation programs.
- Participated in over 100 facility evaluations, at least 10 operational readiness reviews, 2 Due Diligence reviews, in addition to numerous topical reviews (e.g., waste certification, maintenance) and Due Diligence efforts
- Recognized flexibility resulted in being assigned to review or perform assist visits in many other functional areas (e.g., maintenance, conduct of operations, training, etc.) when other resources were not available.
- Efforts resulted in identification of facility and sitewide program deficiencies (e.g., inadequacies in safety analysis and program implementation), noteworthy practices, and the proposal of corrective actions and cost-savings initiatives (e.g., reduction in scope of facility criticality programs, combining of site maintenance procedures).
- Served as team lead for DOE-mandated sitewide nuclear criticality safety program assessment team in FY2000.

**Reactor and Facility Safety Evaluation Division**

August 1987-June 1992

- Served as team leader for several incident investigations and readiness review committees
- Performed oversight of reactor startups.
- Performed a wide range of management-requested topical studies associated with emerging issues at site nuclear facilities (reactors, separations and fuel fabrication).
- Visited several commercial nuclear reactor facilities for the purpose of evaluating commercial industry programs and practices and incorporating those which were applicable into site programs. Among those incorporated at the Savannah River Site as a direct result of these efforts were the Fitness for Duty, Critique and Lessons Learned programs.
- Recognized ability resulted in services being requested by (and provided to) commercial entities for participation in a two week evaluation of the Virginia Electric and Power Company North Anna commercial nuclear facility and in a two week reactor startup assessment at the DOE Hanford facility.

**Program Manager, Reactor Operations Department – Department of Energy**
**Idaho Falls, ID**

August 1986-August 1987

- Provided direction and technical guidance for various sitewide programs including reactor operation (e.g., operator certification, training, control room and simulator upgrades), decontamination and decommissioning of shutdown facilities, and landlord functions.
- Duties also included conduct of safety appraisals, development and review of project schedules, budgets and procedures as well as contract negotiation and general oversight of contractor activities.
- Accomplishments included the final, below cost disposition of the LOFT reactor core and the proposal of a cost savings measure which allowed historic nuclear aircraft jet propulsion engines to be placed at the EBR-1 reactor museum facility for public viewing rather than disposed of in a landfill as was originally intended.

**Nuclear Reactor Control Room Shift Supervisor/Shift Manager – E.I. DUPONT**
**Aiken, SC**

1984-1986

- Directed a crew of 8-20 operators in all activities associated with a large-scale (2800MW) nuclear reactor including power operations (e.g., power optimization, responding to abnormal conditions), planning and direction of maintenance and testing of reactor systems, and interfacing with support organizations (e.g., maintenance, engineering).
- Additional responsibilities included the scheduling of manpower, operator training and other duties associated with the supervision of employees.

**Nuclear Reactor Core Physics Engineer**

1981-1984

- Duties included the design and evaluation of large scale nuclear reactor cores for heavy water nuclear reactors.
- Performed and documented several physics studies in order to gain a more thorough understanding of core behavior. Numerous technical documents describing review results were published for site distribution.
- Duties were expanded to include activities typically associated with a shift technical advisor position. Included were optimization of core characteristics on a day-to-day basis, investigation of systems abnormalities and unusual incidents, review of job plans, and trend analysis.

## EDUCATION

**University of Arizona, Tucson, AZ**
*Bachelor of Science in Nuclear Engineering, 12/1981*

## ACHIEVEMENTS/AWARDS

Divisional and/or site quality awards for:

- A review of uncertainties introduced during the fuel assembly fabrication process (1989)
- Planning of an international technical conference (1990)
- Leading a review to determine readiness for K-Reactor fuel loading operations (1991)
- Serving as team leader for a review of safety system modifications (1991)
- Performance of a broad-scoped evaluation of reactor restart readiness (1991)
- Oversight of K Reactor restart and power ascension test program (1992)

- F Canyon ORR/FEB (1996)
- H Canyon ORR (1997)
- Site Nuclear Criticality Safety Program Review (2000)
- Safety basis conservatism review (2005)

**PUBLICATIONS/PRESENTATIONS**

In addition to numerous documents pertaining to reactor physics, program proposals, assessment and topical review results published for sitewide distribution and presented to DNFSB, DOE and contractor senior management, the following have been presented at DOE/EFCOG workshops and published in proceedings:

- *TSR Implementation Issues at the Savannah River Site*, LWO-NSD-2007-00007, April 2007
- *The Technical Safety Requirements Improvement Initiative at the Savannah River Site*, SED-NSD-2008-00002, April 2008

**JOB-RELATED TRAINING**

- Observation and Performance Based Training Assessment, Institute of Nuclear Power Operations, 1990
- DOE Material Balance and Control, ORNL, 1997
- Standardized Computer Analysis for Licensing Evaluation (SCALE), 1998
- DOE Advanced Nuclear Criticality Safety Course, LANL, FY 2000
- Monte Carlo N-Particle Transport Code (MCNP), 2001
- Six Sigma, 2004
- Nuclear Safety Specialist Core Courses (11 of 12 complete)
- Safety Culture Sustainment (2013)
- Work Planning and Control (2013)

**MILITARY**

U. S. Air Force, Intelligence Analyst, DOD Top Secret codeword security clearance, Honorable discharge, 1974 - 1978 (Vietnam Era Veteran status