

**Calvin Mitchell HOPPER**  
Oak Ridge National Laboratory  
Distinguished Senior Development Engineer  
Nuclear Criticality Safety

Mailing Address:  
Oak Ridge National Laboratory  
Nuclear Analysis Methods and Applications  
Building 6011, Mail Stop 6370  
Oak Ridge, Tennessee 37831-6370  
United States

**Contact Information:**

Phone: (865) 576-8617

Fax: (865) 576-3513

E-mail: HopperCM@ORNL.GOV

**Education:**

B.S., University of Southern Colorado, Physics, 1970

**“Q” security clearance held by U.S. DOE Oak Ridge Operations.**

**Professional and Research Interests:**

Nuclear facility safety

Technical/scientific/programmatic/administrative nuclear criticality safety program management

Nuclear criticality safety analyses

Nuclear criticality safety evaluations

Nuclear engineering computational evaluations (e.g., diffusion theory, transport, Monte Carlo, cross-section)

Design Consultation

Process Consultation

Training

Auditing

Critical mass experimentation

Analysis of critical experiments

**Previous Positions:**

1997-present, Principle Investigator of U.S. Department of Energy Nuclear Criticality Safety Program,  
Task 3: Applicable Ranges of Bounding Curves and Data (1998-present)

1995-1997, Principle Investigator of U.S. Nuclear Regulatory Commission, Computational Sensitivity  
and Uncertainty Project

1994-1995, Head, ORNL Nuclear Criticality Safety Section, ORNL Office of Operational Readiness and  
Facility Safety

1984-1994, Nuclear Criticality Safety Officer, Oak Ridge National Laboratory

1981-1984, Nuclear Criticality Safety Department Head, Y-12 Plant

1980-1981, Health Physics Department Technical Manager, Y-12 Plant

1978-1980, HFIR Project Manager NRC Licensing and Nuclear Safety, Texas Instruments, Inc.

**Other Expertise:**

Principal Manager of the USDOE Criticality Practices & Safety Guide Project (1989-1994) responsible for development of a "USDOE Contractor Nuclear Criticality Safety Program Guide;"  
Criticality Safety Consultant to U.S. Nuclear, Inc., Oak Ridge, TN (1974-1976). Performed criticality safety evaluations as input for the USNRC facility license safety analysis;  
Member of the USDOE Albuquerque Office Weapon Criticality Committee (1982-present) responsible for assist in nuclear criticality safety reviews/analyses of production processes, transportation and storage issues for the US weapons complex.  
Team Teacher (1988 - present) University of Tennessee NE 543, "Selected Topics in Nuclear Criticality Safety;"  
Principal Manager of the USDOE Nuclear Criticality Technology & Safety Project (NCT&SP) (1989-1991) responsible for planning, organizing and conducting the annual USDOE NCT&SP Conference, assisting USDOE Hdqtrs in nuclear criticality safety program planning and prioritization, regulatory interpretations and coordination of steering committees for the USDOE;  
Principal Manager of the USDOE Experiments to Address Discrepant Calculations Project (1990-1991) responsible for coordinating the National Institute of Standards and Technology (formerly NBS) experimental measurements of neutron slowing down in idealized geometries/materials and Oak Ridge National Laboratory and Los Alamos National Laboratory computational analyses of measurements to study discrepant calculational analyses;  
Periodic member of USDOE EH Technical Safety Appraisal (Tiger) Teams (1987-1990) responsible to USDOE EH (through Oak Ridge Associated Universities' contracts) as a nuclear criticality safety specialist for performing technical safety appraisals.

**Professional Organization and consensus standard development:**

Convener for ISO TC 85/SC 5/WG 8 on criticality safety  
Fellow of American Nuclear Society on Criticality Safety  
Member and Past Chairman of American Nuclear Society (ANS) Nuclear Criticality Safety Division  
Past Technical Program Chairman for the ANS Nuclear Criticality Safety Division  
Chair American Nuclear Society Consensus Committee N16  
Member ANS-8 Standards Subcommittee for Fissionable Materials Outside Reactors;  
Chairman of ANSI/ANS-8.7, Nuclear Criticality Safety in the Storage of Fissile Materials  
Member of Working Groups:

- ANS-8. 1, Nuclear Criticality Safety in Operations with Fissionable Material Outside Reactors
- ANS-8.19, Administrative Practices for Nuclear Criticality Safety
- ANS-8.20, Nuclear Criticality Safety Training
- ANS-8.23, Criticality Accident Emergency Planning and Response:
- ANS-8.26, Nuclear Criticality Safety Specialist Training and Qualifications

Past Member of the East Tennessee Chapter of the American Health Physics Society

**Keywords:**

Nuclear Engineering; Nuclear Criticality Safety; Nuclear Safety

**Memberships:**

American Nuclear Society - Nuclear Criticality Safety Division