

Christopher M. Steele

RESUME

CAREER OBJECTIVE: A challenging and rewarding position utilizing my broad analytic skills in Physics, Mathematics, and Nuclear Engineering. In January of 2002, I will have been with the Department approximately 8 years. During this time, I have received 40 DOE awards, 1 EFCOG Safety Analysis Award, and 6 commendations or letters of appreciation for my work demonstrating my commitment to the quality of the organization.

EXPERIENCE:

03/02- *U.S. Department of Energy, National Nuclear Security Administration (NNSA) Office of Present Los Alamos Site operations (OLASO), Los Alamos, NM*
Promoted to Senior Excepted Service Nuclear Engineer (EN-5-840). I am the Area Office Senior Authorization Basis Manager (SABM). I am fully qualified as a Senior Safety Analyst, SABM, and Senior Technical Safety Manager (STSM) per the certification requirements of DNFSB 93-3/Tech-10. Duties include Authorization Basis signature authority for all existing LANL nuclear and nonnuclear facilities (SARs, TSRs, USQs, HAs, etc.). With the DOE/EH Office of Nuclear and Facility Safety (EH-53), Created and taught DOE Complex-wide 10CFR830 Subpart B course in 2002 (trained >400 DOE complex personnel) at multiple sites. My staff allocation includes a GS-15 Deputy SABM, 9 Excepted Service Pay Band 4 (EN-4) engineers and a Program Analyst.

1998-2002 *U.S. Department of Energy, Los Alamos, NM*
I am the Area Office Excepted Service Senior Authorization Basis Manager (SABM) and Supervisor (EJ-840-04). I am fully qualified as a Senior Safety Analyst, Senior Authorization Basis Manager (SABM), and Senior Technical Safety Manager (STSM) per the certification requirements of DNFSB 93-3/Tech-10.

I am a direct report to the Area Manager. I supervise a staff of 9 GS-14 safety analysts, 1 Technical Management assistant and 3 contractors. I have the responsibility and approval authority for the nuclear and nonnuclear safety analysis programs at LANL including Hazard Analyses, Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), and the Unreviewed Safety Question program. I am the LAAO management representative for contract performance measures development and assessment and the single Departmental point of contact for safety analysis issues at Los Alamos National Laboratory. I am the NNSA Senior manager Technical Lead for the safety analysis of the \$400M Russian Fissile Material Storage Facility (RFMSF) at Mayak and have participated in three delegations to Russia in this regard.

Sponsored, coordinated development and taught (with 5 other instructors) the Accident Analysis and Airborne Release Fraction/Respirable Fraction (ARF/RF) Course. This was the first course in accident analysis of its type taught in the DOE Complex. Course was taught twice (1999, 2000). Received a letter of Commendation from the Defense Nuclear Facility Safety Board (DNFSB) signed by the Technical Director for creating, sponsoring and teaching the first Airborne Release Fractions Course for accident analysis in the DOE complex for ongoing efforts to improve training of DOE and contractor personnel on topics related to the development, review and approval of authorization bases.

Since being promoted to the DOE LAAO SABM (EJ-840-04), I have been able to effect positive changes in both the LANL and DOE processes at a systemic management level through the use of basic quality principles as espoused by Deming, Juran, and Crosby.

Examples of management process initiatives I have completed in support of the Area Manager and the Department includes the use of LANL contractual performance measures to evolve the CQI process in the Department and at LANL. I have promoted LANL development of an Office of authorization Basis within the last year, which has started to have some significant successes at LANL. I developed with LANL, a contract Memorandum of Understanding (MOU) which for the first time clearly delineated DOE quality expectations, lines of authority, points of contact, and defined LANL and DOE roles and responsibilities with regard to the safety analysis process. The MOU was signed by the LANL Director's office in 1998. I developed with LANL a prioritized list of activities for all safety analysis projects. I completed for the Area Manager's signature a finalized list of LANL nuclear facilities. This list had been a point of contention between DOE and LANL for about seven years and is now the final agreed upon list. Because SARs are very expensive, this saved the Department between 10 and 20 million dollars. I have been a recognized advocate in the complex for the proper training of DOE safety analysts and played a major role in getting the problem addressed. I have given briefs to the LANL Director and been effective in fostering LANL management process changes including the use of TSA-11 for safety analyses rather than less senior analysts. Specific examples of the effects of the management quality process changes I have been effective in implementing include completion of the DARHT HA and safety controls, TA55 SAR/TSRs, CMR BIO/TSRs, CMR upgrades, LANSCE 1L BIO/OSRs, TA50 HA/TSRs, RAMROD SAR/TSRs, Aries Project (Dedicated by the Secretary), etc. I have effectively developed an area office safety analysis and engineering staff that has evolved from one person to a total of 8 staff and the Senior Manager (myself).

1996-1998 ***U.S. Department of Energy, Los Alamos, NM***

Team Leader (GS-14) for Authorization Basis activities in the Area Office in the Facility Operations Branch. Responsibility for oversight of the Safety Analysis Report (SAR) development, Technical Safety Requirement (TSR) Development, oversight of the Unreviewed Safety Question program, and LAAO management representative for contract performance measures. I also serve as the primary representative between DOE and LANL in the area of nuclear explosive safety. From 1996-1998, I received 11 commendations or monetary Special Act or Service Awards from DOE management including the Principle Deputy Assistant Secretary for safety and Quality (Victor Stello, DP-3), and the Assistant Secretary for Defense Programs (ASDP, Victor Reis) for technical competence with respect to my abilities to perform engineering analyses and analytical expertise as well as management leadership skills. While at LAAO, I created an entirely new and computationally efficient method for performing modeling of explosive releases scenarios that was fully benchmarked against Project Roller Coaster data.

1994-1996 ***U.S. Department of Energy, Amarillo, TX***

19 months as the Senior Risk Management Engineer (GS-13) for the Amarillo Area Office (AAO). Technical review and oversight of Unreviewed Safety Question Determination (USQD) program, Safety Analysis Report (SAR) program, Technical Safety Requirement (TSR) program, Operational Safety Requirement (OSR) program, and Basis for Interim Operations (BIO) program for all nuclear and non-nuclear facilities at Pantex. Responsible for daily oversight of the plant safety envelope. Responsible for obtaining new site-wide OSRs for the plant, site-wide SAR level General Information Document (GID). TSRs for the new 12-104A Cat II Nuclear Facility and Bays facilities. AAO responsibilities for all SARs & TSRs for all Category II nuclear facilities. Responsible for the safe disposition of four positive unreviewed safety questions at the plant in one year. Safety oversight for approximately 50 personnel in the Mason & Hanger Risk Management Department. Responsible for detailed quality assurance

analysis on all responsible aspects of plant risk management. Member of Nuclear Explosive Safety Study (NESS) Qualification Evaluation for Dismantlement (QED) team for B61 center bomb disassembly, W55 program, and W87 program. Instructed contractor organization on technical aspects of analytical plume modeling for safety analysis (radioactive and nonradioactive releases) including explosive dispersal of plutonium, uranium, and nonexplosive dispersal of tritium for the 12-42S vault. Authored DOE analytical safety evaluation report independently modeling tritium fire and non-fire plume releases. I wrote the AAO procedures (signed by the Area Office Manager) governing DOE criticality oversight of the contractor as well as Unreviewed Safety Question, Justification for Continued Operations and Safety Analysis review. While at Pantex, I discovered that the Pantex Plant criticality analysis was in error as the Safety Analysis Report (SAR) generic pit was not bounding with respect to its moderated configuration eigenvalue (the SAR PIT is an unclassified, generic 6" outside diameter pit, with theoretical plutonium density, and a mass of 6.5 kg). Because the pit was the basic building block for the analysis, and the pit did not have a bounding eigenvalue in the moderated regimes, the analysis could not be defended. To further explore the defensibility of the report, I convened an assessment team including myself and 2 other nuclear engineers from SAIC to further evaluate the submitted report. Several other deficiencies were noted in the assessment. After identifying the deficiencies, I worked with the contractor group responsible for the analysis (Risk Management Department) to develop a plan for rectifying the deficiency. The result of the more than 1 year of analytical effort was a 5 volume report, which analyzed 3 specific weapons systems, and weapon canned subassemblies, in multiple postulated upset conditions. The K_{eff} 's from this analysis were compared to the generic SAR pit and defensible control recommendations were developed for use in the FSARs under development. This effort will also bring to rest a 7-year old issue cited by the DNFSB relative to defending the removal of the plant criticality alarm systems circa 1988, without adequate technical justification.

I was also involved in review and resolution of criticality issues relative to staging of highly enriched uranium in Pantex bay facilities, and weapons and weapons subsystem staging. To assist in the development of site analytical capabilities, I assisted in the procurement of advanced workstations at Pantex for use in criticality analysis and the upgrade to MCNP.4A by the plant. During this time I acquired MCNP 4A, ONEDANT, TWODANT, SCALE-PC, and KENO and I am able to run test cases myself using these codes.

Recognition for my efforts while at AAO included a Special Organizational Achievement Recognition Award (SOAR-9/21/95) in recognition of outstanding work in support of plant risk management, SOAR Award (6/30/95) for outstanding work in support of Unreviewed Safety Questions and Safety Analysis Reports (SARs), SOAR Award (8/21/95) for outstanding dedication and support to the B61-0 dismantlement readiness assessment team, Albuquerque Operations Office Award from the Nuclear Safety Division in recognition for having shown outstanding ability and commitment to quality and customer service. On April 1, 1996, John W. Crawford published DNFSB/TECH-10. Page 11 recognizes my work at Pantex/AAO by stating "a senior nuclear engineering professional has been hired, who has contributed substantially on safety-related matters at the site."

1993-1994 ***Los Alamos National Laboratory (LANL), Los Alamos, NM***

Member of the Occurrence Investigations Group (ESH-7) for twenty months with authority to investigate occurrences concerning the Laboratory. Responsibilities included occurrence immediate actions, the notification process, investigation, causal analysis and corrective actions, recommendations to the Facility Managers for occurrences in accordance with DOE Orders 5480.19, 5000.3B, and 5484.1. As ESH-7 Training Officer, assisted ESH-7 group leader to develop a formal program for the training of Facility Managers. Special assignments by the ES&H Division Director included representing the Division as a Member of the LANL Facility Management Process Team, established in December of 1993 with responsibility for reengineering the facility management process at LANL, preventing the Health Research Laboratory (HRL) from being shut down due to conduct of operations issues in the radiological arena, and Laboratory liaison to Pacific Northwest Laboratory (PNL) to assist in the restart of the Nuclear Category II 325 facility. In support of the HRL facility, I assessed the causal nature of the problems, and then generated immediate corrective actions including implementing new procedures, preparing a plan to consolidate all radiological areas in the facility, and assisting in obtaining a new HRL Facility Manager. The facility is now in operation with DOE approval. At the PNL 325 facility, I interacted in much the same way as I did at the LANL HRL facility including assisting in the development and implementation of a new facility management model. I also worked with ESH-6 (Criticality Safety Group) to develop the DOE LAAO approved categorization matrix for use in occurrence reporting. In my capacity as occurrence investigator, I was the point of contact for all criticality-related incidents and occurrences at LANL.

1992 ***U.S. Department of Energy, Los Alamos, NM***

Approximately one year assigned as Facility Representative (GS-9) for the Los Alamos Critical Experiments Facility (LACEF), Omega West Reactor, and SNM vaults at Los Alamos National Laboratory. Responsible for daily technical monitoring and evaluation of operations processes with emphasis on personnel safety, environmental protection, sound operational and engineering practices, configuration control, and review of Conduct of Operations in accordance with DOE Orders 5480.19, 4330.4B, 5480.23, 5480.22. Daily interface with Occurrence Reporting and Investigation in accordance with DOE Order 5000.3B. Received a Department of Energy (DOE) Monetary Award for Superior Job Performance from the manager of the Albuquerque Operations Office of the Department of Energy in July 1993.

1991-1992 ***Public Service Electric and Gas Company***

Fourteen months performing the duties of a reactor engineer. Promoted on first anniversary to grade level II engineer. Duties included core flow calibration, recirculation drive flow calibration, procedure review and development, daily monitoring of thermal limits for technical specification compliance, operational support, trend analysis, control rod analysis, turbine control valve testing instructions, PCIOMR envelope maintenance, software quality assurance, LPRM spiking, reactivity anomaly surveillance, controlled shutdown sequence development, and startup period calculations. I also worked with the nuclear fuels group to understand the impact of burn up on core reactivity as the cycle progressed. During my time at Hope Creek, I discovered an error in the point-wise static critical burn up calculations which affected the technical specification related to the reactivity anomaly surveillance. After analyzing the effect, the Nuclear Fuels Group was informed and a technical specification violation was avoided. I also discovered and corrected errors in the recirculation and core flow calibration methodologies, which allowed more accurate calculation of the core K_{eff} and fuel burn up.

- 1990 *Massachusetts Institute of Technology*
Teaching and Laboratory Assistant to Professor Norman Rasmussen.
- 1989 *Northeast Utilities*
Nuclear Engineer. Analyzed data culminating in a final report applicable to the Millstone Unit III Nuclear Power Station concerning the feasibility of a proposed Incore/Excore neutron detector calibration procedure. The results of this research are presently in use at the station. Developed and documented a methodology addressing errors incurred upon failure of Incore Neutron Detectors applicable to the Haddam Neck Nuclear Power Station. This problem was addressed through computer modeling and statistical analysis of the core neutronic monitoring system under different detector failure modes. The outcome of the analysis was a predictive formula for power distribution errors as a function of the number detectors failed. The results of the analysis are in use at the station today.
- 1988 *Massachusetts Institute of Technology*
Teaching Assistant to Professor J. Yanch
- 1988 *Massachusetts Institute of Technology*
Teaching Assistant to Professor K. Molvig
- 1988 *Oak Ridge National Laboratory, Hollifield Heavy Ion Facility (HHIRF)*
Research Assistant to Doctor C. Baktash. Analyzed high-energy rotational band structure in ^{169}Hf , ^{170}Hf , and ^{171}Hf . This research culminated in the discovery of three totally new bands. The results of this research were presented at the Neils Bohr Institute and later published.
- 1987 *Georgia Southern University*
Teaching Assistant to Professor V. Hassapis.
- 1986 *Army Aviation Test Board*
Engineering Technician involved in operational testing of the Self-propelled Crane for Aircraft Maintenance and Positioning (SCAMP) project. The five-month test included the acquisition and statistical analysis of data pertinent to the project. The project test was conducted at Hunter Army Airfield in Savannah, Georgia under the auspices of the Army Aviation Test Board, Ft. Rucker, Alabama.

EDUCATION:

June 1990 **Master of Science Degree in Nuclear Engineering**
Massachusetts Institute of Technology, Cambridge, MA

Thesis: "Quantitative Investigation Into the Time Dependant Effects of Constant Nodal Discontinuity Factors in Coarse Mesh Finite Difference Reactor Transient Calculations." During this research, I worked with and modified the nodal diffusion code QUANDRY to perform the required analysis. This code is capable of bot static and dynamic prediction of neutronics parameters in a heterogeneous assembly of materials. Knapp Graduate Fellow, 1988-1990. Institute for Nuclear Power Operations Graduate Fellow, 1989-1990. GPA 4.60/5.00

June 1988 **Bachelor of Science Degree in Physics**
Georgia Southern University, Statesboro, GA

Courses included: Physics (I, II, III), Thermodynamics, Hydrodynamics, Quantum Mechanics, Electricity and Magnetism (I, II), Statistics, Dynamics, Strengths of Materials, Modern Physics, German (I, II), Chemistry (I, II)

Collegiate Academic All-American Scholarship recipient, 1987.

National Collegiate Natural Sciences Award recipient, 1987.

Sigma Pi Sigma, 1987. GSC Award for Excellent Scholarship, 1988. GPA 4.00/4.00

June 1983 **Bachelor of Arts Degree in Mathematics**

Edison State College, Trenton, NJ. Courses included: Calculus (I, II, III), Complex Analysis (I, II), Mathematical Statistics, Numerical Analysis, Real Analysis (I, II), Differential Equations, Partial Differential Equations, Linear Algebra (I, II), Number Theory, Abstract Algebra (I, II), Mathematical Methods, FORTRAN Programming, BASIC Programming, APL Programming, PASCAL Programming, COBAL Programming, Mathematical Methods for Management, Symbolic Logic.

New Jersey BEOG Scholarship recipient. GPA: 3.62/4.00

PROFESSIONAL EDUCATION:

1-Week Conduct of Operations Course. U.S. Department of Energy, Albuquerque, New Mexico

1-Week DOE Facility Representative Course. U.S. Department of Energy, Dayton, Ohio

5-Week Station Nuclear Engineering (SNE) Course. General Electric Company, San Jose, California

2-Week BWR Technologies Course. Public Service Electric and Gas Company, Nuclear Training Center, Salem, New Jersey

1-Week Managers Training (MTOP) Course Public Service Electric and Gas Company, Corporate Headquarters, Newark, New Jersey

3-Day Get & Radiation Worker Training Course Public Service Electric & Gas Co., Nuclear Site Processing Center, Salem, New Jersey

1-Week Nuclear Weapons Orientation Advanced Course (NWOA) Interservice Nuclear Weapons School, Kirtland Air Force Base, New Mexico

3-Day Nuclear Criticality Safety Course Los Alamos Critical Experiments Facility (LACEF), Los Alamos National Laboratory, Los Alamos, New Mexico

SAR-Based Formality of Operations Seminar DOE/Al Field Office, DOE Los Alamos Area Office, Los Alamos, New Mexico

Hazardous Waste Operations (HAZWOPER) Course Roy F. Weston, Inc., Los Alamos National Laboratory White Rock Training Center, White Rock, New Mexico

2 Week Management Oversight and Risk Tree and Training for Accident/Incident Investigators EG&G Idaho, Inc., San Diego, California (Earned DOE Certification as an Accident Investigator as of 7/18/93)

Deming Based Quality Education Seminar PRISM, Inc., Santa Fe, New Mexico

1-Week Reason Root Cause Analysis Course Decision Systems, Inc., Dallas, Texas

1-Week Fundamental of Blast Analysis and Design Course Wilfred Baker Engineering, Inc., San Antonio, Texas

1-Week DOE Nuclear Weapon Refresher Course

Sandia National Laboratories, SNL/AL (Basic Nuclear Weapon Effects, Use Control, SST, H1616, W48, B53, W56, B61, W62, W69, W70, W71, W76, W78, W79, W80, B83, W84, W87, & W88)

DOE Unreviewed Safety Question Course. DOE/EH, Amarillo, Texas (NSAC-125, 5480.21, 10 CFR 50.59)

1-Week DOE Preparing and Reviewing Technical Safety Requirements Course

DOE/EH, Amarillo, Texas (DOE-STD-1027-92, 5480.23 (SAR), 5480.22 (TSR), DOE-STD-3009)

Nuclear Surety Training (NST) 410 Fault Tree Analysis for Weapon Component Safety-Critical Parts Assessment, Sandia National Laboratories, Kirtland AFB, Albuquerque, NM

Nuclear Surety Training (NST) 406 Probabilistic Uncertainty Analysis Using Bayesian and Frequentist Statistics, Sandia National Laboratories, Kirtland AFB, Albuquerque, NM

NRC/DOE/EPRI 80 Hour Course on Generic Implementation Procedure (GIP) For The Seismic Evaluation Of Facilities And Equipment at Nuclear Facilities, Presented by LLNL at Boulder, Colorado.

1-Week DOE Technical Safety Requirement (TSR) Instructor Course, Lockheed Martin Idaho Technologies, Idaho Falls, Idaho. Course Grade: A. Certified DOE Instructor for TSR Certified DOE TSR Instructor. Training as of 9/29/95.

1-Week WR708 "Brodie" Course in Nuclear Weapons Development and Technology. Sandia National Laboratories, Albuquerque, NM.

1-Week Lead Auditor Training Course. I obtained certification as a Nuclear Explosive Safety Assessor as of May 21, 1996.

1-Week DOE Unreviewed Safety Question (USQ) Course. DOE/EH, Los Alamos, NM (NSAC-125, 5480.21, 10 CFR 50.59, NE-70 Interpretive Guidance)

1-Week Los Alamos National Laboratory Course on technical use of the Monte Carlo Neutron Production (MCNP.4b) code. LANL, Los Alamos, NM

4-day DOE course on Plume Modeling using the MACCS2 computer code. Energy Training Center, Al, NM

4-day DOE course on MCNP shielding modeling and criticality analysis. Energy Training Center, Al, NM
4-day DOE TSR Course (SPONSORED BY ESH-3), Los Alamos, NM

3-day course on Use of Release Fractions in Safety Analysis (taught course with Jofu Mishima). Los Alamos Area Office, 1998, Los Alamos, NM.

1 day Course on Earthquakes & Safety Analysis Training (Taught by EH-32). Los Alamos Area Office, March 1999.

4-day DOE course on Fundamentals of Quantitative Risk Analysis (ESH568) taught by OMICRON at the Energy Training Center, AI, NM

40-hour course on System Safety Techniques (Hazard Analysis) taught by Millennium Corporation (Aug, 1999) at the Los Alamos Area Office.

32-hour course on Accident Scenario Development and Quantification Course (May 1999) at the Energy Training Center, AI, NM. FSAR, HAR, 5480.23, Probabilistic Risk assessment techniques.

Qualifying Official Training held at the DOE Albuquerque Operations Office in May 1999.

24-hour course in DOE-STD-3009-94 at the Energy Training Center, AI, NM (Sept. 1999).

32-hour course on Seismic Hazard Analysis Training (ESH605) at the Energy Training Center, AI, NM (Sept. 20-23, 1999).

12 hour course (OTT104) "Operational Readiness Review for Team Members." Conducted at LANL by ISRD/AL on 4/11/00.

12-hour course (OTT167) "Operational Readiness Review for Team Leaders." Conducted at LANL by ISRD/AL on 4/12/00.

2-hour course "Operational Readiness Review for Managers." Conducted at LANL by ISRD/AL on 4/14/00.

4-Hour Course "Technical Safety requirements Overview." Conducted by EFCOG in Santa Fe, NM on 4/28/00.

4-Hour Course "Tritium Dispersion/Consequence Analysis." Conducted by EFCOG in Santa Fe, NM on 4/28/00.

1-Day Course "GENII Computer Code." Conducted by EFCOG on 4/30/00 in Santa Fe, NM.

4-Hour Course "RSAC-6 Consequence Code Modeling." Conducted by EFCOG on 4/29/00 in Santa Fe, NM.

8-hour Course "Overview of Hazard Analysis and the Safety Analysis report (SAR)." Conducted by the Process safety Institute on 5/1/00 in Santa Fe, NM.

24-hour course "Accident & Consequence Analysis Training ESH-639". Course included Fire Hazard and Risk Analysis and Chemical Dispersion and Consequence Assessment. Conducted in AL at the ETC on 8/22/00-8/24/00.

3-Day course "Human Resources Management for Supervisors & Managers" taught by the Graduate School of the United States Department of Agriculture from 10/2/00-10/4/00 at the NNSA Los Alamos area office.

4-Hour course "Competency Assessment Training" taught by the Albuquerque Training Division on 11/13/2000.

2-Day course “Survival Skills for Supervisors and Managers” (SMT197) taught by Strategy Works, Inc., for the AL Ops Office. Taught 11/14/00-11/15/00.

December 2000, completed full qualification as Senior Safety Analyst per the requirements of the new qualification card issued by the Albuquerque Operations Office.

December 2000, completed full qualification as Senior Authorization Basis Manager per the requirements of the new qualification card issued by the Albuquerque Operations Office.

December 2000, completed full qualification as Senior Technical Safety Manager per the requirements of the qualification card issued by the Albuquerque Operations Office. This completes the DNFSB 93-3/Tech-10 certification.

3-day course, “DOE Contract Administration for Technical Representatives (PRS17) Course” taught at the AL EOC 2/6/01-2/8/01. This course fulfills qualification requirements of DOE Order 450.1 for Contracting Officer’s Representatives (CORs).

3-day course, “Introduction to High Explosives Course (ESH959)”, taught at the Office of Los Alamos Site Operations 2/21/02-3/7/02.

3-day course, 10CFR830 Subpart B Nuclear Safety Rule taught at the Energy Training Complex, Albuquerque, NM, 6/4-6/6, 2002.

1-day course, “OVERVIEW OF HAZARD ANALYSIS TECHNIQUES”, taught by the Process Hazard Safety Institute at Oak Ridge EFCOG 6/24/02.

4-day course, “Hazard and accident Analysis for DOE Safety Basis Documents”, taught by the Process Safety Institute at Los Alamos, 9/23-9/26, 2002.

AWARDS/HONORS/COMMENDATIONS:

11/21/01 Award from the Albuquerque operations Office manager for participation as supervisor in the Technical Intern Development and Mentoring Program.

10/18/2001 Environmental Quality Category Albuquerque Managers Award and Desk Plaque for work involving a cost savings at the Transuranic Waste Inspection and Storage Project (TWISP) at LANL which save \$19 M dollars and cut about 2 years off the remediation schedule.

10/18/2001 National Security Category Performance Excellence Award and Plaque for work on the \$400M Russian Fissile Material Storage Facility at Mayak.

10/18/2001 National Security Category certificate of Achievement for high level of production and quality initiatives of the NNSA/LAO Safety Authorization Basis Team.

10/18/2001 National Security Category Certificate of Achievement for removal of Sigma from the DOE list of Nuclear Facilities with savings to the Department.

10/18/2001 National security Category Certificate of Achievement for approving the Proton Radiography Authorization Basis at LANSCE.

10/18/2001 National Security Category Certificate of Achievement for work on the DARHT Safety Requirements and Authorization Basis.

- 10/18/2001 National Security Category Certificate of Achievement for work on the successful Beryllium Technology Facility Startup.
- 10/18/2001 National security Category Certificate of Achievement for work on the \$300M Cerro Grande Rehabilitation Project.
- 06/27/2001 SOAR Award in recognition for significant contributions to a high quality safety authorization basis program at Los Alamos and your support for the Appendix O contract team.
- 01/17/2001 Special Recognition Award from LANL Director John Browne and Deputy Director Richard Burick issued to the Emergency Operations Center Staff for outstanding effort during and after the Cerro Grande Fire.
- 10/26/2000 Certificate of Achievement 2000 for DARHT Phase 1 Safety requirements Team.
- 10/26/2000 Certificate of Achievement 2000 DARHT Phase 1.
- 10/26/2000 Managers Award from the Albuquerque Operations Manager for Cerro Grande Fire Joint Effort.
- 10/26/2000 Performance Excellence Award for Authorization Basis work signed by the Operations Office Manager.
- 10/26/2000 Performance Excellence Award for Authorization Basis work associated with the Tru Waste Inspection and Storage Project (TWISP).
- 08/21/2000 SOAR Award in recognition for significant contributions to a high quality Safety Authorization Basis Program at LANL.
- 08/02/2000 Time off Award for support and contributions to the LANL General Emergency involving the Cerro Grande Fire emergency response effort. I worked as the Senior DOE Manager for the Emergency Response situation room.
- 05/04/2000 Award for EFCOG Safety Analysis DOE Complex Working Group Outstanding Paper: "Using Contractual Requirements to Promote Safety."
- 03/02/2000 Memorandum from DNFSB Chairman to Deputy Secretary Glauthier commending the Los Alamos Area Office for Authorization Basis leadership in support of Integrated Safety Management (ISM) objectives and use of the LANL UC contract to support positive identification and evolution of LANL in authorization basis matters. Recommendation from the DNFSB for the rest of the DOE complex to perform similarly. Recommendation that a new Phase III ISM process be created in the DOE complex. Reference to LAAO having a technically strong individual as Senior Authorization Basis Manager.
- 10/1999 Representative from the Office of the Secretary of Energy performed interviews in support of the LANL and DOE Integrated Safety Management Verification process. Noteworthy Practice Number NP-DOE 1.1.1 of the report (which will be transmitted to the Secretary's office states the following: "The AB Manager possesses extraordinary technical competence evidenced by training, education, a demonstrated understanding of the process and a keen technical insight. The Manager is familiar with the facilities and the associated hazards along with a specific knowledge of

computational modeling techniques. There are few individuals who possess this comprehensive level of understanding of the AB process.”

- 10/1999 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for superior performance in developing a high quality Safety Authorization basis review Process and establishing a Federal Team to provide oversight of the contractor in this critical area.
- 10/1999 DOE AL Operations Office Manager’s Performance Excellence Award CMR Building Risk management Team in recognition of demonstrated exceptional impact on the achievement of AL’s strategic vision, mission, goals and objectives.
- 10/1999 DOE AL Operations Office Manager’s Performance Excellence Award TRU Waste Inspection and Storage Project Team in recognition of demonstrated exceptional impact on the achievement of AL’s strategic vision, mission, goals and objectives.
- 10/1999 DOE AL Operation Office Manager Performance Excellence Award DARHT Phase 1 safety requirements Team in recognition of significant contributions to AL’s strategic vision, mission, goals and objectives.
- 09/1999 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for valuable contributions in support of the DARHT Project.
- 09/1999 DOE Team Special Organizational Achievement Recognition (SOAR) Monetary and Time-off Award for valuable contributions in support of the DARHT Project.
- 09/1999 DOE 1999 AL Peer Recognition Award for (recommended by 8 peers) contributions to DARHT and critical Environmental Management Facilities.
- 09/1999 Letter of Commendation from the Defense Nuclear Facility Safety Board (DNFSB) signed by the Technical Director for creating, sponsoring and teaching the first Airborne Release Fractions Course for accident analysis in the DOE complex taught in September 1999 and again in 2000 for ongoing efforts to improve training of DOE and contractor personnel on topics related to the development, review and approval of authorization bases.
- 04/1999 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for significant contributions to the Nuclear Materials Storage Facility Renovation Project.
- 11/1998 LANL Certificate of appreciation for valuable contributions as an instructor for LANL’s Workshop on ARFs and RFs November 17-19, 1998.
- 10/1998 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for exemplary contribution to the Los Alamos Area Office of Facility Operations Program including contributions to the CMR BIO/TSRs, LACEF USQ program contribution to LANL contract performance measure development of the LANL contract MOU for AB quality and support of integration and development of TASD staff.
- 06/1998 DOE AL National Quality Month award for performance excellence in support of AL quality initiatives.
- 04/1998 DOE Time off Award in recognition of outstanding efforts and dedication in support of the Work Smart Standards development initiative.
- 04/1998 DOE Time off Award in recognition for contributions to the FY97 LANL ES&H Appraisal

- 10/1997 DOE Peer Recognition Award for work on the Pantex and LANL Site Wide Environmental Impact Statement, technical competence, analysis expertise, and leadership.
- 09/1997 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for contributions to improving the effectiveness of the CMR upgrades program
- 08/1997 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for insightful and thorough technical analysis of complex calculations in the Appaloosa Program. Award recommend by DP-3 (Victor Stello, Principal Deputy Assistant Secretary for Safety and Quality) for “single-handedly saving the Appaloosa Program”.
- 07/1997 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for contributions in improving the safety authorization envelope including the Appaloosa SAR and the CMR USQ review at LANL.
- 04/1997 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for exemplary contributions to the overall success of the LAAO Safety Analysis Program.
- 01/1997 DOE Certificate of Appreciation from the Assistant Secretary for defense programs in recognition of valuable assistance and contributions to the development of the TA55 SAR and TSRs.
- 04/1996 John W. Crawford published 04/1996 DNFSB/TECH-10. Page 11 recognizes my work at Pantex/AAO by stating “a senior nuclear engineering professional has been hired, who has contributed substantially on safety-related matters at the site”.
- 10/1995 Quality Month Award from the Albuquerque Operations Office in recognition for having shown outstanding ability for and commitment to quality and customer service.
- 09/1995 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award in recognition of outstanding work in support of plant risk management
- 08/1995 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award for outstanding dedication and support to the B61-0 dismantlement readiness assessment team.
- 06/1995 DOE Special Organizational Achievement Recognition (SOAR) Monetary Award in recognition for outstanding work in support of Unreviewed Safety Questions and Safety Analysis Reports (SARs)
- 05/1995 DOE Albuquerque Operations Office Peer recognition Award from the Nuclear Safety Division in recognition for having shown outstanding ability and commitment to quality and customer service.
- 07/1993 DOE Monetary Award for Superior Job Performance
- 06/1987 National Collegiate Natural Science Award
- 05/1987 United States Achievement Academy Academic All-American Award.
- 10/1984 Department of the Army Certificate of Achievement by the Army Aviation Board for superior performance in support of the US Army Self-Propelled Crane for Aircraft Maintenance and positioning (SCAMP) operational test.

PUBLICATIONS & COURSES DEVELOPED:

High-Spin Band Structures in ^{170}Hf by C. Baktash, M.L. Halbert, D.C. Henseley, I.Y Lee, J.W. McConnell, F.K. McGowan, and C.M. Steele. Physical Review C. Analytic Subject Index Number: 27-70.+a.23.20Lv (1990).

Quantitative Investigation Into the Time Dependant Effects of Constant Nodal Discontinuity Factors in Coarse Mesh Finite Difference Reactor Transient Calculations by C. M. Steele © MIT, June 1990

Plutonium Explosive Dispersal Modeling Using the MACCS2 Computer Code by C. M. Steele, T. L. Wald, and D. I. Chanin, August 1997 American Nuclear Society Transactions, Santa Fe, NM. Also issued as Los Alamos National Laboratory Report LA-UR-98-1901, June, 1998. This report was used by the Principal Deputy Assistant Secretary for Safety And Quality and the Assistant Secretary for Defense Programs as the approval basis for a Safety Analysis Report concerning this topic and is currently the approved methodology for consequence analysis for explosive dispersal accidents at the Pantex Plant per Weapons Process Analysis and Modeling Group Report RPT-30: **Validation Study of Available Models for Consideration of Explosive Releases at Pantex Plant** by C. R. Hills, D. I Chanin, and C.L. Dickerman, February, 1998. **Quantifying the Severity of Criticality Limit Violations** by Stewart G. Vessard (LANL), Christopher M. Steele (DOE, Los Alamos). November 16-20, American Nuclear Society Transactions, Volume 77, TANSO 77 1-550 (1997), ISSN:0003-018X.

ANSI/ANS 5.10-1998, **Airborne Release Fractions at Non-reactor Nuclear Facilities**. Part of working group, which wrote the standard, published May 11, 1998.

Software Quality Assurance and the MACCS2 Code by Charles R. Martin, DNFSB, Thomas Burns, DNFSB, Chris Steele, DOE, LAAO. November 1998, joint DOE/DNFSB Paper. This paper was subsequently published as DNFSB/TECH-25, "QUALITY ASSURANCE FOR SAFETY-RELATED SOFTWARE AT DEPARTMENT OF ENERGY DEFENSE NUCLEAR FACILITIES."

Advanced Recovery and Integrated Extraction System (ARIES) Authorization Basis Implementation and Management, by Blair M. Art, Derek J. P. Gordon, Dave J. Post, and Christopher M. Steele. Los Alamos National Laboratory Report LA-UR-99-148, June, 1999.

Using Contractual Requirements to Promote Safety, by Christopher M. Steele, Dae Chung. EFCOG Safety Analysis DOE Complex Working Group Outstanding Paper. May, 2000.

Oxidation of Tritium Gas Under Accident and Transport Conditions, by Jofu Mishima, Sr, Scientist Pacific Western Technologies, Inc., and Christopher. M. Steele, Sr. Authorization Basis Manager, NNSA Los Alamos Area Office (Los Alamos National Laboratory Report LA-UR-02-3803), June, 2002. Analytic basis for tritium oxidation fractions for use in accident analyses.

Accident Analysis and Airborne Release Fraction/Respirable Fraction (ARF/RF) Course. Sponsored, coordinated development and taught (with 5 other instructors) the Accident Analysis and Airborne Release Fraction/Respirable Fraction (ARF/RF) Course. This was the first course in accident analysis of its type taught in the DOE Complex. Course was taught twice (1999, 2000). Received a letter of Commendation from the Defense Nuclear Facility Safety Board (DNFSB) signed by the Technical Director for creating, sponsoring and teaching the first Airborne Release Fractions Course for accident analysis in the DOE complex for ongoing efforts to improve training

of DOE and contractor personnel on topics related to the development, review and approval of authorization bases.

10CFR830 Subpart B Course.

Sponsored, obtained funding for, Coordinated development of (with the DOE/EH Office of Nuclear and Facility Safety (EH-53), and taught (with 4 other instructors) the 10CFR830 Course. Course included modules in accident and hazard analysis (3009), Technical Safety Requirements, the 3 CFR Guides (DSA, TSR, USQ), and the 10 Safety Harbors under the Rule. Both courses were in June (Albuquerque, Oak Ridge) of 2002. Total of >200 personnel trained from around the DOE complex.

PROFESSIONAL ORGANIZATIONS: American Nuclear Society, 1991-present. Sigma Pi Sigma
National Physics Honor Society

CLEARANCE: Current United States Federal Government Q Clearance

REFERENCES: Available upon request.

CITIZENSHIP: United States of America

HIGHEST FEDERAL CIVILIAN GRADE HELD: Excepted Service (EN-5-840)