

**KIRK STAGGS
CURRICULUM VITAE**

EDUCATION

Certificate in Fire Protection Engineering from UC Davis, 1998
Chabot College, Hayward, Ca.; AA degrees in Electronic and Computer Technology,
1983
U.S. Navy, Millington, Tenn.; Aviation Machinist Mate Jet (A) School, 1974
Livermore High School, Livermore, Ca; Graduated in 1973

EMPLOYMENT HISTORY

84-Present Lawrence Livermore National Laboratory, Livermore, Ca

I am presently employed as a Scientific Associate for the University of California at Lawrence Livermore National Laboratory (LLNL) in the Chemistry and Material Science Department. I am assigned to the Yucca Mountain Program. My duties associated with this program involve the design, fabrication, and setup of materials testing and analysis related to corrosion of metals. This involves the use of various analyzers, test equipment, and environmental chambers. I design, assemble, test, trouble shoot, and maintain computer based data acquisition and control systems to control and monitor thermal, pressure, humidity, and gravimetric systems. I also provide similar support to the National Ignition Facility (NIF) Non-Optical Systems Group.

I also conduct fire testing and safety analysis for various programs (Defense programs, National Ignition Facility, etc.). This involves small and large-scale fire experiments to evaluate and determine the performance of materials, fire models, building and ventilation systems, and fire management systems (i.e., fire detectors, sprinkler systems). In addition, I have conducted tests to determine effects and performance of fires in laboratories, hot cells, high-bay storage areas, ventilation systems, low and high-energy systems, and various other experimental systems. I write and/or coordinate efforts in processing Operations Procedures, Operational Safety Procedures, Facility Safety Procedures, National Environmental Protection Act documents, project proposals, detailed test plans, and monthly reports. In addition, I program, calibrate, and operate computer

based data acquisition systems, diagnostic equipment, and various sensors in conjunction with testing.

81-84 Butler Service Group, Sunnyvale, Ca.

I worked as a technician with the Lawrence Livermore National Laboratory Fire Science Group. I conducted small and large-scale fire experiments to evaluate and determine the performance of materials, fire models, building and ventilation systems, and fire management systems.

77-80 Ed Chovanes Ford, San Leandro, Ca.

I worked in the new car department as a utility/installer technician receiving and preparing new cars for delivery.

73-77 U.S. Navy VFP-63 NAS Miramar, San Diego, Ca.; rating ADJ-2

My duties included the fueling and de-fueling, troubleshooting, inspection, adjustment, power turn-up, and scheduled and unscheduled maintenance of jet aircraft. I was a supervisor, training petty officer, safety petty officer, and ground turn-up NATOPS instructor.

CONSULTING WORK EXPERIENCE

81-Present Consulting Technologist, Livermore, Ca.

02-Present Fire Cause Analysis, Berkeley, Ca.

My consulting services involve all aspects of testing (designing, coordinating, fabricating, operations, and data reduction) related to fire, explosions, and equipment performance and failure. I provide analysis of test and accident data in determining probable cause and origin of fire or explosion. In addition, I provide analysis in fire spread, damage patterns, material failure, equipment failure, and fire management systems. I also provide computer generate graphics of data (graphs, tables, etc.) and drawings for analysis, deposition, court room presentation, and reports.

I setup, calibrate, and operate computer based data acquisition systems, flux meters, temperature sensors, load cells, velocity flow meters, mass flow meters, torque meters, RPM meters, optical meters, video equipment, sound equipment, and other types of analog and digital sensors/equipment.

I have conducted inspections to determine the cause and origin of fires involving single and multiunit dwellings, commercial and industrial building and/or complexes, automobiles, trucks, and other types of powered vehicles. I have also conducted fire inspections of domestic,

commercial, and industrial electrical and/or electrical mechanical equipment and components.

I have studied and tested fire related events involving aircraft, automobiles, electrical equipment, batteries, wiring, buildings, building material, and propellants. I have worked on accidents involving fire, smoke, explosions, electrical arcing, electrical over-load, static discharge, welding, piloted ignitions, smoking materials, oxidizers, corrosion, and other nonspecific fire causes.

I have given depositions and testimony related to the examination of evidence, experimental and practical testing, cause and origin of the fire, damage patterns, and equipment failure.

81-Present Depositions and Testimony related to Consulting

Rossmore v Club Car; Deposition, Walnut Creek Ca. 1986

Johnson v Sierra Spring; Deposition, Sacramento, Ca. 1994

Alan Bell v. Cacao; Deposition and Expert Testimony, San Jose, Ca.1997

Safeco/George v. Hydro-Quip; Deposition, Sacramento, Ca. 2000

Lockheed Martin v. RFI Supply; Deposition, San Francisco, Ca 2002

Publications, Reports, and Presentations

Kirk J Staggs, Norman J Alvares, Daniel W. Greenwood, "The Difference between Measured and Stored Minimum Ignition Energies of Dimethyl Sulfoxide Spray at Elevated Temperatures"; presented at the American Society for Testing and Materials (ASTM) Symposium on Thermal Measurements: The Foundation of Fire Standards, (December 3, 2001) and published in the ASTM STP 1427, "Thermal Measurements: The Foundation of Fire Standards"; 2002

Kirk Staggs, Norman Alvares, Mark Newton, "Fire Risk Analysis for the NIF Capacitor Containment Design", Lawrence Livermore National Laboratory, ICRL-ID-133180, (February 22. 1999)

K.J. Staggs, K.R. Wilson, D.P. Eadens, J.W. Stengel, Y.P. Chong, "Evaluation of Anti-Contamination Garments in Use at LLNL", Lawrence Livermore National Laboratory, UCRL-ID-128830, (December 1997)

W. Bergman, K. Wilson, K. Staggs, D. Wapman, "Development of an Air Cleaning System for Dissolving High Explosives from Nuclear Warheads", Lawrence Livermore National Laboratory, UCRL-JC-127216, (February 1997)

Howard Lambert, Kirk Staggs, Annette Macintyre, "Fire Risk Analysis of W79 HE Dissolution Workstation in Facility 12-98 Cell 2", Lawrence Livermore National Laboratory, Livermore, Ca (1997)

W. Bergman, K.J. Staggs, D.E. Turner, D.W. Greenwood, P.D. Wapman "Spark Ignition Studies of DMSO/HE Sprays, Liquids and Aerosols in the W79 HE Dissolution Workstation, (November, 1996)

K. J. Staggs "Waste Storage Areas and Inventory Fire Tests", presented at Annual DOE FPE Contractors Conference, Gatlinburg TN, (April, 1995)

K. J. Staggs "55 Gallon Metal Waste Drum Testing", presented DOE Third Annual Occupational Safety and Health Conference, San Diego, CA, (October, 1994)

K. J. Staggs "55 Gallon Metal Waste Drum Testing", presented at Annual DOE FPE Contractors Conference, Albuquerque, NM, (April, 1994)

K. J. Staggs, H. K. Hasegawa, and S.M. Doughty, "Development of Flammable Liquid Storage Wooden Cabinets for Chemical Laboratories", Lawrence Livermore National Laboratory, Livermore, Ca, UCRL-ID-115605, (1993)

H. K. Hasegawa, K. J. Staggs, and S.M. Doughty, "Fire Testing of 55 Gallon Metal Drums for Dry Waste Storage", Lawrence Livermore National Laboratory, Livermore, Ca, UCRL-CR-115037, (1993)

H. K. Hasegawa and K. J. Staggs, "Large-Scale Tests to Evaluate the Effectiveness of Various Fire Suppression Agents on Burning Stacked Tires", (currently under review for publication), Lawrence Livermore National Laboratory, Livermore, Ca (1993)

H. K. Hasegawa, K. J. Staggs, and S.M. Doughty, "Fire Tests to Evaluate the Potential Fire Threat and its Effects on HEPA Filter Integrity in Cell Ventilation at the Oak Ridge National Laboratory Building 7920", UCRL-CR-114339, Lawrence Livermore National Laboratory, Livermore, Ca (December 1992)

H. K. Hasegawa, K. J. Staggs, and S.M. Doughty, "Fire Tests of Wire and Cable for DOE Nuclear Facilities", UCRL-ID-110598, Lawrence Livermore National Laboratory, Livermore, Ca (September 1992)

A. C. Fernandez-Pello, H. K. Hasegawa, K. J. Staggs, A. E. Lipska-Quinn and N. J. Alavres, "A Study of the Fire Performance of Electrical Cables", Fire Safety Science- Proceedings Of The Third International Symposium, pp. 237-247

Kirk J Staggs, "Fume Hood Exhaust Duct Fire Tests: Building 222", UCID-21675, Lawrence Livermore National Laboratory, Livermore, Ca (May 1989)

Donald Beason, Ken Foote, Steve Priante, and Kirk Staggs, "Fire Exposure to an Office Trailer Complex", Lawrence Livermore National Laboratory, Livermore, Ca. (1988)

Harry Hasegawa, Kirk Staggs, Norman Alvares, and A. C. Fernandez-Pello, "A Procedure for Ranking Performance of Electrical Cables", Hazards Control Department Annual Technology Review 1987, Lawrence Livermore National Laboratory, Livermore, Ca.

Harry Hasegawa, Kirk Staggs, and Steve Leeds, "Evaluation of Quick-Acting ON/OFF Sprinkler Head Performance", Hazards Control Department Annual Technology Review 1986, Lawrence Livermore National Laboratory, Livermore, Ca.

Kirk Staggs, "Sensitivity of Fire and Smoke Detectors to Environmental Conditions: RF and Microwave Exposure", Hazards Control Department Annual Technology Review 1985, Lawrence Livermore National Laboratory, Livermore, Ca.

Norman Alvares and Kirk J Staggs, "Shock Hazards Resulting from the Inadvertent Release of Water from Fire-Protection Sprinkler System", Hazards Control Department Annual Technology Review 1985, Lawrence Livermore National Laboratory, Livermore, Ca.

H.K. Hasegawa, N.J. Alvares, A.E. Lipska-Quinn, D.G. Beason, K.L. Foote, S.J. Priante, and K.J. Staggs, "Fire Protection Research for DOE Facilities: FY 84 Year-End Report", Lawrence Livermore National Laboratory, Livermore, Ca. (1985)

H.K. Hasegawa, N.J. Alvares, A.E. Lipska-Quinn, D.G. Beason, K.L. Foote, S.J. Priante, and K.J. Staggs, "Fire Protection Research for DOE Facilities: FY 83 Year-End Report", Lawrence Livermore National Laboratory, Livermore, Ca. (1984)

Kirk J Staggs, "Apparatus for Large-Scale Cable Fire Experiments", UCID-19433, Lawrence Livermore National Laboratory, Livermore, Ca. (1982)

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