



Advanced Engineering Investigations

ZACHARY J. JASON, PE, CFI, CFEI

Mr. Jason has been a practicing, consulting and forensic engineer since 2005. He is a licensed mechanical engineer and a Certified Fire and Explosion Investigator (CFEI). He specializes in fire origin and cause determination, explosion investigations, and carbon monoxide incidents. He has investigated numerous explosions ranging from small residential propane and natural gas incidents to large commercial accidents involving pipelines, chemical manufacturing plants, petrochemical refineries, and other industrial facilities. Mr. Jason has extensive experience involving the analysis of fuel-gas systems, appliances, and other mechanical components related to the oil and gas, process safety, fire suppression, plumbing, HVAC, and fireworks industries. Prior to receiving his engineering degree, he worked as a volunteer firefighter, and currently works part-time as a certified pyrotechnic display technician.



LICENSURE & EDUCATION

Licensed Professional Engineer in Colorado, Illinois, Missouri, North Carolina, New York, South Carolina, and Texas
BS, Mechanical Engineering, University of Denver, 2005
Certified Fire Investigator (CFI), International Association of Arson Investigators (IAAI), 2018
Certified Fire and Explosion Investigator (CFEI), National Association of Fire Investigators (NAFI), 2006
Certified Fireworks Pyrotechnics/Display Operator, Colorado Division of Fire Safety, 2005
Certified in DOT HAZ-MAT Transportation, 49 CFR 172, 704 (1-4)
Certified in Hazardous Waste Operations and Emergency Response (HAZWOPER) OSHA 29 CFR 1910.120(e)
National Academy of Forensic Engineers – Board Certified in Forensic Engineering, Senior Member, 2018

WORK HISTORY

Principal Engineer, *AEI Corporation*, 2019 to Present
Senior Project Engineer, *AEI Corporation*, 2016 to 2018
Project Engineer, *AEI Corporation*, 2010 to 2016
Staff Engineer, *AEI Corporation*, 2005 to 2010
Engineering Technician, *Western Engineering & Research Corporation*, 2005
Forensic Engineering Intern, *Professional Investigative Engineers, Arvada, CO*, 2004
Pyrotechnic Display Operator, *Western Firework Enterprises Inc.*, 1999 to Present
Structural Firefighter, *Lake-Dillon Fire & Rescue, Frisco, CO*, 1997 to 2003
Wildland Firefighter, *Summit Fire Authority, Summit County, CO*, summers of 2000 to 2003

EXPERIENCE

As a certified fire and explosion investigator (CFEI), Mr. Jason has investigated residential, commercial, industrial, and wildland fires using skills gathered from his work in the fire service and training as a forensic engineer/fire investigator. Mr. Jason has designed and conducted various experimental tests related to these investigations, including full-scale fires and explosions, gas dispersion and migration studies, self-heating and thermal decomposition of reactive chemicals, flammable and combustible liquids, material ignitability, and gas-fired and wood-burning appliance failures.

In addition to his work consulting on a wide range of thermal sciences and failure analysis, Mr. Jason works part-time as a fireworks display technician. He is a Certified Fireworks/Pyrotechnics Display Operator in the state of Colorado and, since 2001, he has successfully carried out over 50 fireworks shows and close proximity pyrotechnics displays. As a forensic engineer, he has investigated the cause of various pyrotechnic accidents throughout the country and has extensive experience with the codes and industry standards dictating the rules, regulations, and procedures governing professional displays, pyrotechnic operators, and consumer fireworks.

Through his previous research, Mr. Jason worked on the design of calibration equipment used in conjunction with aircraft sampling inlets responsible for aerosol particulate research in the stratosphere. His testing and design funding was provided by the National Oceanic and Atmospheric Administration (NOAA) and the British Facility for Airborne Atmospheric Measurements (FAAM). He has experience conducting experiments involving robotics, GPS navigation, accelerometers, solar pyranometers, flowmeters, hot film anemometers, thermocouples, gas concentration sensors, and pressure transducers.



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AFFILIATIONS

American Society of Mechanical Engineers (ASME)
International Association of Arson Investigators (IAAI)
National Association of Fire Investigators (NAFI)
National Fire Protection Association (NFPA)
National Propane Gas Association (NPGA)
National Society of Professional Engineers (NSPE)
National Academy of Forensic Engineers (NAFE)
Colorado Division of Fire Safety