



## Advanced Engineering Investigations

### **DENNIS E. SHELPE, MS, PE, CFI, CFEI, CVFI**

Mr. Shelp has been providing forensic engineering services since 1997. He specializes in origin and cause investigation of fires and explosions, vehicle accident reconstruction, and injury accident analysis. Mr. Shelp has given presentations on fire and explosion investigation, accident reconstruction, and has provided expert testimony in numerous state courts.



#### **LICENSURE, EDUCATION & CERTIFICATIONS**

Licensed Professional Engineer in Alabama, Colorado, Nevada, and Oklahoma  
BS, Mechanical Engineering, Michigan State University, 1991  
MS, Mechanics, Michigan State University, 1994 (Graduate Research: Biomechanics)  
Certified Fire Investigator (CFI), International Association of Arson Investigators (IAAI), since 2009  
Certified Fire and Explosion Investigator (CFEI), National Association of Fire Investigators (NAFI), since 2001  
Certified in Hazardous Waste Operations and Emergency Response (HAZWOPER) OSHA, yearly since 2003  
Certified in DOT Haz-Mat Transportation, 49 CFR 172, 704 (1-4), since 2004  
National Academy of Forensic Engineers – Board Certified in Forensic Engineering, Senior Member, 2018  
Certified Vehicle Fire Investigator (CVFI), National Association of Fire Investigators (NAFI), 2019

#### **WORK HISTORY**

Principal Engineer, *AEI Corporation*, 2006 to Present  
Project Engineer, *AEI Corporation*, 2005 to 2006  
Project Engineer, *Western Engineering & Research Corporation*, 2002 to 2005  
Senior Engineer/Analyst, *Engineering and Fire Investigations (EFI)*, Denver, CO, 2000 to 2002  
Senior Engineer/Analyst, *Engineering and Fire Investigations (EFI)*, Houston, TX, 1998 to 2000  
Associate/Principal Forensic Analyst, *Billy Cox & Associates*, Houston, TX, 1997 to 1998  
Validation Engineer, *General Motors (contracted through Sycron Corp.)*, Flint, MI, 1995 to 1997  
Research Assistant, *Michigan State University, Department of Biomechanics*, East Lansing, MI, 1991 to 1994  
Production Supervisor, *General Motors*, Flint, MI, summer 1990  
Engineering Intern, *Eaton Corporation, Engine Components Division*, Marshall, MI, 1989  
Engineering Intern, *IBM, Environmental Evaluation Division*, Charlotte, NC, 1988

#### **EXPERIENCE**

Mr. Shelp is an expert at investigating the origin and cause of residential and commercial structural fires and motor vehicle fires. He has investigated numerous natural gas and propane explosions and has examined and tested various fuel gas systems and components. Mr. Shelp has examined and tested heating equipment such as furnaces, boilers, water heaters, ranges, and fireplaces, and has collected propane and natural gas samples for chemical analysis. Additionally, he has participated in the planning and execution of fire and explosion tests for both research and training purposes.

Mr. Shelp has reconstructed motor vehicle accidents involving commercial and passenger vehicles, and motorcycles. He has downloaded airbag module data, evaluated occupant injury potentials, and has planned and participated in vehicle crash tests. He has examined automotive components and systems to determine how they failed, and if the failure contributed to the cause of an accident.

Mr. Shelp has also investigated non-automotive injury accidents involving mechanical equipment failures and carbon monoxide exposures.

#### **AFFILIATIONS**

*ASTM International*  
*National Propane Gas Association (NPGA)*  
*National Fire Protection Association (NFPA)*  
*National Association of Fire Investigators (NAFI)*  
*American Society of Mechanical Engineers (ASME)*  
*International Association of Arson Investigators (IAAI), Colorado and International Sections*  
*National Society of Professional Engineers (NSPE)*  
*National Academy of Forensic Engineers (NAFE)*