

STEPHEN THORNE, P.E.

HIGHLIGHTS OF QUALIFICATIONS

Stephen Thorne is a graduate of University of Maryland's Fire Protection Engineering program, and is a registered professional engineer in the states of Washington (#28863) and Idaho (#P-9302). He has over 30 years of experience in the service specialty areas. He has extensive experience in the management and implementation of DOE fire protection programs.

He specializes in providing fire protection design, system engineering and hazards analysis services.

Current projects include:

- Fire protection engineering design support for the Integrated Waste Treatment Unit project
- Fire protection engineering support for the Waste Management Group at the Idaho National Laboratory;
- Fire protection engineering support for the West Valley Demonstration Project;

Mr. Thorne currently holds an active DOE "L" Security Clearance.

RELEVANT EXPERIENCE SUMMARY

Mr. Thorne, as the lead fire protection engineer for the Integrated Waste Treatment Unit project, developed and maintains the fire hazards analysis and associated technical support for the facility. He supports the Waste Management Group by maintaining fire hazards analyses and providing technical support to their activities. He also supports the West Valley Demonstration Project in the area of fire hazards analyses and related technical support.

Mr. Thorne has completed several Fire Department Baseline Needs Assessments, notably, the Los Alamos National Laboratory Baseline Needs Assessment (2009) the Hanford Fire Department Baseline Needs Assessment (2009 and 2013) and the Pacific Northwest National Laboratory Baseline Needs Assessment (2013). He has also performed technical reviews of the Portsmouth Baseline Needs Assessment (2013), West Valley Baseline Needs Assessment (2014), the WIPP Baseline Needs Assessment (2013), and the Fort St. Vrain Baseline Needs Assessment (2015).

Mr. Thorne served as the Director of Safety and Health for the Idaho National Laboratory (2004-2006) and was responsible for providing management direction and technical guidance for the INL's occupational safety and health program as well as the fire protection program. During this period (November, 2006), he was requested and led a team of five fire protection engineers in performing a fire protection program assessment of the Los Alamos National Laboratory contractor, Los Alamos National Security (LANS), LLC.

Mr. Thorne led the development of the Fire Marshal Program at the INL (2000-2003) and was responsible for ensuring buildings, facilities and operations complied with applicable fire and life safety codes/standards. In this position, he managed the fire protection program (10 engineers); and the Life Safety Systems organization (40 technicians and skilled craftsman), the organization responsible for the fire protection systems throughout the site. As delegated by the DOE Authority Having Jurisdiction, he

was responsible for making codes and standards interpretations and reviewing/approving all INL fire hazard analyses.

Relevant recent fire protection activities include preparation and update to the Fire Hazards Analysis for the CHPRC Pump and Treat Facility (2013-14), updates to the CHPRC Canister Storage Building FHA (2013-14); completion and updates to the Integrated Waste Treatment Unit FHA (Idaho, 2008-15); completion and updates to the Sodium Distillation Process FHA (Idaho, 2014-15); The Sodium Distillation Process FHA required the development and submission of an Equivalency request to the Department of Energy, Idaho Office. The equivalency request was approved.

Other relatively recent work includes fire protection support to CH2M Hill B&W West Valley (2011-2015). This includes preparation of the Decontamination and Demolition FHA for the Main Plant Process Building and Vitrification Facility (NY, 2013) the FHA for the Lag Storage Facility (NY, 2012) and the combustible loading program (NY, 2012).

Other relevant fire protection work includes fire protection and life safety design support for multiple facility projects at Mountain Home AFB, Idaho (2007- 2012).

As a regional manager and senior engineer for Hughes Associates (1995-1999), Mr. Thorne was responsible for procuring, performing and managing fire protection engineering projects and activities. Clients included DOE prime contractors, the U.S. Navy, and private industry. During this period, Mr. Thorne completed a significant number of fire hazard analyses for a myriad of nuclear facilities (e.g. Hanford K Basins, Waste Burial Grounds, High Level Waste Tank Farms, Bldg 324, Bldg 325, T-Plant, Canister Storage Facility, Rocky Flats 771 and 664 facilities, OU7-10 Project, Pit 9) and assisted with facility readiness reviews.

As an independent consultant (1991-1995), Mr. Thorne was responsible for providing technical services in the area of fire protection and life safety. During this period, he served a member of a DOE sponsored Technical Review Group (1992-94), and performed independent reviews of authorization basis documents for several high hazard facilities and processes to assess the adequacy of the accident analyses and the related fire protection and Life Safety features. These included: the Savannah River Defense Radioactive Waste Processing Facility (South Carolina), and the West Valley Vitrification Facility (New York).

Mr. Thorne has served on the National Fire Protection Association's Means of Egress Subcommittee and is co-author of two fire safety evaluation systems (FSSES), an industry recognized methodology for achieving safety equivalent to NFPA's Life Safety Code.

Other project experience includes performing comprehensive fire protection surveys of U.S. Naval Facilities and Bases. Mr. Thorne has conducted fire risk assessments and life safety evaluations of select facilities for the General Services Administration (GSA). Occupancies evaluated and assessed include business, storage/warehouses, laboratories, mixed use, essential data/communications, printing and photo-processing, and apartment-style facilities.

As the manager of the Central Intelligence Agency's (CIA) fire protection and prevention program (1990-91), he advised senior management on fire protection policies and priorities and managed the program.

Prior to assuming the manager position, Mr. Thorne worked as a fire protection engineer, as a project engineer (1985-1989) and assisted the group responsible for explosive use activities.

Under the University of Maryland's cooperative education program, Mr. Thorne worked for over one year (1982-84) at the National Institute of Standards and Technology's Center for Fire Research as a student research assistant. Mr. Thorne performed the initial Beta Testing of ASET (Available Safe Egress Time), one of the first publicly released zone fire models.

While completing his engineering degree, Mr. Thorne served as a volunteer firefighter/EMT in Montgomery County, Maryland.

EDUCATION/PROFESSIONAL AFFILIATIONS SUMMARY

B.S., Fire Protection Engineering, University of Maryland

Licenses/Certifications/Memberships:

- Professional Engineer: Washington, No 28863; Idaho, No. P-9302;
- Society of Fire Protection Engineers (past President, Pacific Northwest Chapter); Past Member, SFPE Qualifications Board (6 years)
- National Fire Protection Association (including Means of Egress Subcommittee 1988-91)
- Member, Salamander Honorary Society
- Member, Tau Beta Pi Honorary Society

Security Clearances:

- Department of Energy "L" (active)
- Central Intelligence Agency TOP SECRET (inactive)