

# Fire Protection Engineering And Safety Standards Of U.S. Army And Air Force



® U.S. ARMY CORPS OF ENGINEERS

Safety Design in Buildings

Riyadh Conference

April 16, 2018, Holiday Inn Izdihar - Riyadh



Safety Design in Buildings

Jeddah Conference

April 18, 2018, Park Hyatt - Jeddah



# Presenter:

Gregory M. Michaels, P.E., Fire Protection Engineer |  
US Army Corps of Engineers

Gregory M. Michaels serves as a Fire Protection Engineer in the Building Systems Branch of the Engineering Division for the U.S. Army Corps of Engineers (USACE) Middle East District (MED), located in Winchester, Virginia. He is a member of the Engineering Division, one of three major divisions within the District responsible for accomplishing projects that meet customer requirements. MED is responsible for providing engineering, construction, and related reach-back services in the Middle East, Central Asia, and other areas as required. Its work includes designing and constructing facilities for use by U.S. forces, performing engineering activities for other U.S. government and foreign agencies, and providing operations and maintenance services for various customers. In addition, the District provides project management, engineering, contracting and support services to USACE districts in Iraq and Afghanistan. In his position, Mr. Michaels is responsible for ensuring that fire protection engineering plans and specifications are developed to meet project goals. His duties include overseas site visits, design charrettes, managing AE firm design contracts, design hydraulics, and specification development on projects currently in Jordan, Egypt, Iraq, Kyrgyzstan, Tajikistan, Uzbekistan, Kazakhstan, Turkmenistan, Qatar and Afghanistan. His most recent assignments include fire protection engineering design for a combined Desalinization/Power Plant in Saudi Arabia, the rebuilding of electric power plants in Iraq, and nuclear waste environmental clean-up projects for the Department of Energy. Mr. Michaels also serves as one of four engineers assigned to the Technical Center of Expertise for Fire Protection Engineering of U.S. Air Force Aircraft Hangars worldwide. He has served as a civilian with the District since May 2010.

# Learning Objectives

1. *Differences Between Building Codes and US Military Regulations (Unified Facilities Criteria (UFC))*
2. *Design by Specification Versus Bill of Materials (BOM)*
3. *Fire Protection Engineering Design for the Specific Occupancy and the Fire Hazards*
4. *Mechanical Engineering Versus Fire Protection Engineering*
5. *Unlisted Versus Listed Fire Protection Equipment/Devices/Systems*

# Site 1 Protected SPFI Fire Testing

Smoke leaving doorway

Sole burning item, a small wastebasket

Note: This is PROTECTED SPFI. Unprotected SPFI exists at Site 1

Room filled with smoke

No other fuel, furniture, clothing, etc in space

100% smoke obscuration unprotected rescue not possible

Room smoke filled deadly

00:46

01:01



# Site 1 Protected SPFI Fire Testing

Room fully involved and deadly



Note: This is PROTECTED SPFI. Unprotected SPFI exists at Site 1



01:52

