

TerranearPMC Safety Share

Week of July 16, 2012 – Fire Safety in High Rise Buildings

Last week I had the honor to give a presentation on the new requirements of the Hazard Communication Standard in Albuquerque, NM. Because this presentation was conducted at a hotel, I began my talk by first informing the attendees about what we need to do in case of an emergency, such as a fire or other unforeseen and unwanted event. We talked about proper emergency routes and a proper meeting location. The fact is, being in a hotel or other large building during a fire can be devastating because people are generally unfamiliar with the location of exits, pathways and general layout of the building. This means people would not be ready to quickly evacuate while losing their orientation and possibly getting trapped. This is why it is important to be cognizant of emergency routes when you are in large structures, such as hotels. Know your plan of escape BEFORE an emergency situation occurs. Too many people are not prepared and therefore find themselves improvising during the actual emergency. This is when people have a tendency to panic and lose objectivity and reasoning; resulting in unfortunate outcomes.

Understanding how to properly evacuate a building during an emergency, is not a preventative measure, but one designed to minimize tragedy. Incidents such as fires will occur regardless of your knowledge of proper evacuation routes. However, such preparedness can save your life.

It was on November 21, 1980, when a fire occurred at the Las Vegas MGM Grand where 85 people were killed and the country realized the importance of fire safety in hotels/buildings. This incident is considered the worst disaster in Nevada history, and the third-worst hotel fire in modern U.S. history, rivaling the 1946 Winecoff Hotel fire in Atlanta that killed 119 people and the DuPont Plaza Hotel, San Juan, Puerto Rico fire on December 31, 1986, in which 97 perished. This last incident resulted in tragedy as occupants (in a ballroom celebrating New Year's Eve) ran towards the doors and because they were installed backwards, they opened inward, causing persons to squeeze against the door so it would not open, trapping them in the inferno.

At the time of the MGM fire, approximately 5,000 people were in the hotel and casino, a 23-story luxury resort with more than 2,000 hotel rooms. Just after 7:00 a.m. a fire broke out in a restaurant known as The Deli. The Clark County Fire Department was the first agency to respond. Other agencies that responded included the North Las Vegas Fire Department, Las Vegas Fire & Rescue and the Henderson Fire Department. In addition, helicopters from the 1st Special Operations Wing out of Hurlburt Field, FL (which were deployed to Nevada's Nellis AFB) were the main part of a helicopter rescue effort that pulled 1,000 people from the roof of the MGM Grand. Smoke and fire spread through the building, killing 84 people and injuring 650, including guests, employees and 14 firefighters. While the fire primarily damaged the second floor casino and adjacent restaurants, most of the deaths were on the upper floors of the hotel, and were caused by smoke inhalation. Openings in vertical shafts (elevators and stairwells) and seismic joints allowed toxic smoke to spread to the top floor.

The disaster led to the general publicizing of the fact that during a building fire, smoke inhalation is a more serious threat than flames. Seventy-five people died from smoke inhalation and carbon monoxide poisoning, four from smoke inhalation alone, three from burns and smoke inhalation, only one person died from burns alone, and one person died from massive skull trauma, caused by jumping from a high window

The National Fire Protection Association (NFPA) defines a *high-rise building* as a building greater than 75 feet (25 m) in height where the building height is measured from the lowest level of fire department vehicle access to the floor of the highest occupiable story. Appropriate exits, alarms, emergency lighting, communication systems, and sprinkler systems are critical for employee safety. When designing and maintaining exits, it is essential to ensure that routes leading to the exits, as well as the areas beyond the exits, are accessible and free from materials or items that would impede individuals from easily and effectively evacuating. Therefore, preparing in advance to safely evacuate the building is critical to the safety of all personnel. Here are a few things to consider:

- Never lock fire exits or doorways, halls or stairways. Fire doors provide a way out during the fire and slow the spread of fire and smoke.
- Never prop stairway or other fire doors open.
- Learn your building evacuation plan – in hotels, this is generally placed on the door of your room.
- Make sure you, as well as others in your party, know what to do if the fire alarm sounds.
- In an office environment, workers need to plan and practice the escape plan together
- In hotels, people should be aware of the means of egress.

And if you are trapped during an emergency, what should you do?

- Stay calm and take steps to protect yourself.
- Go to a room with an outside window, and telephone for help if possible.
- Stay where rescuers can see you and wave a light-colored cloth to attract attention.
- Open windows if possible, but be ready to shut them if smoke rushes in.
- Stuff clothing, towels, or newspapers around the cracks in doors to prevent smoke from entering your room.

The NFPA has recognized that when it comes to fire safety in high rise structures, several things can fall through the cracks. One is the need for people to be reminded of what they are expected to do. For a workplace standpoint, it is important to train employees to deal with the real-life situations they may have to face in the event of a fire. It is a good idea for employees on upper levels to occasionally walk down 8 or 10 flights of stairs, recognizing that they may have to walk down 50 or more floors in an actual emergency. The time to learn you're going to encounter a difficulty is when you have the time to deal with it, not during an actual emergency.

A mind is like a parachute, it doesn't work if it isn't open - Frank Zappa