

Corporate Emergency Preparedness and Response

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Introduction

For the past 30+ years the author has been heavily involved in many aspects of the emergency response community. His job titles have ranged from volunteer firefighter to Fire Chief to Emergency Manager to Urban Search and Rescue Task Force Leader to Corporate Emergency Response Team Chief, encompassing local, corporate and federal emergency response agencies. As a result, he has gained unique insights into how both public and private response agencies operate and will discuss how all of this impacts corporate emergency preparedness and response.

Corporate emergency preparedness and response is one of those programs that run the full gamut of iterations depending upon the individual company. Some companies rarely give emergency situations any thought. Others are fully prepared and staffed. There are fully staffed, equipped and trained teams that will respond to any and all threats including interior structural fires, confined space rescue and hazmat/chem-bio events. There are also corporations that rely totally upon the local public responders for all of their emergency situations, and then there are any number of programs that have many different make-ups in between.

This paper will focus on many of the aspects that should be considered when deciding what is best for your organization. But there is one overriding point that you should understand--there is a very good chance that **at some point, your organization will need to stand entirely on its own during an emergency situation.** Prepare for it. What you can or cannot do can mean the survival of your organization.

The New Game

The 9/11 and anthrax attacks made companies in the United States more aware of their vulnerabilities to emergency situations – for awhile. That awareness appears to have disappeared when no more attacks occurred.

With the exception of chemical plants and some other industrial operations, modern U.S. companies have traditionally relied almost totally upon public emergency responders for protection during emergency situations. One overarching issue stuck out during the terrorism attacks. It was easy to see that the public emergency response agencies were totally overwhelmed and could not provide full protection to their areas. Not being able to respond is a phenomenon that is more common than most people think for a number of reasons.

During the anthrax attacks, many fire departments were on a 24-72 hour delay to respond to any hazmat or chem-bio incidents. If you thought that you had anthrax or something else in your mail, you were on your own. This also impacted the ability of fire departments to respond to traditional incidents. You might think that those were very unique situations that are unlikely to happen again. Maybe it will, maybe it will not. But the reality is that public response organizations have difficulties responding every day. You need to understand the strengths and weaknesses of your local departments so that you can properly prepare.

What Can They Do Well? What Can They Not Do Well?

Every fire department is different, but the typical fire department is like any other organization in that they are usually pretty good at what they do the most. For instance, fighting a typical house fire and the assorted small grass fire and car fires are common everyday experiences. That is their bread and butter. Get into cities like New York and Chicago and the fire department is more at home with the taller buildings and tenements that they are frequently called to. However, anything out of the ordinary can cause problems as the experience level drops off. Most cities do not have many large buildings and therefore do not have much experience there. This is the same with chemical plants and processes or anything else out of the ordinary with what they typically do.

Large buildings throw a lot of issues at fire departments. Large in this context, refers to anything taller than 4 or 5 stories or anything low over 4,000 square feet. Size, height and distance create their own problems and the logistics issues and physical demands on the firefighters go up dramatically. Moving heavy hoses filled with water, breathing apparatus, fans, axes, etc. becomes very difficult when going up stairs or maneuvering through buildings filled with heat and smoke. Facing the unknown also cranks the anticipation up a couple of notches higher. Even if the local responding stations tour your facility once per year, if you have a large building there is no way that the fire department can become closely familiar and comfortable with it.

Where are the critical components in your building? Is there a UPS battery system? Are there generators? What is important to you the occupant? All of this is very difficult for the firefighters to find if the lights are out and/or the building is filled with smoke. The more problematic it is for the fire department to find their way, the more chance that damage will increase. These are some things that throw curves at fire departments. Is there always someone on site who can cut generators, UPS and power to locations in the building? If not the FD could wait until there is or cut all power to the site.

What if there is another large emergency response in your area? All of your first response units are out on another call. Who comes in next? Do units from the other side of town respond? Are these units that you have not worked with? Are they units from the county or another town? What if there is a large accident and the roads are shut down, delaying response? Or what if the responding units get lost or in an accident? Oh, darn it; your first-in station got hit with the flu. The District Chief and several of the regular firefighters are out and the Captain is on vacation so a Captain from another area is filling in. He has never been in your area, much less your facility. These kinds of things happen all of the time. How will they impact you?

How Long Does It Really Take The Fire Department To Respond?

Fire can fully envelop a floor in as little as two minutes. Generated smoke and heat can wreak destruction far from the actual flame base. In the fire at the MGM Grand in Las Vegas, the fire moved so fast that some customers were killed almost instantly at the bar. Remember, most companies that suffer through a catastrophic fire go out of business.

It rapidly becomes evident that the best course is to prevent the fire in the first place through aggressive housekeeping and management. The second step is to use properly designed and maintained sprinkler and fire alarm systems. Do not fall into the trap of thinking that sprinklers do more damage by going off accidentally or will drench everything with water upon activation by a fire. Television shows and Hollywood typically show all sprinklers activating with someone activating a pull station. This is far from the truth but further details are beyond the scope of this paper. Just know that you need a good sprinkler system and learn more with NFPA 1401.

What most operations lack is what the author refers to as third leg in corporate fire protection. A well trained and equipped emergency response team (ERT) is essential. Why? Almost every medium and large size company has 24 hour security but they typically have no trained fire/emergency protection personnel. It is very important to have someone on site that is trained in what to do in non-police emergency situations. When is the fire department called? Many companies do not want the local officials called unless it is “absolutely necessary.” This type of mentality can give a fire the time it needs to progress to a level of being extremely destructive or even unstoppable. What do your company directives say to do when there is a smoke haze in an area and no fire can be found? When is the fire department called? Who makes the decision to call the fire department?

As stated earlier, fire can grow and move very rapidly, especially when there is a strong wind and combustible materials (like furniture, carpet, interior finishes, paper, books and computers). There is typically around a 10 minute reaction time to move in on a fire in order to stop it. When measuring fire department response times, many fire departments will take the time from when the units were dispatched until the time they arrived at the address as the response time. What you are interested is how long it takes until properly equipped and trained fire response team is on site, in place and ready to attack. The average response times published by most fire departments do not consider all of the factors that add up to the total time it takes for:

1. Company personnel to find a problem.
2. The information to get to those who make the decision.
3. The decision to call 911.
4. 911 to take the call and to relay to FD dispatch.
5. Dispatch to find the location and identify the proper station(s) to respond and break into other radio traffic and dispatch the call.
6. The FD units to get the call, get out of bed and get into gear and the trucks,
7. The FD units to find the location,
8. Determine where to go in,
9. Make contact with company personnel,
10. Determine how and where to attack,
11. Move to the location with equipment,
12. Place and hook up fire trucks,

13. Begin rescue operations and/or,
14. Begin to attack the fire.

Whew! That is just getting ready to do the work. If you have a large building multiply that total times a large factor.

What Have You Done To Improve The Chances Of Your Company?

Of course your primary responsibility is to be able to quickly and safely evacuate and account for all of your employees. Have you trained all of your employees and held at least annual fire drills? Do all of your employees know where to go and where to assemble outside? Do you have an evacuate-in-place plan? How can you move all of your employees off site in case of a hazmat spill? You need to build a plan.

But before you can put together a comprehensive plan, you should consider the all the threats your company could face. First, build a list of all of the threats your company could face. Then, build a threat matrix as shown below in Exhibit 1. This is your tool and your way to graphically present the issue to management.

Threat	Risk	Damage	Total	Plan
Fire	10	15	150	Y
Weather	15	5	75	Y
HazMat	5	8	40	N
Flood	3	15	45	N
Bomb	2	15	30	N
Terror	1	15	15	N
Riot	3	10	30	N
Power	10	10	100	N

Exhibit 1 – Threat Matrix Example.

Use the Threat Matrix to list your threats (could be more than one example) and determine the real risk levels, how much damage could result and then multiply the two together and apply the total at the end. After that, add a column at the end that states if there is a full plan in place. You can also add a column that identifies if the plan had been exercised or not. The use of color makes the problem areas stand out for easy identification of issues. You can gain information to help you apply your ratings by talking to your building insurance company, the local fire department, fire protection engineers and other safety professionals. There is a list of resources at the end of this paper that provides information on several good books as well.

Preparedness Component Matrix

Component	Plan	Train	Test
Evacuation	10	10	0
Evac-In-Place	8	8	0

Communication	8	8	0
Response	5	0	0
Overall			

Exhibit 2 – Preparedness Component Matrix.

Continuing with the matrix theme, you can build a similar matrix that identifies other program components of your overall emergency response plan. Senior management typically embrace a report that gives the full status at a glance. These matrices are simple to build in Microsoft Excel and are easy to place in reports and to update.

Training

This is an area where you will need to know the standards and you must also use common sense. OSHA 29CFR 1910.156 Fire Brigades states:

“The employer shall provide training and education for all fire brigade members commensurate with those duties and functions that fire brigade members are expected to perform. Such training and education shall be provided to fire brigade members before they perform fire brigade emergency activities. Fire brigade leaders and training instructors shall be provided with training and education which is more comprehensive than that provided to the general membership of the fire brigade.”

How do you know what is “commensurate with those duties and functions that fire brigade members are expected to perform”? Look to the standards established in your state for either industrial fire brigades or volunteer firefighters. In fact, it is very nice to be able to get member certification through your state agencies. Then there is no question.

For fire response you should at least consider having personnel trained to respond with fire extinguishers. However, it is imperative that they know what they can and cannot do. They need to know when to get out and when a fire is too big to approach.

A properly trained and equipped ERT that has members on site at all times can be your lifesaver. They know the facility, they know what is important, they know where things are and they know how to operate equipment. They have special equipment that is for responding in your facility. They know the building and can get employees out if necessary. They can be on scene rapidly and take appropriate actions to immediately stop a problem before it becomes devastating. It is suggested that the team be comprised with facilities and maintenance personnel who can do whatever is necessary to remediate the problem.

It takes at least a year to get an ERT up to a basic certification level if training several hours a week and going to a fire school for 1 week. A great way to build liaison with the local FD is to bring in one or several of their members on a part-time basis to help train your team. Make sure your team Chief is a knowledgeable and experienced firefighter that can properly do the job. Those with experience in volunteer fire departments can usually relate better to part-time firefighters than can career firefighters. In life and/or facility threatening emergencies (fire, medical, special rescue, etc.) even when the team believes that it will be resolved quickly, the local public responders should be called in for backup. There should be on-going training with

the local responders to form familiarity, confidence and a feeling of team. Then, if there is a big event, ERT members can work with and guide local responders around the facility and provide specific expertise. In very large facilities, the local responders' communication equipment may not work and need to rely on in house capabilities.

Levels of Emergency Response Teams

There are several different ways to go with ERTs. The major recognized levels are:

1. Reporting and evacuation only
2. Fire extinguisher use only
3. Incipient Stage Firefighting
4. External Fire Firefighting
5. Interior Structural Firefighting
6. Hazardous Materials Response
7. Nuclear, Biological, Chemical (NBC) Response
8. Confined Space Rescue
9. High Angle Rescue
10. Trench Rescue
- 11 Special Rescue
12. Medical Response

Your ERT can be made up of one or several or all of these specialties depending upon the needs of your facility. You are required to accomplish a needs assessment in order to fully understand what the needs of your facility are. Then you determine where you want to go with your team and how to get there. There are office locations that have teams qualified to accomplish all of the listed specialties. Why? When your facility reaches 6 million square feet with over 23,000 employees plus contractors, temporaries and vendors and visitors with over 200 maintenance personnel and two large central plants located next to a large highway, a very large printing operation and one of the largest mailing operations in the country there are many, many complex issues that are faced annually. These can include radiation incidents created when building floors are x-rayed to prepare for core drilling.

World-class companies take reasonable steps based upon extensive threat data gathering to ensure the safety of employees, visitors and the company. Asbestos, potential biologicals in the mail, fire, rescue, hazmat, fall protection, brush fires, vehicle and equipment accidents, mold, and many others are daily occurrences. Large companies have all of the issues of medium size cities within a much smaller area. Emergency response must take on a quality and precision unknown to many public departments. A small incident that would cause little problem in a public location can be paralyzing to a large facility. Knowledge, capability, efficiency and speed are critical to keeping the operation operating smoothly. Most ERT operations of a well trained and equipped team are accomplished in the back ground with little notice by building occupants. Even large operations are handled quickly and efficiently with minimal disruption.

During the anthrax attacks in the mail, one such large company had already begun preplanning for anthrax in the mail based upon an uptick in hoax events reported by the FBI. When the real thing hit, areas had been preplanned, managers had been briefed and some monitoring capability was on hand. It was a relatively simple matter to upgrade hazmat training and equipment of the team to be fully prepared within two weeks of the first national incident. As a result this team had more capability than their local fire department, was working with and

training the local FBI and mail inspectors and never had to suspend mail operations for more than two hours while managing numerous suspect materials in the mail including hoax powders being sent. There was contact with and updating of the local fire department but they were never called. They responded to over 250 suspect substance incidents.

A well-trained and equipped emergency response team is an amazing tool to have available in the event of any type of emergency. From rapidly removing smoke from the building, to air monitoring to working a loose radioactive source incident, to substances in the mail, any of these events could shut down an entire facility. However, when you are prepared, knowledgeable and have the capability to respond in a calm and capable manner, they just become the last successful event you quickly and efficiently resolved.

Bibliography and Resources

Technical Reports

- a. United States Fire Administration (USFA), Federal Emergency Management Association (FEMA). *USFA-TR22/May 1988 First Interstate Bank Building Fire Report*. 16825 South Seton Avenue, Emmitsburg, Maryland, 21727: U.S. Fire Administration.
- b. *MGM Grand Hotel Fire*, United States Fire Administration. January 15 1982.
- c. *High Rise Office Building Fire One Meridian Plaza, USFA-TR-49/February 1991*, United States Fire Administration

Organizations

- a. National Fire Protection Association, 1 Batterymarch Park Quincy, Massachusetts ,USA 02169-7471.
- b. International Fire Service Training Association, 930 N. Willis Stillwater, Oklahoma 74078.
- c. State Firemen's and Fire Marshals' Association of Texas, 4450 Frontier Trail Austin, Texas 78745.
- d. Your Local Emergency Planning Committee

Courses

NFPA

- a. Sprinkler System Design Course
- b. Fire Alarm System Design Course
- c. Life Safety Code Course
- d. Incident Command System

Texas A&M Municipal and Industrial Fire School courses

Books

- a. Fire Protection Handbook – NFPA
- b. NFPA 101 Life Safety Code – NFPA
- c. Building Construction for the Fire Service – Francis L. Brannigan, Glenn P. Corbett, National Fire Protection Association, 2008.
- d. Industrial Exterior and Structural Fire Brigades – IFSTA
- e. Emergency Management Handbook – IFSTA

Films

- a. Countdown to Disaster – NFPA
- b. Firepower – NFPA

c. Fire Extinguishers at Work - NFPA

OSHA Standards

- a. Occupational Safety and Health Administration (OSHA). 29 CFR 1910.156, *Fire Brigades*.
(http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9810&p_table=STANDARDS).
- b. OSHA 29 CFR 1910.38, *Emergency Action Plans*.
(http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9726&p_table=STANDARDS)
- c. OSHA 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response*.
(http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9765)
- d. OSHA 29 CFR 1910 Subpart E App - Exit Routes, Emergency Action Plans, and Fire Prevention Plans.
(http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10114)