

# Protective Actions for Life Safety

January 26, 2011

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Issue 2011-01

There are many goals for a preparedness program—property protection, business resiliency, environmental protection, and protection of an organization’s brand, image and reputation. The first goal of a preparedness program should be the protection of life safety.

There are many hazards that could jeopardize life safety. Fires, severe weather, a spill or release of hazardous chemicals, an act of terrorism, or an act of violence in the workplace are just a few examples. Development of the preparedness program should include a risk assessment to identify possible hazards, their probabilities of occurrence, and the vulnerability of people, property, the environment, and the entity itself ([NFPA 1600: 5.4](#)).

The emergency operations/response plan should include actions to protect life safety from credible hazards identified during the risk assessment. Protective actions for life safety include:

- Evacuation
- Lockdown
- Shelter-In-Place
- Shelter

In this eNewsletter, we will explore the basics for each of these protective actions.

## Evacuation

If there is a fire, hazardous chemical spill, or bomb within a building, then prompt evacuation to a safe location outside the building is the best protective action. Evacuation planning and “fire drills” have been required by fire prevention codes for many decades. Occupational Safety and Health Administration (OSHA) standards for employee safety in the workplace also require emergency action plans that include employee evacuation. An evacuation plan should address the following:

- Evacuation team
- Fire alarm or mass notification system
- Adequate means of egress (exit routes) with safe assembly areas
- Means to account for all evacuees

Organize an evacuation team with a leader, floor wardens, searchers, stairwell monitors, and assembly area monitors. Small facilities with a limited number of occupants will require a minimal team. However, a large facility with hundreds or thousands of occupants such as a high rise building will require a larger team.

Make sure that everyone can hear and understand the evacuation warning signal. Walk all buildings and verify that there is the required<sup>1</sup> minimum number of exits, travel distance is not excessive, exits are properly marked with visible signs, and there are no obstructions or impediments to egress—especially stairwells and landings that often are used for storage. Identify safe assembly areas away from the building. Assign a separate assembly area for each floor or area of the building and post signs so everyone knows where to assemble for a headcount. Buildings within the inner city should take into account scenarios where the closest assembly area may not be accessible—identify alternate assembly areas farther away from the building.

Identify any persons with temporary or permanent disabilities that will need assistance evacuating. Identify areas of refuge where evacuees needing extra assistance can be protected while awaiting rescue. Consider providing evacuation assist devices and training staff to evacuate persons with mobility impairments.

Manufacturing or other facilities where personnel must delay evacuation until they can safely shutdown process systems require special planning and precautions.

Procedures should include a process to account for all persons known to be within a building—including visitors. A headcount of persons at assembly areas and use of electronic notification systems can be used effectively especially since many evacuees don’t remain at assembly areas.

## Lockdown

If an armed perpetrator is inside a building or believed to be inside seeking to harm people, then a protective action called “lockdown” is



employed. Unlike evacuation, no team can move building occupants to safety when an armed perpetrator is roaming the building. Rather, every person must be able to hear a lockdown warning and take cover immediately.

A public address system that can broadcast a lockdown warning throughout all buildings is essential. The system should be audible and intelligible throughout the building. Multiple persons should be able to broadcast a warning from multiple locations in the building as soon as a threat is detected. Keep in mind that the security desk located



adjacent to the front door may be the first target of the perpetrator.

Everyone within the building should know exactly what to do when a lockdown warning is broadcast. The goal is for everyone to become silent and invisible, which will make it more difficult for the armed perpetrator to find his/her target(s). Everyone should hide within a closed and locked or barricaded room with the lights off. Everyone should be prepared to remain in lockdown until police or a recognized voice sound the “all clear.”

### **Shelter-In-Place**

Shelter-in-place (SIP) is an action to protect life safety when there is an exterior airborne hazard. A release of a hazardous chemical from a manufacturing or chemical plant, a transportation accident involving a chemical tank car, or a fire involving hazardous materials are the most likely scenarios requiring SIP. However, a terrorist incident involving an airborne hazard may also require SIP.

The SIP plan should identify the procedures for closing all outside air intakes and shutting down air handling systems. This can be accomplished in

many modern buildings by computer controlled building management systems. However, it may be a more time consuming process in older buildings requiring staff to shutdown individual air handling units.



All exterior doors and windows should be closed. Building occupants should be relocated to the interior of the

building away from exterior windows. Sheltering on floors above the ground floor is preferred because chemicals are heavier than air and tend to collect at grade level.

Shelter-In-Place is a temporary protective action since no building can be completely sealed to prevent the infiltration of chemicals. As prevailing winds carry a plume of chemicals over a building, some of the chemical may enter the building. As soon as the plume passes and emergency agencies sound the “all clear,” the building should be evacuated and air handling system restarted and placed in exhaust mode to purge the building of any chemicals.

### **Shelter from a Storm**

There are other scenarios that require sheltering within a building. Buildings located in tornado alley should be equipped with tornado shelters that have been structurally reinforced. Emergency Alert System receivers should be provided within a constantly attended location to receive immediate warning that a tornado has been spotted or detected by weather radar. This will provide the maximum amount of time to warn people to move to shelter.

Similar to evacuation, there should be a warning signal to move to tornado shelters, and a team should be organized to direct everyone to shelters.

There may be other times when sheltering may be necessary. The blackout of 2003 required many



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office buildings in New York to shelter employees who couldn't get home due to lack of public transportation. The risk assessment should identify other scenarios that may require evacuation, lockdown, shelter-in-place, or sheltering.

## Training, Drills & Exercises

Protective actions require everyone to take immediate action. Everyone must know what to do as soon as the warning signal is heard. The training program should comply with fire protection, life safety, OSHA, and applicable homeland security regulations (links to codes, standards, and regulations can be found on the [Resources page](#) of the Preparedness, LLC website).

Everyone should be familiar with the sound of the fire alarm system, emergency voice communication system, or mass notification system used for warning purposes. Everyone should know the primary and secondary paths to an exit and their primary and secondary assembly areas. Persons assigned to assist persons with disabilities should be trained to use any evacuation assist devices.

Everyone should know where and how to take cover if a "lockdown" warning is broadcast and where to go if there is an order to "shelter in place."

Adults learn by doing, so drills are an important learning tool. Evacuation drills are also required by many regulations. Design evacuation drills to challenge people to find a secondary exit. Test electronic notification systems and the ability to account for all evacuees. Drills provide an opportunity for team members to practice broadcasting instructions and to evaluate the audibility and intelligibility of the warning signal and announcements.

Lockdown drills require only a limited amount of time and can be done in any weather. Shelter-in-place drills will teach everyone where to go to shelter within the building.

Engage public emergency services as much as possible. Drills are an excellent opportunity to work together. The presence of fire and law enforcement personnel adds realism to drills and helps impress the importance of drills.

Preparedness, LLC can help you with your emergency management and business continuity program. If you are unsure about the adequacy of your program and whether it meets national standards and regulatory requirements, please contact us. We can:

- Audit your preparedness program using NFPA 1600, our National Preparedness Standard, which has been designated as the criteria for evaluation of private sector preparedness program under "PS-PREP."
- Conduct a risk assessment to identify hazards, vulnerabilities and opportunities for hazard prevention and risk mitigation.
- Develop and help you implement your emergency response, business continuity planning, and crisis communications program.
- Conduct training, conduct drills; and facilitate exercises to familiarize personnel with plans and evaluate your overall program.

If you need assistance, please [contact us](#).

Prepare an evaluation form and assign sufficient evaluators to monitor drills and help to identify any problems. Keep records of all drills—especially drills required by regulations—and review the records as part of your overall preparedness program review process.

Drills should be a part of an overall exercise program that evaluates your preparedness program and familiarizes team members with their roles and responsibilities.



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## Additional Resources

Links to dozens of documents to help you with all aspects of your loss prevention, hazard mitigation, emergency response, and business continuity program can be found on the [“Resources” page](#) of the Preparedness, LLC website.

Check out our [blog](#) if you are interested in developments in national standards, industry best practices, current events, and what it means for your preparedness program.

## About Preparedness, LLC

Preparedness, LLC is a client-focused risk consulting company. Our mission is to assist our clients safeguard people, protect property and minimize business interruption. Our vision is to thoroughly understand each client’s business and become a long-term, trusted advisor.

If you would like a copy of our self-assessment checklist; have questions; or need assistance with the development, implementation, or evaluation of your preparedness program, please contact us.

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Questions, comments, like to added to our mailing list?

E-mail us at [info@preparednessllc.com](mailto:info@preparednessllc.com) or call 781.784.0672.

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<sup>1</sup> The required number of exits, capacity of exits, and other requirements for exits are specified in building codes, the Life Safety Code®, and even OSHA standards. Links to these documents can be found on the [Resources page](#) of the Preparedness, LLC website.



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