Emergency Preparedness— Developing the Plan

Having an emergency preparedness plan can directly affect a business's survival from a disaster. This report presents the specific steps for preparing a written emergency preparedness plan that is tailored to a business's needs.

Introduction

Having identified the potential hazards faced by the organization and assessed the relative risk of their occurring, as discussed in Natural Hazards Report NH-30-10, *Emergency Preparedness—An Overview*, the next step in the process is to develop a written plan to cope with the occurrence of these hazards. A separate plan can be developed for each potential hazard; however, with separate plans, many elements of each plan will be the same or vary only slightly (e.g., rescue and medical duties, evacuation procedures, shutdown procedures, etc.). For this reason, it is generally recommended that a multi-hazard plan be developed.

A multi-hazard plan avoids unnecessary redundancy and confusion. It addresses the general elements of an emergency prepared-ness plan to cope with all hazards, and then looks at each potential hazard to determine if there are any unique elements involved. This report presents the specific steps for preparing a written emergency preparedness plan that is tailored to a business's needs.

Review Existing Plans

The first step in the development process is to search out and review all existing plans. The reason for this is twofold: to save on time and effort by building on or amending existing plans; and to ensure proper coordination with the emergency plans of other businesses. Sources of existing plans include the company, government agencies, and local business groups.

If an old plan exists, an update may be all that is necessary. On reviewing this plan, consider if it fully addresses all the contin-gencies now facing the company. Since the plan was developed, the company may have changed significantly, to the extent that even the hazards to which it is now exposed are different.

An emergency at a facility usually will involve response from local, state, or federal govern-ment agencies. These agencies are required to develop plans to protect the public in the event of an emergency. The plans outline the specific steps the agencies will take under various emergency situations and, as such, determine what resources should be allocated to the company's response plans. At the very least, the company's plans should be coordinated with those of the agencies.

Agencies that should be contacted and their plans reviewed include:

- State and local emergency management agencies.

- Local fire department.

- Local police department.

- State and local environmental agencies.

- State and local transportation agencies.

- State and local public health agencies.

- Public service agencies.

- Volunteer groups, such as the American Red Cross.

- Regional offices of federal agencies, such as the Federal Emergency Management Agency (www.fema.gov), the Environmental Protection Agency (www.epa.gov), and the Department of Transportation (www.dot.gov). A listing of the regional offices of these agencies can be found on their websites.

Some emergencies, such as gas leaks and chemical spills, may not be limited to the facility and could spread to neighboring businesses or the community as a whole. Because of the widespread impact such an incident can have, neighboring businesses may be willing to coordinate their efforts and allow review of their plans.

In some communities, local businesses have joined together to form mutual aid associations. A mutual aid association is a cooperative association of business and industrial firms whose primary purpose is to develop an emergency program to minimize damage to the community and insure the continued operation or early restoration of the damaged facilities of its members. The businesses are united by a voluntary agreement to assist each other by providing materials, equipment and personnel in an emergency. The problems

created by some emergencies can be so severe that, even with the best plan, an organization may not be able to cope with all of them. The cooperation and assistance of other businesses at these times may be critical to the survival of the organization.

Purpose of the Plan and Company Policy

The purpose of the plan, and the company's policy with respect to the occurrence of an emergency, should be outlined. Items to be included are the following:

- The plan is designed to prepare the company to deal effectively with emergencies arising from the hazards identified.

- The plan is intended to protect the company's employees, the public, and the environment from harm in the event of an emergency.

- The plan is intended to protect the company's facilities and reputation from further damage in the event of an emergency.

- The plan is designed to ensure the orderly and efficient transition from normal to emergency operations and back.

- The provisions of the plan have been coordinated with the appropriate governmental agencies.

- Company executives have provided authorization for the actions contained in the plan.

Basis for Plan Execution

This section of the plan lists the potential hazards to the life and health of employees, company property, and the environment, and includes a relative assessment of the risk that each hazard poses. It also identifies the conditions under which the plan is to be executed.

Although an emergency plan should be designed to cope with the worst-case situations, in many cases the emergency that occurs may be minor or intermediate in nature. An emergency plan should be structured in such a way that it can be fully executed for severe emergencies, but only partially executed for less catastrophic emergencies.

An example of emergency classification levels, based on severity, for an industrial facility is provided in Table 1. The severity of the emergency influences decisions on the level or degree of response, and determines which personnel will be called, which outside agencies will be contacted, what equipment will be needed, the extent of an evacuation, as well as other factors.

Table 1. Emergency Classification Levels

CLASSIFICATION LEVEL	DEFINITION
ALERT	An alert is declared if there is a warning of a possible emergency, such as a hurricane, within the next 24 hours.
UNIT EMERGENCY	A unit emergency is declared if there is an actual emergency—such as a fire in one unit of the facility—but the emergency is not expected to affect the rest of the facility.
SITE EMERGENCY	A site emergency is declared if the emergency affects the entire facility but is not expected to have any off-site consequences.
GENERAL EMERGENCY	A general emergency is declared if the emergency affects both the facility and the surrounding area, such as from a large chemical spill.

Emergency Response Planning

For an emergency preparedness plan to be effective, the responsibilities of those involved in responding to an emergency must be clearly outlined. This is the emergency response plan. The emergency response plan should consist of the following:

- The emergency response structure, which identifies the personnel who will respond to the emergency.

- The emergency response procedures, which outline the responsibilities of the response personnel.

- The emergency response resources, which identify the facilities and equipment needed in order to respond effectively to an emergency.

As discussed previously, in developing an emergency management plan, an important consideration is the determination of the degree of risk posed by the identified hazards. In developing the emergency response plan, however, the important consideration is that the emergency is responded to in as timely a fashion as possible to limit potential damage. What caused the emergency in the first place is of secondary importance; the actions needed to mitigate the emergency are the primary consideration. For this reason, an emergency response plan must be designed to cope with the worst-case situation.

So that resources can be properly allocated, it is essential that the response plan be coordinated with the plans of applicable government agencies. A list of these agencies,

with names, addresses, and telephone numbers of those to be called in an emergency, should be developed. This list should be structured in such a way as to indicate which agencies are to be called under what emergency conditions.

Emergency Response Structure

The person primarily in charge of the overall operations of the facility should also be in charge of making the decisions as to when an emergency condition exists and when to implement the plan. This individual, usually a member of top management, is referred to as the emergency coordinator. An alternate to the emergency coordinator should be appointed in the event this individual is absent when the emergency occurs. Responsibilities of the emergency coordinator include:

- Initiating the portions of the emergency plan as appropriate to deal with the emergency in progress.

- Organizing and directing the emergency operations of the staff to ensure that the proper steps are being taken.

- Communicating with appropriate government agencies and coordinating response actions.

- Communicating with corporate officials on the progress in handling the emergency.

- Declaring when the emergency has ceased.

Departments within the organization should be analyzed and those with responsibility for emergency response functions (e.g., shutdown of electric power, public relations, etc.) identified. Personnel consisting of electricians, mechanics, maintenance personnel, security officers, etc., from key departments, and at least two alternates for each person, should be assigned to an emergency

response team. There should be sufficient personnel on the emergency response team to cover the separate work shifts during the working week.

The number of personnel on an emergency response team depends on the size and, to a greater extent, the complexity of the operations of the facility. A large facility with many, and various, hazardous operations likely would require a sizable emergency response team. In other facilities, a small, effective team is preferred to a larger one that may be difficult to manage. The emergency response team must conform to a company's needs so that all emergency response functions are adequately staffed.

A list of all emergency response personnel and alternates, and their 24-hour contact phone numbers, should be developed. The list should be assigned to an individual with responsibility for keeping it current. Businesses with high employee turnover rates should take extra precautions to ensure the list is up-to-date.

The emergency response team should be under the direction of a team leader, an individual, such as the chief engineer or maintenance supervisor who is:

- Very familiar with the layout of the facility.

- Very familiar with the mechanical operation of the facility.

- Knowledgeable about the operation of the facility's protection systems.

- Trained and experienced in handling emergencies and firefighting techniques.

The team leader receives instructions from the emergency coordinator. Alternates to the team leader should be appointed so that there is an individual on duty during each operating shift. The major responsibilities of each function on an emergency response team are listed below.

Medical

- Obtains medical care for injured persons.
- Coordinates transportation for ambulance services.
- Trains personnel to handle medical emergencies.

Public Relations

- Releases public information about the emergency.
- Designates a spokesperson for interviews.
- Establishes an emergency media or press headquarters.

Communications

- Establishes a plant warning system.
- Establishes and maintains an emergency communication system.

Security

- Establishes access controls.
- Controls vehicle and pedestrian traffic.
- Assures the protection of vital records.
- Assists in evacuation procedures.

Fire and Emergency

- Manages rescue squad and fire brigade.
- Maintains rescue and firefighting equipment.
- Coordinates rescue and firefighting efforts with local fire department.
- Develops pre-emergency plans for personal protective equipment needed.

Special Hazards

- Manages activities related to special chemical, radiological, and biological hazards.
- Manages decontamination measures.
- Manages pre-emergency plans for dealing with special hazards.

Environmental

- Manages efforts to control hazardous spills.
- Manages efforts to contain contaminated runoff from firefighting operations.
- Manages activities to control atmospheric releases.
- Conducts tests to determine severity of hazard.
- Reports to appropriate government agencies on degree of risk to the general public posed by the incident.
- Manages pre-planning activities related to the containment and clean-up of environmental spills and releases, and plans for disposal.

Engineering

- Maintains continuity of water supplies for firefighting activities and electrical power for vital services during emergency.
- Provides on-the-scene emergency lighting.
- Manages shut-down procedures.
- Develops pre-emergency plans on how to isolate damaged sections of pipelines, electrical lines, and other utilities and services.

Transportation

- Coordinates and controls all transportation needs.
- Develops pre-emergency plans for vehicles needed, including heavy equipment.
- Maintains transportation equipment.

Personnel

- Coordinates procedures to account for all persons, including personnel at the emergency scene.

- Communicates with the families of injured or deceased employees.

- Maintains up-to-date records of employee names, addresses, and telephone numbers.

Since fire, statistically, is one of the most commonly occurring emergencies, particular attention should be given to organizing the plant fire brigade. The Occupational Safety and Health Administration (OSHA) has specific criteria for fire brigades and emergency response actions. These requirements are provided in the OSHA standard, 29 CFR 1910 Subpart L, *Fire Protection*, and should be followed when organizing a fire brigade. The OSHA requirements can be accessed at the following link: https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10124.

Not to be overlooked in the planning is the emergency that occurs off-hours when either no one is on duty, or only security guards or watch service personnel are present. Procedures should be established for responding to emergencies that occur off-hours. If off-premises protective signaling systems are utilized, then the signal monitoring service has to be instructed as to whom to notify on receipt of an alarm signal. If guards are utilized, they have to be trained on the proper procedures to be followed before, during, and after the emergency.

Emergency Response Procedures

Once the responsibilities of the personnel on the emergency response team have been identified, the specific activities they will be required to perform in an emergency should be assigned. While many of the activities are common to all emergencies, other activities may be specific to a particular situation.

The response activities can be identified through the use of flow charts. A flow chart of the emergency response scenario should be created for each hazard identified as being likely to occur. The flow chart becomes the "action guide" for responding to an emergency arising from that hazard, and will depict the various response actions in a modular format. This modular format enables the response to a particular emergency to be tailored to the severity of that emergency. For example, a fire in one building of a multi-structure plant should not result in a response to a site emergency unless the potential for the fire spreading to other buildings is great; however, if the fire could result in the release of toxic gases into the environment, then the response should be to a general emergency because of the risk to the public.

Emergency Response Resources

Having selected the emergency response personnel and assigned their responsibilities, the next step is to identify the resources needed in responding to an emergency. This includes the establishment of an emergency headquarters, or command center, and identification of the vehicles and personal protective equipment needed in the emergency response.

An emergency headquarters, from where emergency response personnel can assemble and the response process can be managed and controlled, should be selected. The location of the headquarters should be outside of potential emergency areas. It should also be assumed that, in a worst-case scenario, it may be necessary to establish an off-site emergency headquarters.

The emergency headquarters should be equipped with protective equipment for staff, emergency power, and up-to-date documents, such as telephone listings, office supplies, and personal necessities. It should be provided with communication systems, including paging, telephone, and radio systems, to permit communication with emergency response personnel, to alert employees to evacuate, and to notify outside agencies. Provision should be made for runner service in the event of the failure of a communication system.

Reliable communication is essential to effective emergency response. Telephone systems will prove to be indispensable, assuming they remain intact. However, even if unaffected by the emergency, telephone circuits can become jammed with calls, making telephone communication difficult. For this reason, in the pre-emergency plan, provision should be made for the availability of special circuits that would be used only during an emergency. It is also recommended that a two-way radio system be provided as a backup. Such a system would provide for communication under the worst-case situation.

Response personnel will require vehicles, communication equipment, and personal protective equipment. This equipment should be identified and a list developed of what is already available, and what must still be provided, and how it can be obtained. Lists of outside sources for the equipment should be maintained.

An inventory should be kept of emergency equipment and supplies, and regular maintenance performed on vehicles. Ideally, the equipment and vehicles should be stored in a secure location, which is separate from normal operating supplies and equipment, but is still readily accessible to response personnel.

Writing an Emergency Response Plan

Having completed the hazard identification and risk analysis, reviewed existing plans, and assessed prevention, preparedness and response capabilities (see *Emergency Preparedness—An Overview*), the next step is to write the plan if one does not exist, or revise an existing plan to make it current.

Since emergency plans are used infrequently, they should be well-organized, concise, and easy to use. The plan should be indexed for ready reference and the pages numbered. Diagrams, charts, and checklists should be used to show the organization, summarize duties and responsibilities, and to show how the organization should respond during normal and off-hours.

The actual writing of the plan should be limited to two or three people for consistency. To be effective, input should be obtained from those who will participate in responding to the emergency. Drafts of the plan should be reviewed by the emergency planning committee for technical merit.

Emergency — An Example Plan, provides a suggested format for an emergency management plan. While this format is fairly typical of emergency management plans, individual organizations should develop a plan to suit their specific needs.

Additional Resources

The following are additional sources of information on emergency preparedness and planning:

- American Red Cross. *Business & Industry Guide*. Redcross.org. September 15, 2008. http://www.redcross.org/services/disaster/ 0,1082,0_606_,00.html

- Department of Homeland Security. *Ready America. Make A Plan*. September 15, 2008. https://www.ready.gov/make-a-plan.

- Federal Emergency Management Agency. *Get Disaster Information*. FEMA.gov. September 15, 2008. https://www.fema.gov/ disasters.

The following are Engineering and Safety Service's reports on emergency planning, available through Hanover's Risk Solutions Partners page.

- Fire Protection Report FP-45-10, *Emergency Action Plans* (OSHA 1910.38)

- Fire Protection Report FP-45-15, *Fire Prevention Plans*

- Crime Prevention Report CP-90-05, *Emergency Planning for Businesses*

References

1. Federal Emergency Management Agency. *Emergency Management Guide for Business and Industry*. FEMA 141. Washington, DC: FEMA, 2004. https:// www.fema.gov/media-library-data/ 20130726-1511-20490-6446/bizindst.pdf.

2. Homeland Security. *Every Business Should Have A Plan*. Washington, DC: DHS. https://www.ready.gov/sites/default/files/ documents/files/readybusiness-brochure.pdf.

3. Occupational Safety and Health Administration. *How to Plan for Workplace Emergencies and Evacuations*. OSHA 3088. Washington, DC: U.S. Department of Labor, 2001 (revised). http://www.osha. gov/Publications/osha3088.pdf.

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