

Understanding the Hazard



Lack of Emergency Response

Understanding the Hazard

This series of publications is designed to help you understand the everyday hazards present at your company's facilities. For more information on how you can better understand the risks your business and operations face every day, contact FM Global.

UTH topic categories:

Construction

Equipment

Fire Protection

Human Factor

Natural Hazards

Process Hazards

Hazard or Risk?

Lack of preparedness for an emergency can be a hazard that impacts your bottom line. FM Global can help you understand the risk your company may face as a result of this hazard.

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The Hazard

It could happen to you. A severe fire or explosion engulfs your facility. An earthquake causes damage to your building, equipment and supplies. A power outage shuts down your critical equipment. Your products are submerged under floodwater. And, you don't have an emergency response plan! This publication helps you understand the hazards of not having an effective response plan in the event of an emergency.

Loss statistics clearly indicate that, if you are prepared to respond to an emergency, the impact on your business and your ability to restore the flow of products and services to your customers will be much less severe.

Science of the Hazard

Your facility's emergency response team (ERT) has a specific function—to protect company assets and help ensure continuity of business operations. The common understanding of this group of employees is that it handles fire emergencies. But, it is important that site management assess the needs of the location to determine exposures of all types that threaten the business, and develop an emergency response plan to handle each exposure.

There are five steps to developing an emergency response plan:

1. Assess and prioritize all the different types of emergencies that threaten your site.
2. Determine your level of response: What will you do for each type of emergency?
3. Create a written procedure that describes the intent, objectives and limitations of the response. Include a list of tools and material support required.
4. Conduct training, including drills, to ensure designated employees can respond effectively.
5. Audit the plan to ensure it will work, and that changes are communicated and incorporated into the plan as they occur. Periodically reassess threats.

Contrary to popular belief, employees who work in a given area do not always know what to do in an emergency. If the machine they operate every day shuts down, they will probably know what to do because it is a relatively common occurrence. But, what if a fire starts in the machine?

What You Can Do at Your Facility

Now:

- Determine what type of emergencies expose your facility, and prioritize your plan and training based on potential severity.
- Determine what equipment and material you have on site to handle different types of emergencies.
- Assign personnel to perform critical functions.

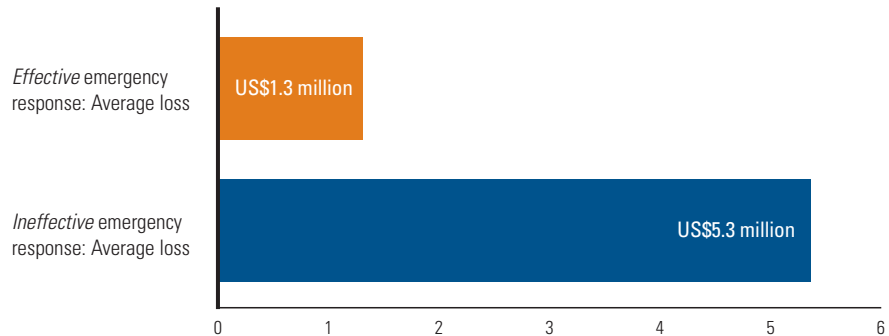
Soon:

- Create a written policy for emergency response.
- Meet with public fire service personnel to develop a prefire plan.
- Fill the gaps between what response the public fire service can provide and what response you can provide.
- Provide necessary training for personnel assigned to perform specific tasks during an emergency.

This is not a common occurrence and the employee may not be prepared. So, in order to control and mitigate emergencies, it is important to select the right people for the ERT and properly train them to handle the emergency.

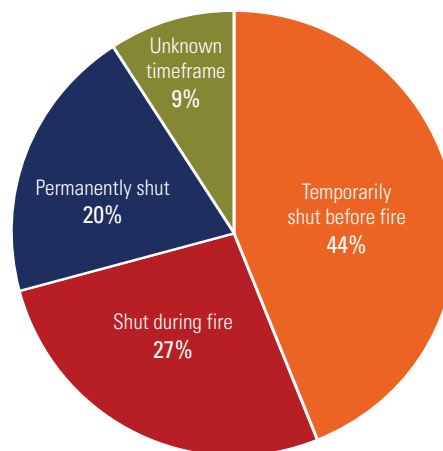
Loss Experience

During a recent 10-year period, FM Global clients reported 1,351 losses where emergency response was a factor. In 1,124 losses, emergency response was effective, resulting in an average loss of US\$1.3 million. In the 224 losses where emergency response was not effective, the average loss was US\$5.3 million.



One of the critical goals of an emergency response program is to ensure control valves for any automatic fire protection system (including gaseous suppression) are fully open during a fire, and are shut only when the fire is completely extinguished. Since 1959, FM Global has documented more than 1,000 fire losses where sprinkler control valves were shut. These losses totaled more than US\$1.6 billion (indexed to 2007 dollars). The following chart shows that more than 70 percent of the damage was caused when valves had been either temporarily closed before the fire, or improperly closed during the fire.

Shut-valve losses by timeframe



Source: FM Global clients

Loss Lesson

A fire spread out of control in a warehouse containing bagged cornstarch, along with empty paper and neoprene bags on pallets. Automatic sprinklers in that portion of the building were impaired. The fire was started by starch-dust explosions, the first in a bagging hopper and the second in a tower housing the hopper. Both were vented, but a fireball from the second explosion entered the building below and ignited combustible material. Sprinkler protection in the area had been impaired two days earlier and still had not been repaired. During the fire, neither the valve supervisor nor the fire pump operator on the ERT responded to the fire. As a result, sprinklers that could have been reactivated were not. Additionally, the fire pump failed to start automatically and was not started manually by the fire pump operator. This large loss could have been controlled readily if the valve had been opened and the fire pump started.

But What About . . .

...our employees? They can handle emergencies without having a written plan.

A written plan provides structure to the emergency response plan and minimizes the chance of misunderstanding. It also attempts to itemize all the possible situations that could occur, and to provide information on the appropriate response for each situation. Without such a plan, it is unlikely all important aspects of a needed response will be completed.

...the public fire service? As soon as the alarm goes off, it will respond.

This is true in most cases, but not guaranteed. Do you have a backup system should the alarm fail? Does the public fire service know what type of incident it is responding to? Does it know how to shut down specific equipment? Just having the fire service respond will not solve all your problems. You need a plan.

...our sprinkler systems and alarms? We have them everywhere.

This is certainly a very good start, and really is the foundation of a good protection plan. Keeping fixed fire protection systems in service and providing them with adequate support during an emergency situation are no less important. A plan helps ensure these steps will be taken.

...the number of people needed? We don't have enough staff to establish an ERT.

There are many levels of emergency response and FM Global can help you design an ERT that makes the best use of your available personnel. But, in all cases, there should be a group of employees who make sure sprinkler valves are open, fire pumps are running, and the fire service is notified. These are the most important features of any emergency response plan.

Basic Functions for Your Fire Emergency Response Team (ERT)

The person in charge of shift emergency response should know:

- the importance of keeping sprinkler control valves wide open;
- the value of sprinkler protection;
- to shut sprinklers off only when the fire has been extinguished; and
- the importance of restoring full protection promptly.

If it is safe to do so, the sprinkler control valve operator for each shift should:

- physically try the sprinkler control valve(s) for the affected system to make sure it is in the fully open position;
- verify sprinkler control valve(s) remain open, and be ready to close the valves when instructed to do so by the person in charge or the fire chief;
- be ready to reopen the closed valve(s) promptly, if necessary; and
- make sure the valves are wide open, verified with a 2-in. (5.08-cm) drain test, and locked.

The notifier for each shift should understand:

- how the alarm system operates; and
- how to call the public fire service and the ERT.

The fire pump operator for each shift should understand:

- how the fire pumps operate;
- the importance of verifying the fire pumps are operating when the alarm is sounded; and
- the importance of keeping the fire pumps operating until instructed otherwise by the person in charge of shift emergency response, or the fire chief.

Need More Information?

Ask FM Global about the following:

- A video clip demonstrating the functions of the person in charge, the notifier, the valve operator, and the fire pump operator
- A video clip demonstrating emergency response team (ERT) training in the use of fire extinguishers and small hose lines
- A sample plan for an ERT
- Lessons learned from actual losses

Ordering Information

For Understanding the Hazard

For additional copies of *Understanding the Hazard* publications, contact your FM Global engineer or client service team.

For all other FM Global publications

All other FM Global brochures and educational material can be found in the FM Global Resource Catalog and ordered online at

www.fmglobalcatalog.com.

Or, for personal assistance worldwide, contact our U.S.-based customer services team, Monday – Friday, 8 a.m. – 5 p.m. ET :

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Related Resources

The following resources can be ordered through FM Global's *Resource Catalog* (P6603), online at www.fmglobalcatalog.com, or through your client service team:

- *The Emergency Response Team* (P8116)
- FM Global Property Loss Prevention Data Sheet 10-2, *Emergency Response*
- *Pocket Guide to Emergency Response* (P9914)
- *Pocket Guide to Prefire Planning* (P9809)
- *Understanding the Hazard: Flood* (P06137) and *Lack of Prefire Planning* (P0033)

Also, check out FM Global's two online courses, *Inspecting Fire Protection Valves* and *Managing Impairments Using FM Global's Red Tag Permit System*. These are free to clients and can be found at <http://training.fmglobal.com>.

Don't Let This Happen to You



Proper emergency response at this facility could have confined damage to the area of fire origin instead of resulting in loss of the whole building.