

## Natural Disaster Emergency Planning and Preparedness

Disasters can happen at any time. Imagine that your business or facility is hit by a natural disaster, such as Hurricane Katrina, a large wildfire, a flood, or an earthquake. How will you ensure that your business quickly returns to normal operations and profitability? How will you protect your employees?



One way to help do this is to create a Natural Disaster Preparedness and Response Plan. Both the final plan and the planning process are useful tools to respond to emergencies and to minimize costs and business interruptions. It can also be a strategic tool in business planning to ensure operational continuity. Being prepared and having a written

plan should also help companies more effectively respond to any third-party liabilities and claims that may arise from the surrounding community in the aftermath of a disaster.

### Why Plan for Natural Disasters?

But why should we plan since natural disasters are rare? One of the primary reasons is potential cost savings to the affected business. Preparedness saves time and money when resuming business operations and allows a resumption of routine business activities. Preparedness and planning help businesses return to normal operation after a man-made or natural disaster.

A disaster plan may also help enable a firm to stay in business and survive catastrophic events. According to David Paulison of the US Federal Emergency Management Agency (FEMA), "Small

businesses that don't have a plan in place generally don't survive after a disaster, whether it's a flood or a tornado. We see that anywhere from 40-60 percent of those that are hit like that simply don't come back to business."<sup>1</sup>

In addition to cost savings, there are other reasons to perform Emergency Planning:

- Regulatory requirements: US Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA), etc.
- Ability to recover and resume business: a strategic advantage
- Potential reduction in exposure to civil or criminal liability
- Improved public relations that enhance a company's image
- Moral responsibility

### Emergency Planning Process

Emergency or disaster preparedness is the process of ensuring that an organization has taken appropriate preventive measures and is in a state of readiness to minimize loss of life, injury, property damage and other effects of potential disastrous events. This process includes the creation of an emergency plan. Emergency management and the emergency planning process incorporate a number of important steps to collectively address critical stages of disasters. A brief description of the planning continuum includes:

- **Emergency Preparedness:** controls and steps implemented before a disaster strikes, including the emergency planning process.
- **Emergency Response:** procedures and steps done immediately after an event and an interruption to business. This includes actions ranging from a simple fire evacuation plan to a detailed emergency plan. More detailed plans typically identify specific responsibilities, action

items, and off-site resources and response contractors.

- **Disaster Recovery:** actions taken to restore critical functions so that some level of operations or services can be offered. It is not intended to get a firm completely running, but to re-start (or continue) business-critical activities. Disaster recovery planning may also be viewed as a subset of a larger process known as business continuity planning.
- **Business Continuity:** planning activities, managerial decisions, restoration activities and other actions necessary to get an organization back to where it was before a natural disaster/interruption.

The balance of this article concentrates on the **Emergency Preparedness** portion of the emergency and disaster planning process.

As part of the planning process, a firm needs to know what natural disasters and other emergencies may affect their business. The following is a list of natural events that should be considered:

- Fire (man-made and naturally-occurring)
- Flood
- Hurricane
- Tornado
- Winter Storm (ice, wind, and blizzard)
- Earthquake/Tsunami
- Infectious Disease Pandemic

There may also be man-made events that occur during natural disasters that exacerbate emergency situations. These events should also be considered in the planning process and may include:

- Hazardous Materials Incident (on- and off-site)
- Explosion or Severe Process Disruption
- Communications Failure
- Radiological Incident
- Civil Disturbance
- Terrorist Incident
- Large Scale Power/Utility Service Loss
- Human Errors

It is important to consider not just events at your facility, but in the surrounding area, including potential impacts to transportation routes or utilities. After the 1989 Loma Prieta and 1994 Northridge earthquakes in California, disruptions

to the transportation networks were substantial and resulted in business interruptions. The business interruptions included inability to make shipments and receive supplies.<sup>2</sup> Employees and customers had a particularly difficult time accessing business locations after the Northridge earthquake.<sup>3</sup> Another example involving utility disruptions occurred in 2010, when ice in the Delaware River resulted in the temporary shutdown of the Salem Nuclear Power Plant in New Jersey. The ice prevented withdrawals of sufficient cooling water and required the implementation of emergency shutdown procedures.<sup>4</sup>



Remember that the planning process is just as important as the final plan. It is in the planning process where decisions are made, resources allocated, personnel assigned, training needs identified, etc. The final plan only documents the decisions made. The action taken to prepare and respond to an emergency is what is most important, not just the physical planning document. To put this in perspective, the effectiveness of the Emergency Plan will ultimately be evaluated in dollars saved, time saved while reestablishing operations, and other results, not the appearance or organization of the plan.

The disaster plan should also tie into existing plans and procedures so that planning and training time is reduced and response personnel have familiarity with response procedures (i.e., don't re-invent the wheel if you don't have to). One integrated contingency plan that addresses various scenarios and regulatory requirements may be the solution for your company.

However, it is important to remember that you can't plan for everything. The goal is to create one flexible plan for all natural disaster risks. Simple is better – in an emergency you don't want to be reading paragraphs, but performing actions! Regular and effective training also allows employees to be more effective and less dependent upon a written plan in an emergency.

## How to Perform the Emergency Planning Process

According to FEMA, the planning process to create an Emergency Plan involves the following steps:

1. Decide to Plan
2. Establish a Planning Team and obtain upper management support
3. Analyze Capabilities and Hazards (including Vulnerability Analysis)
4. Develop the Plan
5. Implement and Test the Plan (Assess)
6. Update – Repeat

When deciding to plan, it is important that company management state the importance of the planning process and allocate sufficient time, resources, and budgets to the planning process. Completion of the plan should be a goal of management and assigned personnel. The person placed in charge of the planning process should also be empowered to make decisions and allocate resources.

The planning team should incorporate a wide range of people and disciplines across the facility. It is important to get the skills and knowledge from all the entities and organizations in the company, otherwise, something critical may be overlooked in the planning process. Using a wide range of people also helps get buy-in and support for the plan.

The management team should also decide to appoint someone as an **Emergency Coordinator** to handle the management of emergency response activities. The Emergency Coordinator should be very familiar with the organization and the physical plant. They need not be part of senior management, but should be empowered to make decisions during an emergency. The Emergency Coordinator should also be someone who is regularly at the facility. For multi-shift facilities, separate Emergency Coordinators may be named for each shift.

Developing a natural disaster plan is a detail oriented and cross-organizational process. Depending on the size and nature of the company, this may be a long process. Therefore, the most critical needs should be prioritized and addressed first.

It is also important to create one plan that addresses all risks, not separate plans for separate risks. The plan must be flexible enough to account for unanticipated occurrences. The plan should account for, as much as practically possible, disruptions in transportation, utility, and communication services.

The plan should also consider actions to be taken should the facility become uninhabitable or severely damaged, or if critical utilities and services are missing for hours or days. Decision criteria for when to evacuate (and when to return to) the facility should be part of the plan. Conversely, the plan should identify criteria for when it is better to “shelter in place” than to leave the facility.



Part of the planning process should include analyzing what emergency response capabilities and plans are already in place. This includes existing equipment and planning for fires, chemical spills, employee accidents and security breaches. This activity is known as a Capability Assessment and should include an analysis of existing employee skills, existing equipment (not just emergency equipment), local response resources, capabilities, and facilities.

A facility is not alone in performing emergency planning. There are various sources of assistance available. Under the Federal Emergency Planning and Community Right to Know Act, known as Title III of the Superfund Amendments & Reauthorization Act of 1986 (SARA), Local Emergency Planning Committees (LEPCs) were formed. These LEPCs are a good source of contacts with state and local government entities and other private businesses. These contacts can help with the emergency planning process and identify natural and other hazards that may be unknown to an individual facility.

As part of the planning process, a facility needs to identify critical products, services, and operations. Especially important areas include

- **Company Products and Services:** To which customers are the company's products and services most critical? Are supplier agreements in force?
- **Vendors and Suppliers:** What products and services are provided by outside parties, especially sole source vendors? Which supplies and raw materials are most important to the function of the company? Are stockpiles or alternative sources available? How long can operations continue without re-supply?
- **Lifeline Services and Utilities:** What utilities are most important to the function of the company and habitability of the premises? What backup sources/alternate supplies are available? How long can the facility operate/remain habitable if utility services are unavailable?
- **Critical Operations and Equipment:** What operations and equipment must be protected? What processes or on-site hazardous material storage areas have the potential to create additional hazards if impacted by a natural disaster? What equipment must be available for use shortly after a disaster? How is this equipment protected? What preventative actions can be taken if/when a severe weather event is forecast (process shutdowns, tank level adjustments, etc.)?

Also, as part of the planning process, Vulnerability Analysis should be performed. This involves looking at all the natural, physical, and man-made hazards surrounding the facility and estimating the probability of impact and the predicted impact. This is one area where the LEPC, government agencies, and insurance carriers can be helpful in obtaining information. Important areas to examine are: flood plains, use of hazardous materials or radioactive materials in surrounding businesses; and proximity to railroads, roads, and airports. This process can be helpful in identifying appropriate off-site emergency response actions and associated communication channels.

The planning process should also involve identifying, copying, and securely storing critical procedures and documents such as engineering documents, component lists, as-built drawings,

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product descriptions, and facility information. This information should be stored in several places, including an off-site location, so that it may be retrieved in the event of a natural disaster. An on-going review of the generation of critical company information should be included in the planning process.

A variety of information may be important in responding to natural disasters. The following items at each facility should be determined, mapped, and incorporated into planning documents, if applicable: call lists, checklist utility shutoffs, water hydrants, water main valves, water lines, gas main valves, gas lines, electrical cutoffs, electrical substations, storm drains, sewer lines, floor plans, alarm and sounders, fire extinguishers, fire suppression systems, exits, stairways, designated escape routes, restricted areas, hazardous materials (cleaning supplies and chemicals), and other high-value items.

Other items to consider in the planning process include teamwork/control/decision-making protocols (fall-backs for when designated people are not present) and short term decision making (evacuate versus shelter in place).

### Emergency Plan Implementation

Effective implementation of a disaster plan initially includes training of employees on the intent and basics of the plan. For the plan and natural disaster response to be effective, employees must be trained in what to do in the event of a disaster. All employees and long-term contractors should be familiar with the plan and participate in emergency drills. Remember that training levels will vary with the required actions of different groups of employees in an emergency.

Emergency drills and exercises should be performed in order to get the most out of the emergency planning process. Depending on the

size and complexity of the facility, the training, drills, and testing of emergency equipment should be done in coordination with the surrounding community. The facility and its staff may need to inform, coordinate and train with police, fire departments, emergency response contractors, regulators and other local businesses.

An Emergency Plan should not sit on a bookshelf gathering dust until used. Emergency management is a dynamic and on-going process. Planning is not the only part of emergency management, but it is one of the most important and ultimately most useful parts. The Emergency Plan is a living document and has to be used, updated and corrected for a business to perfect the plan and increase its value.

After each drill or incident, the emergency plan must be evaluated and the following questions answered:

- What worked and what didn't work?
- What needs to be improved?
- Are responsibilities and necessary communications clear?
- What additional resources/tools are needed?
- Is there sufficient staff?
- Is training sufficient?
- What incidents and emergencies can be responded to and which can't?
- What is the response/preparation time?

Any deficiencies noted should be corrected and changes made to the plan. These changes should be communicated to internal staff and outside resources as appropriate.

Updating the plan and training should be part of at least an annual process. It is also important not to forget the training of new employees as they are hired. On an on-going basis, after each incident and drill, it is important to update the plan, review training and equipment needs, and strive for continual improvement.

### Resources for Natural Disaster Planning

Obviously, this short bulletin can't provide all the information needed to prepare a Natural Disaster Response Plan. In any event, an emergency plan has to be customized to an individual organization. However, there are several good



sources of information to assist in the planning process.

One of the better resources is the Federal Emergency Management Agency ([www.fema.gov](http://www.fema.gov)). The FEMA website has a wealth of information, including sample plans and training. There is a sample business disaster plan located at [www.ready.gov/business/plan/index.html](http://www.ready.gov/business/plan/index.html).<sup>5</sup> This is a simple plan and planning tool that allows a business to write-in names, contacts and data. It is a good start for the planning process. More detailed, and better for all but the smallest businesses, is FEMA Publication 141 "Emergency Management Guide for Business and Industry". It is available at: [www.fema.gov/business/guide/index.shtm](http://www.fema.gov/business/guide/index.shtm).<sup>6</sup>

FEMA also runs the Emergency Management Institute (<http://training.fema.gov/>)<sup>7</sup>, which offers a wide variety of courses ranging from those at the EMI facility in Emmitsburg, Maryland, to a series of free on-line courses that include natural disaster planning (<http://training.fema.gov/IS/>)<sup>8</sup>. A complete list of the FEMA courses is available at <http://training.fema.gov/IS/crslst.asp>.<sup>9</sup> These courses are easy to access and can be completed without time restrictions. A short test is usually required in order to obtain credit for completing the course.

Most states have emergency management agencies and many have their own websites with emergency planning information. For example, the state of California has the California Emergency Management Agency and a website with useful information: [http://cms.calema.ca.gov/prep\\_business.aspx](http://cms.calema.ca.gov/prep_business.aspx).<sup>10</sup> Another example is the state of Michigan, which has developed a fairly detailed planning document which is available at: [www.michigan.gov/cuments/msppub602\\_site\\_planning\\_8707\\_7.pdf](http://www.michigan.gov/cuments/msppub602_site_planning_8707_7.pdf).<sup>11</sup>

This document is a very good source of information and is easily downloadable.

It's a good idea to check your state's Local Emergency Management Agency for unique plans and guidelines. A complete list of State Emergency Management Agencies is located at: [www.fema.gov/about/contact/statedr.shtm](http://www.fema.gov/about/contact/statedr.shtm).<sup>12</sup> Your LEPC may also be able to provide guidance on county and local guidelines.

It is important to remember that these templates and sample plans are only aids to creating a plan. The most useful, and flexible plan will be the plan that is customized to your facility, taking into account unique hazards, training, and response capabilities. It cannot be emphasized enough that any plan must be used in training and drills and routinely updated.

Hopefully, you will never be required to use your emergency plan, but if you do, the planning and training will pay off in many ways.

4. Philadelphia Inquirer (Philly.com) "Salem Reactor Shut Down Due to River Ice" (January 5, 2010) <http://www.philly.com/philly/news/pennsylvania/80682797.html>
5. Federal Emergency Management Agency (March 16, 2010) "Plan to Stay in Business" <http://www.ready.gov/business/plan/index.html>
6. Federal Emergency Management Agency (March 16, 2010) FEMA Publication 141 "Emergency Management Guide for Business and Industry" <http://www.fema.gov/business/guide/index.shtm>
7. Federal Emergency Management Agency Emergency Management Institute (March 16, 2010) <http://training.fema.gov/>
8. Federal Emergency Management Agency – Emergency Management Institute – Independent Study Programs/Distance Learning (March 16, 2010) <http://training.fema.gov/IS/>
9. Federal Emergency Management Agency – Emergency Management Institute – Complete Course List (March 16, 2010); <http://training.fema.gov/IS/crslist.asp>
10. California Emergency Management Agency – How You Should Prepare – Business (March 17, 2010) [http://cms.calema.ca.gov/prep\\_business.aspx](http://cms.calema.ca.gov/prep_business.aspx)
11. Michigan Department of State Police – Emergency Management Division "Site Emergency Planning Workbook" (April 2000), [http://www.michigan.gov/documents/msp-pub602\\_site\\_planning\\_8707\\_7.pdf](http://www.michigan.gov/documents/msp-pub602_site_planning_8707_7.pdf)
12. Federal Emergency Management Agency – State Offices and Agencies of Emergency Management (March 17, 2010) <http://www.fema.gov/about/contact/statedr.shtm>

## References

1. Property and Casualty National Underwriter (November 11, 2009) "Experts Say Small Firms Lag in Disaster Planning"; <http://www.property-casualty.com/News/2009/11/Pages/Experts-Say-Small-Firms-Lag-In-Disaster-Planning.aspx>
2. Marlon G. Boarnet (August 1996) "Business Losses, Transportation Damage and the Northridge Earthquake"; Department of Urban and Regional Planning and Institute for Transportation Studies, University of California, Irvine; August 1996 <http://www.its.uci.edu/its/publications/papers/ITS/UCI-ITS-WP-95-14.pdf>
3. Peter Gordon, et al (May 1998) "Transport-Related Impacts of the Northridge Earthquakes"; Peter Gordon, et al; University of Southern California – School of Urban Planning and Development <http://ntl.bts.gov/lib/5000/5100/5147/gordon.pdf>

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