TRAVELERS Risk Control

Natural disaster risk management guide

Earthquakes, floods, tornados, hurricanes, ice storms, wildfires, hailstorms and other natural events cause billions of dollars in business losses each year. From tornados no longer just in the Midwest to hurricanes that threaten from the Gulf coast up to the eastern seaboard, there is no shortage of natural disasters regularly in the news; and these are not the only threats you may face! To protect your operations, you should also plan for everyday natural occurrences. A microburst, a lightning strike, a local flash flood, or sudden freeze can damage or destroy your property.

No business is immune from natural hazards. Businesses should recognize and respond to the threat that nature poses to their operations and viability. Prepared businesses know they can better manage these exposures. With proper preparation, protection, response and recovery tactics. These actions can better position you to keep your operations running — even if a natural event occurs.

While insurance coverage serves as an important part of a business strategy, insurance alone cannot guarantee recovery. Many businesses do not survive building and equipment damage from a natural disaster. Loss of customers, good will, market share, extended downtimes and other hard-to-insure exposures cause many companies to fail. It is just good business to plan for and protect against natural hazards.

Getting started

So how does a business address its natural hazard exposure?

Take the first step by conducting a natural hazard exposure assessment. In other words, identify the types of events that could threaten the facility. The first draft assessment should be easy. Determine for each site the probability of:

- Earthquake
- Flood
- Windstorm
- Tornado
- Hurricane
- Tsunami
- Wildfire
- Hail
- Winter storms
- Lightning
- Drought
- Mudslides
- Other natural events

Don’t be too quick to dismiss some categories. For example, heavy snows in the South may be highly unusual, but when they happen, the lack of a proper response has led to many roof collapses days after the initial snowfalls. Likewise, your site may reside outside “mapped” flood zones, but due to nearby creeks, retention basins or even new construction, flash floods may expose your facility to serious damage.

Take the second step and focus on establishing the strategy your company will take to respond to a natural event before, during and after the incident. Your company needs to decide ahead of time how it can best protect itself. You can direct efforts to the areas of protection, preparation, response and recovery in different proportions for each of the many hazards you may face.

Often a company will need to assemble a project committee to handle discussions such as policy, planning and program development. The members selected for this committee should have knowledge of operations, the plant/facilities, protection systems and available resources.

Protection, planning and preparation

To protect against fire, companies commonly install fire sprinkler systems. Likewise, proper building design and construction can help prevent building collapse from snow build-up or roof loss from high winds. Shutters can protect glass from wind-driven flying debris. Lightning-protection systems may reduce the exposure to thunderstorms. Seismic bracing can reduce equipment and shelving tip-over as well as sprinkler leakage and wall collapse. Levees, dikes and hydraulic waterproofing can help control against flooding. Emergency generators can provide electricity when power lines fall during ice storms. Quality construction and installed protection features can make a big difference.

Take the third step by evaluating the facility and operations to determine what existing protection features will resist the identified exposures. Your evaluation should determine the current condition and maintenance of these systems. Keeping these systems intact preserves the integrity of their original installation. For example, flashing that is torn or has an inadequate nail pattern can lead to rapid roof loss in a windstorm. Proper construction and installation of protection systems often determines whether a building will survive a natural disaster. As you evaluate the hazards, make improvements and changes as necessary to address your tactical plan.

Building codes provide the starting point for evaluating structural resistance to nature. These codes offer dynamic information and are frequently updated. Many changes reflect improved building methods learned from past disasters. For example, significant changes to the building codes have occurred in response to the windstorm and water surge damage in Florida from hurricanes. If your building predates current codes, you should, at a minimum, evaluate your structure against current codes and consider upgrading to meet current codes. While strictly following current building codes will not prevent all damage, a study supported by the National Science Foundation and the International Associations for Wind Engineering suggests that keeping up with building codes can contribute to better property protections for older buildings*.

Protective features, such as those used to control against flooding, may exist at some distance from the primary building(s). As you make your evaluation, don’t forget these crucial features. You should also consider site selection, particularly for new construction projects. Earthquake, flood and storm surge are all site-specific problems. You can address and possibly avoid them when selecting new or expansion building sites.

In addition to built-in physical protection, you can complete some preparations before an approaching natural hazard arrives. These preparations can help avert damage to the site. For instance:

- Use sand bags to control and redirect flooding
- Establish prearranged vendor contracts to deliver water for critical processes where drought could lead to municipal water control restrictions
- Have window shutters fabricated so they are ready to install when the National Weather Service issues hurricane advisories
- Investigate roof load designs so you know the maximum safe snow depths
- Regularly inspect and clean all roof drains
- Plan for clearing the area around these drains after each heavy snow or when heavy rains follow a snowstorm

Proper preparations may allow you to take appropriate action during your response to an event.

Preparations also include stocking and maintaining necessary materials to support the response and recovery plans. Sand bags, stone, dirt and sand, lumber and plywood, weather radios, snow blowers and shovels,

ladders, generators, pumps, chain saws, lanterns and emergency supplies can all prove useful during an emergency.

Response

Response plans deal with the actions taken both as a natural hazard approaches and during the event. First and foremost, when you plan, develop, implement or activate a response plan, the safety of employees must remain paramount. Early warning and implementation give the best chance for success. The company should take early action rather than waiting. Have established procedures in place, but allow for flexibility and ingenuity of emergency response personnel to complete tasks geared toward reducing damage, saving processes and product, and, of course, protecting people. Also, pick leaders who are familiar with the entire facility and are able to make executive decisions for the company.

Create and practice evacuation plans for the general employee population, as well as for emergency response personnel:

- After all personnel have evacuated, make certain you can account for all employees
- Determine the level of effort the teams will need to give to response actions
- Know evacuation routes
- Have up-to-date weather information available on-site
- Have alternative methods of communicating with emergency personnel and public emergency services
- Keep emergency equipment in working order
- Maintain dedicated materials for emergencies separate from normal operations and facility stock
- Establish vendor contracts for emergency services ahead of time
- Understand how to shut down operations without damaging equipment
- Practice procedures and plans to determine viability of methods and to determine implementation timelines

Recovery

Disaster recovery covers protecting, restoring or salvaging structures, processes, equipment, materials, personnel, records and other components that have been affected or damaged by the primary event.

Sometimes greater damage occurs after the disaster subsides rather than during the actual event. Corrosion occurs over time. Open roofs allow for secondary rainwater to enter. Flood hydraulic pressures can push up concrete floors even as water recedes in nearby waterways. Fires can occur due to disturbed propane tanks, broken gas lines or spilled flammable liquids. Weakened walls can fall when exposed to strong wind. Pilferage and looting can occur at unsecured premises. Recovery can take the form of salvage, such as separating damaged materials from undamaged materials, and getting the valued stock into a protected space. It can involve stabilizing and securing structures from the weather, such as boarding up broken windows and covering damaged roofs. It can include restoring damaged sprinkler systems to protect against fire. It can consist of pumping out water from flooded basements with portable pumps. It can also include the placement of security personnel at the site. Protecting the physical aspects of your business is only part of the issue. Protecting your business relationships is even more of a challenge for many companies. You may want to consider:

- Developing arrangements in advance with critical suppliers. Without a product to sell, you could be out of business. Determine alternate sources of product and supplies in advance from areas not likely to be in the same event area. Vendors may be willing to drop-ship
  supplies to alternate locations if your warehouse is damaged.
- Communicating to your customers that you are in business, or if you are temporarily out of business, the length of time before you return. The solution may be as simple as a prerecorded telephone message, an email to customers or an announcement on your website to something as simple as a sign in front of the

store advising that you have facilities in a different location that are open. The key is to get the message out in as many methods as possible.

- Updating your employee/supplier/customer list frequently. It's amazing how quickly these are outdated. Unlike other emergencies a company may face — such as a fire or a hazardous material spill — a natural disaster is not isolated to the facility. Everyone in the area will be attempting to access the limited recovery resources that are available. Therefore, it is important to carefully plan for the recovery.

Materials you will need to support the recovery should already be on hand wherever practical. You should make arrangements for portable pumps, water vacuums, weather tarps, rigging or other items identified in your planning. And, you should put these arrangements into action as soon as you know an event might occur. In earthquake and tornado prone areas, you will need to give these arrangements special consideration.

Finishing up

When planning for disruptions to your operations, you should survey the facility to determine the greatest vulnerabilities. Which processes are critical? What equipment is critical? Are the plant/facilities and utilities vulnerable? Are critical records jeopardized? Where are they located? What might cause damage? How can they be protected? With this information and the list of natural hazards, you should prioritize concerns. Then, you should develop the prevention and mitigation responses for each item, considering protection, response and recovery actions appropriate to each. The project planning committee should then create an appropriate action plan.

Finally, use resources such as local emergency management agencies and services, your local government, private sector companies, and the Federal Emergency Management Agency to manage your exposure to natural hazards.

Natural disasters can occur anytime, any place. You cannot control when they will happen, but you *can* take the necessary steps to prepare. In doing so, you can better manage your exposure to these events. Chances are that this preparation will translate into better protection for your business, its assets, your employees and the community.

* National Science Foundation: sciencedaily.com/releases

Additional resources

- National Fire Protection Association, NFPA 13, Standard for the Installation of Sprinkler Systems
- National Fire Protection Association, NFPA 1600, Standard on Disaster/Emergency Management and Business Continuity Programs nfpa.org
- Insurance Services Office, Inc. Engineering and Safety Services iso.com Roofs/snow loadsHurricane constructionPerformance of metal buildings in high windMetal-edge flashing
- National Oceanic and Atmospheric Administration noaa.gov
- Federal Emergency Management Agency fema.gov
- Insurance Information Institute, 110 William Street, New York, NY 20038, iii.org
- Insurance Institute for Business & Home Safety, 1408 North Westshore Blvd., Tampa, FL 33607 disastersafety.org

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