



# BUSINESS CONTINUITY PLANNING

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## ADDRESSING HAZARDS

## BUSINESS CONTINUITY PLANNING: ADDRESSING HAZARDS

To develop a comprehensive business continuity plan, you will need to identify the special hazards that your business faces so you can develop a way to respond. To assist you in establishing procedures for hazards, use this reference to determine specific considerations for hazardous materials, technical emergencies, fires, tornados, severe winter storm hazards, floods, earthquakes and hurricanes.

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### HAZARDOUS MATERIALS DANGERS

Hazardous materials are substances that are flammable, combustible, explosive, toxic, noxious, corrosive, oxidizable, an irritant or radioactive. A hazardous material spill or release can pose a risk to life, health and property. An incident can result in the evacuation of a few people, a section of a facility or an entire neighborhood.

There are a number of federal laws that regulate hazardous materials, including: the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Resource Conservation and Recovery Act of 1976 (RCRA), the Hazardous Materials Transportation Act (HMTA), the Occupational Safety and Health Act (OSHA), the Toxic Substances Control Act (TSCA) and the Clean Air Act.

Title III of SARA regulates the packaging, labeling, handling, storage and transportation of hazardous materials. The law requires facilities to furnish information about the quantities and health effects of materials used at the facility and to promptly notify local and state officials whenever a significant release of hazardous materials occurs.

In addition to on-site hazards, you should be aware of the potential for an off-site incident affecting your operations. You should also be aware of hazardous materials used in facility processes and in the construction of the physical plant. Detailed definitions, as well as lists of hazardous materials, can be obtained from the Environmental Protection Agency (EPA) and from OSHA.

#### *Planning considerations for hazardous material hazards:*

- Identify and label all hazardous materials stored, handled, produced and disposed of by your facility. Follow government regulations that apply to your facility. Obtain Safety Data Sheets (SDS) for all hazardous materials at your location.
- Ask the local fire department for assistance in developing appropriate response procedures.
- Train employees to recognize and report hazardous material spills and releases. Train employees in proper handling and storage.
- Establish a hazardous material response plan:
  - Establish procedures to notify management and emergency response organizations of an incident.
  - Establish procedures to warn employees of an incident.
  - Establish evacuation procedures.
- Depending on your operations, organize and train an emergency response team to confine and control hazardous material spills in accordance with applicable regulations.
- Identify other facilities in your area that use hazardous materials. Determine whether an incident could affect your facility.
- Identify highways, railroads and waterways near your facility used for the transportation of hazardous materials. Determine how a transportation accident near your facility could affect your operations.

## TECHNICAL EMERGENCY HAZARDS

Technological emergencies include any interruption or loss of a utility service, power source, life support system, information system or equipment needed to keep the business in operation.

### *Planning considerations for technical emergencies:*

- Identify all critical operations, including:
  - Utilities including electric power, gas, water, hydraulics, compressed air, wastewater treatment services, municipal and internal sewer systems.
  - Security and alarm systems, elevators, lighting, life support systems, heating, ventilation and air conditioning systems, electrical distribution system.
  - Manufacturing equipment, pollution control equipment.
  - Communication systems, both data and voice computer networks.
  - Transportation systems including air, highway, railroad and waterway.
- Determine the impact of service disruption.
- Ensure that key safety and maintenance personnel are thoroughly familiar with all building systems.
- Establish preventive maintenance schedules for all systems and equipment.
- Establish procedures for restoring systems, and determine need for backup systems.

## FIRE HAZARDS

Fire is the most common of all the hazards. Every year, fires cause thousands of injuries and deaths in addition to billions of dollars in property damage.

### *Planning considerations for fire hazards:*

- Meet with the fire department to talk about the community's fire response capabilities and the specific needs of your operations. Identify processes and materials that could cause or fuel a fire or contaminate the environment in a fire.
- Have your facility inspected for fire hazards. Be sure to ask about fire codes and regulations.
- Ask your insurance carrier to recommend fire prevention and protection measures. Your carrier may also offer training.
- Distribute fire safety information to employees: how to prevent fires in the workplace, how to contain a fire, how to evacuate the facility and where to report a fire.
- Instruct personnel to use the stairs – not elevators – in the event of a fire. Instruct them to crawl on their hands and knees when escaping a hot or smoke-filled area.

## FLOOD/FLASH FLOOD HAZARDS

Floods are the most common and widespread of all natural disasters. Most communities in the United States can experience some degree of flooding after spring rains, heavy thunderstorms or winter snow thaws, and most floods develop slowly over a period of days. Flash floods, however, are like walls of water that develop in a matter of minutes. Flash floods can be caused by intense storms or dam failure.

### *Planning considerations for floods/flash floods:*

- Ask your local emergency management office whether your facility is located in a flood plain. Learn the history of flooding in your area, including the elevation of your facility in relation to streams, rivers and dams.

- Review the community's emergency plan and evacuation routes. Know where to find higher ground in case of a flood.
- Establish warning and evacuation procedures for the facility. Be sure to make plans for assisting employees who may need transportation.
- Inspect areas in your facility subject to flooding, and identify records and equipment that can be moved to a higher location. Make plans to move records and equipment in case of flood.
- Purchase a NOAA Weather Radio with a warning alarm tone and battery backup.
- Listen for flood watches and warnings.
  - *Flood Watch*: Flooding is possible. Stay tuned to NOAA radio. Be prepared to evacuate. Tune to local radio and television stations for additional information.
  - *Flood Warning*: Flooding is already occurring or will occur soon. Take precautions at once. Be prepared to go to higher ground. If advised, evacuate immediately.
- Ask The Holmes Organisation for information about flood insurance. In general, most policies do not cover flooding.
- Consider the feasibility of floodproofing your facility. There are three basic methods.
  1. *Permanent floodproofing* measures are taken before a flood occurs and require no human intervention when flood waters rise. They include:
    - Filling windows, doors or other openings with water-resistant materials, such as concrete blocks or bricks. This approach assumes the structure is strong enough to withstand flood waters.
    - Installing check valves to prevent water from entering where utility and sewer lines enter the facility.
    - Reinforcing walls to resist water pressure or sealing walls to prevent/reduce seepage.
    - Building watertight walls around equipment or work areas within the facility that are particularly susceptible to flood damage.
    - Constructing floodwalls or levees outside the facility to keep flood waters away.
    - Elevating the facility on walls, columns or compacted fill. This approach is most applicable to new construction, though many types of buildings can be elevated.
  2. *Contingent floodproofing* measures are also taken before a flood but require some additional action when flooding occurs. These measures include:
    - Installing watertight barriers called flood shields to prevent the passage of water through doors, windows, ventilation shafts or other openings.
    - Installing permanent, watertight doors.
    - Constructing movable floodwalls.
    - Installing permanent pumps to remove flood waters.
  3. *Emergency floodproofing* measures are generally less expensive than those listed above, though they require substantial advance warning and do not satisfy the minimum requirements for watertight floodproofing as set forth by the National Flood Insurance Program (NFIP). They include:
    - Building walls with sandbags.
    - Constructing a double row of walls with boards and posts to create a "crib," then filling the crib with soil.
    - Constructing a single wall by stacking small beams or planks on top of each other.
    - Participate in community flood control projects.
    - Consider the need for backup systems:
      - Portable pumps to remove flood water.

- Alternate power sources such as generators or gasoline-powered pumps.
- Battery-powered emergency lighting.

## SEVERE WINTER STORM HAZARDS

Severe winter storms bring heavy snow, ice, strong winds and freezing rain. Winter storms can prevent employees and customers from reaching the facility, leading to a temporary shutdown until roads are cleared. Heavy snow and ice can also cause structural damage and power outages.

Planning considerations for severe winter storms:

- Listen to NOAA Weather Radio and local radio and television stations for weather information:
  - *Winter storm watch* -- Severe winter weather is possible.
  - *Winter storm warning* -- Severe winter weather is expected.
  - *Blizzard warning* -- Severe winter weather with sustained winds of at least 35 mph is expected.
  - *Traveler's advisory* -- Severe winter conditions may make driving difficult or dangerous.
- Collaborate with federal, state and local public health agencies and/or emergency responders to establish procedures for facility shutdown and early release of employees.
- Store food, water, blankets, battery-powered radios with extra batteries and other emergency supplies for employees who become stranded at the facility.
- Provide a backup power source for critical operations.
- Arrange for snow and ice removal from parking lots, walkways, loading docks, etc.

## TORNADO HAZARDS

A tornado is an incredibly violent local storm that extends to the ground with whirling winds that can reach 300 mph. Spawned from powerful thunderstorms, tornadoes can uproot trees and buildings and turn harmless objects into deadly missiles in a matter of seconds. Damage paths can be in excess of one mile wide and 50 miles long. Tornadoes can occur in any state but occur most frequently in the Midwest, Southeast and Southwest. They occur with little or no warning.

*Planning considerations for tornadoes:*

- Ask your local emergency management office about the community's tornado warning system.
- Purchase a NOAA Weather Radio with a warning alarm tone and battery backup. Listen for tornado watches and warnings:
  - *A Tornado watch* means tornadoes are likely. Be ready to take shelter. Stay tuned to radio and television stations for additional information.
  - *A Tornado warning* means a tornado has been sighted in the area or is indicated by radar. Take shelter immediately.
- Establish procedures to inform personnel when tornado warnings are posted. Consider the need for spotters to be responsible for looking out for approaching storms.
- Work with a structural engineer or architect to designate shelter areas in your facility. Ask your local emergency management office or National Weather Service office for guidance.
- The best protection in a tornado is usually an underground area. If an underground area is not available, consider:
  - Small interior rooms on the lowest floor and without windows.
  - Hallways on the lowest floor away from doors and windows.

- Rooms constructed with reinforced concrete, brick or block with no windows and a heavy concrete floor or roof system overhead.
- Protected areas away from doors and windows.
- Note that auditoriums, cafeterias and gymnasiums that are covered with a flat, wide-span roof are not considered safe.
- Make plans for evacuating personnel away from lightweight modular offices or mobile home-size buildings. These structures offer no protection from tornadoes.
- Conduct scheduled tornado drills to test your plan.

## **EARTHQUAKE HAZARDS**

Earthquakes occur most frequently west of the Rocky Mountains, although historically the most violent earthquakes have occurred in the central United States. Earthquakes occur suddenly and without warning and can seriously damage buildings and their contents; disrupt gas, electric and telephone services or trigger landslides, avalanches, flash floods, fires and huge ocean waves called tsunamis. Aftershocks can occur for weeks following an earthquake. In many buildings, the greatest danger to people in an earthquake is when equipment and non-structural elements such as ceilings, partitions, windows and lighting fixtures shake loose.

### *Planning considerations for earthquakes:*

- Assess your facility's vulnerability to earthquakes. Ask local government agencies for seismic information for your area.
- Have your facility inspected by a structural engineer. Develop and prioritize strengthening measures. These may include:
  - Adding steel bracing to frames.
  - Adding sheer walls to frames.
  - Strengthening columns and building foundations.
  - Replacing unreinforced brick filler walls.
- Follow safety codes when constructing a facility or making major renovations.
- Inspect non-structural systems such as air conditioning, communications and pollution control systems. Assess the potential for damage. Prioritize measures to prevent damages.
- Inspect your facility for any item that could fall, spill, break or move during an earthquake. Take steps to reduce these hazards.
- Move large and heavy objects to lower shelves or the floor. Hang heavy items away from where people work.
- Secure shelves, filing cabinets, tall furniture, desktop equipment, computers, printers, copiers and light fixtures.
- Secure fixed equipment and heavy machinery to the floor. Larger equipment can be placed on casters and attached to tethers that attach to the wall.
- Add bracing to suspended ceilings, if necessary.
- Install safety glass where appropriate.
- Secure large utility and process piping.
- Keep copies of design drawings of the facility, preferably off-site in case of a catastrophe, to be used in assessing the facility's safety after an earthquake.
- Review processes for handling and storing hazardous materials. Have incompatible chemicals stored separately.
- Ask your insurance carrier about earthquake insurance and mitigation techniques.

- Establish procedures to determine whether an evacuation is necessary after an earthquake.
- Designate areas in the facility away from exterior walls and windows where occupants should gather after an earthquake if an evacuation is not necessary.
- Conduct earthquake drills. Provide personnel with the following safety information:
  - In an earthquake, if indoors, stay there. Take cover under a sturdy piece of furniture or counter, or brace yourself against an inside wall. Protect your head and neck.
  - If outdoors, move into the open, away from buildings, street lights and utility wires.
  - Use stairways to leave the building if it is determined that a building evacuation is necessary.
  - After an earthquake, stay away from windows, skylights and items that could fall. Do not use the elevators.

## HURRICANE HAZARDS

Hurricanes are severe tropical storms with sustained winds of 74 miles per hour or greater. Hurricane winds can reach 160 miles per hour and extend inland for hundreds of miles. Hurricanes bring torrential rains and a storm surge of ocean water that crashes into land as the storm approaches. Hurricanes can also spawn tornadoes. Hurricane advisories are issued by the National Weather Service as soon as a hurricane appears to be a threat. The hurricane season lasts from June through November.

### *Planning considerations for hurricanes:*

- Ask your local emergency management office about community evacuation plans.
- Establish facility shutdown procedures. Establish warning and evacuation procedures. Make plans for assisting employees who may need transportation.
- Make plans for communicating with employees' families before and after a hurricane.
- Purchase a NOAA Weather Radio with a warning alarm tone and battery backup.
- Listen for hurricane watches and warnings:
  - *Hurricane watch* -- A hurricane is possible within 24 to 36 hours. Stay tuned for additional advisories. Tune to local radio and television stations for additional information. An evacuation may be necessary.
  - *Hurricane warning* -- A hurricane will hit land within 24 hours. Take precautions at once. If advised, evacuate immediately.
- Survey your facility. Make plans to protect outside equipment and structures
- Make plans to protect windows. Permanent storm shutters offer the best protection.
- Covering windows with 5/8' marine plywood is a second option.
- Consider the need for backup systems:
  - Portable pumps to remove flood water.
  - Alternate power sources such as generators or gasoline-powered pumps.
  - Battery-powered emergency lighting.
  - Prepare to move records, computers and other items within your facility or to another location.