

Risk Control



Hurricane protection, preparation, response and recovery.

A hurricane is a storm with rotary circulation that originates in a tropical depression over the sea with winds in excess of 74 miles per hour. Hurricanes are usually accompanied by torrential rains and flooding along coastal areas. Hurricane season typically runs from June 1 to December 1.

The National Weather Service tracks tropical storms as they intensify into hurricanes. It issues advisories every six hours while a storm is more than 24 hours away from land and more frequently as it approaches landfall. The advisories state the storm's location, wind velocity, speed and direction. The National Weather Service issues warnings when it determines that a coastal area will be affected by the storm's high winds or a combination of high water and rough seas.

Every facility that is located in a coastal area should develop a hurricane emergency plan. The plan should include a detailed procedure and checklist for shutting down processes and protecting buildings, contents, equipment and yard storage. In addition, the procedures should include guidelines to follow to mitigate losses during the hurricane and salvage procedures to follow after the hurricane has subsided.

The plan should include the amount of time required (in hours or days) to complete each major task to ensure preparations are initiated at the appropriate time. Hurricane preparedness also should include the appointment of a qualified group of individuals to form a salvage squad. The objective of the salvage squad is to restore operations to normal as quickly as possible.

Preparation

Preparation for a hurricane should include both long-term and short-term plans.

Long-term preparation:

Long-term plans should be established, completed and reviewed periodically. These plans will mainly encompass improvements to construction features and site preparation to minimize hurricane damage. Long-term preparations could require several weeks or months to complete.

Long-term planning should concentrate on installing and maintaining construction features to increase the "hurricane resistance" of the property. Any hurricane resistance feature that cannot be permanently installed should be arranged so that the specialized protection can be quickly and easily installed. Protection features will need to be inspected and tested at least annually (prior to hurricane season) to keep them in good repair. The following items should be included on the pre-hurricane checklist:

- > Verify that roof coverings, edging strips, flashing, gutters, downspouts and drains are properly anchored and in good repair.
- > Verify that roof-mounted signs and equipment, guy wires and supports are properly anchored and in good repair.
- > Repair or replace any weak or damaged door hinges and latches.
- > Verify auxiliary lighting is in working order.
- > Complete all applicable items from Travelers *Flood Protection, Preparation, Response and Recovery* document.
- > Establish a system to protect all windows and openings on the buildings.
- > Installing shutters, bracing large doorways, having material available to cover all glass, etc., will complete this step.
- > Establish an emergency response team and assemble necessary supplies and equipment at a central, secure location. Each year inspect and verify that the supplies are in good repair. Examples of supplies and equipment may include:
 - Portable pumps and hose
 - Mops and squeegees
 - Emergency lighting
 - Tarpaulins/plastic sheeting
 - Lumber and nails
 - Power and manual tools
 - Sandbags
 - Shovels and axes
 - Building diagrams/schematics
 - Ropes/fasteners

Any new construction or building remodeling should comply with the hurricane preparedness plan.

Short-term plans should be developed well in advance of a hurricane, but need only be implemented when the projected path of a hurricane puts your facility in imminent danger of receiving damage. To prepare for an oncoming hurricane, detailed procedures and a checklist should be developed to ensure an orderly shut down of all production processes and all property is properly protected. The amount of time required (in hours or days) to complete each major task should be determined in advance to ensure preparations are initiated at the appropriate time.

Short-term preparation: As a hurricane approaches, secure the facility.

As the hurricane approaches, quick action will need to be taken to install temporary protection features. The following actions should be completed:

- > Shutter or board up windows to help protect them from flying debris.
- > Clean out floor drains and catch basins. Check drainage pumps.
- > Anchor structures, trailers and yard storage so they will less likely be moved by high winds. Move yard storage inside where practical.
- > Anchor and fill above-ground tanks to capacity with product or water to minimize wind damage.
- > Move drums and portable containers of flammables to a secure properly protected area indoors. Contact Travelers Risk Control to help determine if fire protection is adequate to allow inside storage of flammables.
- > Secure outdoor cranes in accordance with manufacturer's instructions.
- > Fill emergency generator and fire pump fuel tanks.
- > Inspect all fire protection equipment to be sure it is in service.
- > Move important records to a secure area that is protected from the elements. Duplicate critical records and move them offsite to a location that is not susceptible to the hurricane.
- > Shut down production processes safely.
- > Shut off all flammable liquid, combustible liquid and gas lines at their source to prevent an accidental release caused by broken piping.
- > Complete all applicable items from the Flood section of Travelers *Flood Protection, Preparation, Response and Recovery* document.
- > Shut off electrical power at the main building disconnect before the hurricane strikes.
- > Evacuate all employees and, if safe for an emergency response team to remain in the building, ensure that the team has the following:
 - Nonperishable food
 - Two-way radios with spare batteries
 - Stored drinking water
 - Flashlights/batteries
 - First-aid supplies
 - Vehicles with full gas tanks
 - Dry clothing
 - Boots/gloves/hard hats

Travelers resources to help you with hurricane preparedness

- > [Travelers Risk Control Plan Ahead Web page](#)
- > Open for Business®, a Web-based, interactive disaster planning tool from the Institute for Business & Home Safety (IBHS). The [Travelers Risk Control Customer Portal](#) includes access to the planning tool and guides available to you as our customer through a special arrangement with IBHS. Once logged in, use keyword search and type: Open for Business Disaster.

Third Party Resources*

- > [FEMA – Ready Business](#)
- > [FEMA – Before A Hurricane](#)
- > [Hurricane Preparedness for Business](#) (Pages 2-8)
- > [NOAA – Hurricanes](#) (Hurricane tracking, forecasts and alerts based on your zip code)
- > [Red Cross - Hurricane Preparedness](#)
- > [Red Cross – Preparing Your Business](#) (PDF overview of natural disaster preparedness)

During the Hurricane

Arrangements should be made to evacuate the emergency response team before the hurricane strikes. If the emergency response team is able to stay on site, a safe area of substantial construction should be available for the team members to occupy. The emergency response team plans should be communicated in advance to local law enforcement officials. The emergency response team should continually patrol the facility as long as it is safe to do so and complete the following:

- > Watch for structural damage and make repairs as necessary.
- > Watch for causes of fire (e.g., electrical short circuits, flammable materials floating on floodwaters, and flammable gas escaping from ruptured pipes) and take corrective action as needed.
- > Check sprinkler water pressures frequently and watch for loss of pressure.
- > Watch for flooding from rain or tidal surge and deploy sandbags as necessary.

Travelers resources to help you with hurricane response

- > [Travelers Risk Control Emergency Response Web page](#)

Third Party Resources*

- > [FEMA – During A Hurricane](#)
- > [Hurricane Preparedness for Business](#)
[Pages 9-12. Hurricane advisory action steps.]

After the Hurricane

Once the storm has subsided, the salvage squad should be assembled and the squad leader should assign job priorities to safely repair and restore production processes and buildings.

A properly staffed salvage squad generally consists of personnel that are qualified to repair electrical, mechanical, plumbing and fire protection systems. In addition, an adequate complement of personnel for general cleanup may be required. If outside contractors are used, they must be supervised to ensure safe operating conditions are maintained.

The squad leader should verify the salvage squad is properly staffed and equipped to complete their objectives. Typical supplies will include construction tools, mops, buckets, rust inhibitors, fans, water vacuums, brooms, dehumidifiers, squeegees, and wiping rags. Other non-typical items may include the need to order replacement motors, mechanical equipment, etc.

The salvage squad leader should verify the following items are completed:

- > Immediate damage assessment should be completed and action plans developed to address priorities:
 - Look for safety hazards such as downed power lines, exposed electrical wires, leaking gas, etc.
 - Appraise buildings for structural damage or undermining of building foundations.
 - Assess impaired fire protection equipment and alarms.
 - Assess critical production equipment and valuable stock that is required to restore production.
 - Complete temporary repairs and minimize hazards to ensure personnel can safely access the building.

- > The salvage squad should:
 - Provide portable multi-purpose fire extinguishers.
 - Require strict precautionary measures for any cutting/welding that will occur in or around the buildings. Refer to Travelers document *Cutting, Welding & Hot Work Operations* for more information.
 - Eliminate any unnecessary ignition sources and include the enforcement of “No Smoking” regulations.
 - Establish a procedure for removing debris brought by the storm and as a result of any reconstruction efforts.
 - Any holes or other penetrations in the building walls should be temporarily repaired.
 - Assess and prioritize building contents that have been damaged and can be salvaged.
 - Wash walls and floors with soapy water and disinfectant.
 - Photograph and/or videotape any building or contents damage.
- > Fire protection equipment:
 - Assess and service fire pumps that were submerged. The pumps should be tested and placed back in service.
 - Assess the integrity of fire protection alarm circuits. Fully test all alarms. Repair as needed.
 - Assess the integrity of security alarm circuits. Fully test all alarms. Repair as needed.
 - Physically test any sprinkler control valves that were submerged to verify they are operational. Conduct main drain tests for the sprinkler system(s).
 - Notify the local fire department of any extended impairments that will be required for the above systems.
- > Electrical restoration should be completed:
 - Do not energize electrical circuits in the buildings until an electrician has checked all systems.
 - Care should be exercised around damaged power cables. The electrician should notify the squad leader and utility company of all necessary repairs.
 - Electric motors, switch gear and cables should be thoroughly inspected, cleaned and dried as needed before energizing. Even if it has not been immersed, electrical equipment can absorb sufficient moisture to reduce its insulation resistance to a dangerously low level. While electrical leakage may be too small to blow fuses or trip the circuit breakers, it may be sufficient to cause overheating and fires.
 - Carefully examine all metal-clad cable, lighting sockets, receptacles, snap switches or any devices with paper or fiber insulation.
- > Mechanical equipment and systems:
 - Check all flammable liquid and gas piping systems and associated tanks for leaks or damage.
 - Steam lines and any refractory-containing equipment should be examined for wet insulation. In some cases, if insulation is contaminated, it must be stripped and restored rather than dried in place.
 - Test the water supply for boilers, process feed and cooling water, and test underground storage tank contents for contamination before use.
 - Mechanical equipment should be cleaned and dried with casings opened for inspection. Shafting should be checked for alignment and lubricating systems flushed.
- > Security service:
 - Perform a continual fire watch until normal operations are resumed.
 - Verify that the personnel understand how to contact outside emergency response units.
 - Provide portable radios or cellular phones so personnel can immediately contact emergency response units.
 - Familiarize personnel with any unsafe or hazardous conditions and update them with the progress of salvage operations.

Travelers resources to help you with recovery/post-hurricane activities

- > [Travelers Risk Control Disaster Recovery Web page](#)

Third Party Resources*

- > [FEMA Recover and Rebuild](#)
- > [Hurricane Preparedness for Business](#) [Pages 13-14]
- > [OSHA – Flood and Hurricane Recovery](#)

Additional Travelers documents

To access these documents, log in to our Risk Control Customer Center at travelers.com/riskcontrol.com and type all or part of the title in the “Keyword” search field.

- > Emergency Planning - General Overview

Third Party Resources*

- > [FEMA - Hurricane](#)
- > [Red Cross - Hurricane Preparedness](#)
- > [NOAA - Hurricanes](#)
- > [FEMA - Protect Your Property or Business from Disaster](#)
- > [FEMA – Ready America](#)

Please Contact Us

For more information, visit our website at travelers.com/riskcontrol, contact your Risk Control consultant or email Ask-Risk-Control@travelers.com.

*Third Party Resources. By launching the links provided, you can access additional internet resources to help you in your efforts to plan for, respond to and recover from hurricanes. The information provided by these external websites is not owned or controlled by Travelers. They are provided for your convenience. See our Disclaimer for additional information.



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