

Hurricane Emergency Action Plan

If you have property in a region prone to tropical storms, you should always have an up-to-date hurricane emergency action plan in place.

This plan will discuss the “easy-tough” approach and includes easy actions to take any time a hurricane threatens your location and tough actions to take when you know a hurricane will strike your location.

Hurricane Emergency Action Plans

A hurricane emergency action plan should be quick, simple, and practiced.

Quick

Fits in a reasonable timeframe, starting 48 hours before hurricane landfall and wraps up with enough time for personnel evacuation.

Simple

Checklists to guide actions and provide reminders. Checklists should be backed up with more detailed documentation as needed. Remember, when the time comes, no one will have time for the details.

Practiced

Fully test your plan to verify time, staff, and resource needs. Know how many people are needed, what tools and supplies are needed, and how long each task will take.

Regions

Hurricane-prone regions exist around the world. For the U.S., the regions include the states along the Atlantic & Gulf coasts, Hawaii, Puerto Rico, the U.S. Virgin Islands, Guam & the American Samoa.

A hurricane emergency action plan should be a living document. It should be reviewed and updated each year before the season begins and after any major storm. It should address actions to take:

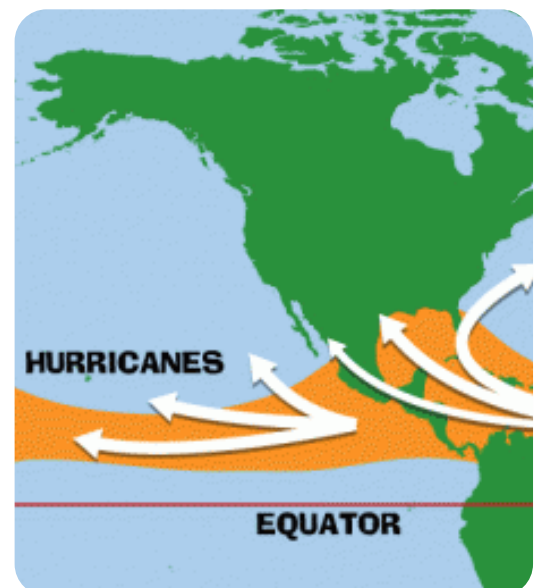
- Before hurricane season begins
- 48 hours before hurricane landfall
- 36 hours before hurricane landfall
- During a hurricane
- After a hurricane

North Atlantic Region

Season: June 1 to November 30

Northeast Pacific Region

Season: May 15 to November 30



Emergency Action Plan Integration

When integrating a hurricane plan, consider other emergency plans, systems or practices that will support surviving and recovering from a storm.

1

Emergency Power

Review emergency power systems. Are they sized and arranged to carry the appropriate loads? In addition to the traditional emergency loads, the system should carry loads needed to maintain the internal building environment, such as chillers and HVAC systems. For multi-story buildings, emergency power should carry elevators so all floors will be accessible for service and repairs. The fuel supply should be sufficient to support the system for the anticipated duration of normal power interruption and to resume fuel deliveries.

Have spare generators located and available in a protected location (don't forget the fuel needed to operate these spares).

2

Business Data

Verify there is a program in place for the routine backup for critical computer data. The data should be backed up to a location that will not be affected by the hurricane.

Identify vital business records (technical drawings, electronic files, paper files). Make plans to protect them or relocate them to a protected location.

3

Equipment & Stock

Know the elevations of critical equipment including rotating equipment (motors) and electrical equipment (transformers and switch gear). This may help you identify equipment that may be exposed to damage due to storm surge or flooding. Relocating this type of equipment before a storm is difficult. Protecting or sparing the equipment may be the only realistic option. Maintain critical equipment spares in a protected location.

Verify practices for installing important electronic equipment. This would include equipment such as computers, local area networks, telephone systems, and, for healthcare facilities, medical diagnostic equipment. To reduce exposure to water damage, electronic equipment should be located above any anticipated flood elevation including hurricane storm surge and at least 10 cm (4 in) above any floor.

4

Utilities & Gases

Verify the location of utility disconnects and confirm that shutoffs are identified with suitable markings. This includes electric and fuel gas utilities and also applies to medical gases in healthcare facilities.

5

Vendors

Develop relationships with equipment suppliers. Arrange in advance to obtain supplies, service or spare equipment quickly. After a storm, there will be a demand surge for all resources. Established relationships improve access to priority service.

6

Personnel

Verify there is a contact list for all facility personnel including contact information for the most likely destination in the event of an evacuation. This will assist in locating personnel after a storm.

Hurricane Season Preparation

Before hurricane season begins

- Review the hurricane plan. Make sure it's current.
- Verify there is a designated person on site at all times during hurricane season with the authority to implement the hurricane emergency action plan. This includes ordering process shutdowns and facility evacuations.
- If responsibilities are assigned to specific individuals, update the assignments if positions or personnel have changed.
- Make sure dedicated hurricane supplies and equipment are on hand. Order replacement materials as needed. See Appendix A for sample list of supplies and equipment.
- Conduct annual drills to test all aspects of the hurricane emergency action plan. Verify the plan reflects current conditions at the location. After each drill, request feedback from involved staff and Emergency Response Team members to assess the effectiveness of the plan and identify areas for improvement.
- Maintain a roofing company under contract to respond quickly should repairs be needed before or after a storm. Having a contract in place will allow faster access to critically needed repair services.
- Schedule an inspection of the building. Have your roofing contractor check the condition of roof coverings and flashing. Verify rooftop equipment is secure and connections/fasteners holding equipment in place are not corroded. Consider adding strapping or bracing to reinforce rooftop equipment. Verify the condition of all glazing systems and weather seals, and confirm windows and doors are secure and will close tight.
- Verify inspection, testing, and maintenance of all emergency generators are up to date. Check entire fuel system, including centralized fuel tanks and fuel transfer pumps.
- Where manual storm shutters, plywood coverings, or flood gates are used to protect the building during a hurricane, verify that all needed materials are on hand, readily available and in good condition. Verify the personnel needed to install or place manual protective systems are available at all times during hurricane season. Verify all personnel have been trained and have practiced before hurricane season begins. Know how long each operation will take and how many people will be needed.
- Establish and maintain emergency contact info and evacuation contact info for all personnel to assist restoring contact with employees after a hurricane event.

When hurricane season begins

During hurricane season, it's important to maintain an awareness of developing and approaching hurricane activity. Websites are available to all hurricane-prone regions that provide this information.

The National Hurricane Center website www.nhc.noaa.gov/index.shtml provides info for the U.S., Caribbean, and Northeast Pacific.

The World Meteorological Organization of the United Nations maintains a Severe Weather Information Center at <http://severe.worldweather.wmo.int/> that includes a map showing any current global tropical cyclone activity with links to advisories and warnings.

When to react to hurricanes

By maintaining a continuous awareness of hurricane activity, you can develop a sense of when and how to react to an approaching hurricane.

The coastal areas affected by hurricane watches and warnings change constantly as a hurricane moves. The watches and warnings provide an indication of the time available to you for taking action. Keep in mind these times are estimates at best, as hurricanes are unpredictable, and they can arrive early.

Plan to start taking action at least 48 hours before the estimated hurricane landfall at your location.

Hurricane Season Take Action

The Easy-Tough approach to taking action

- Review the hurricane plan. Make sure it's current.
- Verify there is a designated person on site at all times during hurricane season with the authority to implement the hurricane emergency action plan. This includes ordering process shutdowns and facility evacuations.
- If responsibilities are assigned to specific individuals, update the assignments if positions or personnel have changed.
- Make sure dedicated hurricane supplies and equipment are on hand. Order replacement materials as needed. See Appendix A for sample list of supplies and equipment.
- Conduct annual drills to test all aspects of the hurricane emergency action plan. Verify the plan reflects current conditions at the location. After each drill, request feedback from involved staff and Emergency Response Team members to assess the effectiveness of the plan and identify areas for improvement.
- Maintain a roofing company under contract to respond quickly should repairs be needed before or after a storm. Having a contract in place will allow faster access to critically needed repair services.
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The Easy-Tough Method

Easy Actions | 48 hours from landfall

About two days before a hurricane is expected to affect your location, begin implementing the easy actions. A hurricane watch is issued 48 hours before a hurricane may become a threat to your location. Make sure that all the easy actions are taken once a watch is issued.

- Review the hurricane emergency action plan with all involved personnel.
- Check building roofs. Make repairs to coverings and flashing as time allows.
- Remove all loose items from roof, secure equipment doors and covers, and remove debris.
- Verify roof drains are clear of trash and other obstructions.
- Fill fuel tanks serving emergency generators and other vital services.
- Verify dewatering pumps are in service and working.
- Verify outside storm drains and catch basins are clean.
- Remove debris from outdoor areas that may become “missiles.”
- Remove loose, outdoor, inactive equipment.
- Back up computer data.
- For healthcare, verify 96 hours of supplies are on hand.
- For new construction projects: remove loose equipment, secure and protect material storage, temporarily brace new construction, and secure roofing and items on the roof.

Based upon your specific needs, add to the list of easy actions, as these are just general concepts and every facility has its own requirements.

Tough Actions | 36 hours from landfall

At 36 hours before anticipated landfall, time will be limited. Make sure you will have the staff needed to complete all of the tough actions, and leave plenty of time to evacuate personnel who will not be remaining on site.

- Protecting or relocating vital business records.
- Removing all loose outdoor storage or equipment.
- Anchoring portable buildings or trailers to the ground.
- Securing outdoor storage or equipment that cannot be moved.
- Installing manual protection systems (e.g. shutters, plywood covers, flood gates, etc.).
- Raising critical equipment off floors (e.g. PC towers).
- Moving critical stock and equipment with waterproof tarpaulins.
- Turning off fuel gas services.
- Turning off non-essential electrical systems.
- Verifying all fire protection systems are in service (e.g. water supplies, fire pumps, sprinklers, fire alarms, special extinguishing systems, etc.).

Again, based upon your specific needs, add to the list of tough actions.

The Easy-Tough Method

Tough-tough Actions

There can be a few tough actions that take so long to complete they need to be started during the easy-action period. Exceptional discipline will be required to make the decision to implement these very tough actions. Review the hurricane emergency action plan with all involved personnel.

- Setting up flood barriers at all first floor doors and entrances.
- Temporarily closing up buildings under construction to avoid entry of wind-driven rain.
- Installing manual shutters on multi-story buildings.

It is absolutely essential to recognize when you have a tough-tough action. The overall plan must recognize their existence. And, the needed guidance and authority must be provided to those who will be charged with making the decision.

During a hurricane

If an Emergency Response Team (ERT) is to remain onsite during the storm, consider the following:

- The ERT should consist of volunteer members willing to remain onsite during the hurricane (if allowed by local authorities).
- Carefully determine whether the location, design, and building construction make it a safe place for ERT members to remain during the storm.
- The ERT members should be trained in all aspects of the emergency action plan and include representative with decision-making authority as well as knowledge of facility operations.
- Security personnel may also be required.
- Prepare an ERT supply kit that includes items necessary during and immediately after the storm. This includes satellite phones, two-way radios, portable AM/FM radios, flashlights, lanterns, plenty of batteries, rubber boots, gloves, blankets or sleeping bags, first-aid kit, spare clothing, and an adequate supply of shelf-stable food and water to last at least 72 hours.
- Anticipate loss of electrical power and municipal drinking water for several days following the storm.
- Storm-tracking procedures should be developed. The ERT should include personnel capable of monitoring conditions using various media and equipment (e.g. radio, television, internet, and portable phone).
- If the facility is in an area known to be exposed to a flood or storm surge, specific response procedures should be developed as part of the emergency action plan to manage the water exposures.
- During the height of the storm, the ERT personnel should remain in a location that has been secured from wind and flood and proven secure.



The Easy-Tough Method

After a hurricane

- When returning to the site, bring identification, additional supplies, and cameras to document conditions.
- Communicate with the ERT to determine what supplies are needed.
- Survey the site for hazards:
 - Live electrical wires
 - Broken glass and sharp metal
 - Leaking fuel gases or flammable liquids
 - Damaged building features or contents that could shift or collapse
 - Paved or hardscape areas undermined by wave action and subject to collapse
- Reinforce appropriate management loss prevention programs including:
 - Controlling the use of smoking materials
 - Using hot work permits to manage all cutting or welding operations
- Verify the status of protection systems. Check water supplies, fire pumps, automatic sprinklers, fire alarms, and security systems.
- Manage impairment for protection systems:
 - Expedite repairs
 - Post fire watch in area with impaired fire protection
 - Post security personnel in areas where building or site access is not suitably controlled.
- Survey the damage and initiate repairs immediately:
 - Promptly notify contractors to avoid waiting in line for service.
 - Establish repair priorities, including the building envelope, utilities and fire protection systems.
- Begin salvage as soon as possible to prevent further damage:
 - Protect the building and contents from further damage
 - Separate damaged goods
 - Save all damaged goods
 - Avoid accumulations of combustible materials inside the building
 - Avoid storage in areas with impaired fire protection
- Maintain contact with corporate management and your insurance agent.
- Contact your insurance agent to report claims and fire protection impairments.
- Do not discard damaged property or begin repairs without prior approval from your claims representative.
- Collect receipts and other documents that show what you paid for your damaged property.
- For loss of income claims you will need to provide a claims adjuster with documents such as monthly profit and loss statements, payroll records, rent rolls, etc.
- Clear roof drains, balcony drains and ground-level basins and drains in preparation for future rain events.
- Have qualified personnel thoroughly check all utility systems and hazardous processes before returning them to service.
- Restore HVAC system to maintain or restore building interior environment.
- Provide a means to stay in contact with displaced personnel. Consider a telephone number that delivers a recorded message with daily updates.

Additional Resources

Appendix A | Sample List of Hurricane Supplies & Equipment

- Emergency lighting
- Lumber and nails/screws
- Tape for windows
- Sandbags
- Roofing cement, sealant, and other repair materials
- Tarpaulins
- Caulk
- Duct tape
- Power and manual tools
- Shovels and axes
- Chainsaws and fuel
- Nonperishable food and drinking water
- Cell phone with charged spare batteries
- Satellite phones (as land telephone lines and cell phone service may be interrupted)
- Two-way radios with charged spare batteries
- Flashlights with spare batteries

Your Sterling Seacrest Pritchard Team

Your dedicated risk management and insurance team at Sterling Seacrest Pritchard is available to help! Please reach out to your team to develop your Emergency Action Plan.

References

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Current Tropical Cyclone Information. Severe Weather Information Center. 21 July 2010. World Meteorological Organization. Website accessed 21 July 2010. <http://severe.worldweather.org/tc/wnp/>

Tropical Cyclone. National Weather Service. 05 January 2010. NOAA. Website accessed 21 July 2010. <http://www.srh.noaa.gov/srh/jetstream/tropics/tc.htm>

Hurricane. FEMA. 23 June 2010. FEMA. Website accessed 21 July 2010. <http://www.fema.gov/hazard/hurricane/index.shtm>

Hurricane Preparedness - Disaster Supply Kit. National Hurricane Center. NOAA. Website accessed 21 July 2010. http://www.nhc.noaa.gov/HAW2/english/prepare/supply_kit.shtml

Hurricane Research Division - Frequently Asked Questions - When is hurricane season? Atlantic Oceanographic and Meteorological Laboratory. 21 January 2010. NOAA. Website accessed 21 July 2010. <http://www.aoml.noaa.gov/hrd/tcfaq/G1.html>