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# Is Your Business Prepared for Hurricane Season?

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What You Need to Know About  
Disaster Preparedness

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# Introduction



It's hurricane season and the forecast is anything but clear. The National Oceanic and Atmospheric Administration ([NOAA](#)) is anticipating 15 to 21 storms this season, 7 to 10 of which are expected to be hurricanes with winds of 74 mph or greater. This projection displays a 65% chance of an above-normal 2021 hurricane season, following 2020's record-breaking year.



From every direction, the goals of high-risk companies are to keep employees safe and to “defend the fence line” — or respond to emergencies effectively by containing them within the facility’s limits.

For companies handling hazardous materials, this is a large task, made more difficult by the unpredictability of storms. However, evolving resources and lessons learned from previous, high-profile events can point businesses like yours in the right direction.

For coastal businesses in high-risk industries such as manufacturing and chemical processing, preventing secondary emergencies such as fires and chemical spills is a top priority, in addition to flooding and evacuation, property damage and eventual rebuilding that come with severe storms and hurricanes surrounding any facility.

After years of severe storms and disastrous spills, all businesses are taking a closer look at their total risk landscape, how they anticipate disasters like severe storms and hurricanes, mitigate risk, and respond before, during and after emergencies.

# Assess Your Business' Risks



High-risk businesses should have a 360-degree understanding of the liabilities involved in their operations, whether they include events taking place inside their facility, or those instigated by external factors.

## Internal Risks

For manufacturing and chemical companies, the presence of hazardous materials inherently creates an extra level of risk during storms. As part of your standard operating procedures and safety management practices, you already understand and document the substances, equipment and procedures involved in your operations and how each influences the others, including plans for spill containment, waste handling, remediation, transportation, and disposal. When it comes to big storms, you need to consider how external factors can impact these typically controlled elements and how you might need to alter procedures in these situations.

Consider your start-up and shutdown processes. A disproportionate percentage of process safety incidents take place during these two equipment transition periods. In fact, [according to the Center for Chemical Process Safety \(CCPS\)](#), process safety incidents occur five times more often during start-up than during normal operation. The worst time for a start-up or shutdown incident to occur is during or directly following a natural disaster. This can be a direct cause of what is known as **compounding disaster events**.

During Hurricane Harvey, seven industrial plants on the Texas coast released a total of [255,598 pounds of air pollution](#) due to accidents triggered by electrical outages and shutdowns, including a fire and series of explosions at the Arkema chemical plant in Crosby.

## Don't be the Cause of a Compound Disaster

When two or more catastrophic events happen at once, this is known as a compound disaster. Compounding disaster events result in enormously complex response and recovery challenges, as each disaster amplifies the effect of the other.

When a community is already coping with the fallout of one disaster – such as a hurricane – it is your organization's job as a member of the community to avoid adding to this hardship with another disaster caused by negligence. Manufacturing, utility, and chemical processing plants in particular have a responsibility to their neighboring areas to ensure they are prepared for a variety of disasters in such a way to ensure their operations will not cause greater harm to the community.

Before a natural disaster occurs, your organization should have updated safety and emergency plans, facility designs based on these plans and have trained all employees on how to immediately react to mitigate overall damage of any accident.

# Assess Your Business' Risks (cont'd)



## External Factors

When assessing your facility's risk for a natural disaster, it's critical look beyond your fence line. What if a hurricane or named storm would take place on your grounds? What are the steps that need to be taken to contain the incident? Think about how your operations interact with or influence external events.

Consider the local emergency services and how they will respond to an incident at your facility. How quickly will they be able to react? Build relationships with these local services and identify a liaison for consistent and open communication.

Secondary episodes that occur outside of the plant can have a great effect on your operations. Take a power outage, for example. While it may start outside of your property, it can have a direct impact on your power source. Do you have adequate backup? Or a flood seeps into your grounds. Is your equipment elevated enough to avoid escalating issues?

Incidents within your facility can have a great impact on the surrounding communities. Look closely at the many ways an internal episode can spread and what damage it might create beyond the fence line. Don't forget to look above ground level. What harmful materials could be airborne if your facility should catch fire?

## The Effect of COVID-19 on Emergency Preparedness

As the threat of hurricane season becomes more imminent, the ongoing threat of COVID-19 still looms for most organizations, creating the likelihood of facing the complexities of compound disaster events. It's important to prepare for the compounding impact of these simultaneous disasters, and here are three best practices to get you started:

→ **Don't wait until the last minute to evacuate.**

COVID-19 added new variables to disaster response plans. Expect to need more time to prepare, respond and recover.

→ **Prepare for supply chain disruption.**

COVID-19 severely disrupted supply chains. Add in a natural disaster and a bad situation becomes much worse. You can get ahead of this by making plans with alternate suppliers and identifying alternative distribution paths.

→ **Prepare for a longer disruption.**

Emergency service teams have been stretched thin and are following new protocols under COVID-19 protections. As it might take them longer to respond to your emergency, verify that your backup systems are in proper working order and your disaster kits are fully stocked.

## Create an Emergency Plan



Employers are required to keep their employees safe during working hours. Training on operational safety procedures is one important way to accomplish this. Just as important are the plans your organization puts in place in advance to keep employees safe during an emergency.

The Occupational Safety and Health Administration (OSHA) has developed standards to help organizations develop thoughtful, well-organized plans for employer and employee actions during workplace emergencies. These requirements are designed to avoid confusion, injury, and property damage.

**[OSHA 1910-.38 Emergency Action Plan](#) requires that emergency plans be both written and communicated orally to your entire staff, and include procedures for:**

- Reporting an emergency
- Evacuation and exit routes
- Employees who remain to operate critical plant operations before they evacuate
- Accounting for all employees after evacuation
- Employees performing rescue or medical duties
- Contacting employees to disseminate information about the emergency plan at the moment, including names and job titles

**While not required by OSHA, the following components are also recommended to be included in your organization's emergency plan:**

- Location of nearest hospital or emergency medical center
- Type of alarm system used to notify employees of an emergency (i.e. siren, text message or phone chain)
- Procedures for accessing and protecting information and records
- Location and permissible uses of personal protective equipment (i.e. portable defibrillators, masks, fire extinguishers)
- Communication plans for during the disaster and a backup plan

## Employee Training



Creating the plan is just the first step. Unless your employees know and understand your organization's emergency plans, everyone and your facility remain in danger.



### Ensure that all workers know what to do in case of an emergency.

When communicating your emergency plans to employees, employers must take into consideration literacy, cultural, and language barriers that exist within their workforce. For plans to be effective, all employees must understand the procedures.



### Practice evaluation plans on a regular basis.

Beyond communicating your emergency plan, consistent practice of important procedures is a great way to build familiarity and automatic reaction before a true emergency takes place.



### Update plans and procedures based on lessons learned from practice exercises and communicate to your employees.

If a flaw in the plan becomes apparent during practice, take the time to reevaluate the plan, update where needed, and clearly communicate the changes to your workforce. Similarly, if an event takes place outside of your facility that provides insight into potential threats to your own operations, consider how you can enhance your systems and plans to better protect the community.



*Employers who hire contract workers are also responsible for informing and training these temporary workers on the hazards, protocols, and backup plans for their facility.*

## Communication During the Storm



You've developed your emergency plans.  
 You've communicated them to your employees.  
 You've run through practice drills.  
 Are you ready for the next storm?

As with most things in life, the real thing is never exactly as you planned. In-the-moment chaos and the unpredictability of storms requires you to be flexible, drawing on your plans for guidance but also allowing yourself to react responsibly to what is actually happening around you.

The most important thing during a storm is communication, which can be broken into two categories:

### 01 | COMMUNICATION WITH EXTERNAL RESOURCES



#### Storms can be unpredictable

Having access to information about the storm and its latest developments is crucial to your safety. Consider investing in a National Oceanic and Atmospheric Administration (NOAA) radio for your business. Follow along with local authorities to understand the movement of the storm and what other hazards have been caused by the storm already.

### 02 | COMMUNICATION WITH INTERNAL EMPLOYEES



#### Communicate developments clearly & efficiently

Your emergency plan should outline how you will keep employees informed, both at the start of an incident and throughout its development. Your primary concern may be the employees currently within the plant, but do not forget off-duty employees who may need to stay off the grounds but continue monitoring the facility, or continuing with their critical work even during the storm.



## The Recovery Period



Post-disaster clean-up is not hazard free. In fact, the main health risks of Hurricane Katrina came after the storm had passed and were caused by the amount of water left behind. Residents and clean-up crews were impacted by outbreaks of West Nile, mold, and rising endotoxin levels, while medical centers remained inoperable.



### The final step of the recovery period is collecting lessons learned.

*No matter how prepared you are, and how well you follow the steps laid out in this document, there will be room for improvement. Take the time after an incident to analyze your facility's response. Consider the equipment and infrastructure, along with employee action. Where did you succeed? What could be improved for the next event? Make sure to update your emergency plans accordingly.*

### Three crucial steps to follow to continue to keep you and your employees safe



#### Limit contact with flood water

Flood water can contain a variety of dangerous materials, including raw sewage or spilled chemicals.



#### Contact the National Response Center for any hazardous spills or discharges

Depending on the spill, you may have legal requirements for reporting or taking other actions. needs before returning to businesses.



#### Manage debris and damaged buildings

Returning to a damaged facility can cause health and environmental challenges. There may be life-threatening hazards waiting for you and your employees upon return, including leaking natural gas lines, carbon monoxide or other airborne hazards. The moisture and humidity caused by the flood can also create long-term risks from microorganisms such as bacteria and mold. [The United States Environmental Protection Agency](#) provides various guidelines for clean-up needs before returning to businesses.

# Lessons Learned from Recent Weather Events



## The Fukushima Disaster: Backup Your Backup

If one layer of safety fails, another layer should remain intact to prevent accidents from happening. This is the major lesson learned from the Fukushima Disaster of 2011.

In March of 2011, the nuclear reactors at the Fukushima Daiichi Nuclear Power Plant in Okuma, Fukushima were shut down by sensors due to a building earthquake. Emergency diesel generators turned on to keep the coolant pumping around the nuclear cores to prevent them from overheating. However, just moments later a 46-foot tsunami wave, set in motion by the earthquake, came crashing through the nearby defensive sea wall and flooded the plant, disabling the emergency generators and setting in motion events that would result in nuclear meltdowns and multiple hydrogen explosions.

While the executives of the plant operator Tokyo Electric Power (Tepco) were acquitted in 2019 of guilt, many experts believe they could have done more to safeguard the plant from such a disaster.

While protection against natural hazards were required in the design of nuclear plants at the time, these requirements have been greatly strengthened following Fukushima, ensuring various levels of defense to act as independently as possible. For example, in the case of a tsunami and flooding, backup safety systems should be located at elevation.

The Fukushima Disaster is classified as a level 7 event by the International Atomic Energy Agency, and in relation to similar disasters it is considered second in scope following the 1986 meltdown of the Chernobyl Nuclear Power Station. While there are not many deaths attributed to the disaster, approximately 160,000 people were evacuated from a 12-mile radius around the plant, some of whom are still not allowed to return to their homes 10 years later.

## Lessons Learned from Recent Weather Events (cont'd)

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### Hurricane Harvey and the Arkema Plant Explosions: Update Emergency Plans When New Risks are Identified

When more than five feet of water flooded parts of Arkema's peroxides plant in Crosby, Texas during Hurricane Harvey in 2017, the facility was not prepared. Even though in 2008, after Hurricane Ike made landfall over Galveston, Arkema identified floods and hurricanes as potential threats to its Crosby site. The company failed to update the plant's contingency plans with appropriate safety measures, such as raising backup generators above flood levels or isolating hazardous materials from extreme elements such as high wind or water, and in the 2017 hurricane, the facility lost both its main and backup power, causing refrigerated trailers of organic peroxides to burst into flames.

*Throughout Hurricane Harvey, the U.S. Coast Guard's National Response Center received [102](#) reports of the release of oil or hazardous chemicals. The Arkema plant, over three years after the incident, is still working to reopen its plant and meet Harris County floodplain regulations.*

### Hurricane Katrina: Remove and Replace Legacy Structures

Every day, nearly 10,000 people wake up on oil platforms and drilling rigs in just the Gulf of Mexico alone. In the days that followed Hurricane Katrina in August of 2005, The U.S. Coast Guard received 540 oil spill reports. More than 400 pipelines and 100 drilling platforms were damaged in the storm, and an estimated 8 million gallons of oil spilled.

In the years that followed, the American Petroleum Institute released new design standards and stronger guidelines for tying down derricks, compressors and other platform features affected by storm winds.

Oil let loose by Katrina was pushed farther inland by Hurricane Rita only three weeks later. The lasting impact of Hurricane Katrina's various oil spills has yet to be determined more than 15 years later.



## About Veriforce

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Veriforce® is a recognized leader in delivering comprehensive, integrated supply chain risk management solutions that help bring workers home safely and optimize business performance. The company's SaaS safety and compliance platform, data integrity and verification practices, and standardized safety training programs empower leading organizations to drive safety and compliance into their supply chains and down to the worker-level.

Veriforce is the world's premier supply chain risk and compliance management network, comprising more than 650 hiring clients, more than 50,000 contracting companies, over 9,000 accredited safety trainers and authorized evaluators, and over 2.5 million workers. It's this network that makes Veriforce the preferred partner for companies that strive to ensure a safe, qualified third-party workforce, to stay ahead of risk, and achieve optimal business performance. Company offices are located in The Woodlands, TX, Covington, LA and Calgary, AB.



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