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SEVERE WEATHER

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SUBPART A - PURPOSE

The purpose of this policy and procedure is to provide a working guide to be used by management in making their decisions.

SUBPART B - RESPONSIBILITIES

Management

Management will use the information provided by the HS&E Department as well as weather alerts from NOAA and the local Emergency Management Officials to make their decisions as to what steps / preparations should be taken.

HS&E Department



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At the beginning of Hurricane Season, the HS&E department will send out a memo company wide reminding all personnel to review their personal evacuation plans as well as the company's plan.

In addition, the HS&E Department will keep abreast of the latest information on the storm / hurricane and pass this information along to management and supervisors as needed.

Supervisors

At the beginning of the Hurricane Season, all supervisors will review the company's Severe Weather Policy and Procedures with employees.

SUBPART C - HURRICANES AND TROPICAL STORMS

A hurricane is a severe tropical storm with winds exceeding 74 mph. Hurricanes originate in tropical waters north of the equator, and travel north, northwest, or northeast from their point of origin. Hurricanes bring heavy rain, high winds and tides, and sometimes tornadoes. The hurricane season runs from June through November, but the majority of hurricanes occur in August, September, and October.

The Weather Bureau broadcasts major types of weather alerts, including those described in the following table.

Alert Definition	Wind Velocity MPH	Advisories	
Tropical storm		Small Craft	Advises small craft to take precautions and not venture into open waters.
Gale Warning	39-54	Warning	Ditto
Whole Gale	55-73	Warning	Ditto
Whole Gale	74+	Hurricane Watch	Warns of a threat to designated coastal inland region.
		Hurricane Warning	Identifies a coastal area where winds of 74+ mph are expected to occur.



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The table below shows the hurricane alert phases and the actions to be taken at each phase:

Phase	Description	Actions to be Taken
1	A tropical depression, storm, or hurricane begins to form and is judged to have a potential for affecting operations.	Initiate preparations for shut-down of the affected area.
2	The hurricane is approaching operations and is judged to have the probability for affecting operations.	Evacuate non-essential personnel.
3	The hurricane is judged as certain to have an effect on operations.	Shut down operations and evacuate remaining personnel.

Note: See Gulf of Mexico Hurricane Tracking Chart Attachment for a guide as to when certain activities should take place.

SUBPART D - HURRICANE PREPARATIONS

When you hear a warning of a potential hurricane:

- Inventory your property.
- Check insurance coverages.
- Secure property and move computers and electrical equipment away from windows.
- Be sure motor vehicles are in good running condition and have at least threefourths of a tank of fuel. (It could be difficult to obtain fuel within 100 miles of your evacuation site or assembly point.)
- Drive carefully during an evacuation, since risk is increased due to high winds, rain, and traffic conditions.
- Be sure that emergency survival supplies are available, such as:
 - o Fire extinguishers.
 - o A portable AM/FM radio with extra batteries.
 - o A three-day supply of non-perishable food and water for each individual.
 - o Blankets.
 - o First aid supplies,
 - Water purification supplies.
 - Flashlights with extra batteries.



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During a Hurricane

Stay in touch with the movement of the hurricane through radio and television advisories, and

- Seek shelter do not travel during a hurricane.
- Warning: If the center ("eye") of the hurricane passes directly over your location, a lull in the wind occurs, this may last from five minutes to half an hour. Then the wind velocity will increase suddenly, perhaps with greater force from the opposite direction. Remain in the shelter.

After the hurricane has passed:

- Avoid low-hanging and downed electrical wires because the wires may still be energized.
- Follow the directions of local law enforcement agencies in traveling. Soil may be washed out beneath roads in coastal areas and the weight of a vehicle may cause collapse.
- Be aware of the increased potential for snakes and other wildlife in unexpected areas.
- Use only bottled water until the local authorities have determined if the local drinking water is safe to consume.

SUBPART E - TORNADOES

A tornado is a funnel-shaped cloud that spins rapidly and extends toward the ground from the base of a thundercloud. Tornadoes occur most frequently in the months of March and September in the Midwestern, Southern, and Central States. The table below describes the conditions under which tornado advisories are issued and the actions to take for your own safety.

Advisory	Weather Conditions	Actions to be Taken
Tornado Watch	Weather Conditions are judged as having the potential for forming a tornado.	



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		calling the Weather Bureau except to report a tornado).
	A tornado has been sighted or detected	Prepare to take immediate cover.
Warning	by radar.	

SUBPART F - TORNADO SHELTERS

Select a shelter in advance. The best tornado shelter is provided by a tornado cellar or underground excavation with an air outlet to equalize the air pressure. The shelter should be free from water, gas, debris, and equipped with a pick and shovel if possible.

Warning:

Be cautious when selecting a shelter. Flash flooding caused by

thunderstorms could make some locations dangerous.

SUBPART G - BEFORE A TORNADO

Seek a tornado shelter. If a tornado shelter is not close, seek an inside shelter in a strongly reinforced building, if possible. *Note:* The southwest corner of a basement usually provides the best protection. In a building without a basement, stand against the inside wall of a lower floor and, if possible, take cover under heavy furniture.

Avoid auditoriums, gymnasiums, or other structures with large, poorly supported roof structures. If you are in an open area, move at right angles to the path of the tornado to avoid it if possible. Tornadoes travel at about 25 to 40 mph. If there is no time to escape, lie flat in a depression, ditch, or ravine.

SUBPART H - DURING A TORNADO

- Remain calm.
- Do not leave your shelter to go out during the storm.
- Stay away from windows.
- Lie face down, draw your knees up under your body, and cover the back of your head with your hands. This position helps prevent head injuries, the most common cause of death during tornadoes.



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SUBPART I - THUNDERSTORM PRECAUTIONS

To avoid being struck by lightning, stay indoors and away from electrical appliances and telephones during the thunderstorm that accompanies the tornado. If you are outdoors, avoid elevated and metal structures. Louder or more frequent thunder and lightning activity, means the risk for lightning injury or death is increasing. Lightning can strike within a 10 mile radius even if no rain, sun shining, etc. (some report up to 15 miles) High winds, rainfall, and cloud cover often act as precursors to actual cloud-to-ground strikes but not necessarily

For visible lightning strikes in or near developing thunderstorms, use the 30-30 rule. Counting from the time of the flash of lighting, if the sound of thunder is within 30 seconds take appropriate cover/safety until the storm has passed; or 30 minutes from the last visible lightning strike.

Be prepared for possible flash flooding, very strong winds, and hail from the thunderstorms that accompany most tornadoes.

NOTE: See attached Weather Safety Procedures for more information.

SUBPART J - EARTHQUAKES

Earthquake Hazards

Most casualties from an earthquake do not result from the actual movement of the ground, but rather from objects and debris falling from buildings, bridges, and other structures that are shaken, damaged, or demolished by the shock of the earthquake. Landslides, ocean waves, or seismic sea waves triggered by earthquakes can also cause damage.

Before an Earthquake

Prepare for an earthquake as follows:



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- Potential hazards: Periodically check all offices, storage areas, production areas, and other work locations for earthquake hazards:
 - Mount all pictures, mirrors, etc. securely on walls so that they would not fall during an earthquake.
 - Secure gas lines and gas appliances to prevent leaks, and keep a shut-off tool close to the source valve.
 - Secure top-heavy equipment, file cabinets, and bookshelves, and other heavy items that might tip over during an earthquake.
 - Evacuation: Be familiar with alternate routes of evacuation from the various parts of the building.
 - Have a prearranged plan for communication. *Note:* Local phone networks may be overloaded or inoperative.
 - *Emergency supplies:* In areas where personnel may not be able to leave the building or area, it is **suggested** that the following emergency survival supplies be maintained:
 - o fire extinguishers
 - o a portable AM/FM radio with extra batteries:
 - o a radio for communication purposes;
 - o a three-day supply of non-perishable food and water for each individual;
 - o blankets:
 - o first aid supplies;
 - o water purification supplies; and
 - o Intrinsically safe flashlights with extra batteries.

<u>SUBPART K - DURING AN EARTHQUAKE</u>

Remain calm and assure others. By doing so, you can help avoid actions that are not well thought out or that may incur unnecessary risk.

If you are outside, move to an open area to avoid the danger of falling trees, power lines, poles, walls, etc.



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If you are inside, crouch under a solid object such as a desk or table, and cover your head with arms and hands. If no solid object is near, stand in a doorway or against an interior wall.

Do **not** stand near windows, exterior walls, or objects such as light fixtures, bookcases, etc.

Do **not** run outside where falling objects may present a hazard.

Do **not** use the elevator, which might be damaged.

If driving, stop the vehicle. *Warning:* Do **not** stop on or under any overpass or elevated roadway, because of the possibility of a structural collapse.

SUBPART L - AFTER AN EARTHQUAKE

Make your area as safe as possible by taking the following actions:

- Check for injuries among other personnel. Administer first aid as needed.
- Check the building for damage, such as fire, gas leaks, damaged electrical wires, etc.
- Shut off utilities, if required.
- Clean up hazardous materials and dangerous spills.
- Evacuate the building when directed to do so, and do not reenter it until a safety inspection is performed.
- Move to a clear area away from falling objects.
- Conserve water.
- Contact the emergency response agency when appropriate.
- Do not restore gas or electric service until authorized personnel have checked the facility.
- Do **not** use the elevators until they have been inspected and approved.
- Use only bottled water until the local authorities have determined if the local drinking water is safe to consume.

Be prepared for additional earthquake shocks, called "aftershocks". Most of them are smaller than the main shock, but some may be large enough to cause additional damage, especially to buildings already weakened by the main quake.



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SUBPART M - COLD ENVIRONMENTS

General Precautions

Wear appropriate clothing to prevent exposure that can cause frostbite and hypothermia.

Protect clothing from wetness, both externally (from rain, water, or wet snow) and internally (from perspiration). Wet clothing does not provide adequate insulation and causes body heat to be lost at extremely high rates.

Protect yourself from intense light reflection from ice, snow, and water. Light reflection can cause snow blindness and sunburn. Wear sunshades and protective screens.

Protect yourself from wind, which can cause severe burns.

Note: For more information on the symptoms and treatment of frostbite and

hypothermia, refer to the First Aid section.

<u>SUBPART N - HOT ENVIRONMENTS</u>

General Requirements

When employees are working in hot / humid environments, potable water will be provided and where it is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity throughout the shift.

If an employee is suffering or is believed to be suffering from heat illness, an area with shade that is either open to the air or with ventilation for cooling will be provided and will be permitted at all times. The employee will be put on a less strenuous work regiment.

Generally when working in hot / humid environments, all precautions will be taken so that the employees will be protected. They will be allowed to take more water breaks. Environmental factors will be closely monitored. The most



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common factors are: air temperature, heat index, humidity, radiant heat sources, and air circulation. If possible and cleared by the client, the working hours could be re-arranged so that employees are not exposed to the hottest part of the day.

Physical factors will also be taken into consideration before performing a task that could lead to heat related illnesses. These factors include the type of work, level of physical activity, the duration of the job, and the clothing that the employees are wearing.

In addition, supervisors are to take into consideration personal factors such as the age of the employee, weight/fitness, and drug/alcohol use prior to assigning the task to employees.

Training

Supervisors will be trained in preventing heat related illnesses prior to supervising a crew working in the heat. In addition, supervisors will receive emergency response training in the event of heat related illnesses.

Revision Date:11-18-14,_4/18/2017
Approved By: Safety Committee 07-23-08

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WEATHER SAFETY PROCEDURES

If any-one or a combination of the following conditions exists, operations must be halted.

- **RAIN** Rain falling at such an intensity that visibility is reduced to an unsafe level (signalman or rigger is not visible by the operator) operations are to be shut down until such time conditions improve.
- **WIND** Wind in excess of thirty-five knots operations should be shut down until safer conditions prevail.
- **FOG** If visibility is reduced to an unsafe level due to fog (load, signalman, or rigger is not visible by the operator) operations are to be suspended until conditions improve.
- **TORNADO** If a tornado watch has been issued for the area, prepare to halt crane operations. If a tornado warning has been issued, cease operations, lay the boom down and secure all loose items and seek shelter.
- **LIGHTNING** Thunder or lightning occurring within 3 miles of the work site, operations should be shut down.

BBGCI will use the 30/30 Rule. The 30/30 Rule states that people should seek shelter if the "Flash-To-Bang" delay (length of time in seconds between a lightning flash and its subsequent thunder), is 30 seconds or less, and that they remain under cover until 30 minutes after the final clap of thunder.

A 30 second lead time is necessary prior to a storm's arrival because of the possibility of distant strikes. A 30 minute wait after the last thunder is heard is necessary because the trailing storm clouds still carry a lingering charge. This charge can and does occasionally produce lightning on the back edge of a storm, several minutes after the rain has ended.

30% of all lightning strikes occur on the leading edge of a thunderstorm, 10% occur during the thunderstorm, and 60% of all lightning strikes occur on the back edge of a thunderstorm. Thus the reasoning for the 30 minute wait after the last thunder is heard.



LIGHTNING FACTS

- All thunderstorms produce lightning and are dangerous.
- Lightning bolts can travel 20 miles before striking the ground.
- Most lightning deaths occur when people are caught outdoors.
- Lightning often strikes as far as 10 miles away from any rainfall.
- High winds, rainfall, and a darkening cloud cover are the warning signs for possible cloud-to-ground lightningstrikes.

THUNDERSTORM FACTS

- Thunderstorms can produce five basic kinds of severe weather hazards: tornadoes, strong straight-line winds, lightning, flash flood producing rains, and large damaging hail.
- The National Weather Service issues Severe Thunderstorm Warnings for two types of weather events: when they are highly imminent, or they are already occurring.
- Severe Thunderstorm Watch: Severe Thunderstorms are possible in your area.
- **Severe Thunderstorm Warning:** Severe thunderstorms are occurring.
- Severe Thunderstorm Warnings are classified as **possibly** having hail stones ³/₄ inch or more in diameter, and/or straight-line wind gusts of 58 mph or higher (or implied by tree/structural damage.)