

**TROPICAL STORM AND HURRICANE PREPAREDNESS PROCEDURES
PORT OF HOUSTON AUTHORITY
BARBOURS CUT TERMINAL**

Hurricane season on the Gulf Coast extends each year from June 1 through November 30.

Every year, prior to the onset of Hurricane season, BCT Managers and critical staff will meet to review the Terminal Hurricane Procedures, and amendments will be made as necessary. Maintenance will perform an inventory of emergency supplies and purchase anything we don't have on hand or that needs to be replaced. Outside maintenance will be responsible for checking the facility to make sure all portable buildings are properly secured. All terminal users and outside warehouses will be notified in writing to be sure that extra care be taken in their usual housekeeping and securing of their facilities.

When the U.S. Weather Service predicts a tropical storm or a hurricane to affect the Houston/Galveston area, a strategy meeting will be called for all Managers and critical staff to discuss specific plans. A person from each department will be assigned to coordinate preparations for their area. Employees with questions about attendance during a storm period should be referred to their managers.

The terminal will continue to receive and deliver cargo as long as it is safe to do so, but if a storm is imminent the following should be used as a guideline. Remember, this time line is only a guide, and it could be moved forwards or backwards depending on the severity and the expected arrival of the storm.

It should be noted that PHA retains the right to decide when to shut down vessel operations and put its equipment into storm position.

There are several web sites that can provide us with up to the minute weather information. Here are two that we can log onto: www.weather.com (The Weather Channel), and www.khou.com (Channel 2 in Houston). Local television newscasts and news radio also provide extensive coverage of any storm that may threaten our area (TV channels 2, 11, 13, and 26; radio station 740 AM).

A HURRICANE WATCH IS IN EFFECT. THE STORM IS 72 HOURS FROM HOUSTON.

- 1) Begin coordinated team communication with Port, WGMA, USCG, Pilots, Trucking Companies, and Terminal Users.**
- 2) Verify again emergency equipment inventory and supplies to ensure adequate quantities of rope, plywood, masking tape, flashlights, batteries, cables, turnbuckles, etc. required for lashing down cranes, heavy equipment, and loose items that must remain outside, and boarding up and taping of windows.**
- 3) All warehouse users and the outlying empty yards will be notified to begin securing their areas.**
- 4) Call all vendors to remove or pump out Port of Potties, waste bladders, waste oil, non hazardous waste, grease traps, trash and dunnage, and scrap metal.**
- 5) Critical files on computers should be backed up onto diskette and stored in a safe place.**
- 6) Any loose gear not in use on the terminal should be moved inside or secured.**
- 7) Empty yards on the terminal will be told to check to make sure all container doors are closed and secured.**
- 8) A small amount of canned goods, drinking water, and canned drinks should be purchased and stored in case people get stranded on the facility during or after the hurricane. These will be stored at the fire barracks.**
- 9) A safe location should be designated as the storm center.**
- 10) Each department will inspect their areas of responsibility for compliance.**
- 11) Return any equipment rented by PHA that is not being used. ***
- 12) Outside maintenance should pump down all lift stations. ***

THE STORM IS 48 HOURS FROM HOUSTON

- 1) Continue coordinated team communication.**
- 2) Move non-essential equipment to a safe location. Service the equipment with fuel, lubricants, etc., in order that it can be used after the storm.**

- 3) Make ready all portable generators, air compressors, and portable radios.**
- 4) Fill mobile fueling rigs and keep them topped off.**
- 5) Lash down non-essential gear and equipment that must remain outside, recheck lashing portable buildings.**
- 6) Any daily use materials that carry a warning label (solvents, cleaning agents, paint, pesticides, etc.) should be put into their lockers and secured.**
- 7) Begin to stack loaded containers into safe positions on the pad. Begin to stack down the empty containers.**
- 8) Each department will inspect their areas of responsibility for compliance.**

STORM IS 24 HOURS FROM HOUSTON

- 1) Continue coordinated team communication.**
- 2) Move desks, files, office equipment, and furniture away from uncovered windows. Put all papers in file cabinets or drawers along with telephones.**
- 3) Computers, copiers, and fax machines should be moved to a safe location. Make sure they are marked with names and departments to hasten redistribution after the storm.**
- 4) Continue to secure terminal equipment. Wharf cranes and yard cranes should be put into their tie downs unless they are in use. Terminal crane operators should be used to move the yard cranes into position over the tie downs. Management will determine when or where to tie down on a crane-by-crane basis throughout the day.**
- 5) Fill extra drums with fuel, lubricants, water, hydraulic fluids, etc. and stow in a safe location for use after the storm.**
- 6) Service all vehicles with fuel, etc.**
- 7) Board up or tape all windows.**
- 8) Each department will inspect their areas of responsibility for compliance.**

STORM IS WITHIN 12 HOURS OF HOUSTON

- 1) Continue coordinated team communication.**
- 2) Secure all electrical power sources not required for minimum operation. Electrical equipment should be turned off and unplugged; lights should be turned off except for areas that might be manned.**
- 3) All equipment should now be secured in a safe location; all cranes should be in their tie downs.**
- 4) All stacking down of containers left on the terminal should be complete.**
- 5) Each department will inspect their areas of responsibility for compliance.**
- 6) All other hurricane preparations should be completed. Excuse all non-essential personnel.**

STORM IS WITHIN 6 HOURS OF HOUSTON

- 1) Continue coordinated team communication.**
- 2) Storm coordinators should make their last check of the facility to ensure that nothing has been missed. Any last minute preparations should be completed. Port Police vehicles should be parked under the cover in the covered lanes.**
- 3) Prepare to ride out the storm. If you are required to be on premises you should remain indoors. Be sure you have emergency supplies (radio, flashlight, batteries, etc.). Monitor the weather information.**

POST STORM OPERATIONS

- 1) Re-staff entrances to keep out vandals and sightseers.**
- 2) Survey for damage or injured personnel. Assist any injured as necessary.**
- 3) Assess damage of terminal property, provide to the Terminal Manager a written report accompanied by photographs when possible.**
- 4) Prioritize cleanup and repairs:**
 - A. Remedy dangerous or hazardous conditions**
 - B. Remove debris**
 - C. Temporary repairs**

D. Permanent repairs

5) Advise Communication Team of port status and plans after the storm.

SECURING EQUIPMENT AND MACHINERY

WHARF CRANES

All cranes should be boomed up and the legs pinned into position on the dock, and put into the tie downs. The spreader bars should be lowered all the way down with the full weight of the bar on the dock. All baloney cables should be tied off so they won't get blown from the basket.

YARD CRANES

We have 83 tie-downs for yard cranes on the terminal. If time permits, RTGs 101-112 should be secured with tie-downs located in container yard 1 on container pads 1C, 1D, 1F, 1G, 1H, and 1I. RTGs 401 -408, 421 – 428. and 429 – 442 should be secured with tie-downs located in container yard 2, container yard 3, container yard 4, and container yard 5. RTGs 409 -420 should be secured with tie-downs located in container yard 7. All RTGs should follow the operational manual “High Wind Securing” procedure from Konecranes. First, the gantry mode (wheel position) should be in the “Park” position. Second, lower the spreader onto a container weighing 20 tons or greater and engage the twistlocks. Third, the hoist ropes must be tensioned so that they are tight but not supporting the full load of the container. Lastly, the operator may exit the cab to the trolley via the access ladder at the cab or if possible, the container should be lifted and relocated to the truck lane (park position) and secured to the load via step three. Each crane should be shut down and topped off with fuel.

Tie-Down Locations:

- Total Tie-Downs: 83
- RTGs 101-112: Secure in Container Yard 1.
- RTGs 401-408, 421-428, & 429-442: Secure in Container Yards 2, 3, 4, and 5.
- RTGs 409-420: Secure in Container Yard 7.

Steps for Securing RTGs:

1. Refer to Operational Manual: Follow the “High Wind Securing” procedure outlined in the Konecranes manual.
2. Gantry Mode Positioning:
 - Set the wheel position to “Park” mode.
3. Spreader and Container Positioning:
 - Lower the spreader onto a container weighing 20 tons or greater.
 - Engage the twistlocks to secure the spreader to the container.
4. Hoist Rope Tensioning:
 - Tension the hoist ropes until they are tight but not bearing the full weight of the container.
5. Operator Exit:
 - The operator should exit the cab to the trolley using the access ladder.
 - Alternatively, if possible, the container should be lifted and relocated to the truck lane (park position) and secured as described in step 4.
6. Shutdown and Fueling:
 - Shut down each crane.
 - Top off the fuel in each crane.

Additional Notes:

- Ensure all steps are executed promptly and safely.
- If time permits, prioritize securing RTGs 101-112 first due to their specific tie-down locations.
- Maintain clear communication with all crane operators and ground personnel throughout the procedure.

~~We have 19 tie downs for yard cranes on the terminal. If time permits, 19 of the 20 (5 over 1) yard cranes (401-419) should be secured with tie downs located in C-4 and C-7. The remaining 22 (4 over 1) and 1 (5 over 1) yard cranes (AA-JJ, 101-112 and 420) should be secured according to the “High Wind Securing” procedure by Kone cranes. First, the gantry mode (wheel position) should be in the “Park” position. Second, lower the spreader onto a container weighing 20 tons or more and engage the twist locks. Third, the hoist ropes must be tensioned so that they are tight but not supporting the full load of the container. Lastly, the operator may exit the cab to the trolley via the access ladder at the cab or if possible, the container should be picked up and relocated to the truck lane (park position) and secured to the load via step three. Each crane should be topped off with fuel.~~

TOP LOADERS AND PENCILS

The maintenance manager shall decide a safe area for storage of this equipment during a hurricane. The spreader bar should be locked into a loaded container on the ground with the full weight of the bar on the container. Each piece of equipment should be topped off with fuel and the brake set.

TRUCKS AND BASKETS

The maintenance manager shall decide a safe area for the storage of this equipment. Trucks should be topped off with fuel and the brakes set.

OTHER GEAR

Any loose equipment or loose gear should be moved indoors or secured to remain outside. All drums of oil, hydraulic fluid, solvents, or other liquid stored in drums should be moved to a safe location to prevent leakage or spillage.

Edited by Fabian on May 22, 2024

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