

## PRE-WINDSTORM PLANNING

The key to minimizing damage is adequate preparation before a windstorm arrives.

If your site is subject to windstorms, the following should be completed prior to the storm. Develop a comprehensive written windstorm emergency plan to mitigate the exposures. The plan should include:

- Assigning emergency organization roles and responsibilities.
- Providing training at least annually.
- Assembling emergency supplies and equipment in a safe location, such as plastic tarps, mops, squeegees, emergency lighting, battery operated radio, tape for windows, lumber and nails, etc.
- Planning for salvage and recovery, including maintaining a list of key vendors, contractors, and salvage services.
- A business continuity plan for restoring operations after the event.
- The plan should be reviewed at least annually and updated as needed.
- Designate a person to monitor the status and location of the windstorm, keeping management and maintenance personnel updated as needed. Allow sufficient time needed to implement the emergency procedures.
- Inspect and repair the roof for problems with: Loose roof covering; loose flashing, edging strips and accessories; blocked or loose drains, gutters or downspouts.
- Inadequately secured equipment, signs, stacks, roof ventilators, etc.
- Anchor large equipment, such as cranes and draglines, in accordance with manufacturer's guidelines.
- Relocate loose outdoor equipment, machinery, stock and other debris indoors or fasten securely.
- Outdoor structures, such as trailers, should be properly anchored. Secure storage of flammable liquid containers or move them to a sheltered area (but never into main facility areas).
- Identify and consider removing any large trees or limbs that could fall and damage buildings, outdoor equipment, power lines, etc.
- Protect exterior windows and doors as follows: Attach pre-fitted windstorm shutters and/or plywood.; inspect doors and windows for weak latches and hardware - make repairs as needed; install steel bars in pre-installed metal brackets on the inside of exterior roll-up doors.
- Fill fuel tanks of generators, fire pumps, company-owned vehicles, etc.
- Fill aboveground tanks to capacity with product or water to prevent wind damage.
- Clean out debris from storm drains and catch basins.
- Protect computers, stock and key machinery and equipment subject to water damage with plastic tarps or waterproof covers. Backup all important computer data and store in a safe location.
- Consider moving valuable and/or critical stock and materials from the site to a safe location.
- Isolate, neutralize or remove from the site any chemicals that can react violently with each other.
- Prepare for possible flooding if located in a flood prone area:
  1. Relocate important equipment, stock, and records to higher elevations not subject to flooding. For equipment and stock that cannot be relocated, be prepared to cover with plastic tarps or store on pallets.
  2. Install back-flow prevention devices in sewer and drain lines to prevent floodwater from backing up into buildings.
  3. Be prepared to place sandbags at vulnerable building openings and around critical outdoor equipment subject to flooding.

4. If there is eminent danger of flooding, shut off the building's electrical power. Note:
5. Power to electric motor-driven fire pumps should remain in service.
6. Be prepared to safely shut down operations if necessary: Shut off processes and equipment following established procedures; shut off all flammable and combustible liquid and gas lines at their source to prevent discharge from broken piping.
7. Enforce "No Smoking" and "No Cutting or Welding" rules. Protect or shut off other possible flame sources.

#### **DURING A WINDSTORM**

- Emergency response team personnel should remain at the facility if safe to do so and be prepared to respond.
- Continue to monitor weather reports for information on potential storm damage, access to property, utility outage, etc. Update management and maintenance accordingly.
- Patrol the property continuously and watch for roof leaks, pipe breakage, fire or structural damage.
- Constantly monitor any processes, equipment, boilers, furnaces, etc., that must remain on line during the windstorm.
- During power failure, turn off electrical switches to prevent reactivation before necessary checks are completed.

#### **AFTER A WINDSTORM**

- Secure the site to prevent unauthorized entry.
- Organize and prepare emergency crews for salvage and cleaning operations.
- If safe to do so, conduct an immediate damage assessment, paying particular attention to the following:
  1. Structural damage to the building.
  2. Roof coverings.
  3. Fire protection equipment, maintaining as much fire protection in service as possible by isolating damaged sections, then making repairs and restoring systems back to service as soon as possible. Notify ARC if any system will be impaired for more than 10 continuous hours.
  4. Utilities, including electricity, gas, water, compressed air, HVAC, steam, etc. (isolate as necessary).
  5. Production & process equipment.
  6. Areas subject to flooding, including basements.
  7. Notify utility companies of any outages or damage.
  8. Call in key personnel and notify contractors to begin major repairs. Make sure facility safety procedures are fully implemented before work commences. This includes controlling ignition sources such as smoking and hot work. Follow all hot work permit procedures.
  9. Initiate salvage operations to perform the following: Promptly cover any compromised exterior building elements, such as damaged roof coverings, doors, windows, etc., with plastic tarps to prevent water entry; relocate damaged stock and equipment to dry areas; clean and dry equipment, placing priority on critical high-valued equipment; inspect and repair electrical systems and equipment before re-energizing.
  10. Clear any debris from roof and yard drains, gutters, drain pipes, gutters, catch basins, etc.

11. Remove water and dehumidify damp areas.
12. Monitor air humidity levels over an extended period of time in areas with highly sensitive equipment.
13. Review the effectiveness of the windstorm emergency plan and revise as needed.