



## Organizational and Safety Solutions

### *Windstorm Preparedness Plan*

#### Background

When a windstorm crisis or catastrophe arises, it is too late to plan and implement an adequate response in the wake of the confusion, emotional distraction, and muddled coordination. The physical integrity of the property and the continuity of the operations depend upon the effectiveness of a sound pre-planned windstorm crisis management plan.

The two primary goals of a **Windstorm Preparedness Plan** are to protect lives, property, and other assets of the organization and to ensure a prompt and efficient transition from emergency operations back to normalcy. Failure to implement proper loss control practices can produce a direct, tangible loss that must be paid for with dollars that would otherwise be used for operations and investment.

When formulating a **Windstorm Preparedness Plan** for your facility, it is extremely important to understand the effects that a windstorm catastrophe could have on the property and continued operations. For instance, a hurricane can be foreseen by monitoring weather forecasts and allowing time for efficient implementation of precautionary actions. A less foreseeable, such as a tornado, requires more specialized planning involving the implementation of time related loss reduction controls and procedures designed to reduce loss severity. Properly planning for these crises by implementing pre-loss and post-loss objectives will help you reduce potential losses arising from natural catastrophes.

The **Windstorm Preparedness Plan Checklist** addresses two areas: pre-emergency actions (including various loss prevention and loss reduction measures), and post-emergency recovery actions.

The five basic steps associated with developing a formalized Windstorm Preparedness Plan include the following:

1. Obtain management or board of directors' support and prepare a written policy and program;
2. Establish responsibilities and authority to designated personnel;

3. Organize the plan to handle emergencies and inform employees;
4. Educate and train personnel;
5. Audit and update the plan periodically.

These basic steps are outlined and described in further detail within the attached checklist.

NOTE: There are several sources for additional information regarding specific wind resistant construction techniques and building materials including The Institute for Building and Home Safety ([www.ibhs.org](http://www.ibhs.org)), The National Association of Home Builders ([www.nahb.org](http://www.nahb.org)), FEMA ([www.fema.gov](http://www.fema.gov)), NOAA ([www.noaa.gov](http://www.noaa.gov)), and your local building inspection department.

Please contact your PMA Risk Control Consultant if you need assistance in setting up a Windstorm Preparedness Plan. Although the threat of these catastrophe hazards sometimes seems remote, it is always better to be prepared for emergencies before they happen. Don't wait to deal with a crisis. BE PREPARED.

**IMPORTANT NOTICE** - *The information and suggestions presented by PMA Companies in this risk control technical bulletin are for your consideration in your loss prevention efforts. They are not intended to be complete or definitive in identifying all hazards associated with your business, preventing workplace accidents, or complying with any safety related or other laws or regulations. You are encouraged to alter the information and suggestions to fit the specific hazards of your business and to have your legal counsel review all of your plans and company policies.*

## Windstorm Preparedness Checklist

### Facility Susceptibility Review

- ❑ Evaluate all structures (including buildings, storage areas, utility buildings, antennas, etc.) as to their condition and susceptibility to damage from high winds or from collapse due to ponding water or snow load. Consider modifications or additional reinforcements to any structure that would be highly susceptible to collapse or wind damage.
- ❑ Regularly inspect the grounds to assess the condition of trees and shrubs. Dead, dying, or diseased trees and dead wood (limbs, branches, or sections of tree) must be removed since these can cause significant damage or personal injury during high winds. Additionally, trees and shrubs should be trimmed so that they will not rub against the building. For large trees and expansive properties, it is strongly suggested that a tree maintenance program be implemented utilizing a certified tree expert and arborist.
- ❑ Survey the property to identify equipment, inventory, stock, furniture, decorations, etc., that are kept outside that would be susceptible to damage or being uplifted during high winds. Such items should be listed and actions established for pre-storm precautions.

### Pre-Storm Precautions

- ❑ Establish a Storm Emergency Team and an Action Plan. The Action Plan should include team member responsibilities before and during a storm, and clean up, salvage and restorative operations after a storm. The plan should also have a communication plan, provisions for emergency evacuation and/or shelter in place strategies and a list of resources that could be utilized in an emergency.
- ❑ Exercise and update plan on an annual basis. This would include table top or full drills conducted by the storm emergency team and a review of all resources listed in the plan.
- ❑ Develop a list of emergency phone numbers of contractors and appoint a designated person to monitor weather reports daily.
- ❑ Train employees on the plan.
- ❑ Maintain a storm kit for the emergency team. Kit may include food provisions, water, flashlights, battery powered radio, rain gear, list of emergency contacts etc.

### Buildings

- ❑ Check all building openings to make sure that windows and doors are weather-tight.
- ❑ Check windows for broken panes. Secure all loose window framing and shutters.
- ❑ Provide storm shutters or board up all windows and doors at first sign of advancing storm.

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- ❑ Before and during the storm, close all windows, doors, or other building openings and keep these openings closed and covered. An open door or window can allow wind to blow into the building, possibly increasing damage to the roof.
- ❑ Inspect roof coverings. All loose coverings should be nailed down or covered with sandbags (without blocking roof drains).
- ❑ Inspect ballasted (stone) roof coverings. Ensure that roof ballasts are uniformly dispersed. If scoured, the ballast should be redistributed or additional material provided.
- ❑ Inspect roof perimeter flashing. Nail down loose sections. Replace rusted nails or anchor bolts as needed.
- ❑ Brace unsupported structural members with struts, cables, or additional diagonal bracing, and laterally support all non-reinforced block walls on both sides at construction sites.
- ❑ Secure or remove work in-progress, temporary storage, temporary structures or trailers, and scaffolding.

### Stock, Inventory, Outside Furniture/Amenities, Storage or Equipment

- ❑ Review inside storage arrangements and relocate all susceptible materials to safe areas away from windows, doors and other openings. Place stock that is susceptible to water damage on skids or on other support structures so that it is off the floor.
- ❑ Remove outside furniture and building amenities (such as awnings, lamps, etc.) that would be susceptible to high winds relocating them to inside areas. Anchor yard storage or furniture that cannot be moved.
- ❑ Secure, remove, or otherwise protect fine arts and valuables inside, especially those items close to window openings.
- ❑ Secure hoisting or loading equipment such as cranes and bulk cargo loaders.
- ❑ Anchor, brace, or secure combustible/flammable liquid tanks.
- ❑ Relocate outside combustible/flammable/chemicals liquid drums or portable containers inside or to a properly sheltered area.
- ❑ Inspect storm drains to ensure they are open and flowing. Clear and maintain the area of debris that may clog the drain during the storm.

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### Utilities/Electronic Data Processing Equipment

- ❑ Institute an emergency repair program with utility contractors to restore the loss of electricity, gas, telephone services, water supply, or other necessary utility service.
- ❑ Anticipate worst-case scenarios and evaluate the need for systems providing emergency power.
- ❑ Ensure data processing software, files, records, etc., are properly backed up and transported offsite to a "safe" location.
- ❑ Shut off all gas supplies. Shut off all flammable and combustible liquid and gas lines at their source to prevent the discharge of such materials from piping broken by windblown debris. Support or protect exposed piping, if possible.
- ❑ Shut off electrical equipment in areas that might be flooded. If the entire facility is exposed, shut off building power at the main building disconnects.
- ❑ At locations where power loss is likely or expected, shut down (following normal shut down procedures) all electrical equipment where unexpected power loss will cause significant loss to products or equipment. For example, if the equipment requires electricity to keep materials from solidifying (specifically molten metals). Otherwise, ensure that there is a reliable alternative power supply for this highly damageable equipment or process.
- ❑ Establish a reserve fuel supply equal to the normal supply or provide a safe alternate fuel source for sufficient duration.
- ❑ Fill the fuel tanks for emergency generators or other back up power sources.

### Fire Protection Equipment/Domestic Water Lines/Plumbing

- ❑ Keep fire protection equipment operational. Install barriers around sprinkler risers and control valves to protect them from floating debris from possible floodwater.
- ❑ Inspect and repair all fire protection equipment. Activate all systems as soon as possible.

The following precautions are needed in the event of flooding caused by the windstorm:

- ❑ Lubricate sprinkler control valves and locks to reduce future rusting and ensure ease of operation.
- ❑ Label location of outside sprinkler control valves and hydrants for easy visibility. Routinely inspect valves.

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- ❑ Protect fire pump equipment or boilers in a flood prone area with sandbags or other diking material.
- ❑ Review location and condition of hand-operated domestic valves that prevent the backflow through plumbing fixtures or drain sewers. Install valving if necessary.
- ❑ Clear floor and yard drains. Monitor these drains during the storm to make sure they remain clear.
- ❑ If water is expected to enter the facility despite all physical barriers, apply a rust preventative compound to pumps, blowers, and compressors that can't be relocated.
- ❑ Develop an emergency contingency plan in case the surrounding area is impassable.
- ❑ Contact manufacturers and contractors of critical machinery to establish a contract for priority support with backups.

### Post-Storm Actions

- ❑ Immediately initiate salvage activities including returning fire protection systems to service looking for downed live power lines, leaking flammable liquid or gas transfer lines, and structures in danger of collapse. Separate damaged materials from undamaged materials; cover equipment and stock that is now exposed to weather; utilize the "Hot Work" Permit System when necessary, eliminate ignition sources as much as possible, and institute a fire watch until normal operation are resumed.
- ❑ Develop plans to secure facility against looters and trespassers.
- ❑ Provide updated communication to employees.

