

## Windstorm Planning Guide

In Minnesota, the damaging windstorm season normally runs from May through September. During this time, we are subject to both straight-line winds and the deadly tornado. As you know, both of these high-speed winds can cause severe property damage, bodily injury, and even death to site personnel. Consequently, a good Windstorm Planning Guide must consider practical actions that can be taken to mitigate both physical damage and injury potential from the windstorm.

Studies of severe windstorms show conclusively that windstorm-related damage can be prevented or, at least, minimized. The keys to success are planning and organized action before and after a storm. The following Planning Guide provides some practical action tips to implement at your facility.

### Pre-windstorm Planning

- Designate a Windstorm Emergency Coordinator (WEC) who is charged with the responsibilities of carrying out the action items of the Planning Guide.
- Develop a windstorm emergency action plan and educate appropriate personnel about its aims and procedures.
- The written windstorm action plan should include the following:
  - 1) Identification of a designated weather watcher who will monitor local weather conditions that have the potential of affecting the site.
  - 2) Provide authority to the WEC to warn employees of a potential storm and to coordinate the move of everyone at the site to predetermined safe areas in the buildings.
  - 3) Identify names and telephone numbers of contacts for local offices of emergency preparedness.
  - 4) Arrange backup communications such as two-way radios or cellular phones. Spare batteries should be available on site.
  - 5) Maintain ongoing agreements with contractors for supplies and repairs that may be needed after a windstorm. If possible, use contractors who are not in your immediate area, since local contractors may be over-committed, or local authorities' needs may be given priority.
  - 6) Regularly inspect and repair roof coverings and flashing. The most important single component of a roof system is its flashing since it acts as a weather seal along the perimeter of a roof, at the junction of a roof and wall, and at junctions of roof covering and structures such as skylights, and heating, ventilation, and air conditioning equipment. During installation, and periodically throughout the year, make sure that flashing is properly secured around the entire roof and at any auxiliary rooftop structures. When inspecting flashing, pull out on the lower edge. If it feels loose, re-secure it with appropriate weather-resistant fasteners driven through washers.

- 7) Clean all roof drains to assure full drainage.
- 8) Remove all loose debris from the roof.
- 9) Identify key equipment and stock that will need to be protected with tarpaulins or waterproof covers.
- 10) Identify and consider removal of any large trees that could fall and damage buildings, fire pump houses, or power and communication lines.
- 11) Have plans in place for site security after a windstorm.
- 12) Insert additional site-specific windstorm concerns.

## **Impending Windstorm**

For most windstorms, the local weather service gives an advance warning to those areas likely to lie in the path of the storm. The potential storm path can be monitored using TV, radio, and internet access to the National Weather Service.

The following actions are recommended:

- Monitor the path of windstorm to determine severity and estimated time of arrival at site.
- Initiate implementation of the Windstorm Emergency Action Plan.
- Anchor or relocate anything in the yard that could potentially blow away, or blow into and damage a facility, specifically:
  - ✧ remove all loose yard debris;
  - ✧ anchor or relocate all nonessential yard equipment to a safe indoor location;
  - ✧ secure yard storage of flammable liquid drums, or move them to a sheltered area; however, never move them into main facility areas;
  - ✧ anchor all portable buildings (e.g., trailers) to the ground; and,
  - ✧ make sure outdoor signs are properly braced.
- Clean out drains and catch basins.
- Cover computers, machinery, and stock with tarpaulins and waterproof covers.
- Turn off gas to minimize fire loss potential. Protect or shut off other flames.
- Shut down all non-critical and non-essential electrical equipment.
- Insert additional site-specific items.

## **After the Windstorm**

Quick action after a severe windstorm is critical in order to reduce the potential for further damage and loss. The following action items should be considered:

- Secure the site.
- Survey the damage.
- Survey for safety hazards such as live wires, leaking gas, flammable liquids, poisonous gasses, and damage to foundations or underground piping.
- Repair damage to the automatic sprinkler system and get sprinkler protection back in service as soon as possible.
- Call in key personnel and notify contractors to start repairs. Make sure safety systems are fully implemented before work is allowed to begin.
- Begin salvage as soon as possible to prevent further damage:
  - ✧ cover broken windows and torn roof coverings immediately; and,
  - ✧ separate damaged goods, but beware of accumulating too much combustible debris inside a building.
- Clean roof drains and remove debris from roof to prevent drainage problems.
- Visually check any open bus bars, conductors, and exposed insulators before reenergizing main electrical distribution systems.

Each site is unique and will have specific damage potential. These need to be identified and evaluated and made part of the Windstorm Planning Guide. Remember, this Planning Guide contains guidelines to be used when responding to a windstorm at your site.

It is your responsibility to develop a practical guide that will be helpful in mitigating physical damage and personal injury as a result of a windstorm. The State Risk Management office is available during regular business hours to discuss your specific site concerns and provide assistance. Visit the website at <http://mn.gov/risk>.