

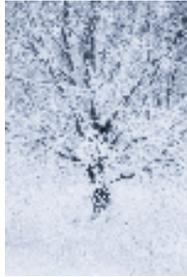


# TDCJ Risk Management's Training Circular

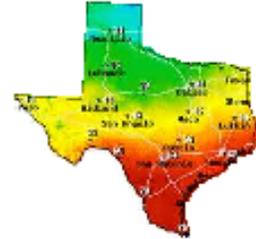
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Risk Management Issues

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# March Changing Texas Weather!



Severe weather affects everyone in the Lone Star State, with tornadoes, thunderstorms, lightning, snow storms, flooding, and even a hurricane. Especially in the spring, violent weather threatens countless adults, children, homes, schools, business, and your personal belongings.

You would think by now living in Texas, we would be prepared for severe weather and not wait until the last minute. But the truth is the majority of Texans are not prepared. Early preparation can save lives and property when disastrous weather occurs.

## Severe Weather Action Planning

**Blizzard** Winds of 35 miles per hour (mph) or more with snow and blowing snow re-



ducing visibility to less than 1/4 mile for 3 hours or more.

**Tornadoes** are one of nature's most destructive forces.

Each year, an average of 800 tornadoes is reported in the United States, and these result in as many as 80 deaths and more than 1,500 injuries. Tornado winds range from 40-72 mph in an F-1 tornado to 261-318 mph in an F-5 tornado.

**Lightning** is also a danger with severe thunderstorms. Lightning causes more than 100 deaths and hundreds of injuries annually in the United States.

Only about 10 percent of those struck by lightning are killed. Of the 90 percent who survive a lightning strike, the majority suffer lifelong severe



injury. Those injuries are primarily neurological, with a wide range of symptoms, and are difficult to diagnose.

The number of deaths and injuries resulting from lightning is higher than the number resulting from tornadoes and hurricanes combined. In fact, lightning is the number two storm-related killer, surpassed only by flooding. Lightning also causes about \$5 billion in U.S. economic losses annually.

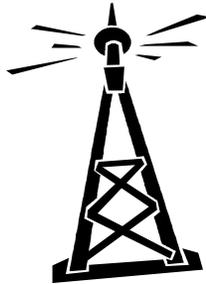
But the real tragedy of lightning's devastation is that protecting yourself is easy, although the simple safety precautions are sometimes inconvenient. It requires diligence and continual reinforcement and encouragement. Lightning safety is a multi-step process, with each step providing a decreasing level of protection – plan around the weather, and have a lightning safety plan.

**Flash floods** can strike any time and any place with little or no warning. In mountain-

ous or flat terrain, distant rain may be channeled into gullies and ravines, turning a quiet stream side campsite or wash into a rampaging torrent in minutes. City streets can become rivers in seconds.

### **Watches and Warnings**

If severe weather is anticipated in an area, the National Weather Service issues watches and warnings, which are relayed via the National Oceanic and Atmospheric Administration (NOAA) Weather Radio, commercial radio, and television. If there is a chance of severe weather in your area, be sure to have one of these on in the work area to monitor the situation. These definitions apply to the watches and warnings:



**Blizzard Warning** - Issued for winter storms with sustained or frequent winds of 35 mph or higher with considerable falling and/or blowing snow that frequently reduces visibility to 1/4 of a mile or less. These conditions are expected to prevail for a minimum of 3 hours.

**Winter Storm Watch** - means that severe winter conditions, such as heavy snow and/or ice, may affect your area, but

its occurrence, location and timing are still uncertain.

**Winter Storm Warning** - when 4 or more inches of snow or sleet is expected in the next 12 hours, or 6 or more inches in 24 hours, or 1/4 inch or more of ice accretion is expected.

**Winter Weather Advisories** - inform you that winter weather conditions are expected to cause significant inconveniences that may be hazardous. If caution is exercised, advisory situations should not become life-threatening.

**Tornado Watch** - tornadoes are possible in the area. Remain alert for approaching storms.

**Tornado Warning** - a tornado has been sighted or indicated by weather radar. If a tornado warning is issued for your area and the sky appears threatening, move to a predestinated place of safety.

**Severe Thunderstorm Watch** - severe thunderstorms are possible in the area.

**Severe Thunderstorm Warning** - severe thunderstorms are occurring in the area.

**Flash Flood Watch** - means it is possible that rains will cause flash flooding in the specified area. Be alert and prepared for a flood emergency.

**Flash Flood Warning** - means flash flooding is occurring or is imminent in the specified area. Move to safe ground immediately.

### **Employee Actions**

Avoid traveling when the weather service has issued advisories.

If a tornado warning is issued for your area, take the following actions.

#### **If in a small building:**

- Stay away from windows, doors, and outside walls.
- Do not open the windows (opening the windows does not protect buildings from tornado damage).
- Go to a basement, if one is available.
- If there is no basement, go to an interior room on the lowest floor such as a closet or bathroom.
- Cover yourself in blankets, towels, or anything that will protect you from flying debris.

#### **If in a school, hospital, factory, or shopping center:**

- Go to interior rooms and halls on the lowest floor.
- Stay away from areas enclosed with glass.
- Stay away from areas with wide-span roofs such as auditoriums, gymnasiums, cafeterias, and warehouses.
- Cover yourself in blankets, towels, or anything that will

protect you from flying debris.

***If in a building:***

- Go to an interior small room or hall.
- Stay **away** from exterior walls or areas enclosed in glass.

***If indoors:***

- Don't use the telephone except for emergencies, as lightning can travel through phone lines.
- Avoid using electrical appliances.
- Avoid contact with metal surfaces.

***If outdoors:***

- If possible, move inside a sturdy building or a hard-top automobile with the windows rolled up.
- Avoid getting under objects that act as lightning rods such as tall isolated trees, telephone poles, or large radio antennas.
- Seek shelter in low places such as ravines or under a thick growth of relatively small trees.
- Stay away from tractors, metal farm equipment, and small vehicles such as bicycles.
- Stay away from wire fences, metal pipes, and rails.

***30-30 Rule***

If you are planning to be outside, watch the weather forecast and know your local

weather patterns. Make plans around the weather to avoid the lightning hazard. If you are outside when a storm approaches, stay near proper shelter and use the '30-30 Rule' to know when to seek proper shelter.

When you see lightning, count the time until you hear thunder. If you count 30 seconds or less, seek proper shelter. If you can't see the lightning, wait 30 minutes or more after last hearing thunder before you leave shelter.

***Shelter from Lightning***

The best shelter commonly available against lightning is a large fully enclosed, substantially constructed building, e.g., your typical house. Substantially constructed means it has wiring and plumbing in the walls.

Once inside, stay away from any conducting path to the outside. Stay off the corded telephone. Stay away from electrical appliances, lighting, and electric sockets. Stay away from plumbing. Don't watch lightning from windows or doorways. Inner rooms are generally safer.

If you can't get to a house, a vehicle with a solid metal roof and metal sides is a reasonable second choice. As with a house, avoid contact with conducting paths going outside:

close the windows, lean away from the door, put your hands in your lap, and don't touch

the steering wheel, ignition, gear shifter, or radio. Convertibles, cars with fiberglass or plastic shells, and open framed vehicles don't count as lightning shelters.

***Places to Avoid***

If you can't get to proper lightning shelter, at least avoid the most dangerous locations and activities. Those are:

- Higher elevations
- Wide-open areas including sports fields
- Tall isolated objects like trees, poles, and light posts
- Water-related activities: boating, swimming (includes indoor pools), and fishing.
- Golfing
- Wide-open vehicles like farm tractors, open construction vehicles, riding lawnmowers, golf carts (even with roofs), etc.
- Unprotected open buildings like picnic pavilions, rain shelters, and bus stops.
- Metal fences and metal bleachers.



***Last Resort Safety Measures***

If you've made several bad decisions and are outside far away from proper shelter and

lightning threatens, proceed to the safest location. If lightning is imminent, it will sometimes give a very few seconds of warning.

Sometimes your hair will stand up on end, or your skin will tingle, or light metal objects will vibrate, or you'll hear a crackling sound. If this happens and you're in a group, spread out so there are several body lengths between each person. If one person is struck, the others may not be hit and can give first aid. Once you've spread out, use the lightning crouch: put your feet together, squat down, tuck your head, and cover your ears. Minimize ground contact. Don't lay down.

When the immediate threat of lightning has passed, continue heading to the safest spot possible. Remember, this is a desperate last resort. You are much safer having followed the previous steps and not put yourself into this high-risk situation. All deaths from lightning result from cardiac arrest or respiratory failure. The recommended first aid treatment for cardiac arrest is CPR and for respiratory failure mouth-to-mouth resuscitation.

If a severe thunderstorm watch or warning is issued be alert to changing conditions and listen for further information.

If a flash flood watch or warning is issued, be alert for changing conditions. Do not

drive through low water crossings. Observe these flash flood safety rules. They could save your life.

- Keep alert for signs of heavy rain (thunder and lightning), both where you are and upstream. Watch for rising water levels.
- Know where high ground is and get there quickly if you see or hear rapidly rising water.
- Be especially cautious at night. It's harder to recognize the danger then.
- Do not attempt to walk across or drive through flooded areas or roadways. You will not know the depth of the water.
- If your vehicle stalls, abandon it and seek higher ground immediately.

### **Severe Weather Plan**

When developing a severe weather plan, be sure to include:

- actions employees must take when severe weather occurs
- assembly locations for employees within the workplace
- procedures for accounting for employees once the severe weather threat has passed.

Each employer also should consider purchasing an emergency weather radio to keep up with changing weather conditions. Staff members who have access to the internet,

should regularly check the local weather conditions to ensure they make their plans according to the weather.

### **References:**

<http://www.weather.gov/safety>

<http://www.tdi.texas.gov/wc/safety/videoresources/index.html>



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