

Safety around power lines

Frequently asked questions about power lines on or near your property

The following safety guidelines apply to any power line, including the Xcel Energy transmission lines. If you see a power line that is down or broken, DO NOT touch it. STAY AWAY from it and call 911 immediately. There is no way to tell if a power line is energized just by looking at it. Always assume it is energized and carries currents strong enough to kill.

Machinery and vehicle guidelines

One of the most important rules to follow when working around power lines with tall equipment is simple: LOOK UP. Know where the power lines are and stay away from them.

Q. How can farm equipment and other machinery be safely operated near power lines?

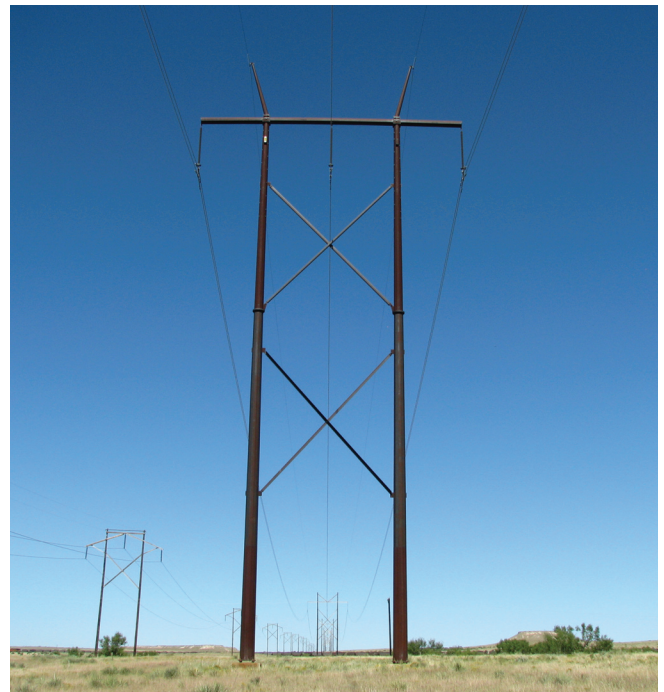
A. If you are considering operating a vehicle within a height greater than 14 feet, please contact your local electric utility. Call first even if it appears the line has clearance exceeding 14 feet.

And always remember:

- Physical contact with power line wires is extremely hazardous and can cause a lethal shock. Equipment **SHOULD NOT** be operated under a power line in a manner that causes contact or near-contact with the wires.
- DO NOT lift, elevate, build or pass under a power line any object, tool or vehicle that could make contact or near-contact with the wires.
- To help prevent arc flashing, or an electrical explosion, it is recommended that equipment, antennas and people stay at least 14 feet away from any energized power line.

Q. Can I put fuel in my machinery safely near a power line?

A. Fueling vehicles under transmission lines is not recommended. If you must fuel a vehicle under a transmission line, use a non-metallic or plastic container. The vehicle should also be grounded to eliminate any source of sparks.

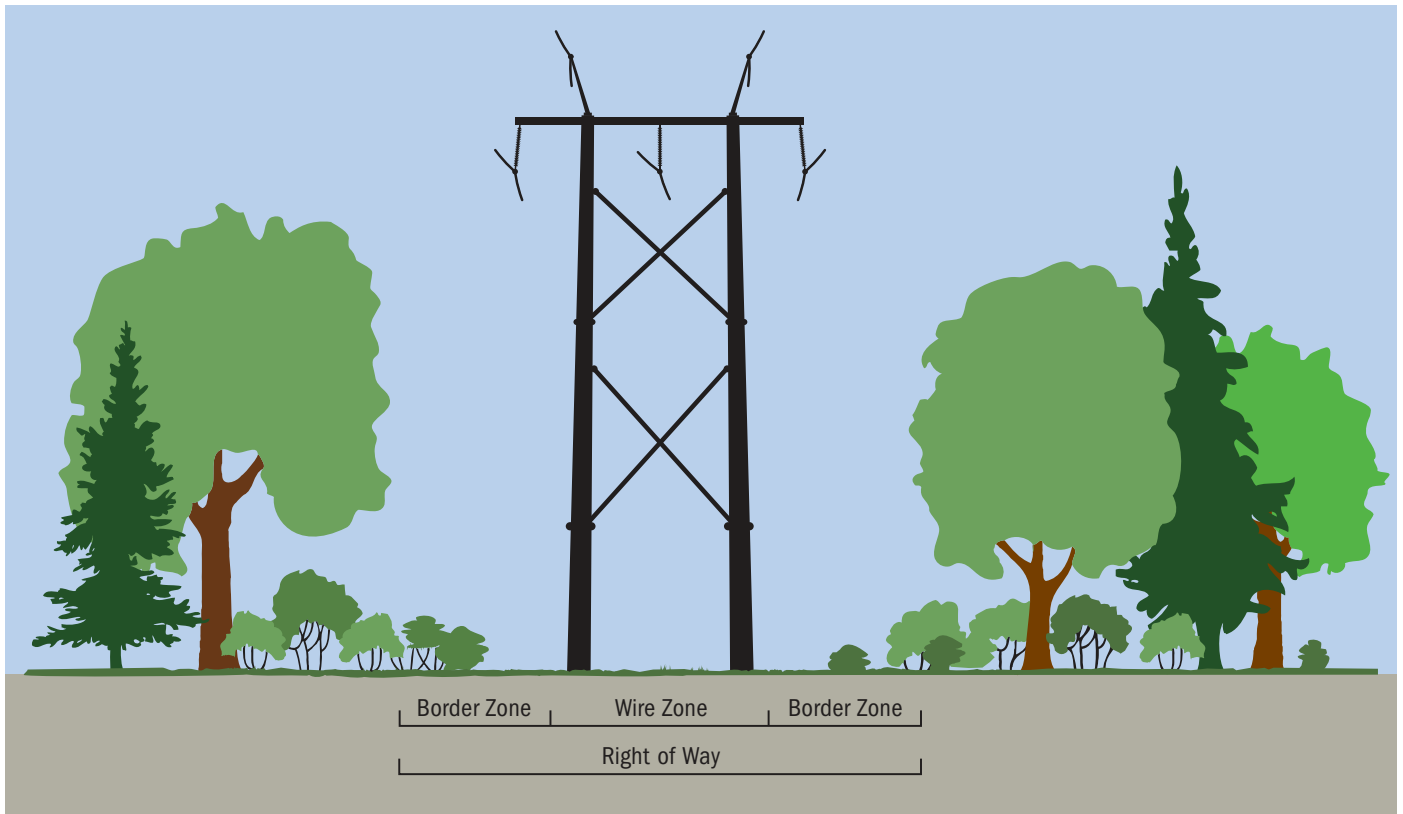


LOOK UP! Equipment that can be extended, such as a grain elevator or stack mower, requires the utmost care when within the easement right of way.

Building or planting guidelines

The North American Electric Reliability Corporation (NERC) requires electric utilities to meet stringent requirements designed to keep our electrical system safe and reliable, including standards for maintaining proper clearances. It is our responsibility to keep a certain amount of distance around power lines clear of anything that may make contact or near-contact with a power line. This includes buildings and incompatible vegetation.

You must call your utility provider before planting any trees, shrubs or building any structures in transmission line rights of way areas to help avoid problems in the future.



Do not plant non-compatible vegetation in the border zone or wire zone of a transmission right of way as they will likely require removal.

Q. Can I plant anything in the right of way area?

A. For your benefit, DO NOT plant any trees or shrubs in the right of way area before talking to your utility first. As a landowner, even with an easement granted, most property rights do remain with you, but a utility doesn't want to be forced to remove your new tree. Activities in the easement area that do not interfere with the safe construction, operation and maintenance of the line are permitted, i.e. using the land for pastureland, farming or gardening.

Q. Can I construct a building or other structure beneath a power line?

A. Not without prior written approval from the electric utility. Buildings and other structures are generally not permitted on rights of way. It is important that you discuss projects with the utility in order to avoid creating situations that could become unsafe to the landowner and/or utility workers.

Right of way (ROW) is the area where the transmission facilities are placed. It is generally clear of tall vegetation and buildings. Certain rights are acquired by the utility in an easement, but the landowner remains the owner of the property.

Fence Guidelines

Fence wires mounted on wood posts can build up an electrical charge near power lines. Important factors are:

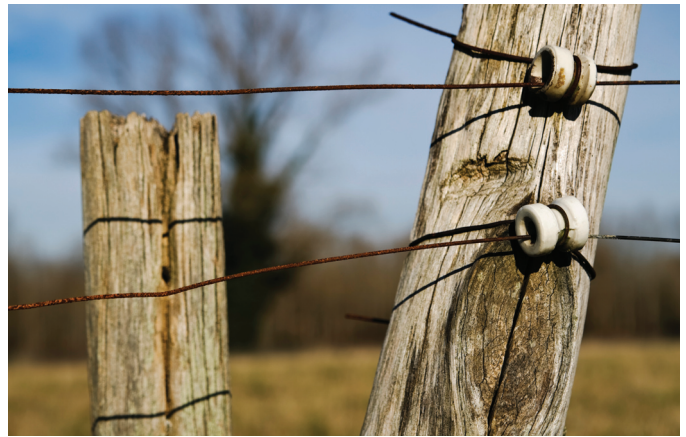
- Length of fence paralleling the line
- Distance between the line and the fence
- Amount of moisture in the fence posts and the ground
- Presence of grounding devices such as metal fence posts or weeds growing next to the fence

Q. What do I need to know about non-electric fences?

A. Non-electric fences made of barbed wire or similar material directly attached to steel posts are adequately grounded and will not collect an electric charge. If you are planning to install a wire fence parallel to and near a power line, use at least one steel post every 150 to 200 feet to ground the fence.

Q. Can electric fences build up an electrical charge?

A. Electric fences, being specially insulated from the ground, can pick up a charge from transmission lines. Usually, the charge will drain off when the charger unit is connected to the fence; however, when the charger is disconnected either for maintenance or when the fence is being built, a small shock may be produced. Contact Xcel Energy for assistance.



Electric fences are specially insulated from the ground and can pick up an induced charge from transmission lines.

Typically such a shock can be prevented by:

- Shorting out one or more of the fence insulators to the ground with a wire when the charger is disconnected, or
- Installing an electric filter which will ground charges induced from a power line while still allowing the charger to be effective. Again, contact Xcel Energy for assistance if you have questions; every situation is unique.

Irrigation and watering guidelines

The potential for water and metal to conduct electricity makes it important to take safety precautions when irrigating near power lines. Additionally, fertilizers and pesticides tend to increase the conductivity of water, making extra precautions necessary. Watering the lawn at your home or business is not problematic; however, you still must prevent a direct, solid stream of water from contacting a transmission line.



You should never allow a solid stream of water to hit a transmission line wire. Be sure to note the guidelines in this section.

Q. Can I irrigate near transmission lines?

A. Yes, as long as you take these precautions:

- **Prevent a solid stream of water from hitting the wires.** Equipment with nozzles that are small in diameter or spray a fine mist is typically not problematic because the solid part of the water stream will not reach the power line wires. Also, an intermittent spray of water will not conduct

significant amounts of electricity. Even large diameter nozzles operating at their normal spray angle typically will not reach the wires with a solid stream. However, at no time should the solid part of a water stream touch power line wires. Should that happen, turn the water off by switching the pump off before trying to correct the problem.

- **Make sure the irrigation system is well grounded.** If you have questions as to whether or not your irrigation system is adequately grounded, contact your local electric utility.
- **Check with utility before installing a new irrigation system.** Each system should be reviewed on a case-by-case basis; questions about the installation and operation of an irrigation system adjacent to or under a power line should be directed to your electric utility.
- **DO NOT install long lengths of pipe parallel and adjacent to transmission lines.** They should be laid out at right angles to power lines, if possible, to reduce risk of the pipes building up an induced charge.
- **Be careful when moving the pipes.** When unloading irrigation pipes, stay at least 50 feet from power lines to avoid any chance of raising them too close to the wires.

Recreation Guidelines

Q. Can I play with a kite or a model plane near a power line?

A. No. Here are some rules to follow:

- Do not fly kites or model planes near any power line.
- Always fly kites and model planes so the wind carries them away from power lines, and television or radio antennas.
- Call your electric utility if a kite or plane becomes snagged in a power line. DO NOT pull the string or climb a tower, pole or ladder to get it down.
- If a plane is caught in the line, let go of the control line immediately and call your electric utility for assistance.

DO NOT attempt to retrieve it yourself.

Q. Can I hunt in areas where there is a power line?

A. Hunting is allowed on land where there is a power line, if you are the land owner. Intentionally shooting at power lines is illegal. Shooting insulators or conductors can break a wire or cause hazards such as an electrical discharge or arc through the air.

Q. Can I build a bonfire, burn leaves or build another type of fire under a power line?

A. No. Fires should not be started under a power line. Smoke and hot gases from fires can create a conductive path for electricity.

- A fire could damage the poles or wires and result in an outage.
- It is possible that the power line could flash to the ground through hot air and smoke, which is a serious safety hazard.



When the weather is nice, we want to get outside. You can enjoy many recreational activities near power lines but some activities require caution. Be careful when flying kites, hunting or building fires near power lines. Additionally, never climb towers, fences, or any other structure near a power line or an electrical substation.



Safe construction and maintenance practices

Q. How do I know the lines are safe?

A. Transmission lines are built and maintained to meet or exceed safety standards, such as those specified by the National Electrical Safety Code and the North American Electric Reliability Corporation. Every effort is made to ensure safety in construction, operation and maintenance of transmission lines. For information on safe distances for specific activities near the power line, contact the utility operating the line directly. Transmission lines and line infrastructure are designed to withstand extreme weather conditions. Protective devices at line terminals stop the electricity flow under abnormal operating circumstances.

Q. How do you monitor the safety of the line?

A. Xcel Energy follows strict transmission line maintenance standards. We regularly inspect lines by ground (usually during fall or winter months) and by air to look for:

- Non-compatible vegetation within the right of way
- Equipment needing repair or replacement
- Right-of-way encroachments, which can be hazardous to safety and reliable operation
- Anything that might jeopardize safe, reliable operation of the line

Utilities must visit the right of way for these inspections but visits will be minimal and landowners will be contacted prior to inspections or maintenance. However, in cases of emergency, advance contact may not be possible.