Farming Around Power Lines



WHAT'S AT STAKE?

Farms will sometimes have power lines on poles or towers crossing farmyards and fields. Most of the time, there are distribution lines supplying electricity to the farm house and site. In some cases, there are also buried power lines on the farm. Become familiar with the power lines on farms.

Farm equipment like augers, hoisted truck boxes and large cultivators in transport position are a few examples of farm equipment that could come into contact with power lines if you are not careful.

WHAT'S THE DANGER?

IRRIGATED LANDS

There are three main dangers to consider when working around transmission facilities on irrigated lands: direct contact, spraying and induction.

Direct Contact

If you must handle irrigation equipment close to a transmission tower or line, take caution to never come near or touch the transmission facilities. In many irrigation systems, especially older ones, aluminum pipes are used and they are particularly conductive. If any kind of pipe or hose contacts a tower or line, it will create a path to the ground and you could be seriously injured.

Spraying

Electricity will flow through many materials to make a path to the ground, including water. If you enter this path to the ground you could seriously harm yourself and any equipment you're using.

When using an irrigation system on your land, make sure to never get too close or make direct contact to the power line with the water stream under any circumstance. Using a flapper to break up the spray helps to not create a current.

Induction

In rare circumstances induction can occur where a piece of irrigation equipment you're using can be electrically charged by a tower or line next to it. Ensuring your irrigation system does not run parallel to the transmission line will help to reduce the potential for induction. Please exercise caution when using any kind of equipment near transmission facilities.

The following types of farm machinery can accidentally brush or get hung up in overhead power lines while in use or being moved:

- Tractors with front-end loaders.
- Portable grain augers.
- Fold-up cultivators.
- Power Pole
- Moving grain elevators.
- Irrigation pipes.
- Equipment with antennas.
- Watch out for overhead electrical lines.
- Know where power lines are located.
- Treat all overhead power lines as though they are bare and uninsulated.
- Keep all equipment away from overhead lines.

Know where power lines are when:

- Using ladders.
- Harvesting tree crops.
- Moving equipment.
- Always use pre-planned routes that avoid power lines when moving equipment.

ELECTRICAL FACTS

- Electrical incidents in the rural industry have often involved contact between machinery or irrigation pipes with overhead powerlines.
- Other causes of electrical incidents include general lack of electrical equipment maintenance and unauthorized electrical handy-work.
- Apart from death and injury, electrical incidents have also caused significant property damage (e.g. arcing or burning from electricity can damage or destroy vehicle frames, gearboxes, engines, axles and tyres).
- Most overhead power lines have no protective insulation. Any physical or equipment contact with them could be dangerous.
- Non-metallic materials such as lumber, tree limbs, tires, ropes, straw and hay, are capable of conducting electricity, depending on moisture content and surface contamination.
- Electricity always seeks the path of least resistance to the ground.
- You can be electrocuted by simply coming too close to a power line. Electricity can arc or “jump” between a wire and a conducting object, such as a ladder or a truck.
- When electricity flows into the ground, it can electrocute anyone who comes close. Stay at least 10 metres away from fallen Also, if you see equipment or a person in contact with a power line, be aware that the ground may be energized and be dangerous to bystanders.

FINAL FARM POWER LINE TAKEAWAY

These tasks can put you in harm’s way near power lines.

1. Cutting down trees and tree limbs too close to power lines.
2. Raising or carrying ladders or other long tools near power lines.
3. Raising front-end loaders and moving other large equipment (including those with radio antennas) near power lines.

HOW TO PROTECT YOURSELF

EMPLOYER/EMPLOYEE SAFETY SOLUTIONS

Employers have the primary responsibility for protecting the safety and health of their workers. Employees are responsible for following the safe work practices of their employers.

- Develop a “safety first” attitude. Follow safe work practices all the time and set a good example for others.
- Provide adequate training for all workers. Train them in rescue and emergency procedures so everyone in your operation knows what to do in an electrical emergency.

Train workers that if they have an electrical emergency and must leave the equipment, they should:

- Never get back on machinery that touches a power line until the utility company disconnects the line.
- Train seasonal employees about dangers and give additional reminders.
- Determine transport and clearance height for farm equipment. Ask your local utility company to help determine line heights in all areas of the farm. Never measure line heights yourself.
- Plan and develop routes for moving equipment to avoid power lines and train workers to follow these routes.

Train workers that when moving equipment they should:

- Know where all overhead power lines are located.
- Know pre-planned routes between fields, to bins and elevators, and on public roads to avoid low-hanging power lines.
- Keep all equipment and objects at least 10 feet away from overhead lines.
- Always lower a portable grain auger before you allow workers to move it, even just a few feet.

What to do in case of a fire when operating equipment

- Leave the equipment, jump as far away from the equipment as possible.
- Do not allow any part of your body to touch the equipment and the ground at same time.
- Shuffle away from where you jumped; do not take large strides. Too large a step could put each foot in a different voltage zone and electrocute you.
- Once away from the equipment, never attempt to get back on or even touch it. Many electrocutions occur when the worker dismounts, then gets back on the equipment.
- Remember that prevention is the best way to handle emergencies. Respect electricity and avoid contact with overhead lines.

Prevention Reminders

- Be Aware. Locate overhead power lines before starting work.
- Lower large equipment like grain augers, air seeders and front end loaders before moving them.
- Take another route if you are moving large equipment and don’t have enough clearance.
- Make sure you have enough clearance while working around power poles in the field. If you don’t have enough clearance, you could pull down a power pole.
- Never stack hay or pile grain near power lines. These can be inviting for kids who may climb too near to a power line.
- Use care when doing field work around power poles and guy wires. Watch for broken or dislodged guy wires. Report broken or damaged guy wires to your electrical service provider immediately.
- Never place bulk fuel tanks or granaries near power lines.
- Know the height of any new equipment your purchase.
- Never spray water hoses or irrigation pivots at power lines.
- When using machinery to dig, a clearance distance of one metre (3.2 feet) has to be maintained from any underground electrical cable. If you must work closer, contact your electrical service provider.
- Be careful when pruning as a wire could be hidden in a tree or bush.

FINAL WORD

Prevention and precautions are the best methods to deal with emergencies in the farm environment. But the key starts with respect for the power of electricity especially overhead power lines.