

## Overhead Power Line Tips for Construction Workers

Before You Begin Construction Work:

- Survey the site for overhead power lines.
- Look Up and Live!

**Best Safety Practice:**

Never get closer than 10 feet to an overhead power line!

### Minimum Safe Distances Around Overhead Power Lines

Line Voltage	Minimum Safe Distance
Up to 50,000 volts	10 feet
50,000 to 200,000 volts	15 feet
200,000 to 350,000 volts	20 feet
350,000 to 500,000 volts	25 feet
500,000 to 750,000 volts	35 feet
750,000 to 1,000,000 volts	45 feet

Source: ASME B30.5a-1995

Note: Some facility owners may require a greater separation due to the nature of the work being done. Always contact the local utility before working near power lines.

Consider **ALL** overhead power lines as energized until the electric utility indicates the line is not energized and has been grounded.

In construction work, an overhead power line safety component should be part of your employer's overall safety and health program and safety training.

If overhead lines are present, call utility company and find out what voltage is on the lines.

If overhead lines can not be shut down, ask the utility company if they can install insulation over the lines during the time you are working near them.

## Working with tools and equipment

If the lines cannot be shut down or insulation applied, a minimum safe distance of 10 feet must be established.

Have a brief job site meeting to discuss the planned work as it relates to the power lines

Discuss topics such as the use of long handled tools, and equipment (raised dump trucks, back hoes, etc.) that could come in contact with the lines

Consider the need for a designated person to monitor activities around the lines.

Only use nonconductive ladders when working on or

near overhead power lines.

Employees shall not be permitted to approach or carry any object closer than 10 feet to an energized line.

The only exception is for trained and qualified employees using insulated tools designed for high voltage lines.

## Things to consider if your vehicle/equipment comes in contact with a power line:

- Don't leave the vehicle, as long as you can stay inside and avoid touching metal on the vehicle.
- If you need to get out to summon help or because of fire, jump out without touching any wires or the equipment, keep your feet together and hop to safety.
- When equipment is working close to energized power line the personnel standing on the ground shall not come in contact with this equipment.

## Underground power line tips for construction workers

- When excavating or trenching, consider that electric lines and other utilities could be buried in the area.
- **Call Before You DIG! South Dakota One Call's number is 1-800-781-7474.**
- After the markings have been made, excavators should maintain a minimum clearance of two (2) feet between a marked and unexposed underground facility and the cutting edge or point of any power operated excavating or earth moving equipment.

## Safety around underground power lines

- As the operation approaches the estimated location of underground facilities, the excavator must determine the exact location of the marked facility by safe and acceptable means. The distance on both sides of a marked facility is 18 inches in South Dakota and can differ in other states.
  - Usually accomplished by the use of hand tools or vacuum excavation techniques.
  - Consider the equipment owned by the consumer, and has it been located?
- Treat all buried line/equipment as energized, until a qualified worker from the utility says differently.
- If electrical equipment is damaged during the trenching or excavating operations, consider this equipment to be energized until properly disconnected, tested and grounded.

• If, during the course of excavation, a facility has been exposed, it is the excavator's responsibility to inspect and support these facilities prior to backfilling.

• If damage of any kind is discovered — or any suspicion of damage exists — it is the excavator's responsibility to immediately notify the facility owner directly.

## Avoiding Hazards in Directional Drilling

Along with the many benefits from Horizontal Directional Drilling (HDD) come very serious dangers.

The most dangerous strikes can occur when a drill hits an electric or gas line.

The operator can be electrocuted or cause an explosion.

- Step Potential can endanger the tracking person as his feet encounter an energized area where the boring device has encountered an electrical line. Equipment operator may also be injured.
- Touch Potential will likely injure or kill the equipment operator as the current travels from the point of contact, through the boring equipment back to the operator's position.

Follow the manufacturers' recommendations, in the Equipment Operators Manual.

Plan and map your bore.

With bore plan in hand, the competent person must mark the route and call for One Call. After the area has been located, expose the existing utilities, following relevant OSHA requirements.

## For Further Information

The safety tips in this pamphlet are not intended to be all-inclusive; they are simply a starting point to help prevent electrical contacts from overhead and underground powerlines.



## Maintaining safety around electricity vital

In the past years, rural electric cooperatives in South Dakota have noticed an increasing number of incidents which involve the facilities from these cooperatives. This publication discusses the procedures which should be used when work is performed around electric facilities, both overhead and underground.

With a little planning and cooperation with other utilities and excavation companies, we can continue to do our jobs and limit the risks for injury or much worse.

We instruct the cooperatives to properly plan their jobs, starting with the first meeting with the consumer where they lay out the route and set a plan in place which benefits the cooperative and the needs of the consumer.

Next, requirements for the work are transferred to the staking sheets so everyone involved with the work is aware of the consumers requests but most of all their facilities on site.

Third on the list is to look over the job meet with the consumer and start to produce a plan to accomplish the work, flag the proposed work area and call South Dakota One Call at 1-800-781-7474.

The fourth item is to make sure everyone involved with the work is brought up to speed on the requirements for this particular job. This is recapped in a tail-gate briefing immediately before starting work on the job. During the tail gate briefing, hazards associated with the job. Even though the presence of an overhead line should be obvious to everyone present, this is one of the hazards the crew should talk about. A call to the facility owner will allow the person in charge to work with the owner of the line and as a result will lessen the opportunity for an accident to happen.

## Plan to prevent an accident

One of the best ways to avoid an accident is to think ahead. Consider all of the hazards involved with the job:

- Hazards involving overhead power lines
- Hazards involving underground power lines
- Hazards located before the meter (utility side)
- Hazards located after the meter (customer's side)
- Consumer's facilities
- Other utilities involved (gas, telephone, cable, water, electrical)

Take the necessary time to properly plan a job, it may help avoid later delays caused by an accident.

## For more information, contact your local electric cooperative:

**Black Hills Electric Cooperative**  
PO Box 792 • Custer, SD 57730-0792  
605-673-4461 • [www.bhec.coop](http://www.bhec.coop)

**Bon Homme Yankton Electric Association**  
PO Box 158 • Tabor, SD 57063-0158  
605-463-2507 • [www.byelectric.com](http://www.byelectric.com)

**Butte Electric Cooperative**  
PO Box 137 • Newell, SD 57760  
605-456-2494 • [www.butteelectric.com](http://www.butteelectric.com)

**Cam Wal Electric Cooperative**  
PO Box 135 • Selby, SD 57472  
605-649-7676 • [www.cam-walnet.com](http://www.cam-walnet.com)

**Central Electric Cooperative**  
PO Box 850 • Mitchell, SD 57301  
605-996-7516 • [www.centralec.com](http://www.centralec.com)

**Charles Mix Electric Association**  
PO Box 10 • Lake Andes, SD 57356  
605-487-7321 • [www.cme.coop](http://www.cme.coop)

**Cherry-Todd Electric Cooperative**  
PO Box 169 • Mission, SD 57555  
605-856-4416 • [timg@cherry-todd.com](mailto:timg@cherry-todd.com)

**Clay Union Electric Corporation**  
PO Box 317 • Vermillion, SD 57069  
605-624-5525 • [www.clayunionelectric.coop](http://www.clayunionelectric.coop)

**Codington-Clark Electric Cooperative**  
PO Box 880 • Watertown, SD 57201-0880  
605-886-5848  
[www.codingtonclarkelectric.coop](http://www.codingtonclarkelectric.coop)

**Dakota Energy Cooperative**  
PO Box 830 • Huron, SD 57350-0830  
605-352-8591 • [www.dakotaenergy.coop](http://www.dakotaenergy.coop)

**Douglas Electric Cooperative**  
PO Box 370 • Armour, SD 57313  
605-724-2323 • [kenvanzee@unitel.sd.com](mailto:kenvanzee@unitel.sd.com)

**FEM Electric Association**  
PO Box 468 • Ipswich, SD 57451  
605-426-6891 • [www.femelectric.coop](http://www.femelectric.coop)

**Grand Electric Cooperative**  
PO Box 39 • Bison, SD 57620  
605-244-5211 • [www.grandelectric.coop](http://www.grandelectric.coop)

**H-D Electric Cooperative**  
PO Box 1007 • Clear Lake, SD 57226  
605-874-2171 • [www.h-delectric.coop](http://www.h-delectric.coop)

**Kingsbury Electric Cooperative**  
PO Box 126 • DeSmet, SD 57231-0126  
605-854-3522  
[kingsbury@kingsburyelectric.coop](mailto:kingsbury@kingsburyelectric.coop)

**Lacreek Electric Association**  
PO Box 220 • Martin, SD 57551  
605-685-6581 • [wayne@lacreek.com](mailto:wayne@lacreek.com)  
**Lake Region Electric Association**  
PO Box 341 • Webster, SD 57274  
605-345-3379 • [www.lakeregion.coop](http://www.lakeregion.coop)

**Moreau-Grand Electric Cooperative**  
PO Box 8 • Timber Lake, SD 57766  
605-865-3511 • [www.mge.coop](http://www.mge.coop)

**Northern Electric Cooperative**  
PO Box 457 • Bath, SD 57427  
605-225-0310 • [www.northernelectric.coop](http://www.northernelectric.coop)

**Oahe Electric Cooperative**  
PO Box 216 • Blunt, SD 57522  
605-962-6243 • [www.oaheelectric.com](http://www.oaheelectric.com)

**Rosebud Electric Cooperative**  
PO Box 439 • Gregory, SD 57533  
605-835-9624 • [www.rosebudelectric.com](http://www.rosebudelectric.com)

**Sioux Valley Energy**  
PO Box 216 • Colman, SD 57017  
605-534-3535 • [www.siouxvalleyenergy.com](http://www.siouxvalleyenergy.com)

**Southeastern Electric Cooperative**  
PO Box 388 • Marion, SD 57043-0388  
605-648-3619  
[www.southeasternelectric.com](http://www.southeasternelectric.com)

**Traverse Electric Cooperative**  
PO Box 66 • Wheaton, MN 56296  
320-563-8616 • [www.traverseelectric.com](http://www.traverseelectric.com)

**Union County Electric Cooperative**  
PO Box 459 • Elk Point, SD 57025-0459  
605-356-3395 • [info@unioncounty.coop](mailto:info@unioncounty.coop)

**West Central Electric Cooperative**  
PO Box 17 • Murdo, SD 57559  
605-669-2472 • [www.wcenet.com](http://www.wcenet.com)

**West River Electric Association**  
PO Box 412 • Wall, SD 57790  
605-279-2135 • [www.westriver.com](http://www.westriver.com)

**Whetstone Valley Electric Co-op**  
PO Box 512 • Milbank, SD 57252  
605-432-5331 • [www.whetstone.coop](http://www.whetstone.coop)

**Basin Electric Power Cooperative**  
1717 E. Interstate Ave. • Bismarck, ND 58503  
701-223-0441 • [www.basinelectric.com](http://www.basinelectric.com)

**East River Electric Power Cooperative**  
PO Box 227 • Madison, SD 57042-0227  
605-256-4536 • [www.eastriver.coop](http://www.eastriver.coop)

**Rushmore Electric Power Cooperative**  
PO Box 2414 • Rapid City, SD 57709  
605-342-4759 • [www.rushelec.com](http://www.rushelec.com)



# Contractor Safety Around Power Lines

A Safety Reminder Brought To You By:



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And Its Member Electric Cooperatives