Factsheet: Power Lines Kill Workers!

Most people know that power lines can kill, yet a surprising number of power line deaths occur on a regular basis. Electricity is generated and transmitted at high voltages for a good reason: it limits power loss as the electricity travels long distances from power plant to point of use. Power lines can be at tens of thousands of volts, even at hundreds of thousands of volts: the higher the voltage, the greater the potential danger.

Common Power Line Problems

Problems occur when people or equipment get too close to energized lines. Some of the most common situations that occur are:

- *Contacting lines* with cranes and other construction equipment
- *Hitting a line* when erecting or moving a scaffold
- *Getting too close* with a ladder or a tool, especially a *conductive* one, such as aluminum or wood.

Controlling Power Line Hazards

There are three major ways to control power line hazards:

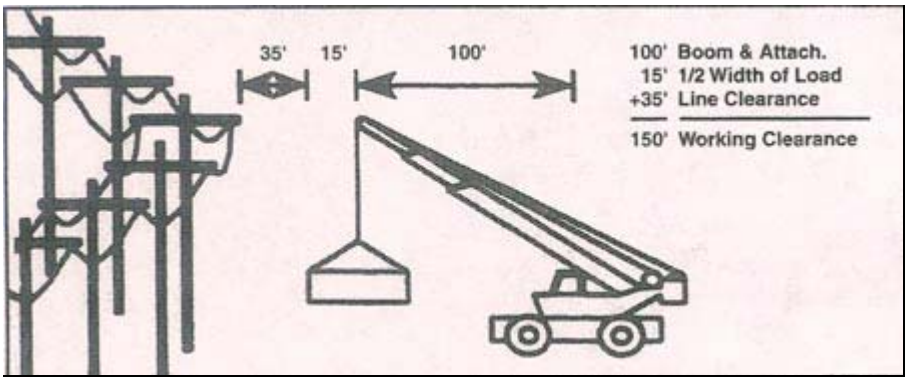
1. Maintaining a ***safe distance*** from lines
2. Having the power company ***de-energize and ground*** the power line(s)
   Have a power company rep at the site!
3. Having the power company install ***insulated sleeves*** (also known as "eels") over power lines (See the above item.)

NOTE: Only the electric power utility can determine the clearance distance for this method of *insulating lines.*

NOTE: The information on pages 2 and 3 of this factsheet was adapted from material developed by the **Construction Safety Council.**

Staying away from power lines is the best option. The following illustration shows the safe power line clearance distance, as well as the working clearance distance. The table shows clearance distances from power lines for various line voltages.

NOTE: The term kV = 1,000 volts. For example, 50 kV = 50,000 volts.



Power Line Clearance Distances	
Voltages	**Distances from Power Lines**
≤ 50kV	10 feet
200 kV	15 feet
350 kV	20 feet
500 kV	25 feet
650 kV	30 feet
800 kV	35 feet

The best and easiest way, is to follow this rule:

- **Up to 50 kV – Stay at least 10 feet away**
- **Over 50 kV – Stay at least 35 feet away**

Preventive Measures

General

- Move equipment/activity to the safe working distance from power lines.
- Have utility de-energize and visibly ground power lines.
- Have utility move power lines to the safe working distance.
- Have utility install insulated sleeves on power lines.*
- Install flagged warning lines to mark horizontal and vertical power line clearance distances.
- Use nonconductive tools and materials.

Cranes and Other High Reaching Equipment

- Use an observer.*
- Use an insulated link, if applicable.*
- Use a boom cage guard, if applicable.*
- Use a proximity device, if applicable.*

Mobile Heavy Equipment

- Install rider posts or goal posts under power lines.
- Install warning signs at driver's eye level.

**** These options do not allow the operator to work closer than the line clearance distance.***

Ladders

- Use nonconductive ladders.
- Don't carry or move extension ladders fully extended. Retract before moving.
- Get help moving ladders to maintain control.

Material Storage

- Don't store any materials under power lines.
- Use caution tape and signs to cordon off area under power lines.

Excavations

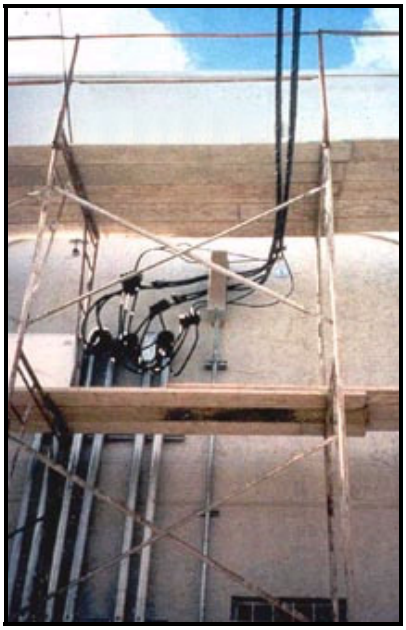
- **Call 811 to contact your local one-call service several days before you dig to locate all *underground cables.***
- **Hand dig within three feet of cable location.**
- **Be aware that more than one underground cable may be buried in area of locator markings.**

Remember:

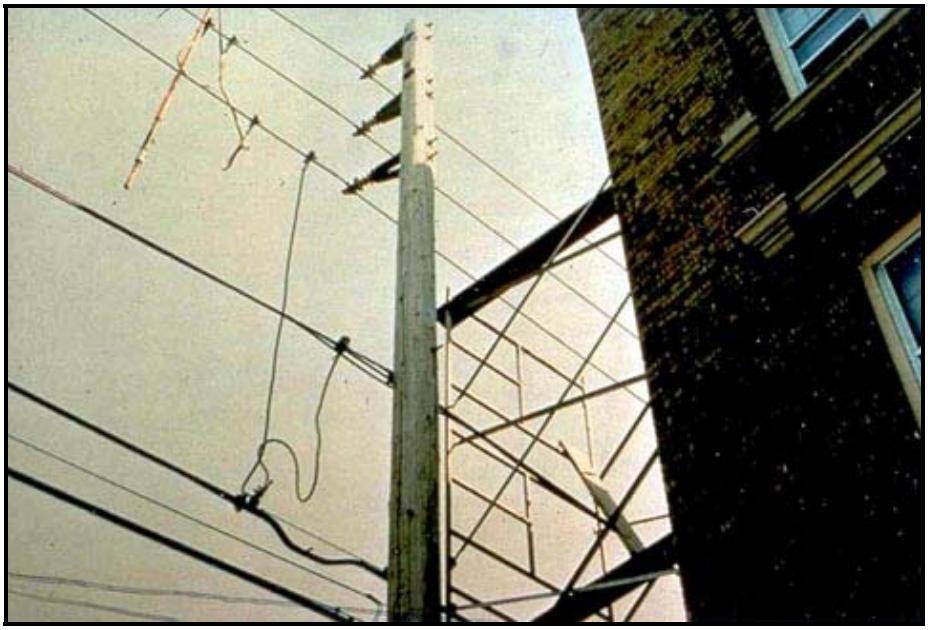
The only safe power lines are the ones that don't exist.

Call 811 before you dig!

Power line photos: unprotected and protected



There is a hazard of shock or electrocution: scaffold and platform are less than 10 feet away from these power lines.



This scaffold has been protected from electrical hazards: three power lines at the top have been de-energized, jumpered together and then electrically grounded by the power company.

This power company worker is placing insulated sleeves (“eels”) over the power line in this photo.