



092: Tree-Trimming Electrical Hazards

Contact hazards

Conductors aren't the only potential hazard sources. Ungrounded metal frames and fixtures are also potentially dangerous, since they may be energized.

Contact with an energy source can be direct or indirect.

You can make direct contact with any part of your body. Your head, arms, shoulders, hips, knees, and feet are all potential contact points.

You can make indirect contact with any part of your body. You don't need to touch an energy source to receive a shock. You can get a shock by holding objects that are energized. Such objects include conductive tools, tree branches, communications wires, cables, fences, and guy wires. These items can become energized when you move them into contact with an energy source, or they may be energized before you touch them.

You can receive a shock by touching a live conductor and ground or by touching two energized conductors.

Assume a hazard exists whenever a conductor passes through a tree or within reaching distance of an employee working in the tree.

Precautions

Before doing tree-trimming, make sure you are a qualified employee—that is, you are familiar with the special techniques and hazards involved in tree-trimming and line clearance.

If a hazard exists, you can remove it by de-energizing the lines. If you cannot de-energize the lines, you must use protective equipment.

If a hazard of more than 750V exists, you must have a second employee qualified in line clearance tree-trimming that you can easily communicate with by voice.

Observe the minimum working distance permitted for the voltage levels of the lines you are trimming. These distances vary from 2 feet at 2.1KV to 15 feet at 700KV.

If a branch hangs on an energized conductor, consider that branch to be energized also. Use the correct insulated equipment.

Do not assume rubber footwear (such as lineman's overshoes) will provide you any protection from trimming hazards.

Do not allow ladders, platforms, or aerial devices to come into contact with an electrical conductor. The dielectric properties of this equipment are not enough to protect you in such a situation.

An aerial lift device can make accidental contact with a conductor. Should this happen, assume the truck supporting the aerial lift device is also energized.

Standing on or near a ground rod won't protect you. Kirchoff's Law states electricity will flow in inverse proportion to the resistances it encounters. Your body does not have enough resistance to prevent a lethal shock if it is in parallel with a ground rod that has as little as a single ohm of impedance.

Should another employee make contact with an energy source, do not grab that employee to pull him or her free. You may be able to use a pole (or other insulat-

Discussion leader duties for this session:

Obtain some tree-trimming tools and demonstrate how those tools can act as extensions of the body to create a path for electricity.

What this Safety Talk covers:

The hazards involved in line clearance, tree-trimming, and related operations, and the ways to reduce those hazards.

Discussion notes :

Review and Discussion

What are some shock hazard sources other than conductors?

How might you make direct contact with a shock hazard?

How might you make indirect contact with a shock hazard?

How might you receive a shock?

When should you consider a hazard to exist?

When must you have a second employee present and what must that employee be qualified to do?

What should you know about minimum working clearances?

If an aerial lift makes contact with an energy source, what should you assume about the truck?

What are some mechanical hazards that can occur on a tree-trimming job? What might you do to work more safely in regard to those hazards?

What are the PPE requirements for a typical tree-trimming job? In what situations will you need additional PPE?

ed device) of sufficient length to knock the employee free, or de-energize the conductor(s) in question.

Non-electrical hazards

Consider the mechanical hazards. For example, take care to cut limbs in such a way that they won't fall on you or others.

Pay attention to your fall protection and to aerial lift safety, as applicable.

Wear eye and hearing protection, as appropriate.

Participant's Signature and Date

[illegible]