



High Voltage Overhead Lines

Many workers in both construction and agriculture face a common safety hazard: electrical contact with high voltage overhead lines. Every year they are killed or disabled after accidentally coming in contact with the lines. What precautions can you take to avoid this type of accident? What does the law - California Code of Regulations - say about this hazard?

Safe Work Practices

Several safety orders deal with requirements for safe work practices around high voltage overhead lines. When these orders are followed, almost all accidents involving high voltage lines are prevented.

- Electrical Safety Order [2946\(b\)\(4\)](#) prohibits storage of irrigation pipe or long metal poles near high voltage overhead lines if they are long enough to reach the lines. In one year, 80 percent of the electrocution deaths of California agricultural workers occurred when the irrigation pipes they were handling came in contact with overhead lines.
- Electrical Safety Order [2946](#) outlines the requirements for prevention of accidents due to nearness of overhead lines. Workers must be guarded against the danger of accidental contact with overhead lines.

With certain exceptions, work done over live (power on) overhead lines is against the law. Section [2946](#) also prohibits doing work within 6 feet of lines carrying between 600 and 50,000 volts. For lines carrying higher voltages, follow the clearance requirements in Table 1 of [2946](#).

Amusement rides or attractions shall not be located under or within 15 ft. horizontally of conductors operating in excess of 600 volts.

It is prohibited to store tools, machinery, and equipment near live high voltage overhead lines if it is possible for them to come within the minimum clearance of 6 feet as per Table 1 of [2946](#) when they are being moved or used.

When moving boom-type equipment with boom lowered and no load attached, keep the end of the boom at least 6 feet away from high voltage lines.

When erecting, operating, and dismantling boom-type lifting or hoisting equipment, the minimum clearance is 10 feet when the overhead line is carrying between 600 and 50,000 volts. For lines carrying higher voltages follow the clearance requirements in Table 2 of [2946](#).

The following warning sign must be posted on the equipment, in clear view of the operator as required by Electrical Safety Order [2947](#):

UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN 10 FEET OF HIGH VOLTAGE LINES OF 50,000 VOLTS OR LESS.

The following statement must be printed on the sign in smaller lettering:

FOR MINIMUM CLEARANCE OF HIGH-VOLTAGE LINES IN EXCESS OF 50,000 VOLTS, SEE ARTICLE 37, TITLE 8, HIGH-VOLTAGE ELECTRICAL SAFETY ORDERS.

If you don't know whether an overhead line is live, assume that it is until whoever owns or operates the line verifies that the power is not on. If you are working near a dead (power off) line, make sure it is clearly grounded at the worksite. A grounded line has a grounding wire clamped to it, with the other end clamped to either the structure or a grounding rod.

Orchard Hazards

Many employees are injured during pruning operations when they contact high voltage lines with pruning towers, pruning poles, or branches. Use of metal poles for fruit picking or nut harvesting is a violation of General Industry Safety Order [3455](#).

Discussion Questions

Is there danger on this job site of coming into contact with high voltage overhead lines?
What can be done to prevent such contact?
Are the requirements of the safety orders being followed on this site? If not, how are they being violated?

Resources

Title 8, California Code of Regulations (Safety Orders) can be reviewed at:

<http://www.dir.ca.gov/samples/search/query.htm>

Contacting Cal/OSHA Consultation Service

Services: <http://www.dir.ca.gov/dosh/consultation.html>

Publications: <http://www.dir.ca.gov/dosh/puborder.asp>

Consultation Programs:

<http://www.dir.ca.gov/dosh/consultation.html>

Toll-free Number: 1-800-963-9424

Onsite Assistance Program Area Offices

Central Valley: 559-454-1295 San Diego/Imperial: 619-767-2060
No. California: 916 263-0704 San Bernardino: 909-383-4567
SF/Bay Area: 510-622-2891 San Fernando Valley: 818-901-5754
Santa Fe Springs/LA/Orange: 714-562-5525

Note: The information provided is not meant to be either a substitute for or legal interpretation of the occupational safety and health regulations. Readers are cautioned to refer directly to Title 8 of the California Code of Regulations for detailed information regarding the regulation's scope, specifications, and exceptions and for other requirements that may be applicable to their operations.