PURPOSE/APPLICATION

To provide guidance to workers, Supervisors, and Managers who may be required to work in proximity of overhead power lines, power poles, and guy wires to prevent contact with a power line by a worker or equipment. (For underground power lines, refer to the Ground Disturbance Code of Practice (COP-07)).

PPE

- Strike minimum requirements

TRAINING

- Site Specific Orientation
- Strike New Worker Orientation

HAZARD SOURCES & CONCERNS

- Personal injury
- Property damage
- Fire
- Arcing
- Equipment damage

PRECAUTIONS

Always maintain a 7m distance from the line for lines without a confirmed voltage.

- If work will require equipment to encroach within 7m, contact the owner of the line and receive written approval. The power company should be notified 48 hours in advance.
- If possible, have the line de-energized during the construction activity.
- The utility company can provide the confirmed voltage of each line, which may change to a safe distance of approach (see safe limits of approach section).
- If site access requires crossing under or working in proximity to overhead power lines, goal posts will be installed no closer than 7m.
- Goal posts will be made of non-conductive materials. Reflective flagging strips shall be tied/attached to the cross rope to increase visibility.
- When moving loads on public roads, do not exceed the provincial maximum height. If the height clearance limit cannot be achieved, the appropriate written permissions and steps must be in place before passing under the lines.
- Review the construction activities that have been completed that include work near power lines to verify if it is possible to complete the activities without having to cross under live lines.
- Verify that the site owner has applied for/received a crossing agreement from the owner of the line(s) being crossed.
- Arrange for any required line lifts before starting work.
- Coordinate with any 3rd party transportation contractors to verify travel routes and timeline.
- Before any activity at the job site, the permit must clearly designate and define the danger zone parallel to each side of the power line.

THE DO's

DO Obtain all Safe Work Permits from the client.
DO Confirm sufficient clearance before passing under the line.
DO Use spotters with a pre-determined communication method (e.g., air horns, radio, etc.) when moving equipment or large loads (vessels, compressors, modules, etc.) under power lines.
DO Identify spotter and review responsibilities prior to starting work.
DO When conducting a tailgate meeting, specifically referring to overhead power line requirements.

DO Include overhead power line locations at Site Specific Orientation.
DO Position high-visibility signs that clearly identify the "Danger Zones" – "Overhead Power".
DO Take into consideration the maximum length or height of equipment, truck loads, etc.
DO Measure to account for the clearance changes resulting from any pipeline crossing ramps, ditch spoil piles, etc.
DO Flag all power pole guy lines in the vicinity of the work area.
DO Mark out the route to be travelled when cranes, shovels, aerial man lifts, pile drivers, and similar equipment are being moved. Uneven terrain could cause the boom or other structure to weave or bob, increasing the likelihood of power line contact.
DO Pay special attention to auxiliary equipment such as radio antennas and jibs. Spotters are to be used to escort equipment underneath power lines.

DON'T Allow equipment higher than the goal post to operate within the goal post area.
DON'T Attempt to lift power lines; this must be done by an approved professional.
DON'T Park aerial lifts, telehandler, over height loads, or cranes under or near power lines.
DON'T Allow the spotter to stand in blind spots of the equipment operator.
DON'T Conducted work in close proximity to overhead lines during windy, rainy, or stormy weather.
DON'T Allow the spotter to touch the heavy equipment during working activities.

MOVING OVERSIZED AND TALL LOADS UNDER LINES

The safe limit of approach distances applies to a load, equipment, or building that is transported under energized overhead power lines when the total height, refer to applicable provincial regulations.

IF CONTACT IS MADE WITH AN OVERHEAD POWER LINE

If contact is made and there is no risk of fire:

1. If safe to do so, and possible, move equipment away from overhead power lines, thus breaking contact with the energy source.
2. If unable to break the contact, the operator will stay inside the cab of the equipment and contact the emergency response team for assistance.
3. Call emergency services (911) and your local utility company for assistance.
4. Only once the power line has been de-energized, the operator may leave the cab of the equipment.
5. Work shall not resume, or equipment moved, until an investigation and damage assessment has been completed and all electrical safeguards are in place.
6. Never assume a line that has been deenergized will stay that way; some utility lines are automatically reenergized after a set period.

If contact is made and there is a risk of fire:

1. The operator shall shut off the equipment and jump off as far away as possible and land with both feet together. Never touch the ground and the equipment at the same time. If your feet are apart, it could create a bridge for electricity to run through you.
2. Slowly shuffle (with both feet on the ground at all times) at least 10 m away, (aiming for 30 m if possible) from your vehicle or equipment. If you need to quickly reach safety and the ground is flat and level, hop with both feet together
3. The operator shall hop away to a safe distance of 30 m (100 ft.) or more from the equipment, at right angles to the power line, keeping both feet together when hopping away from the equipment.
4. When in a safe location, call emergency services (911) and your local utility company for assistance.
5. Contact your Supervisor to arrange for the power line to be de-energized, isolated, and grounded.

Safe Limits of Approach Based on Province

Alberta Schedule 4 Safe Limit of Approach Distances Table 1:

Operating voltage of overhead power lines between conductors	Safe limit of approach distance for persons and equipment
0 - 750V - Insulated or polyethylene-covered conductors (1)	300 mm
Above 750V Insulated Conductors (1) (2)	1.0 m
0 - 40 kV	3.0 m
69 kV, 72 kV	3.5 m
138 kV, 144 kV	4.0 m
230 kV, 240 kV	5.0 m
500 kV	7.0 m

1 Conductors must be insulated or covered throughout their entire length to comply with this group.

2 Conductors must be manufactured to the rated and tested insulation levels.

British Columbia Clearance Distances

Table 19-1A

Operating Voltage Phase to Phase	Minimum limits of approach
Over - 750V to 75 Kilovolts	3.0 m
Over 75 kilovolts to 250 kilovolts	4.5 m
Over 250 kilovolts to 550 kilovolts	6.0 m

Note: In British Columbia, the system owner representative must state in writing whether the electrical system has been de-energized, guarded, or rerouted. This document must be available at the work site.

Saskatchewan

Table 19 Minimum Distances from Exposed Energized High Voltage Electrical Conductors

Operating Voltage of Overhead Power Lines. Voltage to Ground	Minimum Distance from Exposed High Voltage Electrical Conductors
133 Kilovolts	6.1 m
79.8 kilovolts	4.6 m
14.4 kilovolts	3.0 m

Manitoba Clearances Distances

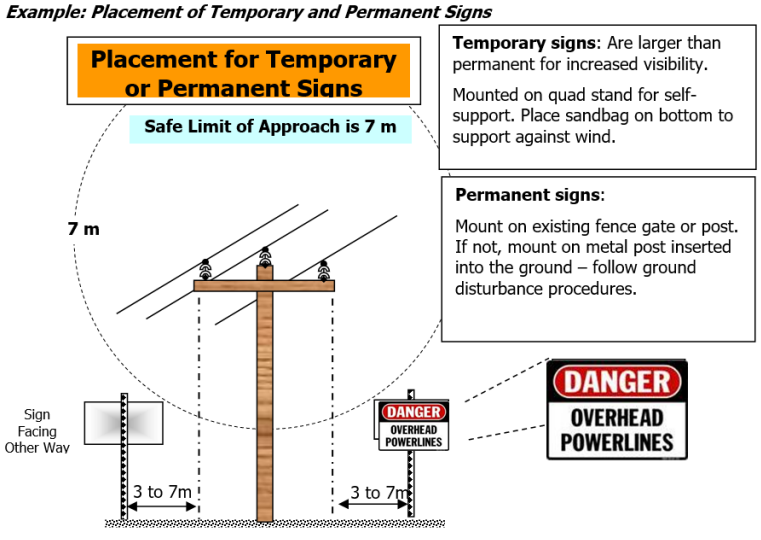
Part 25 Work in the Vicinity of Overhead Electrical Lines

An employer must notify the electrical authority having jurisdiction over an overhead electrical line before authorizing or permitting a worker to

(a) work within 3 m of the line; or

(b) use equipment or machinery from a location from which it, or any part of it, is capable of coming within 3 m of an overhead electrical line

Example: Placement of Temporary and Permanent Signs



REFERENCES / ADDITIONAL INFORMATION

Utility Safety Partners
www.utilitysafety.ca

Alberta OHS Code
Part 17 Overhead Power Lines

BC OH&S Regulations
Part 19 Electrical Safety

Saskatchewan OHS Regulations
PART 30 Additional Protection for Electrical Workers

Manitoba Workplace Safety and Health Regulations Part 25 Work in the Vicinity of Overhead Electrical Lines

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