



ELECTRICAL AND POWERLINES

Potential Hazards

1. spark
2. electrical shock/electrocution
3. equipment/property damage

Personal Protective Equipment Required

- | | | |
|-----------------|--------------------|----------------------------|
| Hard hat | CSA Boots | Eye protection |
| Hand protection | Hearing protection | Skin protection (clothing) |

PRELIMINARY ACTIVITIES

Where multiple trade activity is scheduled, the general contractor is to review in advance the priority of work and schedule the appropriate time frame to allow each trade to complete their scope of work. Prior to any work commencing supervisors must conduct a hazard assessment of all applicable work areas. Any hazards that are found during the hazard assessment must be addressed prior to any work commencing.

DO’S:

1. Stay clear of overhead power lines and wires.
2. Look up for hydro wires running through or beside trees.
3. Do a visual safety check for overhead lines before starting any activity.
4. Keep away from outdoor areas marked with signs that say “Danger” or “Danger High Voltage.”
5. If high machines frequently work near overhead power lines, consult the power company regarding burying or diverting the lines.
6. Know the full height of equipment and machinery when all parts are raised to their full extent. Check these heights against the line clearance distances marked on the site plans so that you know where the particular areas of risk are.
7. Tell workers about the potential dangers and safe working practices, eg retract the booms of telescopic handlers and keep them as close to the ground as possible when the vehicle is moving.
8. Stay away from a downed power lines and inform the local service provider.

DON’Ts:

1. Do not touch an overhead wire with a pole, stick or other object. Electricity could travel down that object and cause a shock that could kill you.
2. Don’t throw anything at wires or electrical equipment, and don’t fasten things to utility poles. Damaged equipment can be very dangerous.
3. Do not construct any building beneath supply lines.
4. Do not climb electricity pylons, electricity poles or trees near power lines.

SAFE WORK PROCEDURE

Builders must identify the location and voltage of all overhead electrical conductors at a worksite. Remember to count transformers as conductors.

When any work activity takes place near energized overhead high-voltage lines, the following procedures must be followed:

- Determine what activities may take place near overhead high-voltage lines.
 - Determine the voltage of the overhead lines through the authority controlling the system (for example, BC Hydro).
 - Maintain minimum clearance (see voltage–distance table) at all times.
 - Do not use a tape measure or stick to physically measure the distance from an energized power line. Estimate the distance from the ground, and if in doubt, provide for more clearance.
1. Only qualified persons will work on or repair electrical systems, equipment or tools.
 2. All temporary lighting must be installed and maintained in accordance with the applicable codes.
 3. Splices or repairs of electrical cords must retain the same mechanic and electrical strength as the original cable.
 4. All electrical extension cords, tools and equipment must have a ground plug or be double insulated.
 5. Temporary electrical cords shall be kept clear of stairways and other locations where they may be subject to damage or present a tripping hazard.



6. All energized junction boxes, circuit breaker panels, etc., must have the proper cover in place to prevent accidental contact. Do not use cardboard or other makeshift covers.
7. Damaged or defective electrical tools must be tagged "Out of Service" and handed to the supervisor for repair.
8. Supervisors must ensure that exposed and non-exposed cords are tested and tagged as required, not to exceed 3 month intervals.

POWERLINES, TRANSFORMERS, FLAGGED WARNING LINES

Under no circumstances shall any person work or instruct workers to erect scaffolds, operate cranes, tools, and equipment or come in proximity to the allowable distances of powerlines or transformers.

Voltage	Minimum Distance
751V to 75 KV	10' (3 meters)
75 KV to 250 KV	15' (4.6 meters)
250 KV to 550 KV	20' (6.1 meters)

When the minimum distance cannot be maintained safely due to the circumstances of the work, the types of tools used or due to unplanned movement of a worker, the following steps must be taken:

1. STOP work immediately.
2. Call the power authority controlling the electrical system, and arrange for a worksite meeting. At the meeting, decide whether the energized electrical conductors can be:
 - de-energized
 - effectively guarded, or
 - displaced/rerouted.
3. Get assurance in writing (form 30M33) from the power authority indicating which of the three actions they will take and when it will be done. Form 30M33 is available from the local electrical utility or WorkSafeBC office.
4. Keep written assurances on the worksite, and inform all workers who will be directly affected by the power authority actions.
5. Designate a qualified safety-watcher who can
 - Monitor equipment and material movement
 - Give an instant STOP signal to the equipment operator when the equipment or load is too close to the electrical conductor
 - Make sure equipment, work tools, or loads do NOT contact the electrical guarding.

When energized electrical conductors are GUARDED, special precautions must be taken:

1. A qualified safety watcher must be posted and positioned so that both the equipment and the load and the equipment operator can be seen. The safety watcher must signal stop to the equipment operator whenever the equipment or load is likely to contact the flagged warning line.
2. Workers, equipment and loads must not touch or handle the flagged warning lines. Only persons qualified to work with high voltage electricity are allowed to touch or handle the electrical guarding.