Scaffold Depot

Safe Work Practices / Procedures / Instruction

ELECTRICAL AND POWER LINE SAFETY

Energized Power Lines

A worker must be informed of the potential electrical hazards before being permitted to do work in proximity to energized electrical conductors or equipment.

The Project Superintendent or Supervisor/Foreman shall follow the following procedure if contact with an energized power line occurs:

1. If the machine is still in contact with an energized wire, inform the operator to stay in the machine and remove all personnel from the immediate vicinity.
2. Notify the BC Hydro Emergency Service by phone (telephone number to be posted at Emergency telephone).
3. Notify the Site Safety Officer who will prepare an incident investigation report.

Disconnection and Lockout

The use of electrical power is a daily occurrence throughout the course of construction. While helpful, electricity may also be dangerous. For this reason we must always exercise caution when working with electrical equipment. Part 10 of WorkSafeBC OHS Regulation 12 for De-energization and lockout procedures must be used. This lockout procedure includes:

1. Portable Electrical Appliances: Disconnect these tools before working on them. If damage is found, report it to the Project Superintendent who will initiate repairs.
2. Hardwire Electrical Appliances: Determine the correct circuit breaker and switch it to the off position. Lock-out the individual circuit breaker by use of a personal padlock. If this is not possible, close and lock the panel door with a personal padlock. Immediately tag the panel identifying whom, when, and why the panel is locked.
3. Electrical Panels: In the event a main electrical panel must be locked-out, a journeyman electrician will be in charge. Keys to the panel or room locked-out are to be held by the electrician and the Project Superintendent to prevent anyone from re-energizing the panel.

REMEMBER:

Always use the required lock out procedure when working on all electrical powered machinery.

Scaffold Depot

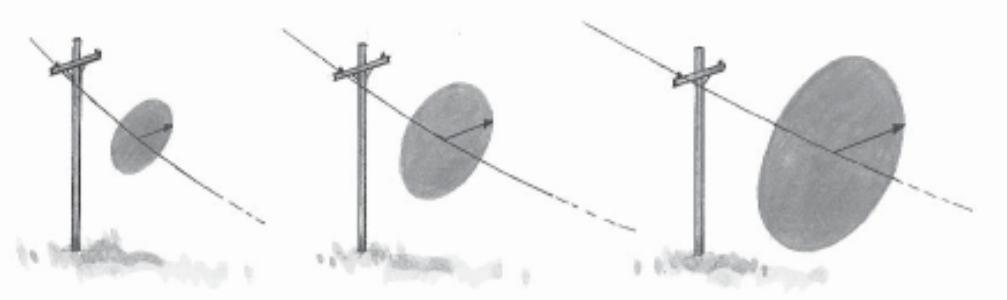
Safe Work Practices / Procedures / Instruction

An employee who is ordered to work on equipment or machinery requiring lock out procedures shall be responsible for locking the control devices and removing the locks at the completion of the work. After the lock out procedure has been applied, the employee who applied the locks (to ensure that operation is not possible) must inspect the equipment or machinery.

Low voltage electrical equipment must be completely disconnected and locked out before starting any work on it.

Where it is not practicable to completely disconnect low voltage electrical equipment, work must be performed by a qualified and authorized worker in accordance with safe work procedures which:

- Require the use of appropriate electrical protective equipment, including rubber gloves and cover up, and other necessary live line tools;
- Provide that if practicable, uncontrolled liquid is not permitted close to any worker working on the equipment;
- If applicable, control the use of metal ladders, wooden ladders with metal reinforced rails, metal scaffolds or metal work platforms.



LIMITS OF APPROACH

Voltage	Minimum Distance	
Phase to Phase	**Metres**	**Feet**
Over 750 V to 75 kV	3	10
Over 75 kV to 250 kV	4.5	15
Over 250 kV to 550 kV	6	20

Assurance in Writing

If the minimum distance in the table listed above cannot be maintained because of the circumstances of the work or inadvertent movement of persons or equipment, an assurance in writing (30m33) acceptable to WorkSafeBC and signed by a representative of the owner of the utility system, must be obtained and kept on site. An assurance must state that while work is being done the electrical equipment and conductors will be displaced or rerouted from the work area, if practicable.

If the utility cannot be displaced or rerouted then the assurance must state that the electrical equipment will be isolated or grounded, but if isolation and grounding is not practicable then the assurance must state that the electrical equipment will be visibly identified and guarded. If guarding is used, neither equipment nor unqualified persons may touch the guarding. The letter of assurance must be available for inspections at the workplace. The letter must be posted as close as practicable to the work area and must be made known to all persons with access to the work area.

Assurance Not Practicable

If a worker or workers are exposed to high voltage electrical equipment and the conductors cannot be isolated, rerouted or guarded, then work must not be done within the minimum distances as noted on the Limits of Approach Table (Table 3.17.1) noted above until approval is obtained by the regulatory agency and the following precautions are taken:

- The area within which the equipment or materials are to be moved must be barricaded and supervised to restrict entry only to those workers directly engaged in the work;
- A safety watcher must be designated;
- A positive means must be provided for the safety watcher to give clear, understandable stop signals to the workers in the area and the watcher must give stop signal by no other means.

Where the equipment is in motion in the area in proximity to the energized electrical equipment or conductors, no person other than the equipment operator may touch any part of the equipment or material being moved by it.

No person may move a load or any rigging from its position of natural suspension if it is in proximity to an energized electrical conductor.

Scaffold Depot

Safe Work Practices / Procedures / Instruction

Tools, Cords & Assured Grounding

- All electrical tools and equipment must be grounded or double insulated.
- All electrical tools and equipment must be inspected daily for wear or damage.
- Power cords must be a minimum 3 wire, properly grounded and equipped with CSA approved plug ends, all rated for the electrical load required.
- When used outdoors or in a wet or damp location, portable electrical equipment, including temporary lights, must be protected by a G.F.C.I. Type A unless another approved means of protection is provided.
- An alternative to using a GFCI is to follow the company's Assured Grounding Program. This program requires contractors and their workers to visually inspect their portable power tools and cords on a daily basis, inspecting for defects, cuts, abrasions etc. where the tool or tool requires repair or replacement.
- In addition contractors and their workers are required to test portable power tools and cords using electrical testing devices checking for continuity and polarity of such equipment. These tests must be conducted on a quarterly basis per year. Please see the Site Safety Officer for more details on this program.
- Damaged or defective electrical tools must be returned to the tool room for repair.
- Do not handle electrical equipment unless you are qualified and authorized to do so.
- Temporary electric cords must be covered or elevated. They must be kept clear of walkways or other locations where they may be exposed to damage or create tripping hazards.
- Broken and burned out lamps must be replaced as soon as practicable.
- Energized wiring in junction boxes, circuit breaker panels and similar places must be covered when not being worked on.
- All work areas must have adequate lighting.
- Under no circumstances shall workers stack materials, erect scaffolds, or operate tools and equipment in proximity to power-lines within the limits of approach specified. (Table 3.17.1 - Limits of Approach)
- Sufficient distance shall be maintained to prevent unplanned or accidental movements bringing the worker, tools, equipment or materials within the specified distance. The specified distance required applies to all parts of the equipment including booms, hoisting cables, and any part of the load being raised.
- Employees (other than qualified electricians) and equipment shall not touch or handle electrical guarding.
- Whenever guarding is used, a qualified safety watch (trained and experience journeyman electrician) shall be posted to control the approach of equipment, tools and workers and prevent contact with the guarding.
- When work is being carried out in proximity to energized electrical conductors operating at 750 watts or less, the Project Superintendent shall ensure that any employee performs the work in a manner preventing the contact with the energized conductors.