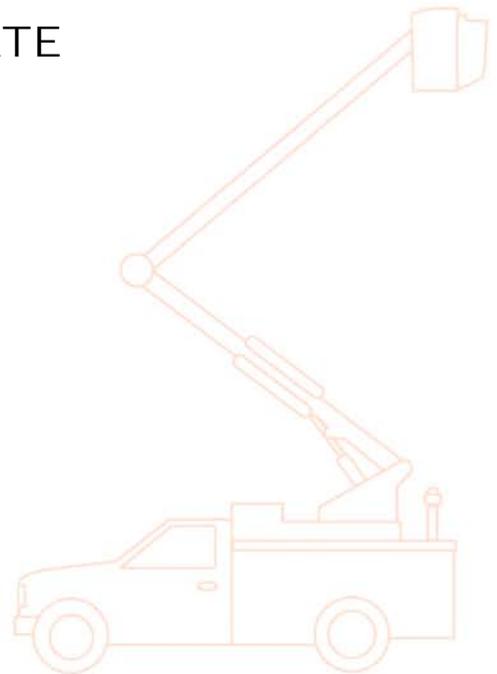


BC HYDRO PUBLIC SAFETY UPDATE
August 2018



Safety Messages

3 Keys of Electrical Safety

BC Hydro reminds workers to follow the 3 Keys of Electrical Safety when working near our equipment.



Look up and down

Identify overhead and underground power lines. Follow safe work procedures at: bchydro.com/besafe, worksafebc.com, and bconecall.ca.

Workers should take the time to do a thorough assessment and identify electrical hazards before going to work. Look up to identify poles and powerlines, keeping in mind that the most hazardous voltages are found near the top of the pole. Many workers also put themselves at risk by contacting low voltage wires or communication cables with their equipment, causing the pole to lean or wires to come within reach. Even low voltage contact can be deadly.

About ten percent of BC Hydro's lines are located underground and voltages range from 120V all the way up to 500,000V. We can help you locate our plant through the BC One Call process.



Stay back

Keep at least 10 metres back from fallen power lines. Treat all power lines as live and extremely dangerous.

Workers must follow WorkSafeBC Regulation when working near BC Hydro equipment. But what about situations where the equipment is damaged? BC Hydro recommends that in uncontrolled situations workers stay back a minimum of 10m from most equipment to account for movement in the wire in case it is, or suddenly becomes, energized. This distance increases to 33m for transmission lines and equipment. If you see smoke coming from a manhole, consider this a very serious situation - an explosion could take place and the manhole cover could become a projectile. Stay back 33m and call 911.



Call 911 for help

Stay put and do not attempt a rescue. If your vehicle catches fire, jump clear of the vehicle, land with feet together, and shuffle 10 metres away keeping your feet close together.

BC Hydro crews respond as quickly as possible to incidents but our workers must obey traffic laws, even when responding to emergencies. Call 911 to ensure immediate response to any life threatening emergency. First responders will attend and will contact BC Hydro to ensure our rapid response.

Assurance In Writing – The 30M33 Process

Follow Section 19 of WorkSafeBC Regulation when working in proximity to BC Hydro equipment and contact BC Hydro's Electric Service Coordination Centre at 1-877-520-1355 to arrange for a BC Hydro representative to attend your site. In many cases an assessment will identify that workers could be exposed to electrical hazards.

This site visit will determine what is required to protect the safety of the worker. BC Hydro has responsibilities as the owner of the power system, and will review the hazards and provide options to help you maintain compliance with the WorkSafeBC Regulation.

BC Hydro will assess the options based on the Hierarchy of Controls identified in Section 19.25.

- We will determine whether it is practicable to displace or reroute the electrical equipment or conductors from the work area.
- If this option is not practicable, we will assess whether it is practicable to isolate and ground the electrical equipment.
- If isolation and grounding is not practicable we will assess whether the electrical equipment can be visually identified and guarded.

Never place your workers at risk of electrical contact and always follow WorkSafeBC Regulation.

Drones and BC Hydro Infrastructure

Drones (Unmanned Aerial Vehicles, or UAV's) are becoming common tools and BC Hydro asks you to keep the following rules in mind when flying near BC Hydro infrastructure:

- All UAV activity is regulated by Transport Canada and any user must adhere to the law.
- BC Hydro permission is required for UAV activity near transmission lines and our generation and substation sites, and wherever our employees are working. These flights must be coordinated with both:
 - BC Hydro's Aircraft Operations Department (1-844-469-8848 or aircraftoperations@bchydro.com) to determine scope of work and avoid conflict with BC Hydro helicopter and drone traffic.
 - BC Hydro's Security Command Centre (1-877-311-8611 or securitycommandcenter@bchydro.com) for permission to fly in proximity to our plant.
- There is a possibility of electrical interference with communication and controls systems and UAV controls may not function correctly near our lines and equipment.

Safety Incidents

Agriculture

- A customer was clearing out livestock pens with a mini excavator and caught the communication wire, breaking a pole. This caused high voltage lines to come within reach.
- A farmer was cutting hay and hit a guy wire along the edge of his fence. He pulled the guy wire until the pole broke. The pole fell over across his tractor and the high voltage line stayed energized. It was inches from touching the tractor.
- Farm equipment hit a guy wire causing a transformer to come loose from a pole, hanging in the air by a wire.
- A person moving farm equipment caught communication lines, causing a pole to break and bringing high voltage lines to the ground.
- Farm equipment contacted a guy wire and broke two transmission structures.



Construction

- An overhead construction crane made contact with a high voltage line, causing an outage. The crane was being operated by remote control and there were no injuries.
- A customer demolished a house while the service wires were still energized.
- A civil crew exposed duct and dug beside it. The crew did not support the duct and it sagged and broke.
- An excavator was working on driveway/parking area and tore down a low voltage service, damaging transformers.
- A demolition contractor was demolishing a house but did not contact BC Hydro. The backhoe operator called BC Hydro when he saw arcing and flashes after crushing 3/4 of the house. There were no injuries.
- A private construction company snagged an overhead service with an excavator and broke a pole.
- A loader moving near an industrial area made contact with a transmission structure causing an outage
- A line contractor happened to be on a site visit at a work site and noticed that three residual buildings were being demolished before their overhead services were disconnected. The contractor also noticed that a meter base was exposed.
- A contractor had exposed what they thought was BC Hydro duct with VAC truck, and began digging beside the exposed duct. At this point they contacted the actual BC Hydro duct. There were no injuries.
- On a public construction site a private contractor working in an excavation damaged a duct and did not notify BC Hydro. The damage was discovered during the response to a customer outage.



Forestry

- A non-utility arborist was trimming a tree when he lost control of it and it fell on a high voltage line, breaking the line.
- A crew was called to a tree on wire with customers out. A tree had hit the line and knocked it off of its insulator. When they arrived they found that a feller-buncher was working close by and may have caused the incident.
- A crew found 3 spans of neutral down in a logging area.

Municipalities

- A crew doing work on road for the city dug into energized duct causing outage to hydro customers. WorkSafeBC was notified and attended the site.
- An excavating contractor was digging along a ditch line preparing to install a new waterline for a subdivision. They ended up tearing up a new duct with an energized high voltage cable in it.
- A contractor installing a waterline for a construction company dug into a 12,000V cable. The contractor didn't have BC One Call ticket.
- A crew installing water and sewer mains excavated too close to BC Hydro underground facilities and broke a duct containing low voltage cables.
- A crew installing water and sewer mains were using a vac truck and a back hoe when they came across broken ducts. The duct appeared to have been broken for quite some time but was not previously reported. The Forman on site placed himself at risk by standing right beside the broken duct with the cable exposed.
- A mower severed a guy wire on a distribution circuit causing the guy wire to flip up and contact on an adjacent transmission circuit.
- A municipal crew was digging to expose their water service with a backhoe when they dug up low voltage conduit and service wire. They also damaged communication duct and exposed a gas line. They stopped work and no one was hurt.
- Excavation crew was installing a new waterline. The excavator boom caught the communication line breaking the pole and bringing down low voltage lines.

Transportation

- A semi-trailer backed up into a pole shearing it off at the ground line and moving it 10 feet. A high voltage cable ran the length of the pole to feed underground equipment – this cable was damaged. The driver left the site but photos taken by a witness allowed the RCMP to locate the truck at local truck stop.
- A dump truck with its box up caught communication lines and broke a pole with high voltage wires.
- A highway maintenance grader hit a guy wire with its blade and caused top of pole to break.
- A flagger set up a folding chair approx. 0.5m from a downed powerline.
- A road maintenance contractor hit and broke a pole with a brush mower.
- A heavy equipment operator was moving a processor and caught a guy wire which caused a pole to break. Lines contacted trees and started a brush fire.



Utilities

- A contractor doing directional drilling drilled through the house service cable.
- A crew installing a utility had a trench open next to a pole. The bottom of the hole was below the bottom of the pole – there was no 30M33 in place and the pole was not being held.

Other Incidents

A painting contractor was working aloft, painting the siding of condo development from a Genie boom lift parked in the middle of a busy road. The contractor swung the boom lift above the high voltage lines in order to paint the side of the building. When he lowered the boom it made contact with the high voltage conductor. He was transported to hospital.



Two window washers were working on a two story townhouse complex. They were in the process of setting up their ladder against the wall of the building and contacted high voltage lines. Both workers suffered burns and were transported to hospital.



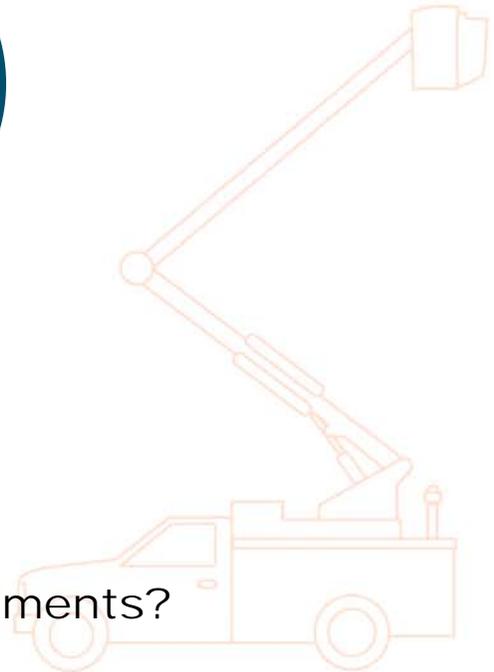
Public Safety Themes and Campaigns

This fall we will be attending the BC Municipal Safety Association conference and the BC Construction Safety Alliance conference. If you know of an event that will help us get the message out around electrical safety, please contact me at marc.spencer@bchydro.com.

Electrical Safety Awareness Training

BC Hydro provides electrical safety awareness training for trades workers, first responders, and members of the public who may have interaction with our facilities. The training is provided free of charge, and it is available both online and in person.

For more information go to www.bchydro.com/safetytraining.



Questions or comments?

Marc Spencer
Public Safety
604-528-1952
marc.spencer@bchydro.com