

Incident Summary Reference # 5616487

SUPPORTING INFORMATION	Incident Date			May 28, 2017
	Location			Penticton, BC
	Regulated industry sector			Electrical – Low voltage electrical system (30-750V)
	Impact	Injury	Qty injuries	1
			Injury description	A minor shock causing mild pain was received to the forearm. No other physical damage was incurred
			Injury rating	None
		Damage	Damage description	N\A
			Damage rating	N\A
		Incident rating		
	Incident overview			A telecom worker was installing a new aerial fibre optic cable to a residence. While attempting to remove the older communication cable run too close to the exposed power conductors his bare arm brushed against one of the power conductors and he received a minor electrical shock. The shock startled him and he jumped down off the ladder without further incident or injury.
INVESTIGATION CONCLUSIONS	Site, system and components			The electrical installation code requires a minimum separation of 300mm between insulated power and communication conductors. Modern insulation types are resistant to degradation and breakdown due to the new materials used in their construction This separation is considered enough of a safety boundary between the two systems such that trained workers will not be unduly subjected to a shock hazard.
	Failure scenario(s)			<p>The original power conductors supplying the home’s electrical service box were over 60 years old. The conductor insulation is weather-beaten due to environmental factors and this reduced the insulating abilities of the insulation and may have created un-noticeable bare spots.</p> <p>Over the years additional aerial cables were installed to supply cablevision service and to upgrade existing telephone service. These installations resulted in reduced clearances between the power and communication cables and the communication cable was routed between the power conductors in very close proximity to each other.</p> <p>The worker was likely required to reach in close to the power conductors to remove the existing telephone cable before connecting the new one and while doing so his bare arm contacted the energized powerline. Working with bare arms and without gloves will increase the exposure to a shock risk while performing this task.</p>
	Facts and evidence			<p>The existing home was constructed in 1964 with a 100A main service. The power conductors of that time period consisted of a rubberized compound with an overall cloth jacketing. This type of insulation is susceptible to degradation from environmental factors such as UV, salt spray and other air-borne contaminants.</p> <p>At some time a Cablevision service drop (cable) was installed to the property and the conductors were run from the same pole and attached to the house in very close proximity to the power conductors. Telephone service was also updated with a newer service drop (cable) at some time.</p>

Incident Summary Reference # 5616487

		These conductors were found non-compliant in providing sufficient clearance as required by the BC Electrical Code.
	Causes and contributing factors	<p>Workers should be more thoroughly trained in recognizing the older style power conductors and in their inherent tendencies to physical break down becoming a shock risk.</p> <p>Close inspection of the service conductors could have been made to identify any insulation or lack of insulation which might pose a shock hazard when first .</p> <p>Working on a Sunday may make a worker anxious to complete the days tasks.</p> <p>The weather was very warm and a worker not wearing gloves or protective clothing on his bare arms is at an increased chance of risk. Protective clothing reduces the chance of accidental contact with energized power conductors.</p>

Site Photos



Photo of Hydro pole across street with aerial conductors to home



Photo of aerial conductors gathered at same connection point on home. The communication cables are intertwined with the power conductors



Close up of power conductors, cablevision and Telus communication cable intertwined around service head



New (black) fibre optic cable connection into existing CATV connection box