

Incident Summary #II-1327439-2022 (#26178) (FINAL)

SUPPORTING INFORMATION	Incident Date		February 6, 2022	
	Location		Fruitvale, BC	
	Regulated industry sector		Electrical - Low voltage electrical system (30V to 750V)	
	Impact	Injury	Qty injuries	0
			Injury description	N/A
			Injury rating	None
		Damage	Damage description	Electrical service equipment consisting of service mast pipe, mast pipe weather head, mast pipe attachment, mast pipe roof flange, consumer service conductors, revenue meter mount enclosure sustained mechanical damage and subsequent electric arcing damage from sliding snow that had accumulated then released along the pitched length of metal roofing material.
			Damage rating	Minor
	Incident rating		Minor	
Incident overview		Area weather conditions resulted in high snow accumulations. Snow accumulations releasing along slippery roofing material surfaces loaded then compromised the structural integrity of electrical service equipment and created an unsafe electrical condition resulting in damage to the structure electrical service equipment and civil features.		
INVESTIGATION CONCLUSIONS	Site, system and components		A 63mm metallic service conductor mast pipe is secured to a structure and projects above a structure roofline to provide a location to support aerial electrical service conductor supplied by the area electrical utility. The mast pipe is sized and engineered to accept the consumer service conductors drawn into the mast pipe and sized and engineered to accept cantilever loading of the aerial service conductors and the natural wind and weather loading imposed on the aerial conductors. When the acceptable cantilever loading is exceeded, the mast pipe cannot sustain the load and bends. When a mast pipe is bent, the internal area volume is decreased. The consumer service conductors drawn into the mast pipe may be subject to damage if the internal area volume of the mast pipe is decreased to a level where the conductor insulation is damaged by squeezing or damaged by abrasion from a crease at the unintentional bend area.	
	Failure scenario(s)		Weather conditions in the geographical area prior to the incident resulted in high snowfall accumulations. A subsequent weather warming trend and precipitation created a tendency for snow accumulations to release and slide from slippery, pitched surfaces. Snow releasing and sliding along the length of a metal roofing material loaded the electrical service mast pipe, the mast pipe could not sustain the snow loading and bent.	

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	The service conductors drawn into the mast pipe were compromised and stretched by the falling snow. As a result, the service conductor insulation was damaged and created multiple conductor short circuits, conductor faults to ground, intermittent electrical arcing in and around the area where the mast pipe secures to the meter mount enclosure. The intermittent arcing was sustained until utility overcurrent protection operated and de-energized the electric supply to the structure. The high temperatures at the electrical arcing area charred adjacent combustible materials. No resulting fire damage occurred.
Facts and evidence	Photographs of the damage equipment provided by the incident notifier support the conclusion of the incident investigation. The geographic area experienced multiple slow sliding events, service repairs and related incidents during the end of January, beginning of February 2022.
Causes and contributing factors	It is most likely the extreme weather conditions with high levels of snow accumulations releasing and sliding along slippery surfaces which caused the incident. Electrical service equipment installed in an area that may be subject to snow releasing and sliding was a contributing factor.



Image 1 - Mast pipe and meter mount prior to removal. Note the electric arcing damage, evidenced by ambient light, where the mast pipe is secured to the meter mount (circled).



Image 2 - Mast pipe and meter mount prior to removal – top view of arcing damage and charred adjacent combustible material.



Image 3 - Roof Line: Electric arcing damage to the meter mount enclosure. Circled area indicates the compromised service conductor insulation.