

Incident Summary #II-1515128-2023 (#32692) (FINAL)

SUPPORTING INFORMATION	Incident Date	February 27, 2023	
	Location	Penticton, BC	
	Regulated industry sector	Electrical - Low voltage electrical system (30V to 750V)	
	Impact	Qty injuries	1
		Injury description	Young student required medical attention for minor burns sustained
		Injury rating	Minor
	Damage	Damage description	Outlet and outlet cover were left with burn marks requiring replacement
		Damage rating	Minor
	Incident rating	Minor	
Incident overview	A young student placed a metal paper clip in a non-tamper-proof 120-volt 15 amp rated duplex outlet causing an immediate short. The outlet and outlet cover were burned requiring replacement and the young student sought medical attention.		
and INVESTIGATION CONCLUSIONS	Site, system and components	<p>The common place 120-volt 15 amp rated duplex outlet is installed along useable wall space for use as convenience. These outlets are used widely within systems as the most common type of electrical system people interact with daily. These duplex outlets when installed are also accompanied by a cover plate providing limited access to energized parts.</p> <p>The 120-volt 15 amp rated grounded outlet as well as codes for its safe installation have both changed throughout its inception for use. Modern day codes for safe electrical installation within schools require these outlets to be tamper proof in their design so that no objects can be placed within the receptacle outlet touching energized parts.</p>	
	Failure scenario(s)	<p>This elementary school is dated in its construction as the electrical codes in which it was originally built to have long since been changed.</p> <p>Although many upgrades have been completed over time the tamper proof receptacles have not been installed to replace the original duplex receptacles.</p> <p>Along with a non tamper proof receptacle a metal cover plate was originally installed for a more robust finished product.</p> <p>A curious student was able to put a metal paper clip into the energized port in the plug and when it touched the metallic face plate it caused an immediate short to ground.</p>	

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Facts and evidence	<ul style="list-style-type: none">• Student admitted to faculty that a metal paper clip was inserted into the plug causing the short.• No overcurrent device was tripped as per conversation with the district's electrical maintenance staff.• This outlet was replaced with a tamper proof receptacle and the original was able to be reviewed along with the metal cover plate (see photos below).
Causes and contributing factors	Due to the dated infrastructure the originally installed equipment does not have the modern-day safety equivalent of tamper proof receptacles. The outlet was possible then to have a metal paper clip inserted into the line side of the outlet causing the electrical short and subsequent minor injuries.



Image 1 - Original Outlet. Burned area on the receptacle and the point where the paper clip short against the metal cover plate.



Image 2 - Location of install of original outlet. Replaced with Tamper Proof receptacle as observed in photo.