

Incident Summary #II-827682-2019 (#11457) (FINAL)

SUPPORTING INFORMATION	Incident Date	March 18, 2019	
	Location	Vancouver	
	Regulated industry sector	Elevating devices - Elevator	
	Impact	Qty injuries	0
		Injury description	No injury reported
		Injury rating	None
	Damage	Damage description	Fire damage to the auxiliary elevator controller (Photo 1) which houses some of the high voltage components
		Damage rating	Major
Incident rating	Major		
Incident overview	The auxiliary elevator controller had an internal fire within the controller cabinet and caused a substantial amount of damage to the elevator components within the cabinet.		
INVESTIGATION CONCLUSIONS	Site, system and components	The auxiliary elevator controller houses components that enable the elevator system to operate. These components consist of a motor contactor, load reactor and dynamic braking resistors. The motor contactor is similar to a switch for the elevator motor which enables/disables current to flow to the motor. The load reactor minimizes the effects of voltage spikes to the elevator motor. The braking resistors are used to decelerate an electric motor by converting the motor's kinetic energy to electrical energy.	
	Failure scenario(s)	One or more components within the auxiliary elevator controller produced a large amount of heat and ignited components within the controller. The ignition source was just below the motor contactor.(Photo 2)	
	Facts and evidence	<p>During Onsite Investigation:</p> <ul style="list-style-type: none"> • 2 elevating units on site, only one was affected by the fire • Auxiliary elevator controller for the first unit was still in its original condition (Photo 1) • Auxiliary elevator controller for the second unit was damaged extensively from the fire(Photo 2) • During investigation it was confirmed that auxiliary elevator controller damaged during by the fire was the original, with all original parts. • Damage from fire was seen in the area just below the motor contactor (Photo 3) • Fire was investigated by a reputable fire investigation company () and a final investigation report was provided. • According to report, the left cable below motor contactor was the ignition source. The yellow colour of the cable strands indicates that the cable reached a temperature of approximately 1050 degree C, which was hot enough to ignite the enclosure of the contactor. also indicated a loose connection from the cable to the terminal block below contactor was the probable cause of the high resistance heating 	

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	<ul style="list-style-type: none">• Entire auxiliary controller cabinet was replaced after the investigation (Photo 4)• A follow up assessment was performed on this unit prior to releasing the unit for public use
Causes and contributing factors	<p>It is very likely that a loose cable connection at the left terminal block from the high current cable was the cause of the fire within the cabinet housing the auxiliary elevator controller. Contributing factors could be improper initial installation or maintenance</p> <p>report also confirms that the yellow colour of the cable strands after the fire indicates a high resistance heating took place</p>

Photos or diagrams (if necessary)



Photo 1 - Picture of Auxiliary controller from other elevator which was not affected by the fire



Photo 2 - Origin of the fire just below the motor contactor

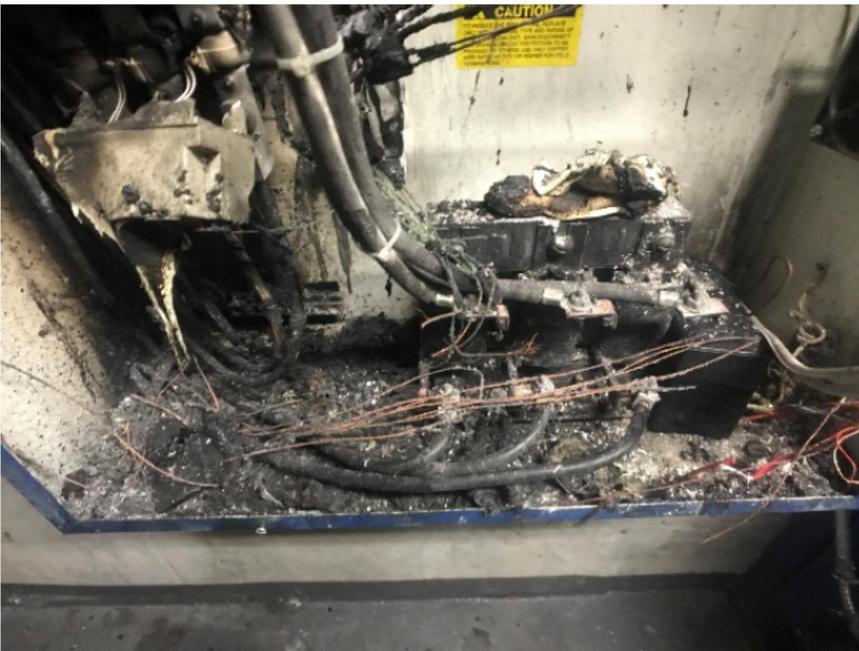


Photo 3 – Shows the fire damage just below motor contactor



Photo 4 Picture of new replaced auxiliary controller