Incident Summary #II-1244167-2021 (#23713) (FINAL)

SUPPORTING INFORMATION	Incident Date		August 24, 2021
	Location		New Westminster, BC
	Regulated industry sector		Elevating Devices - Elevator
	Impact – Injury	Qty injuries	0
		Injury description	N/A
		Injury rating	None
	Impact – Damage	Damage description	Damage to variable frequency drive unit, regenerative resistors, and wiring.
		Damage rating	Moderate
	Incident rating		Moderate
	Incident overview		During a fault with the variable frequency drive, the regenerative resistors overheated. Maintenance records and manuals that were sitting on top of the controller cabinet directly over the resistors, caught on fire. Fire Department was called, and the fire was extinguished.
INVESTIGATION CONCLUSIONS	Site, system and components		The variable frequency drive receives commands from the controller that will provide power to accelerate and decelerate the elevator during operation. The regenerative resistors dissipate energy in the form of heat when the elevator is slowing down or accelerating when stopping or leaving floors.
	Failure scenario(s)		A fault in the drive (overheat) caused the drive to fail and the resistors to dissipate excess heat. A fire started where maintenance manuals and documents were placed on top of the controller cabinet directly above the regenerative resistors (Image 1 and 2).
	Facts and evidence		• The fire was contained to the top of the cabinet based on amount of ash where the maintenance records and documents were placed (Image 1). • There was no evidence of fire inside the controller cabinet, other than ashes from the documents on top of the cabinet dropping down through ventilation openings onto equipment inside of the controller (Image 3 and 6). • Damage caused by heat was found inside of the controller cabinet at the drive and wiring connected to the drive. • Damage caused by heat was also found at the top of the controller or near the regenerative resistors and surrounding wiring (Image 4, 5 and 6). • The variable frequency drive did shut down, but the mechanic was unable to determine when.

Incident Summary #II-1244167-2021 (#23713) (FINAL)

Causes and contributing factors	It is almost certain that heat was created by the regenerative resistors overheating, due to a fault caused by the variable frequency drive. It is probable that the maintenance manuals and documents caught on fire due to being placed on top of the controller cabinet directly over the regenerative resistors. The investigation was unable to determine the cause of the variable frequency drive overheating.

Image 1: Log Book, MCP Manual, schematics and documents were directly above the regenerative resistors

Image 2: The fire was contained to the top of the cabinet

Image 3

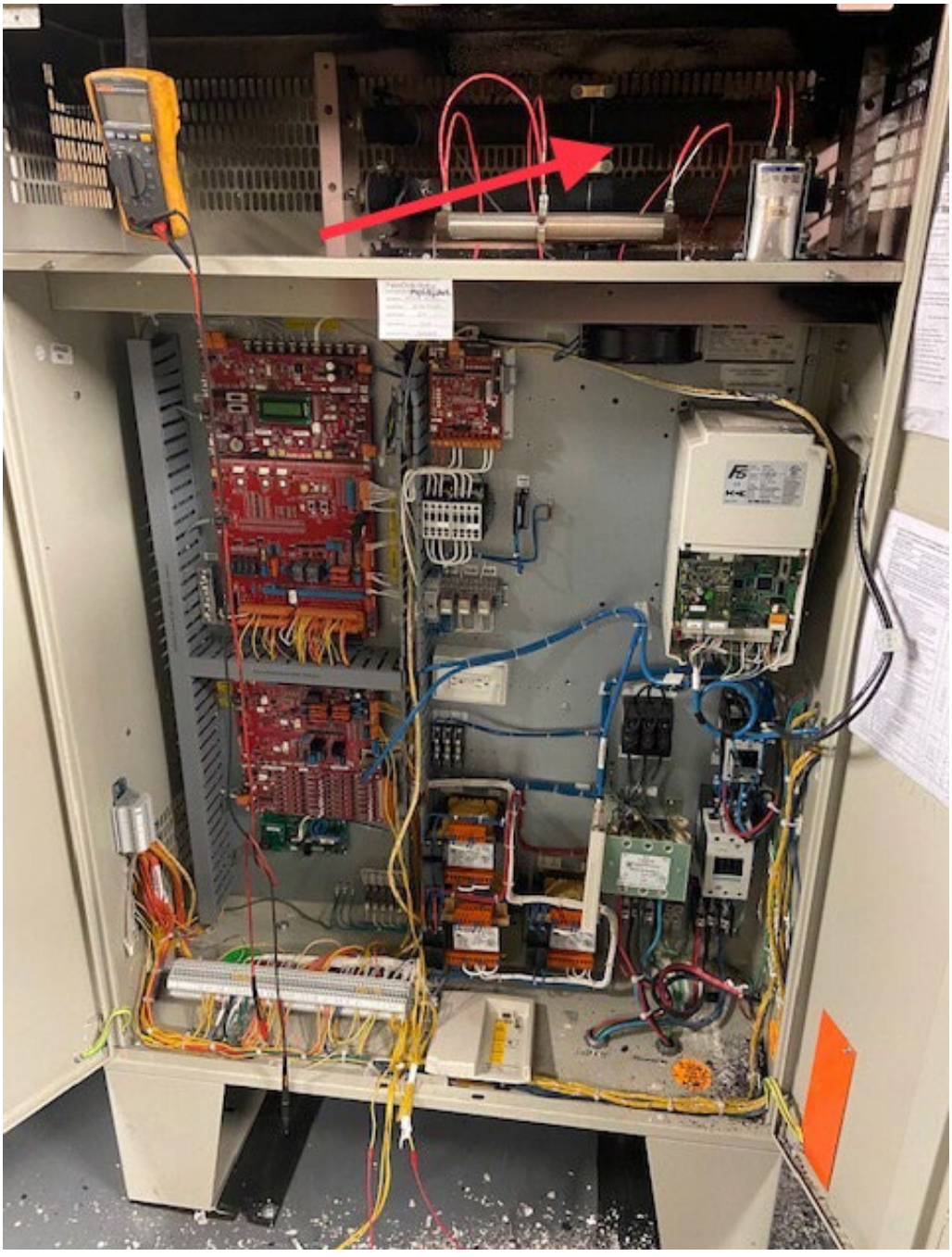

Image 4: Damage caused by heat

Image 5: Damage caused by heat

Image 6: Damage caused by heat