
	STANDARD OPERATING GUIDELINE			
	OPERATIONS			
	FIRE SCENE INDUSTRIAL HYGIENE – VEHICLE EXHAUST CAPTURE SYSTEM			
	Effective: 12/Feb/2019	Revised: 28/Dec/2020	S.O.G. #: O-342.4	

1.0 Purpose

- 1.1 The purpose of this guideline is to document the operational procedures of the Plymovent vehicle exhaust capture system.
- 1.2 All fire stations are equipped with vehicle exhaust capture systems. These systems are effective at reducing fire fighter exposures to diesel exhaust to the lowest feasible concentration by capturing vehicle exhaust and venting it to the outside. The Plymovent system attaches directly over the tailpipe of fire apparatus and captures diesel exhaust before it enters the room air.

2.0 Responsibility


- 2.1 It is the responsibility of all Highland Park Fire Department personnel to understand and follow the information documented in this Standard Operating Guideline. Supervisors are responsible for insuring that personnel maintain compliance with this guideline.

3.0 Background

- 3.1 Diesel engine exhaust is a complex mixture of both gaseous and particulate substances, including carbon monoxide, oxides of sulfur, nitrogen, and hydrocarbons.
- 3.2 The concentrations of chemicals in diesel exhaust vary based on the condition of the engine and composition of the fuel. Diesel exhaust particulates are small enough to be inhaled and deposit in the lungs and lower respiratory system.
- 3.3 Short term exposure to diesel engine exhaust can cause headaches, dizziness, and irritation of the eye, nose, and throat. Symptoms of exposure include shortness of breath, chest tightness, coughing, or wheezing. Long term exposure can increase the risk of heart disease, respiratory disease and is classified as a Group 1 carcinogen, which means it is known to cause cancer in humans.
- 3.4 Firefighters are at high risk of exposure to diesel engine exhaust, particularly inside fire stations where fire apparatus release diesel exhaust that has the potential to disperse to areas of the station. Diesel particles can settle on and contaminate apparatus, personal protective equipment, and living areas throughout the fire station. This residue of particulates creates a secondary source of exposure through absorption or accidental ingestion.

4.0 Procedures for Exiting Fire Stations

- 4.1 Upon starting vehicle, the system fan will automatically start and it will turn off automatically based on the setting of the timer mechanism.
- 4.2 Vehicles shall exit stations at a safe speed as recommended by Plymovent (not to exceed 10 mph) to prevent injuries to personnel inside the station and reduce possible damage to the components of the exhaust system.
- 4.3 All personnel shall stay clear of the exiting vehicle and exhaust system. The hose moves with the vehicle along the track or rail and detaches from the tailpipe as the system's trolley engages the disconnect magnet. After the nozzle detaches from the tailpipe the hose will retract to a normal resting position. The Plymovent Vehicle Exhaust Capture System is a

	STANDARD OPERATING GUIDELINE			
	OPERATIONS			
	FIRE SCENE INDUSTRIAL HYGIENE – VEHICLE EXHAUST CAPTURE SYSTEM			
	Effective: 12/Feb/2019	Revised: 28/Dec/2020	S.O.G. #: O-342.4	

moving system when connected to a vehicle and in-station personnel must stay clear of its traveling path to ensure their safety.

5.0 Procedures for Entering Fire Stations

- 5.1 Upon returning to station, the person riding in the firefighter position shall dismount the apparatus, retrieve the hose, and bring it to the inside threshold of the overhead door. The driver will bring the vehicle slowly into the station and stop the vehicle when the exhaust pipe is inside the threshold of the overhead door. The officer's window should be open so that voice communication can be utilized in the event of an emergency.
- 5.2 The firefighter shall make the hookup of the Plymovent hose after the vehicle has come to a complete stop. This procedure is as follows:
 - 5.2.1 Stand at the inside threshold of the overhead door with exhaust hose in front of you.
 - 5.2.2 Place the exhaust nozzle over the tailpipe and connect the magnet to the vehicle.
 - 5.2.3 The firefighter will signal the driver that it is safe to move forward and park the vehicle.
 - 5.2.4 The Plymovent is to remain connected to the apparatus even when the apparatus is shut- down as the particulates that can still come from the exhaust may still be aerosolized into the station.

6.0 Other Operational Information

- 6.1 Open garage doors before starting apparatus.
- 6.2 Vehicles should not be allowed to idle inside the station.
- 6.3 All drivers should be instructed to keep apparatus operation to an absolute minimum in the fire station.
- 6.4 Garage doors should be left open, *when weather conditions permit*, for at least 10 minutes following the operations of the vehicles.
- 6.5 Keep all doors leading from the apparatus rooms to stairwells, living quarters, hallways, offices, or other areas doors closed and sealed.

7.0 References and Supporting Documents

- 7.1 Plymovent Vehicle Exhaust Capture System

Approved:  Fire Chief