

Diesel particulate filters and heavy-duty trucks — reducing the risk of fire

A hydraulic hose was located near a garbage truck's diesel particulate filter (DPF). The hose failed and sprayed hydraulic fluid. Heat from the DPF ignited the hydraulic spray, burning a worker, the truck, and the side of a nearby building.

On a heavy-duty truck, hydraulic lines may be located near a DPF. The intense heat generated by the DPF can damage improperly shielded lines and cause them to rupture and spray hydraulic fluid. The heat from the DPF can then ignite the spraying hydraulic fluid and put operators and other people nearby at risk of injury from fire.

How diesel particulate filter systems work

DPF systems are used on many large, diesel-powered trucks to reduce the amount of fine particles (soot) released in the exhaust. A DPF traps the soot in a filter. The DPF system then exposes the soot to high temperatures to break it down into less-harmful ash.

How a fire hazard can develop

During this soot-burning process, known as regeneration, temperatures near the DPF can reach about 607°C (1,125°F). Equipment located near the DPF can be exposed to this high heat. If not properly shielded, the equipment may fail. If a hydraulic line fails, hydraulic fluid may spray out and ignite, resulting in a fire.

Examples of vehicles with hydraulic machinery include garbage, recycling, and delivery trucks, as well as trucks with deck cranes and other equipment. This machinery may be installed or retrofitted on a large diesel chassis. In some cases, the machinery's hydraulic components are placed too close to the DPF system, and they may not have proper heat shielding.

What employers and drivers can do to reduce the risk

When inspecting large diesel trucks with DPF systems, ensure the following:

- Hoses, wires, and other equipment located near DPF systems are in good condition and are not showing signs of heat damage.
- Equipment located near DPF systems is protected from heat exposure by either distance or proper shielding.
- The area around the DPF system and all hydraulic components is free of debris.