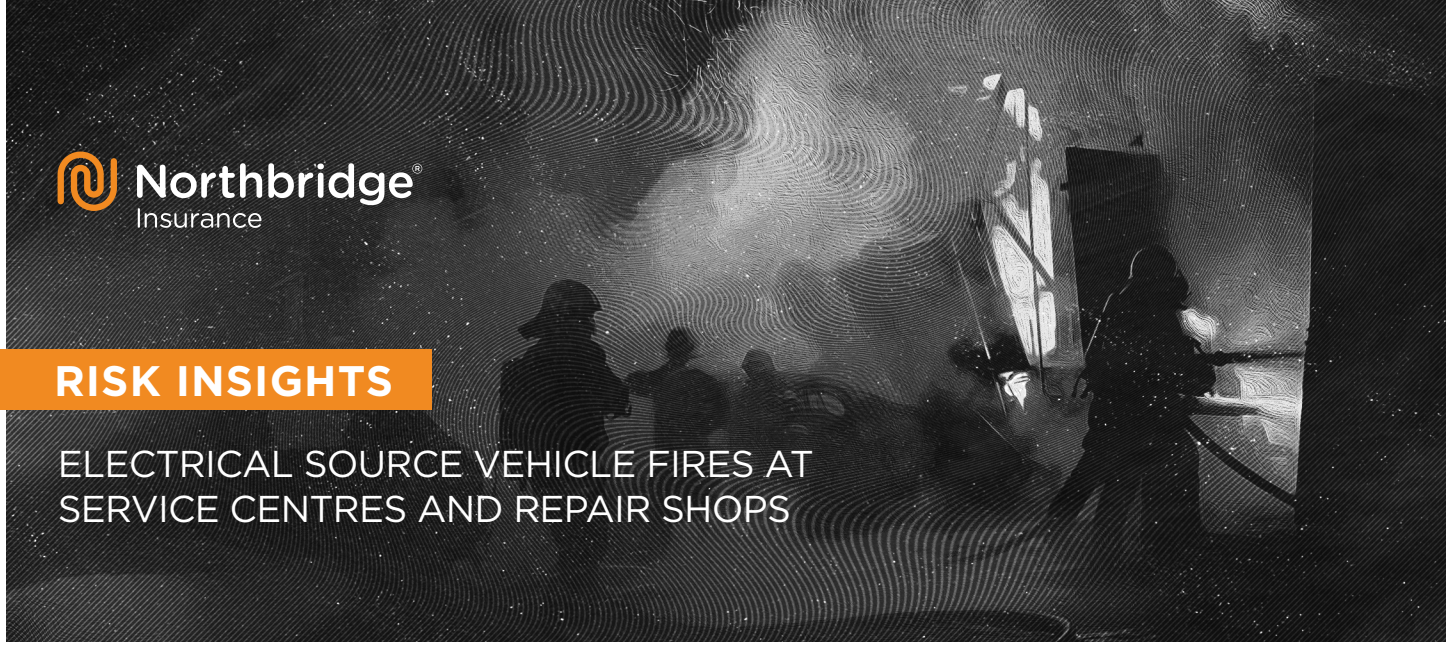

Northbridge® Insurance

RISK INSIGHTS

ELECTRICAL SOURCE VEHICLE FIRES AT SERVICE CENTRES AND REPAIR SHOPS

Some common ignition sources for fires can occur when vehicles and equipment experience electrical malfunctions at service centres and repair shops. Highway motor vehicles, marine vehicles, recreational vehicles and equipment all contain various electrical components, such as batteries, cables and wiring, power generators and electronic control units. In a matter of minutes, your property could be engulfed in a fire as the flames from a vehicle encounter other highly combustible material as a result of ignition from an electrical source.

Real life scenario: A customer brings in a vehicle—with no immediate visible issues—to a repair shop. Later, the vehicle catches on fire and the fire extends throughout the building causing property damage. After a thorough investigation, it is discovered the cause of the fire was electrical in nature, due to the battery cable from a charger being left on all night. Charging electrical systems can build up heat, especially if damaged or if safety components like fuses fail. This heat build-up can cause components to melt and eventually ignite combustible material or even cause explosions.

TAKE THE PROPER PRECAUTIONS TO PROTECT YOUR BUSINESS AND TO PREVENT LIFE-THREATENING INJURIES. DEVELOP WRITTEN HANDLING PROCEDURES OF VEHICLES FOR YOUR EMPLOYEES AND ENFORCE REGULAR INSPECTIONS ON ALL VEHICLES AND EQUIPMENT ON YOUR PROPERTY. ONLY QUALIFIED PERSONNEL SHOULD BE ENTRUSTED TO DISCONNECT BATTERIES OR MAKE OTHER ALTERATIONS TO THE VEHICLE SYSTEMS.

Disconnecting the power supply

A good risk management practice is to disconnect batteries from vehicles as soon as they're brought into a building. This is especially important for vehicles or equipment that are being serviced due to electrical issues. Disconnecting from a power supply and removing batteries also helps prevent battery drainage. Furthermore, a notification system should be established to indicate the vehicle has been made safe by disconnecting the battery. A red tie or even a sign indicating "Battery Disconnected" should be placed in a visible location on the outside of the vehicle. Most damaged vehicles towed in from accident sites should already have the battery disconnected, however, it is still your responsibility to ensure this has been done properly.

For your personal equipment, such as trucks or other motorized equipment, consider installing permanent devices called battery cut-off switches. When the unit is inside a building for repairs or storage, the battery power supply can be disconnected preventing an electrical fire. Battery cut-off switches disconnect a battery's power supply quickly and easily. After installing a battery cut-off switch on the negative post, the battery cable is then attached to the cut-off switch. A mechanism on the cut-off switch tightens and loosens the battery cable which disconnects or engages the power supply from the battery. Cut-off switches are also an effective loss prevention tool for deterring theft of vehicles and equipment. The mechanism on many cut-off switches can be completely removed or locked, making it impossible to start a vehicle or equipment. Some new equipment comes with a factory installed cut-off switch.

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Battery safety

Short circuits, overcharging and other battery/charger malfunctions can produce heat buildup, which may lead to fires, explosions and ultimately, loss of property. Only qualified personnel should be working on the electrical system and battery of any vehicle. When working with batteries, enforce the mandatory use of personal protective equipment (PPE) because batteries contain toxic fumes and acid that can cause lung damage, blindness and burning or scarring of the skin.

Installing and removing batteries

- Shut down all related electrical loads prior to performing battery maintenance.
- Always disconnect the negative (black) terminal connector before connecting or removing the positive (red) terminal connector. This prevents an electrical arc from occurring should a wrench touch a grounded surface.

Charging batteries

- Never charge batteries during non-business hours as no one is there to monitor the process and react if something goes wrong.
- When charging batteries during business hours, remember to first connect the charger connectors to the battery and ensure the charging circuit isn't energized.
- Follow the charger's operating instructions and make sure the connections are to the correct polarity—positive (red) to positive (red) and negative (black) to negative (black). Once the connections are made, turn the charger on.
- Unplug the charger at the end of the workday or when it cannot be supervised.
- Unattended and unobserved charged electrical systems, such as those found in a vehicle, can constitute a significant hazard if there is an unknown damage or malfunction. Disconnecting the power source from the potential ignition point will reduce the hazard significantly—as well as eliminate the possible drain on the battery.
- Never leave a charged or charging battery unattended overnight in a vehicle stored within the building.

Maintenance procedures

- Before performing maintenance, repairs or tightening of terminal connections, ventilate the battery compartment as batteries vent hydrogen gas, which can accumulate around the battery compartment.
- Ensure there are no possible malfunctions or damage to the electrical system before reconnecting the battery and storing the vehicle outside.

The batteries and electric systems discussed above do not include specialized batteries, hybrid vehicles or fully electric vehicles. Work on such specialized batteries and vehicles requires specialized training and equipment with significantly different safety practices.

For more information on making your business safer, contact our Risk Services team at **1.833.692.4111** or visit us at **www.northbridgeinsurance.ca**.

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