Electric & Autonomous Vehicles on Site: New Risks, New Rules Stats and Facts

FACTS

- **High Voltage Is a Different Kind of Danger:** EV battery packs can operate above 800 volts. Contact without proper training and insulated PPE can be immediately fatal.
- **A Paused EV Is Not De-energized:** Switching off an electric vehicle does not eliminate stored battery energy. The system retains lethal voltage even when the vehicle appears off.
- **Thermal Runaway Has No Warning:** A damaged lithium-ion battery can enter thermal runaway — uncontrolled heating producing intense heat, toxic gases, and fire — without any visible warning.
- **Re-ignition Is a Real Hazard:** An EV fire that appears extinguished can reignite hours or days later due to stranded energy in undamaged battery cells. Workers who assume the scene is clear may be walking back into an active hazard.
- **Autonomous Vehicles Do Not See Everything:** Site-based autonomous vehicles rely on sensors that can be confused by obstructions or unexpected worker movement. Presence in their path is never fully safe.
- **Training Has Not Kept Pace with Adoption:** Workers are increasingly operating, servicing, or working near electric and autonomous equipment they have not been specifically trained on.
- **Standard Emergency Response May Not Apply:** Fire suppression and rescue procedures for conventional vehicles do not always transfer to EV incidents. EV-specific emergency protocols are required.

STATS

- Fires involving lithium-ion batteries in U.S. workplaces have increased significantly in recent years, according to the National Fire Protection Association, 2021–2023.
- There were 5,180 non-fatal electrical injuries involving days away from work in the U.S. in 2023–2024 combined — a 59 percent increase from the previous two-year period — according to the Electrical Safety Foundation International.
- New York City reported more than 800 lithium-ion fires resulting in over 30 deaths and 400 injuries since 2022, according to FDNY data.
- OSHA found that SK Battery America Inc. exposed workers to serious health hazards after a lithium battery fire in October 2023 caused potentially permanent respiratory damage — and that the company had failed to train workers on how to protect themselves from the toxic atmosphere the fire produced.
- As of November 2025, 5,202 autonomous vehicle accidents had been reported in the

United States since 2019, with 7.4 percent resulting in injury and 1.2 percent in a fatality, according to NHTSA reporting data.

- In Canada, electrical contact remains a leading cause of workplace fatalities in industries involving energized equipment, according to the Association of Workers’ Compensation Boards of Canada.