Charging Ahead Safety Considerations for Electric Equipment & Vehicles Stats and Facts

FACTS

- **Electrical Shock Risk:** Charging systems and high-voltage components can expose workers to electric shock if equipment is damaged, improperly handled, or not de-energized.
- **Battery Fire and Thermal Runaway:** Lithium-ion batteries can overheat, ignite, or explode if damaged, improperly charged, or exposed to extreme temperatures.
- **Improper Charging Practices:** Using incompatible chargers, overloading circuits, or charging in unsafe areas increases fire and electrical hazard risks.
- **Arc Flash Hazards:** High-voltage systems in electric vehicles and equipment can produce arc flash events, causing severe burns and injuries.
- **Confined Space Charging Risks:** Charging batteries in enclosed or poorly ventilated areas can lead to accumulation of gases and increased fire or explosion risk.
- **Trip and Cable Hazards:** Charging cables and equipment left in walkways create trip hazards and increase the risk of falls in busy work areas.
- **Lack of Training on High-Voltage Systems:** Workers unfamiliar with EV systems may not recognize hazards, increasing the likelihood of unsafe handling and incidents.

STATS

- In the United States, **fires involving lithium-ion batteries have increased significantly in recent years**, with workplace incidents reported across industries using electric

equipment (National Fire Protection Association, 2021–2023).

- U.S. data shows that **electrical incidents, including shock and arc flash, continue to cause dozens of workplace fatalities annually**, particularly in maintenance and equipment-related tasks (U.S. Bureau of Labor Statistics, 2022–2023).
- In Canada, **electrical contact remains a leading cause of workplace fatalities in certain industries**, including those involving energized equipment and systems (Association of Workers' Compensation Boards of Canada, recent years).
- The U.S. Bureau of Labor Statistics reports that **exposure to electricity accounted for multiple fatal occupational injuries each year**, including incidents involving equipment maintenance and power systems (2021–2023).
- In Canada, workplace data indicates that **fires and explosions, including those linked to electrical systems, result in serious injuries and fatalities annually** (AWCBC, recent reporting years).