Safely SPEAKING

BY BRUCE BURTON

Battery safety

BATTERIES are used everywhere – farm equipment, vehicles, battery-powered forklifts, and a multitude of other applications that make our lives easier. When batteries do their job, they essentially go unnoticed. However, they do come with hazards that can cause serious property damage, injuries and death. Your safety program should include training and procedures on battery maintenance, jump-starting, installation or removal, and charging.

Ignoring the potential hazards of batteries can have severe consequences. Batteries contain acid and can explode or catch fire. Should this happen, acid and toxic fumes are released and contact with the skin may result in painful burns and scarring. The toxic fumes produced can damage lung tissue and blindness may occur if the acid contacts the eyes. The use of Personal Protective Equipment (PPE) is mandatory when working with batteries and PPE should be part of your safety program.

Explosive gases are produced when batteries are being charged. Heat or sparks can ignite these gases resulting in a fire or explosion. Batteries should be charged in areas free of ignition sources, such as hot work activities, open flames, smoking or other electrical equipment.

Batteries should be kept clean and free of dust to protect against shorting. Spilled electrolyte mixed with dust on a battery can create a low resistance electrical path, which can cause a short in the battery.

The type of maintenance and inspection program will depend on the particular battery. Flooded lead-acid storage batteries require the most maintenance. However, even so called "maintenance-free batteries" may still require some maintenance, such as cleaning. For specific maintenance details, please consult the manufacturer's recommendations.

The following guidelines for battery safety are intended as general information.

Maintenance procedures

- Batteries vent hydrogen gas and these gases can accumulate around the battery compartment.
- Always ventilate the battery compartment prior to performing any maintenance, repairs or tightening of terminal connections.

Jump-starting batteries

- For negative ground vehicles, connect one end of the jumper lead (red) to the positive terminal of the dead battery and connect the other end to the positive terminal of the booster battery.
- Connect one end of the jumper lead to the negative terminal (black) of the booster battery: then connect the other end to the bare metal frame at a location away from the battery of the equipment being jump-started.
- Once started, disconnect the jumper leads in reverse order.

Installing or 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 will prevent an electrical arc from occurring should a wrench touch a grounded surface.

Charging batteries

- Before connecting the charger connectors to the battery, ensure the charging circuit is not energized.
- Follow the manufacturer's operating instructions and ensure the charger 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.

Short circuits, overcharging or other battery and charger malfunctions can result in heat buildup and fire. Chargers should be monitored and used only during business hours. It is preferable to unplug the charger at the end of the business day.

At Federated Insurance, we believe loss prevention is a critical component of your risk management program. For more information, contact our Loss Prevention Department at 1-800/665-1934, or visit our Web site at www.federated.ca.

BRUCE BURTON, CRM, is a loss prevention technical specialist for Federated Insurance.