

Contact Safety Jan - March 2017

Mine Safety & Training Section

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ELECTRICAL SAFETY

Every day, we are reminded of the importance of electricity. It is used to light our workplaces and homes, powers industrial and hospital equipment that serve important functions daily. Without electricity, many of the technological advances we have made would not be possible. But with this important source of power comes serious hazards. We will look at a few areas in mining where it is important to be aware of electrical hazards.

Extension Cords

Throughout the job site, many powered tools require the use of extension cords. During normal use, wires can become loose and exposed. It is important to follow some basic precautions when using extension cords.

- Use only equipment that is approved to meet MSHA standards and manufacturer recommendations.
- Do not modify or use extension cords incorrectly. Splices and repairs to extension cords must be made IAW 56/57.12013.
- Use factory assembled cord sets and only extension cords that are 3-wire type.
- Remove cords from receptacles by pulling on the plugs and not the cord.

- Use only cords, connection devices, and fittings that are equipped with strain relief.
- Conduct annual continuity and resistance testing on all extension cords IAW 56/57.12028.
- As required under 56/57.12030, correct all potentially dangerous conditions once found, before equipment or wiring are energized.

Equipment

The mining environment is typically considered rugged and under normal use electrical equipment experiences significant wear and tear each day. This can result in exposed wires, short circuits and insulation breaks. If equipment is not equipped with ground fault protection, the worker can be exposed to shock hazards. Some of the same basic precautions that were discussed with extension cords also apply to the use of electrical equipment.

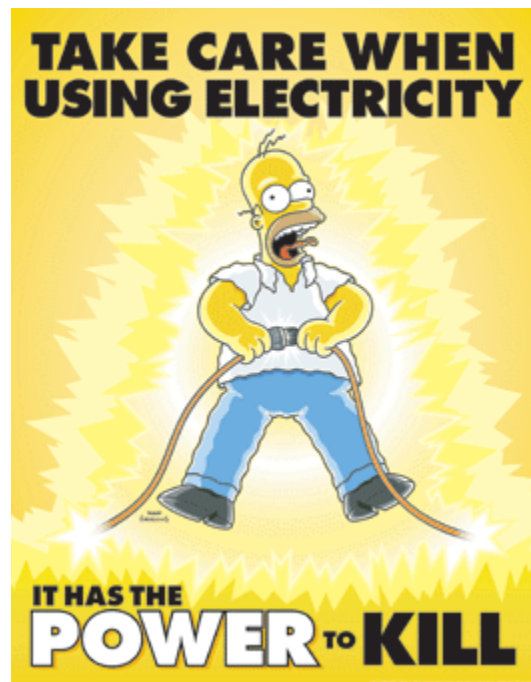
- Where possible, use ground-fault circuit interrupters (GFCIs) on all 120-volt, single-phase, 15 and 20 ampere receptors.
- Ensure an annual ground resistance and continuity program is established and documented.
- Use tools and equipment that is double insulated.
- Visually inspect all equipment before use. Remove from service and tag any equipment where electrical wiring is exposed, cords are missing prongs, etc.

Power Lines

Power lines (cables), both overhead and buried are extremely dangerous due to the extreme high voltage they carry.

- Always be aware of where buried and overhead power lines are located.
- De-energize and ground lines when working near them.
- Ensure power lines and cables are insulated adequately where they pass into and out of electrical compartments IAW 56/57.12008.
- Installation of overhead power lines shall follow the National Electrical Code requirements. (56/57.12045)
- Stay at least 10 feet from power distribution systems as required under 56/57.12071.

Electrical hazards are prevalent throughout a mine operation. While only a few key areas were discussed here, it is important for operators, safety professionals and mine workers to be aware of and trained to recognize these hazards and take appropriate precautions to reduce their risks. Requirements for protecting employees from electrical hazards are provided under 30 CFR Part 56/57, Subpart K.



QUIZ

1) Name one basic precaution when using extension cords.

2) Always remove receptacles by pulling on the cord and not the plug.

True or **False**

3) What should you do when working near ground lines?

4) Where can you find requirements for protecting employees from electrical hazards?

If there is any specific topics you would like to learn more about please write on line below.

Employee: _____ Date: _____

Mine/Company: _____

Address: _____

City: _____ State: _____ Zip: _____