**Section 220.60 Trailing Cables**

a) Trailing cables; ampacity.

All trailing cables shall meet the minimum requirements for construction and ampacity provided in the Standards of the Insulated Power Cable Engineers Association – National Electric Manufacturers Association in effect when such cables are purchased.

b) Trailing cables; short-circuit, grounded phase protection, and disconnecting devices.

Short-circuit protection for trailing cable shall be provided by a circuit breaker or other no less effective device of adequate current-interrupting capacity in each ungrounded conductor. One (1) breaker may protect multiple cables if the amperage setting on the breaker is set to the lowest amperage setting of the smallest circuit. Disconnecting devices shall be installed in conjunction with each circuit breaker and within three thousand (3,000) feet of each mobile machine. Such disconnecting devices used to connect power from trailing cables shall be plainly marked and identified and such devices shall be equipped or designed in such a manner that it can be determined by visual observation that the power is disconnected.

c) Short-circuit protection; ratings and settings of circuit breakers.

Circuit breakers providing short-circuit protection for trailing cables shall be set at not more than eighty (80) percent of the short-circuit capability of the system. The maximum time for clearing a short circuit shall not exceed that cable time current rating specified by the Insulated Power Cable Engineers Association higher settings may be permitted by an authorized representative of the Department when he has determined that higher settings are justified.

d) Design of trailing cable for low and medium voltage three (3) phase equipment.

All trailing cables supplying power to equipment from low and medium-voltage systems purchased after effective date shall contain two (2) or more grounding conductors having a total cross-sectional area of not less than one-half (½) the power conductor and grounded metallic shields around each power conductor. The metallic shielding shall meet the requirements for shielding provided by the Standards of the Insulated Power Cable Engineers Association-National Electrical Manufacturers Association for type SH or SHD portable power cables. Such trailing cables shall include an insulated conductor for the ground continuity check circuit except in circuits in which a no less effective device for ground check monitoring approved by the Department is being utilized.

e) Splicing of trailing cables.

1) When splices in trailing cables are made, they shall be:

A) Mechanically strong with adequate electrical conductivity,

B) Effectively insulated and sealed so as to exclude moisture, and

C) Vulcanized or otherwise made with suitable materials to provide good bonding to the outer jacket.

2) Splices made in trailing cables shall provide continuity of all components including the grounded metallic shielding.

3) Trailing cables or portable cables with exposed wires or splices that heat or spark under load shall not be used.

f) Securing of Trailing Cables to equipment.

Trailing cables shall be secured to machines in a manner to protect the cables from damage and to prevent strain on the electrical connections.

g) Protection of trailing cables.

Trailing cables shall be adequately protected to prevent damage by mobile equipment and placed to afford protection against rock slides and other falling objects. Surplus trailing cable to shovels, draglines, drills, and similar equipment shall be stored on reels mounted on the equipment or otherwise protected from mechanical damage. Damaged outer jackets of trailing cables shall be repaired to the same degree of protection as the remainder of the cable.

h) Breaking trailing cable and power cable connections.

1) Plugs and connectors in trailing cables and power cables shall not be connected or disconnected while the circuit is energized.

2) No power cable or electric circuit supplying power in excess of two hundred forty (240) volts will be energized or deenergized, hooked up or unhooked except by a person qualified under Section 220.50(e) of this Part to perform electrical work, or by a person trained to perform electrical work at the direction of a qualified person.

3) This requirement shall not be construed to include the energizing or deenergizing of a simple "on-off"switch on standard equipment, when such switch or equipment is located outside of any high-voltage switch house.

i) Trailing Cables; Movement.

Trailing cables shall not be moved with mobile equipment unless cable slings, sleds, or equivalent protection is provided.

j) Energized trailing cables, handling.

Energized trailing cables, where the phase-to-ground voltage is one hundred fifty (150) volts or more, shall be handled only by persons wearing protective gloves. Protective gloves must be worn while using insulated hooks or tongs.

k) Protective gloves; minimum requirements.

1) Protective gloves worn while handling high-voltage trailing cables shall be rated at least for the phase-to-ground voltage of the system and shall be used and tested in accordance with the provisions of Section 220.80(aa), (bb) and (cc).

2) Protective gloves worn while handling low-voltage and medium-voltage trailing cables shall be rated for a minimum of the phase-to-ground voltage of the circuit.

3) Protective gloves shall be inspected for defects before each use. Protective gloves which contain defects shall not be used.

(Source: Amended at 10 Ill. Reg. 224, effective February 7, 1986)