§ 18.48 Circuit-interrupting devices.

(a) Each machine shall be equipped with a circuit-interrupting device by means of which all power conductors can be deenergized at the machine. A manually operated controller will not be acceptable as a service switch.

(b) When impracticable to mount the main-circuit-interrupting device on a machine, a remote enclosure will be acceptable. When contacts are used as a main-circuit-interrupting device, a means for opening the circuit shall be provided at the machine and at the remote contactors.

(c) Separate two-pole switches shall be provided to deenergize power conductors for headlights or floodlights.

(d) Each handheld tool shall be provided with a two-pole switch of the “dead-man-control” type that must be held closed by hand and will open when hand pressure is released.

(e) A machine designed to operate from both trolley wire and portable cable shall be provided with a transfer switch, or equivalent, which prevents energizing one from the other. Such a switch shall be designed to prevent electrical connection to the machine frame when the cable is energized.

(f) Belt conveyors shall be equipped with control switches to automatically stop the driving motor in the event the belt is stopped, or abnormally slowed down.

NOTE: Short transfer-type conveyors will be exempted from this requirement when attended.

§ 18.49 Connection boxes on machines.

Connection boxes used to facilitate replacement of cables or machine components shall be explosion-proof. Portable-cable terminals on cable reels need not be in explosion-proof enclosures provided that connections are well made, adequately insulated, protected from damage by location, and securely clamped to prevent mechanical strain on the connections.

§ 18.50 Protection against external arcs and sparks.

Provision shall be made for maintaining the frames of all off-track machines and the enclosures of related detached components at safe voltages by using one or a combination of the following:

(a) A separate conductor(s) in the portable cable in addition to the power conductors by which the machine frame can be connected to an acceptable grounding medium, and a separate conductor in all cables connecting related components not on a common chassis. The cross-sectional area of the additional conductor(s) shall not be less than 50 percent of that of one power conductor unless a ground-fault tripping relay is used, in which case
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§ 18.53 High-voltage longwall mining systems.

(a) In each high-voltage motor-starter enclosure, with the exception of a controller on a high-voltage shearer, the disconnect device compartment, control/communications compartment, and motor contactor compartment must be separated by barriers or partitions to prevent exposure of personnel to energized high-voltage conductors or parts. In each motor-starter enclosure on a high-voltage shearer, the high-voltage components must be separated from lower voltage components by barriers or partitions to prevent exposure of personnel to energized high-voltage conductors or parts. Barriers or partitions must be constructed of grounded metal or nonconductive insulating board.

(b) Each cover of a compartment in the high-voltage motor-starter enclosure containing high-voltage components must be equipped with at least two interlock switches arranged to automatically deenergize the high-voltage components within that compartment when the cover is removed.

(c) Circuit-interrupting devices must be designed and installed to prevent automatic reclosure.

(d) Transformers with high-voltage primary windings that supply control voltages must incorporate grounded electrostatic (Faraday) shielding between the primary and secondary