

installed either underground or within a drift.

**§ 75.800-2 Approved circuit schemes.**

The following circuit schemes will be regarded as providing the necessary protection to the circuits required by § 75.800:

(a) Ground check relays may be used for undervoltage protection if the relay coils are designed to trip the circuit breaker when line voltage decreases to 40 percent to 60 percent of the nominal line voltage;

(b) Ground trip relays on resistance grounded systems will be acceptable as grounded phase protection;

(c) One circuit breaker may be used to protect two or more branch circuits, if the circuit breaker is adjusted to afford overcurrent protection for the smallest conductor.

**§ 75.800-3 Testing, examination and maintenance of circuit breakers; procedures.**

(a) Circuit breakers and their auxiliary devices protecting underground high-voltage circuits shall be tested and examined at least once each month by a person qualified as provided in § 75.153;

(b) Tests shall include: (1) Breaking continuity of the ground check conductor, where ground check monitoring is used; and

(2) Actuating at least two (2) of the auxiliary protective relays.

(c) Examination shall include visual observation of all components of the circuit breaker and its auxiliary devices, and such repairs or adjustments as are indicated by such tests and examinations shall be carried out immediately.

**§ 75.800-4 Testing, examination, and maintenance of circuit breakers; record.**

(a) *Recordkeeping.* The operator shall make a record of each test, examination, repair, or adjustment of all circuit breakers protecting high-voltage circuits which enter any underground area of the mine.

(b) *Record security.* These records shall be made in a secure book that is not susceptible to alteration or electronically in a computer system so as

to be secure and not susceptible to alteration.

(c) *Retention and access.* These records shall be retained at a surface location at the mine for at least one year and shall be made available to authorized representatives of the Secretary, the representative of miners, and other interested persons.

[64 FR 43287, Aug. 10, 1999]

**§ 75.801 Grounding resistors.**

[STATUTORY PROVISIONS]

The grounding resistor, where required, shall be of the proper ohmic value to limit the voltage drop in the grounding circuit external to the resistor to not more than 100 volts under fault conditions. The grounding resistor shall be rated for maximum fault current continuously and insulated from ground for a voltage equal to the phase-to-phase voltage of the system.

**§ 75.802 Protection of high-voltage circuits extending underground.**

(a) Except as provided in paragraph (b) of this section, high-voltage circuits extending underground and supplying portable, mobile, or, stationary high-voltage equipment shall contain either a direct or derived neutral which shall be grounded through a suitable resistor at the source transformers, and a grounding circuit, originating at the grounded side of the grounding resistor, shall extend along with the power conductors and serve as a grounding conductor for the frames of all high-voltage equipment supplied power from that circuit.

(b) Notwithstanding the requirements of paragraph (a) of this section, the Secretary or his authorized representative may permit ungrounded high-voltage circuits to be extended underground to feed stationary electric equipment if:

(1) Such circuits are either steel armored or installed in grounded, rigid steel conduit throughout their entire length; or,

(2) The voltage of such circuits is nominally 2,400 volts or less phase-to-phase and the cables used in such circuits are equipped with metallic shields around each power conductor,