

rigid steel conduit throughout their entire length. The grounding resistor, where required, shall be of the proper ohmic value to limit the ground fault current to 25 amperes. 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.

**(c) Inclusion of fail safe ground check circuits in resistance ground systems; operative functions; time extension; couplers for power circuits; guidelines for construction**

Six months after the operative date of this subchapter, low- and medium-voltage resistance grounded systems shall include a fail safe ground check circuit to monitor continuously the grounding circuit to assure continuity which ground check circuit shall cause the circuit breaker to open when either the ground or pilot check wire is broken, or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of twelve months, may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available. Cable couplers shall be constructed so that the ground check continuity conductor shall be broken first and the ground conductors shall be broken last when the coupler is being uncoupled.

**(d) Disconnecting devices installed in conjunction with circuit breakers; purpose; trailing cables for mobile equipment; guidelines for construction; time extension; splices**

Disconnecting devices shall be installed in conjunction with the circuit breaker to provide visual evidence that the power is disconnected. Trailing cables for mobile equipment shall contain one or more ground conductors having a cross sectional area of not less than one-half the power conductor, and, six months after the operative date of this subchapter, an insulated conductor for the ground continuity check circuit or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of twelve months may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available. Splices made in the cables shall provide continuity of all components.

**(e) Connections of single phase loads**

Single phase loads shall be connected phase to phase.

**(f) Circuit breakers; markings**

Circuit breakers shall be marked for identification.

**(g) Trailing cables for medium voltage circuits; guidelines for construction**

Trailing cables for medium voltage circuits shall include grounding conductors, a ground check conductor, and ground metallic shields around each power conductor or a grounded metallic shield over the assembly, except that on equipment employing cable reels, cables without shields may be used if the insulation is rated 2,000 volts or more.

(Pub. L. 91-173, title III, §309, Dec. 30, 1969, 83 Stat. 782.)

**Editorial Notes**

REFERENCES IN TEXT

For the operative date of this subchapter, referred to in subsecs. (c) and (d), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

**Statutory Notes and Related Subsidiaries**

EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 870. Trolley wires and trolley feeder wires**

**(a) Intervals for cutoff switches**

Trolley wires and trolley feeder wires shall be provided with cutout switches at intervals of not more than 2,000 feet and near the beginning of all branch lines.

**(b) Overcurrent protection devices**

Trolley wires and trolley feeder wires shall be provided with overcurrent protection.

**(c) Location of wires**

Trolley wires and trolley feeder wires, high-voltage cables and transformers shall not be located in by the last open crosscut and shall be kept at least 150 feet from pillar workings.

**(d) Adequate insulation and guard devices; promulgation of safety guidelines**

Trolley wires, trolley feeder wires, and bare signal wires shall be insulated adequately where they pass through doors and stoppings, and where they cross other power wires and cables. Trolley wires and trolley feeder wires shall be guarded adequately (1) at all points where men are required to work or pass regularly under the wires; (2) on both sides of all doors and stoppings; and (3) at man-trip stations. The Secretary or his authorized representatives shall specify other conditions where trolley wires and trolley feeder wires shall be adequately protected to prevent contact by any person, or shall require the use of improved methods to prevent such contact. Temporary guards shall be provided where trackmen and other persons work in proximity to trolley wires and trolley feeder wires.

(Pub. L. 91-173, title III, §310, Dec. 30, 1969, 83 Stat. 783.)

**Statutory Notes and Related Subsidiaries**

EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 871. Fire protection**

**(a) Firefighting equipment; promulgation of minimum requirements for equipment; existing requirements; examinations after blasting**

Each coal mine shall be provided with suitable firefighting equipment adapted for the size and conditions of the mine. The Secretary shall establish minimum requirements for the type,