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(3) Allow for visual observation, without removing any covers, to verify that the contacts are open;

(4) Ground all power conductors on the load side when the switch is in the ''open and grounded'' position;

(5) Can only be locked out in the ''open and grounded'' position; and

(6) Safely interrupts the full-load current of the circuit or causes the current to be interrupted automatically before the disconnecting switch opens.

(d) *Barriers and covers*. All compartments that provide access to high-voltage circuits must have barriers and/or covers to prevent miners from contacting energized high-voltage circuits.

(e) *Main disconnecting switch and control circuit interlocking*. The control circuit must be interlocked with the main disconnecting switch in the power center so that:

(1) When the main disconnecting switch is in the ''open'' position, the control circuit can only be powered through an auxiliary switch in the ''test'' position; and

(2) When the main disconnecting switch is in the ''closed'' position, the control circuit can only be powered through an auxiliary switch in the ''normal'' position.

(f) *Interlocks*. Each cover or removable barrier providing access to high-voltage circuits must be equipped with at least two interlock switches. Except when the auxiliary switch is on the ''test'' position, removal of any cover or barrier that exposes energized high-voltage circuits must cause the interlock switches to automatically de-energize the incoming circuit to the power center.

(g) *Emergency stop switch*. The power center must be equipped with an externally accessible emergency stop switch hard-wired into the incoming ground-wire monitor circuit that de-energizes the incoming high-voltage in the event of an emergency.

(h) *Grounding stick*. The power center must be equipped with a grounding stick to be used prior to performing electrical work to assure that high-voltage capacitors are discharged and circuits are de-energized. The power center must have a label readily identifying the location of the grounding stick. The grounding stick must be stored in a dry location.

(i) *Caution label*. All compartments providing access to energized high-voltage conductors and parts must display a caution label to warn miners against entering the compartments before de-energizing incoming high-voltage circuits.

[75 FR 17549, Apr. 6, 2010]

§ 75.826 High-voltage trailing cables.

High-voltage trailing cables must:

(a) Meet existing trailing cable requirements and the approval requirements of the high-voltage continuous mining machine; and

(b) Meet existing ground-check conductor requirements (§ 75.804) or have a stranded center ground-check conductor not smaller than a No. 16 A.W.G.

[75 FR 17549, Apr. 6, 2010]

§ 75.827 Guarding of trailing cables.

(a) *Guarding*.

(1) The high-voltage cable must be guarded in the following locations:

(i) From the power center cable coupler for a distance of 10 feet inby the power center;

(ii) From the entrance gland for a distance of 10 feet outby the last strain clamp on the continuous mining machine; and,

(iii) At any location where the cable could be damaged by moving equipment.

(2) Guarding must be constructed using nonconductive flame-resistant material or grounded metal.

(b) *Suspended cables and cable crossovers*. When equipment must cross any portion of the cable, the cable must be either:

(1) Suspended from the mine roof; or

(2) Protected by a cable crossover having the following specifications:

(i) A minimum length of 33 inches;

(ii) A minimum width of 17 inches;

(iii) A minimum height of 3 inches;

(iv) A minimum cable placement area of two and one half-inches (2½″) high by four and one-quarter inches (4¼″) wide;

(v) Made of nonconductive material;

(vi) Made of material with a distinctive color. The color black must not be used; and

(vii) Made of material that has a minimum compressive strength of 6,400 pounds per square inch (psi).

[75 FR 17549, Apr. 6, 2010]

§ 75.828 Trailing cable pulling.

The trailing cable must be de-energized prior to being pulled by any equipment other than the continuous mining machine. The cable manufacturer's recommended pulling procedures must be followed when pulling the trailing cable with equipment other than the continuous mining machine.

[75 FR 17549, Apr. 6, 2010]

§ 75.829 Tramming continuous mining machines in and out of the mine and from section to section.

(a) *Conditions of use.* Tramming the continuous mining machine in and out of the mine and from section to section must be done in accordance with movement requirements of high-voltage power centers and portable transformers (§ 75.812) and as follows:

(1) The power source must not be located in areas where permissible equipment is required;

(2) The continuous mining machine must not be used for mining or cutting purposes, unless a power center is used in accordance with §§ 75.823 through 75.828 and §§ 75.830 through 75.833;

(3) Low-, medium-, and high-voltage cables must comply with §§ 75.600–1, 75.907, and 75.826, as applicable; and

(4) The energized high-voltage cable must be mechanically secured onboard the continuous mining machine. This provision applies only when using the power sources specified in paragraphs (c)(2) and (c)(3) of this section.

(b) *Testing prior to tramming.* Prior to tramming the continuous mining machine,

(1) A qualified person must activate the ground-fault and ground-wire monitor test circuits of the power sources specified in paragraph (c) of this section to assure that the corresponding circuit-interrupting device opens the circuit. Corrective actions and recordkeeping resulting from these tests must be in accordance with §§ 75.832(f) and (g).

(2) Where applicable, a person designated by the mine operator must activate the test circuit for the grounded-phase detection circuit on the continuous mining machine to assure that the detection circuit is functioning properly. Corrective actions resulting from this test must be in accordance with § 75.832(f).

(c) *Power sources.* In addition to the power center specified in § 75.825, the following power sources may be used to tram the continuous mining machine.

(1) *Medium-voltage power source.* A medium-voltage power source is a source that supplies 995 volts through a trailing cable (See Figure 1 of this section) to the continuous mining machine. The medium-voltage power source must—

(i) Not be used to back-feed the high-voltage circuits of the continuous mining machine; and

(ii) Meet all applicable requirements for medium-voltage circuits in 30 CFR 75.

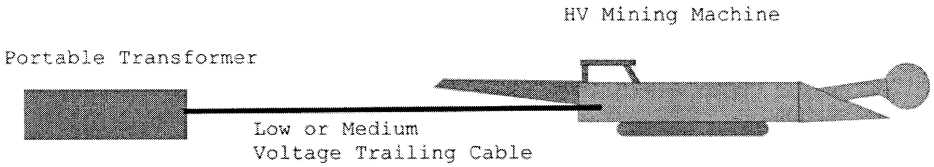

Figure 1-Power Source-75.829(c)(1) 995 volts used for tramming