§ 75.705–1 Approved methods of grounding.

The methods of grounding stated in §75.701–1 will also be approved with respect to the grounding of frames of high-voltage equipment referred to in §75.704.

§ 75.705 Work on high-voltage lines; deenergizing and grounding.

[STATUTORY PROVISIONS]

High-voltage lines, both on the surface and underground, shall be deenergized and grounded before work is performed on them, except that repairs may be permitted, in the case of energized surface high-voltage lines, if such repairs are made by a qualified person in accordance with procedures and safeguards, including, but not limited to, a requirement that the operator of such mine provide, test, and maintain protective devices in making such repairs, to be prescribed by the Secretary prior to March 30, 1970.

§ 75.705–1 Work on high-voltage lines.

(a) Section 75.705 specifically prohibits work on energized high-voltage lines underground;

(b) No high-voltage line, either on the surface or underground, shall be regarded as deenergized for the purpose of performing work on it, until it has been determined by a qualified person (as provided in §75.153) that such high-voltage line has been deenergized and grounded. Such qualified person shall by visual observation (1) determine that the disconnecting devices on the high-voltage circuit are in open position and (2) ensure that each ungrounded conductor of the high-voltage circuit upon which work is to be done is properly connected to the system-grounding medium. In the case of resistance grounded or solid wye-connected systems, the neutral wire is the system-grounding medium. In the case of an ungrounded power system, either the steel armor or conduit enclosing the system or a surface grounding field is a system grounding medium;

(c) No work shall be performed on any high-voltage line on the surface which is supported by any pole or structure which also supports other high-voltage lines until: (1) All lines

§ 75.704 Grounding frames of stationary high-voltage equipment receiving power from ungrounded delta systems.

[STATUTORY PROVISIONS]

The frames of all stationary high-voltage equipment receiving power from ungrounded delta systems shall be grounded by methods approved by an authorized representative of the Secretary.

§ 75.704–1 Other methods of protecting offtrack direct-current equipment; approved by an authorized representative of the Secretary.

Other methods of maintaining safe voltage by preventing a difference between the frames of offtrack direct-current machines and the earth must be approved by an authorized representative of the Secretary.

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trip setting shall not exceed 300 percent of the nominal current rating of the grounding diode;

(6) Overcurrent devices must be used and installed in such a manner that the operating coil circuit of the main contactor will open when a fault current with a value of 25 percent or less of the diode rating flows through the diode;

(7) The silicon diode installed must be suitable to the grounded polarity of the power system in which it is used and its threaded base must be solidly connected to the machine frame on which it is installed;

(8) In addition to the grounding diode, a polarizing diode must be installed in the machine control circuit to prevent operation of the machine when the polarity of a trailing cable is reversed;

(9) When installed on permissible equipment, all grounding diodes, overcurrent devices, and polarizing diodes must be placed in explosion proof compartments;

(10) When grounding diodes are installed on a continuous miner, their nominal diode current rating must be at least 750 amperes or more; and

(11) All grounding diodes shall be tested, examined and maintained as electrical equipment in accordance with the provisions of §75.512.

§ 75.704 Grounding frames of stationary high-voltage equipment receiving power from ungrounded delta systems.

The frames of all stationary high-voltage equipment receiving power from ungrounded delta systems shall be grounded by methods approved by an authorized representative of the Secretary.
supported on the pole or structure are
deenergized and grounded in accord-
ance with all of the provisions of this
section which apply to the repair of en-
ergized surface high-voltage lines; or
(2) the provisions of §§ 75.705–2 through
75.705–10 have been complied with, with
respect to all lines, which are sup-
ported on the pole or structure.
(d) Work may be performed on ener-
gized surface high-voltage lines only in
accordance with the provisions of
§§ 75.705–2 through 75.705–10, inclusive.

§ 75.705–2 Repairs to energized surface
high-voltage lines.
An energized high-voltage surface
line may be repaired only when
(a) The operator has determined that:
(1) Such repairs cannot be scheduled
during a period when the power circuit
could be properly deenergized and
grounded;
(2) Such repairs will be performed on
power circuits with a phase-to-phase
nominal voltage no greater than 15,000
volts;
(3) Such repairs on circuits with a
phase-to-phase nominal voltage of 5,000
volts or more will be performed only
with the use of live line tools;
(4) Weather conditions will not inter-
fere with such repairs or expose those
persons assigned to such work to an
imminent danger; and
(b) The operator has designated a
person qualified under the provisions of
§ 75.154 as the person responsible for
carrying out such repairs and such per-
son, in order to ensure protection for
himself and other qualified persons as-
signed to perform such repairs, has prepared
and filed with the operator:
(1) A general description of the na-
ture and location of the damage or de-
fect to be repaired;
(2) The general plan to be followed in
making such repairs;
(3) A statement that a briefing of all
qualified persons assigned to make
such repairs was conducted informing
them of the general plan, their indi-
vidual assignments, and the dangers in-
herent in such assignments;
(4) A list of the proper protective
equipment and clothing that will be
provided; and
(5) Such other information as the
person designated by the operator feels
necessary to describe properly the
means or methods to be employed in
such repairs.

§ 75.705–3 Work on energized high-
voltage surface lines; reporting.
Any operator designating and assign-
ing qualified persons to perform repairs
on energized high-voltage surface lines
under the provisions of § 75.705–2 shall
maintain a record of such repairs. Such
record shall contain a notation of the
time, date, location, and general na-
ture of the repairs made, together with
a copy of the information filed with the
operator by the qualified person des-
ignated as responsible for performing
such repairs.

§ 75.705–4 Simultaneous repairs.
When two or more persons are work-
ing on an energized high-voltage sur-
face line simultaneously, and any one
of them is within reach of another,
such persons shall not be allowed to
work on different phases or on equip-
ment with different potentials.

§ 75.705–5 Installation of protective
equipment.
Before repair work on energized high-
voltage surface lines is begun, protec-
tive equipment shall be used to cover
all bare conductors, ground wires,
guys, telephone lines, and other at-
tachments in proximity to the area of
planned repairs. Such protective equip-
ment shall be installed from a safe po-
sition below the conductors or other
apparatus being covered. Each rubber
protective device employed in the mak-
ing of repairs shall have a dielectric
strength of 20,000 volts, or more.

§ 75.705–6 Protective clothing; use and
inspection.
All persons performing work on ener-
gized high-voltage surface lines shall
wear protective rubber gloves, sleeves,
and climber guards if climbers are
worn. Protective rubber gloves shall
not be worn wrong side out or without
protective leather gloves. Protective
devices worn by a person assigned to
perform repairs on high-voltage surface
lines shall be worn continuously from
the time he leaves the ground until he