### FEDERAL PROVISIONS NOT INCLUDED IN DRAFT PROPOSED RULEMAKING

Mine Safety and Health Administration

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Title 30 Parts 1-1 100 Minoral Resources Department of Labor Mino Safety and Health Administration Code of Federal Regulations

PART 77--MANDATORY SAFETY STANDARDS, SURFACE COAL MINES AND SURFACE WORK AREAS OF UNDERGROUND COAL MINES

#### Subpart A--General

#### Section

77.1 Scope.

77.2 Definitions.

#### Subpart B--Qualified and Certified Persons

- 77.100 Certified person.
- 77.101 Tests for methane and for oxygen deficiency; qualified person.
- 77.102 Tests for methane; oxygen deficiency; qualified person, additional requirement.
- 77.103 Electrical work; qualified person.
- 77.104 Repair of energized surface high voltage lines; qualified person.
- 77.105 Qualified hoistman; slope or shaft sinking operation; qualifications.

7.108

Records of certified and qualified persons.

77.107

Training programs.

77.107-1

Plans for training programs.

#### Subpart C--Surface Installations

- 77.200 Surface installations; general.
- 77.201 Methane content in surface installations.
- 77.201-1 Tests for methane; qualified person; use of approved device.
- 77.201-2 Methane accumulations; change in ventilation.
- 77.202 Dust accumulations in surface installations.
- 77.203 Use of material or equipment overhead; safeguards.
- 77.204 Openings in surface installations; safeguards.
- 77.205 Travelways at surface installations.
- 77.206 Ladders; construction; installation and maintenance.
- 77.207 Illumination.
- 77.208 Storage of materials.
- 77.209 Surge and storage piles.
- 77.210 Hoisting of materials.

- 77,211 Draw-off tunnels; stockpiling and reclaiming operations; general.
- <u>77.211-1</u> Continuous methane monitoring device; installation and operation; automatic deenergization of electric equipment.
- 77.212 Draw-off tunnel ventilation fans; installation.
- 77.213 Draw-off tunnel escapeways.
- 77.214) Refuse piles; general.
- 77.215 Refuse piles, construction requirements.
- 77.215-1 Refuse piles; identification.
- 77.215-2) Refuse piles; reporting requirements.
- 77.215-3 Refuse piles; certification.
- 77.215-4 Refuse piles; abandonment.
- 77.216 Water, sediment, or slurry impoundments and impounding structures; general.
- 77.216-1 Water, sediment or slurry impoundments and impounding structures; identification.
- 77.216-2 Water, sediment, or slurry impoundments and impounding structures; minimum plan requirements; changes or modifications; certification.
- 77.216-3 Water, sediment, or slurry impoundments and impounding structures; inspection requirements; correction of hazards; program requirements.
- 77.216-4 Water, sediment or slurry impoundments and impounding structures; reporting requirements; certification.
- 77.216-5 Water, sediment or slurry impoundments and impounding structures; abandonment.
- 77.217 Definitions.

#### Subpart D--Thermal Dryers

- 77.300 Thermal dryers; general.
- 77.301 Dryer heating units; operation.
- 77.302 Bypass stacks.
- 77.303 Hot gas inlet chamber dropout doors.
- 77.304 Explosion release vents.
- 77.305 Access to drying chambers, hot gas inlet chambers and ductwork; installation and maintenance.
- 77.306 Fire protection.
- 77.307 Thermal dryers; location and installation; general.
- 77.308 Structures housing other facilities; use of partitions.
- 77.309 Visual check of system equipment.
- 77.309-1 Control stations; location.
- 77.310 Control panels.
- 77.311 Alarm devices.
- 77.312 Fail safe monitoring systems.
- 77.313 Wet-coal feedbins; low-level indicators.
- 77.314 Automatic temperature control instruments.
- 77.315 Thermal dryers; examination and inspection.

#### Subpart E--Safeguards for Mechanical Equipment

- 77.400 Mechanical equipment guards.
- 77.401 Stationary grinding machines; protective devices.
- 77.402 Hand-held power tools; safety devices.
- 77.403 Mobile equipment; falling object protective structures (FOPS).
- 77.403 Mobile equipment; rollover protective structures (ROPS).
- 77.403- Incorporation by reference.
- 77.404 Machinery and equipment; operation and maintenance.
- 77.405 Performing work from a raised position; safeguards.
- 77.406 Drive belts.
- 77.407 Power driven pulleys.
- 77.408 Welding operations.
- 77.409 Shovels, draglines, and tractors.
- 77.410 Mobile equipment; automatic warning devices.
- 77.411 Compressed air and boilers; general.
- 77.412 Compressed air systems.
- 77.413 Boilers.

#### Subpart F--Electrical Equipment--General

- 77.500 Electric power circuits and electric equipment deenergization.
- 77.501 Electric distribution circuits and equipment; repair.
- 77.501-1 Qualified person.
- 77.502 Electric equipment; examination, testing, and maintenance.
- 77.502-1 Qualified person.
- 77.502-2 Electric equipment; frequency of examination and testing.
- 77.503 Electric conductors; capacity and insulation.
- 77.503-1 Electric conductors.
- 77.504 Electrical connections or splices; suitability.
- 77.505 Cable fittings; suitability.
- 77.506 Electric equipment and circuits; overload and short-circuit protection.
- 77.506-1 Electric equipment and circuits; overload and short circuit protection; minimum requirements.
- 77.507 Electric equipment; switches.
- 77.508 Lightning arresters; ungrounded and exposed power conductors and telephone wires.
- 77.508-1 Lightning arresters; wires entering buildings.
- 77.509 Transformers; installation and guarding.
- 77.510 Resistors; location and guarding.

- 77.511 Danger signs at electrical installations.
- 77.512 Inspection and cover plates.
- 77.513 Insulating mats at power switches.
- 77.514 Switchboard; passageways and clearance.
- 77.515 Bare signal or control wires; voltage.
- 77.516 Electric wiring and equipment; installation and maintenance

Subpart G--Trailing Cables

77.600

Trailing cables; short-circuit protection; disconnecting devices.

77.601

Trailing cables or portable cables, temporary splices.

17.602

Permanent splicing of trailing cables.

77.603

Clamping of trailing cables to equipment.

77.604

Protection of trailing cables.

77.605

Breaking trailing cable and power cable connections.

77.606

Energized trailing cables; handling.

17.606-

Rubber gloves; minimum requirements.

#### Subpart H--Grounding

- 77.700 Grounding metallic sheaths, armors, and conduits enclosing power conductors.
- 77.700-1 Approved methods of grounding.
- 77.701 Grounding metallic frames, casings, and other enclosures of electric equipment.
- $\overline{77.701-1}$  Approved methods of grounding of equipment receiving power from ungrounded alternating current power systems.
- $\overline{77.701-2}$  Approved methods of grounding metallic frames, casings and other enclosures of electric equipment receiving power from a direct-current power system.
- 77.701-3 Grounding wires; capacity.
- 77.701-4 Use of grounding connectors.
- 77.702 Protection other than grounding.
- 77.703 Grounding frames of stationary high-voltage equipment receiving power from ungrounded delta systems.
- 77.703-1 Approved methods of grounding.
- 77.704 Work on high-voltage lines; deenergizing and grounding.
- 77.704-1 Work on high-voltage lines.
- 77.704-2 Repairs to energized high-voltage lines.
- 77,704-3 Work on energized high-voltage surface lines; reporting.
- 77.704-4 Simultaneous repairs.
- 77.704-5 Installation of protective equipment.
- 77.704-6 Protective clothing; use and inspection.
- 77.704-7 Protective equipment; inspection.
- 77.704-8 Protective equipment; testing and storage.

- 77.704-9 Operating disconnecting or cutout switches.
- 77.704-10 Tying into energized high-voltage surface circuits.
- 77.704-11 Use of grounded messenger wires; ungrounded systems.
- 77.705 Guy wires; grounding.

#### Subpart I--Surface High-Voltage Distribution

- 77.800 High-voltage circuits; circuit breakers.
- 77.800-1 Testing, examination, and maintenance of circuit breakers; procedures.
- 77.800-2 Testing, examination, and maintenance of circuit breakers; record.
- 77.801 Grounding resistors.
- 77.801-1 Grounding resistors; continuous current rating.
- 77.802 Protection of high-voltage circuits; neutral grounding resistors; disconnecting devices.
- 77.803 Fail safe ground check circuits on high-voltage resistance grounded systems.
- 77.803-1 Fail safe ground check circuits; maximum voltage.
- 77.803-2 Ground check systems not employing pilot check wires; approval by the Secretary.
- 77.804 High-voltage trailing cables; minimum design requirements.
- 77.805 Cable couplers and connection boxes; minimum design requirements.
- 77.806 Connection of single-phase loads.
- 77.807 Installation of high-voltage transmission cables.
- 77.807-1 High-voltage powerlines; clearances above ground.
- 77.807-2 Booms and masts; minimum distance from high-voltage lines.
- 77.807-3 Movement of equipment; minimum distance from high-voltage lines.
- 77.808 Disconnecting devices.
- 77.809 Identification of circuit breakers and disconnecting switches.
- 77.810 High-voltage equipment; grounding.
- 77.811 Movement of portable substations and transformers.

#### Subpart J--Low- and Medium-Voltage Alternating Current Circuits

- 77.900 Low- and medium-voltage circuits serving portable or mobile three-phase alternating current equipment; circuit breakers.
- 77.900-1 Testing, examination, and maintenance of circuit breakers; procedures.
- 77.900-2 Testing, examination, and maintenance of circuit breakers; record.
- 77.901 Protection of low- and medium-voltage three-phase circuits.
- 77.901-1 Grounding resistor; continuous current rating.
- 77.902 Low- and medium-voltage ground check monitor circuits.
- 77.902-1 Fail safe ground check circuits; maximum voltage.
- 77.902-2 Approved ground check systems not employing pilot check wires.
- 77.902-3 Attachment of ground conductors and ground check wires to equipment frames; use of separate connections.

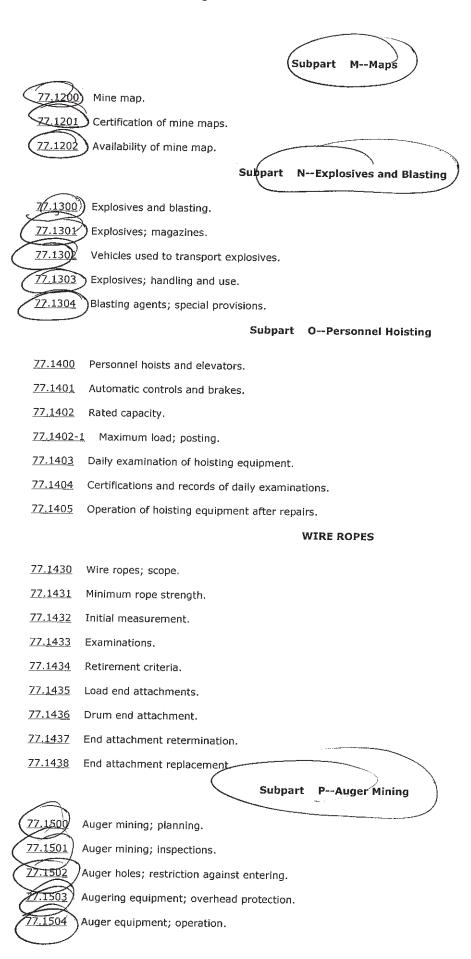
- 77.903 Disconnecting devices.
- 77.904 Identification of circuit breakers.
- 77.905 Connection of single-phase loads.
- 77.906 Trailing cables supplying power to low-voltage mobile equipment; ground wires and ground check wires.

#### Subpart K--Ground Control

- 77.1000 Highwalls, pits, and spoil banks; plans.
- 77.1000-1 Filing of plan.
- 77.1001 Stripping; loose material.
- 77.1002 Box cuts; spoil material placement.
- 77.1003 Benches.
- 77.1004 Ground control; inspection and maintenance; general.
- 77.1005) Scaling highwalls; general.
- 77.1006 Highwalls; men working.
- 77.1007 Drilling; general.
- 77.1008 Relocation of drills; safeguards.
- 77.1009) Drill; operation.
- 77.1010 Collaring holes.
- (77.1011) Drill holes; guarding.
- (77.1012) Jackhammers; operation; safeguards.
- 77.1013 Air drills; safeguards.

#### Subpart L--Fire Protection

- 77,1100 Fire protection; training and organization.
- 77.1101 Escape and evacuation; plan.
- 77.1102 Warning signs; smoking and open flame.
- 77.1103 Flammable liquids; storage.
- 77.1104 Accumulations of combustible materials.
- 77.1105 Internal combustion engines; fueling.
- 77.1106 Battery charging stations; ventilation.
- 77.1107 Belt conveyors.
- 77.1108 Firefighting equipment; requirements; general.
- 77.1108-1 Type and capacity of firefighting equipment.
- 77.1109 Quantity and location of firefighting equipment.
- 77.1110 Examination and maintenance of firefighting equipment.
- 77.1111 Welding, cutting, soldering; use of fire extinguisher.
- 77.1112 Welding, cutting, soldering with arc or flame; safeguards.



77.1505) Auger holes; blocking.
Subpart QLoading and Haulage
77.1600 Loading and haulage; general.
77.1601 Transportation of persons; restrictions.
77.1602) Use of aerial tramways to transport persons.
77.1603 Trains and locomotives; authorized persons.
77.1604 Transportation of persons; overcrowding.
27.1605 Loading and haulage equipment; installations.
17.1606) Loading and haulage equipment; inspection and maintenance.
77.1607 Loading and haulage equipment; operation.
77.1608 Dumping facilities.
Subpart RMiscellaneous
Subpart Re-Miscenaneous
77.1700 Communications in work areas.
77.1700 Emergency communications; requirements.
77.1702 Arrangements for emergency medical assistance and transportation for injured persons; reporting requirements; posting requirements.
77.1703 First-Aid training; supervisory employees.
77.1704 First aid training program; availability of instruction to all miners.
77.1705 First aid training program; retraining of supervisory employees; availability to all miners.
77.1706 First aid training program; minimum requirements.
77.1707 First aid equipment; location; minimum requirements.
53 Safety program, instruction of persons employed at the mine.
77.1710 Protective clothing; requirements.
77.1710-1 Distinctively colored hard hats or hard caps; identification for newly employed, inexperienced miners.
77.1711 Smoking prohibition.
77.1712 Reopening mines; notification; inspection prior to mining.
77.1713 Daily inspection of surface coal mine; certified person; reports of inspection.
Subpart STrolley Wires and Trolley Feeder Wires
77.1800 Cutout switches.
77.1801 Overcurrent protection.

 $\overline{77.1801-1}$  Devices for overcurrent protection.

 $\overline{77.1802}$  Insulation of trolley wires, trolley feeder wires and bare signal wires; guarding of trolley wires and trolley feeder wires.

#### Subpart T--Slope and Shaft Sinking

77.1900 Slopes and shafts; approval of plans.

77.1900-1 Compliance with approved slope and shaft sinking plans.

- 77.1901 Preshift and onshift inspections; reports.
- 77.1901-1 Methane and oxygen deficiency tests; approved devices.
- 77.1902 Drilling and mucking operations.
- 77.1902-1 Permissible diesel-powered equipment.
- 77.1903 Hoists and hoisting; minimum requirements.
- 77.1904 Communications between slope and shaft bottoms and hoist operators.
- 77.1905 Hoist safeguards; general.
- 77.1906 Hoists; daily inspection.
- 77.1907 Hoist construction; general.
- 77.1908 Hoist installations; use.
- 77.1908-1 Hoist operation; qualified hoistman.
- 77.1909 Explosives and blasting; use of permissible explosives and shot-firing units.
- 77.1909-1 Use of nonpermissible explosives and nonpermissible shot-firing units; approval by Health and Safety District Manager.
- 77.1910 Explosives and blasting; general.
- 77.1911 Ventilation of slopes and shafts.
- 77.1912 Ladders and stairways.
- 77.1913 Fire-resistant wood.
- 77.1914 Electrical equipment.
- 77.1915 Storage and handling of combustible materials.
- 77.1916 Welding, cutting, and soldering; fire protection.

#### Subpart U--Approved Books and Records [Reserved]

AUTHORITY: 30 U.S.C. 811 , 957 , and 961 .

SOURCE: 36 FR 9364, May 22, 1971, unless otherwise noted.

Help Printing This Page

## Title 30 Parts 1-130 Manage Beacutoes Repartment of Labor Mine Safety and Health Administration Code of Federal Regulations

#### 30 CFR § 77.2

Definitions.

For the purpose of this part 77, the term:

- (a) Active workings means any place in a coal mine where miners are normally required to work or travel;
- American Table of Distances means the current edition of "The American Table of Distances for Storage of Explosives" published by the Institute of Makers of Explosives;
- Barricaded means to obstruct passage of persons, vehicles, or flying materials;
- \* (a) Berm means a pile or mound of material capable of restraining a vehicle;
  - (e) Blasting agent means any material consisting of a mixture of a fuel and oxidizer which-(1) Is used or intended for use in blasting;
  - Is not classed as an explosive by the Department of Transportation;
  - Contains no ingredient classed as an explosive by the Department of Transportation; and,
  - Cannot be detonated by a No. 8 blasting cap when tested as recommended in Bureau of Mines Information Circular
  - (f)Blasting area means the area near blasting operations in which concussion or flying material can reasonably be expected to cause injury.
  - (g) Blasting cap means a detonator containing a charge of detonating compound, which is ignited by electric current, or the spark of a fuse. Used for detonating explosives.
  - (f) Blasting circuit means electric circuits used to fire electric detonators or to ignite an igniter cord by means of an electric starter.
  - (I)Blasting switch means a switch used to connect a power source to a blasting circuit.
  - Box-type magazine means a small, portable magazine used to store limited quantities of explosives or detonators for short periods of time in locations at the mine which are convenient to the blasting sites at which they will be used.
  - (R) Capped fuse means a length of safety fuse to which a detonator has been attached.
  - (n) Capped primer means a package or cartridge of explosives which is specifically designed to transmit detonation to ether explosives and which contains a detonator.
  - (m) Certified or registered, as applied to any person means a person certified or registered by the State in which the coal mine is located to perform duties prescribed by this Part 77, except that, in a State where no program of certification or registration is provided or where the program does not meet at least minimum Federal standards established by the Secretary, such certification or registration shall be by the Secretary.
  - Detonating cord or detonating fuse means a flexible cord containing a core of high explosive.
  - (o) Detonator means a device containing a small detonating charge that is used for detonating an explosive, including, but not limited to blasting caps, exploders, electric detonators, and delay electric blasting caps.
  - (f) Electrical grounding means to connect with the ground to make the earth part of the circuit.
  - (q) Explosive means any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion. Explosives include, but are not limited to black powder, dynamite, nitroglycerin, fulminate, ammonium nitrate when mixed with a hydrocarbon, and other blasting agents.
- Flash point means the minimum temperature at which sufficient vapor is released by a liquid or solid to form a flammable vapor-air mixture at atmospheric pressure.
  - (s) Low voltage means up to and including 660 volts, medium voltage means voltages from 661 to 1,000 volts, and high voltage means more than 1,000 volts.
  - (t) Misfire means the complete or partial failure of a blasting charge to explode as planned.
  - (u) Primer or Booster means a package or cartridge of explosive which is designed specifically to transmit detonation to other explosives and which does not contain a detonator.

- (v) Qualified person means, as the context requires,
- (1) An individual deemed qualified by the Secretary and designated by the operator to make tests and examinations required by this Part 77; and,
- (2) An individual deemed, in accordance with the minimum requirements to be established by the Secretary, qualified by training, education, and experience, to perform electrical work, to maintain electrical equipment, and to conduct examinations and make tests of all electrical equipment.
- (w) Roll protection means a framework, safety canopy, or similar protection for the operator when equipment overturns.
- (x) Safety can means an approved container, of not over 5 gallons capacity, having a spring-closing lid and spout cover.
- (y) Safety fuse means a train of powder enclosed in cotton, jute yarn, and waterproofing compounds, which burns at a uniform rate; used for firing a cap containing the detonating compound which in turn sets off the explosive charge.
- (z) Safety switch means a sectionalizing switch that also provides shunt protection in blasting circuits between the -blasting switch and the shot area.
- (aa) Secretary means the Secretary of Labor or his delegate.

[36 FR 9364, May 22, 1971, as amended at 43 FR 12320, Mar. 24, 1978]

Help Printing This Page

## Title 30 Parts 1-19th Mineral Resources Department of Labor Mine Safety and Realth Administration Code of Federal Regulations

30 CFR § 77.106
Records of certified and qualified persons.

The operator of each coal mine shall maintain a list of all certified and qualified persons designated to perform duties under this Part <u>77</u>.

(Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 47 FR 14706, Apr. 6, 1982; 60 FR 33719, June 29, 1995]

Help Printing This Page

# Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Safety and Realth Administration Code of Federal Regulations

30 CFR § 77.107 Training programs.

Every operator of a coal mine shall provide a program, approved by the Secretary, of training and retraining both qualified and certified persons needed to carry out functions prescribed in the Act.

Help Printing This Page

# Title 30 Parts 1-198 Historial Resources. Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.107-1

Plans for training programs.

77.107-1 Plans for training programs.

Each operator must submit to the district manager, of the Coal Mine Safety and Health District in which the mine is located, a program or plan setting forth what, when, how, and where the operator will train and retrain persons whose work assignments require that they be certified or qualified. The program must provide—

(a) For certified persons, annual training courses in the tasks and duties which they perform as certified persons, first aid, and the provisions of this part 77; and

(b) For qualified persons, annual courses in performance of the tasks which they perform as qualified persons.

[63 FR 53761, Oct. 6, 1998 effective Oct.6, 1999]

Help Printing This Page

# Title 30 Parts 1-199 Mineral Measures Department of Labor Mine Safety and Realth Administration Code of Federal Regulations

30 CFR § 77.214 Refuse piles; general.

- (a) Refuse piles constructed on or after July 1, 1971, shall be located in areas which are a safe distance from all underground mine airshafts, preparation plants, tipples, or other surface installations and such piles shall not be located over abandoned openings or steamlines.
- (b) Where new refuse piles are constructed over exposed coal beds the exposed coal shall be covered with clay or other inert material as the piles are constructed.
- (c) A fireproof barrier of clay or inert material shall be constructed between old and new refuse piles.
- (d) Roadways to refuse piles shall be fenced or otherwise guarded to restrict the entrance of unauthorized persons.

[36 FR 9364, May 22, 1971, as amended at 36 FR 13143, July 15, 1971]

Help Printing This Page

# Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.215
Refuse piles; construction requirements.

- (a) Refuse deposited on a pile shall be spread in layers and compacted in such a manner so as to minimize the flow of air through the pile.
- (b) Refuse shall not be deposited on a burning pile except for the purpose of controlling or extinguishing a fire.
- (c) Clay or other sealants shall be used to seal the surface of any refuse pile in which a spontaneous ignition has occurred.
- (d) Surface seals shall be kept intact and protected from erosion by drainage facilities.
- (e) Refuse piles shall not be constructed so as to impede drainage or impound water.
- (f) Refuse piles shall be constructed in such a manner as to prevent accidental sliding and shifting of materials.
- (g) No extraneous combustible material shall be deposited on refuse piles.
- (h) After October 31, 1975 new refuse piles and additions to existing refuse piles, shall be constructed in compacted layers not exceeding 2 feet in thickness and shall not have any slope exceeding 2 horizontal to 1 vertical (approximately 27°) except that the District Manager may approve construction of a refuse pile in compacted layers exceeding 2 feet in thickness and with slopes exceeding 27° where engineering data substantiates that a minimum safety factor of 1.5 for the refuse pile will be attained.
- (i) Foundations for new refuse piles and additions to existing refuse piles shall be cleared of all vegetation and undesirable material that according to current, prudent engineering practices would adversely affect the stability of the refuse pile.
- (j) All fires in refuse piles shall be extinguished, and the method used shall be in accordance with a plan approved by the District Manager. The plan shall contain as a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedure to be used, shall be involved in the extinguishing operation.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957), Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 40 FR 41776, Sept. 9, 1975; 47 FR 14696, Apr. 6, 1982; 60 FR 33719, June 29, 1995]

Help Printing This Page

## Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Safety and Realth Administration Code of Federal Regulations

30 CFR § 77.215-1 Refuse piles; identification.

A permanent identification marker, at least six feet high and showing the refuse pile identification number as assigned by the District Manager, the name associated with the refuse pile and the name of the person owning, operating or controlling the refuse pile, shall be located on or immediately adjacent to each refuse pile within the time specified in paragraphs (a) or (b) of this section as applicable.

- (a) For existing refuse piles, markers shall be placed before May 1, 1976.
- (b) For new or proposed refuse piles, markers shall be placed within 30 days from acknowledgment of the proposed location of a new refuse pile.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957))

[40 FR 41776, Sept. 9, 1975]

Help Printing This Page

# Title 30 Parts 1-199 Minesal Resources Department of Labor Mans Safety and Health Administration Code of Federal Regulations

30 CFR § 77.215-2 Refuse piles; reporting requirements.

- (a) The proposed location of a new refuse pile shall be reported to and acknowledged in writing by the District Manager prior to the beginning of any work associated with the construction of the refuse pile.
- (b) Before May 1, 1976, for existing refuse piles, or within 180 days from the date of acknowledgment of the proposed location of a new refuse pile, the person owning, operating or controlling a refuse pile shall submit to the District Manager a report in triplicate which contains the following:
- (1) The name and address of the person owning, operating or controlling the refuse pile; the name associated with the refuse pile; the identification number of the refuse pile as assigned by the District Manager; and the identification number of the mine or preparation plant as assigned by MSHA.
- (2) The location of the refuse pile indicated on the most recent USGS 7 1/2 minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.
- (3) A statement of the construction history of the refuse pile, and a statement indicating whether the refuse pile has been abandoned in accordance with a plan approved by the District Manager.
- (4) A topographic map showing at a scale not to exceed 1 inch=400 feet, the present and proposed maximum extent of the refuse pile and the area 500 feet around the proposed maximum perimeter.
- (5) A statement of whether or not the refuse pile is burning.
- (6) A description of measures taken to prevent water from being impounded by the refuse pile or contained within the refuse pile.
- (7) At a scale not to exceed 1 inch=100 feet, cross sections of the length and width of the refuse pile at sufficient intervals to show the approximate original ground surface, the present configuration and the proposed maximum extent of the refuse pile, and mean sea level elevations at significant points.
- (8) Any other information pertaining to the stability of the pile which may be required by the District Manager.
- (c) The information required by paragraphs (b)(4) through (b)(8) of this section shall be reported every twelfth month from the date of original submission for those refuse piles which the District Manager has determined can present a hazard until the District Manager notifies the operator that the hazard has been eliminated.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957), Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

 $[40 \ FR \ 41776, \ Sept. \ 9, \ 1975, \ as \ amended \ at \ 47 \ FR \ 14696, \ Apr. \ 6, \ 1982; \ 57 \ FR \ 7471, \ Mar. \ 2, \ 1992; \ 60 \ FR \ 33719, \ June \ 29, \ 1995]$ 

Help Printing This Page

# Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.215-3 Refuse piles: certification.

- (a) Within 180 days following written notification by the District Manager that a refuse pile can present a hazard, the person owning, operating, or controlling the refuse pile shall submit to the District Manager a certification by a registered engineer that the refuse pile is being constructed or has been modified in accordance with current, prudent engineering practices to minimize the probability of impounding water and failure of such magnitude as to endanger the lives of miners.
- (b) After the initial certification required by this section and until the District Manager notifies the operator that the hazard has been eliminated, certification shall be submitted every twelfth month from the date of the initial certification.
- (c) Certifications required by paragraphs (a) and (b) of this section shall include all information considered in making the certification.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957))

[40 FR 41776, Sept. 9, 1975, as amended at 57 FR 7471, Mar. 2, 1992]

Help Printing This Page

# Title 30 Parts 1-199 Mineral Resources Repartment of Labor Mine Safety and Realth Administration Code of Federal Regulations

#### 30 CFR § 77.215-4

Refuse piles; abandonment.

When a refuse pile is to be abandoned, the District Manager shall be notified in writing, and if he determines it can present a hazard, the refuse pile shall be abandoned in accordance with a plan submitted by the operator and approved by the District Manager. The plan shall include a schedule for its implementation and describe provisions to prevent burning and future impoundment of water, and provide for major slope stability. (Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957), Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C.

[40 FR 41776, Sept. 9, 1975, as amended at 47 FR 14696, Apr. 6, 1982; 60 FR 33719, June 29, 1995]

Help Printing This Page

# Title 30 Parts 1-1 the Mineral Heatenroes Repartment of Labor Name Salety and Health Administration Code of Federal Regulations

30 CFR § 77.216

Water, sediment, or slurry impoundments and impounding structures; general.

- (a) Plans for the design, construction, and maintenance of structures which impound water, sediment, or slurry shall be required if such an existing or proposed impounding structure can:
- (1) Impound water, sediment, or slurry to an elevation of five feet or more above the upstream toe of the structure and can have a storage volume of 20 acre-feet or more; or
- (2) Impound water, sediment, or slurry to an elevation of 20 feet or more above the upstream toe of the structure; or
- (3) As determined by the District Manager, present a hazard to coal miners.
- (b) Plans for the design and construction of all new water, sediment, or slurry impoundments and impounding structures which meet the requirements of paragraph (a) of this section shall be submitted in triplicate to and be approved by the District Manager prior to the beginning of any work associated with construction of the impounding structure.
- (c) Before May 1, 1976, a plan for the continued use of an existing water, sediment, or slurry impoundment and impounding structure which meets the requirements of paragraph (a) of this section shall be submitted in triplicate to the District Manager for approval.
- (d) The design, construction, and maintenance of all water, sediment, or slurry impoundments and impounding structures which meet the requirements of paragraph (a) of this section shall be implemented in accordance with the plan approved by the District Manager.
- (e) All fires in impounding structures shall be extinguished, and the method used shall be in accordance with a plan approved by the District Manager. The plan shall contain as a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, shall be involved in the extinguishing operation.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957))

[40 FR 41776, Sept. 9, 1975]

Help Printing This Page

# Title 30 Parts 1-100 Mineral Resources Repartment of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.216-1

Water, sediment or slurry impoundments and impounding structures; identification.

A permanent identification marker, at least six feet high and showing the identification number of the impounding structure as assigned by the District Manager, the name associated with the impounding structure and name of the person owning, operating, or controlling the structure, shall be located on or immediately adjacent to each water, sediment or slurry impounding structure within the time specified in paragraph (a) or (b) of this section as applicable.

(a) For existing water, sediment or slurry impounding structures, markers shall be placed before May 1, 1976.

(b) For new or proposed water, sediment, or slurry impounding structures, markers shall be placed within 30 days from the start of construction.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957))

[40 FR 41777, Sept. 9, 1975]

Help Printing This Page

# Title 30 Parts 1-150 Minoral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

#### 30 CFR § 77.216-2

Water, sediment, or slurry impoundments and impounding structures; minimum plan requirements; changes or modifications; certification.

- (a) The plan specified in §77.216, shall contain as a minimum the following information:
- (1) The name and address of the persons owning, operating or controlling the impoundment or impounding structure; the name associated with the impoundment or impounding structure; the identification number of the impounding structure as assigned by the District Manager; and the identification number of the mine or preparation plant as assigned by MSHA.
- (2) The location of the structure indicated on the most recent USGS 7 1/2 minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.
- (3) A statement of the purpose for which the structure is or will be used.
- (4) The name and size in acres of the watershed affecting the impoundment.
- (5) A description of the physical and engineering properties of the foundation materials on which the structure is or will be constructed.
- (6) A statement of the type, size, range, and physical and engineering properties of the materials used, or to be used, in constructing each zone or stage of the impounding structure; the method of site preparation and construction of each zone; the approximate dates of construction of the structure and each successive stage; and for existing structures, such history of construction as may be available, and any record or knowledge of structural instability.
- (7) At a scale not to exceed 1 inch=100 feet, detailed dimensional drawings of the impounding structure including a plan view and cross sections of the length and width of the impounding structure, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the measurement of the minimum vertical distance between the crest of the impounding structure and the reservoir surface at present and under design storm conditions, sediment or slurry level, water level and other information pertinent to the impoundment itself, including any identifiable natural or manmade features which could affect operation of the impoundment.
- (8) A description of the type and purpose of existing or proposed instrumentation.
- (9) Graphs showing area-capacity curves.
- (10) A statement of the runoff attributable to the probable maximum precipitation of 6-hour duration and the calculations used in determining such runoff.
- (11) A statement of the runoff attributable to the storm for which the structure is designed and the calculations used in determining such runoff.
- (12) A description of the spillway and diversion design features and capacities and calculations used in their determination.
- (13) The computed minimum factor of safety range for the slope stability of the impounding structure including methods and calculations used to determine each factor of safety.
- (14) The locations of surface and underground coal mine workings including the depth and extent of such workings within the area 500 feet around the perimeter, shown at a scale not to exceed one inch=500 feet.
- (15) Provisions for construction surveillance, maintenance, and repair of the impounding structure.
- (16) General provisions for abandonment.
- (17) A certification by a registered engineer that the design of the impounding structure is in accordance with current, prudent engineering practices for the maximum volume of water, sediment, or slurry which can be impounded therein and for the passage of runoff from the designed storm which exceeds the capacity of the impoundment; or, in lieu of the certification, a report indicating what additional investigations, analyses, or improvement work are necessary before such a certification can be made, including what provisions have been made to carry out such work in addition to a schedule

for completion of such work.

- (18) Such other information pertaining to the stability of the impoundment and impounding structure which may be required by the District Manager.
- (b) Any changes or modifications to plans for water, sediment, or slurry impoundments or impounding structures shall be approved by the District Manager prior to the initiation of such changes or modifications.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957))

[40 FR 41777, Sept. 9, 1975]

Help Printing This Page

## Title 30 Purts 1-198 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

#### 30 CFR § 77.216-3

Water, sediment, or slurry impoundments and impounding structures; inspection requirements; correction of hazards; program requirements.

- (a) All water, sediment, or slurry impoundments that meet the requirements of §77.216(a) shall be examined as follows:
- (1) At intervals not exceeding 7 days, or as otherwise approved by the District Manager, for appearances of structural weakness and other hazardous conditions.
- (2) All instruments shall be monitored at intervals not exceeding 7 days, or as otherwise approved by the District Manager.
- (3) Longer inspection or monitoring intervals approved under this paragraph (a) shall be justified by the operator based on the hazard potential and performance of the impounding structure, and shall include a requirement for inspection immediately after a specified rain event approved by the District Manager.
- (4) All inspections required by this paragraph (a) shall be performed by a qualified person designated by the person owning, operating, or controlling the impounding structure.
- (b) When a potentially hazardous condition develops, the person owning, operating or controlling the impounding structure shall immediately:
- (1) Take action to eliminate the potentially hazardous condition;
- (2) Notify the District Manager;
- (3) Notify and prepare to evacuate, if necessary, all coal miners from coal mine property which may be affected by the potentially hazardous conditions; and
- (4) Direct a qualified person to monitor all instruments and examine the structure at least once every eight hours, or more often as required by an authorized representative of the Secretary.
- (c) After each examination and instrumentation monitoring referred to in paragraphs (a) and (b) of this section, each qualified person who conducted all or any part of the examination or instrumentation monitoring shall promptly record the results of such examination or instrumentation monitoring in a book which shall be available at the mine for inspection by an authorized representative of the Secretary, and such qualified person shall also promptly report the results of the examination or monitoring to one of the persons specified in paragraph (d) of this section.
- (d) All examination and instrumentation monitoring reports recorded in accordance with paragraph (c) of this section shall include a report of the action taken to abate hazardous conditions and shall be promptly signed or countersigned by at least one of the following persons:
- (1) The mine foreman;
- (2) The assistant superintendent of the mine;
- (3) The superintendent of the mine;
- (4) The person designated by the operator as responsible for health and safety at the mine.
- (e) Before May 1, 1976, the person owning, operating, or controlling a water, sediment, or slurry impoundment which meets the requirements of §77.216(a) shall adopt a program for carrying out the requirements of paragraphs (a) and (b) of this section. The program shall be submitted for approval to the District Manager. The program shall include as a minimum:
- (1) A schedule and procedures for examining the impoundment and impounding structure by a designated qualified person;
- (2) A schedule and procedures for monitoring any required or approved instrumentation by a designated qualified person;
- Procedures for evaluating hazardous conditions;

- (4) Procedures for eliminating hazardous conditions;
- (5) Procedures for notifying the District Manager;
- (6) Procedures for evacuating coal miners from coal mine property which may be affected by the hazardous condition.
- (f) Before making any changes or modifications in the program approved in accordance with paragraph (e) of this section, the person owning, operating, or controlling the impoundment shall obtain approval of such changes or modifications from the District Manager.
- (g) The qualified person or persons referred to in paragraphs (a), (b)(4), (c), (e)(1), and (e)(2) of this section shall be trained to recognize specific signs of structural instability and other hazardous conditions by visual observation and, if applicable, to monitor instrumentation.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957))

[40 FR 41777, Sept. 9, 1975, as amended at 57 FR 7471, Mar. 2, 1992]

Help Printing This Page

# Title 30 Parts 1-199 Minoral Recognition Of Labor Hoperational of Labor Hoperational of Labor Hoperation Science and Hoperation Code of Federal Regulations

#### 30 CFR § 77.216-4

Water, sediment or slurry impoundments and impounding structures; reporting requirements; certification.

(a) Except as provided in paragraph (b) of this section, every twelfth month following the date of the initial plan approval, the person owning, operating, or controlling a water, sediment, or slurry impoundment and impounding structure that has not been abandoned in accordance with an approved plan shall submit to the District Manager a report containing the following information:

(1) Changes in the geometry of the impounding structure for the reporting period.

- (2) Location and type of installed instruments and the maximum and minimum recorded readings of each instrument for the reporting period.
- (3) The minimum, maximum, and present depth and elevation of the impounded water, sediment, or slurry for the reporting period.

(4) Storage capacity of the impounding structure.

(5) The volume of the impounded water, sediment, or slurry at the end of the reporting period.

- (6) Any other change which may have affected the stability or operation of the impounding structure that has occurred during the reporting period.
- (7) A certification by a registered professional engineer that all construction, operation, and maintenance was in accordance with the approved plan.
- (b) A report is not required under this section when the operator provides the District Manager with a certification by a registered professional engineer that there have been no changes under paragraphs (1) through (6) of this section to the impoundment or impounding structure. However, a report containing the information set out in paragraph of this section shall be submitted to the District Manager at least every 5 years.

  [57 FR 7471, Mar. 2, 1992]

## Help Printing This Page

## Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.216-5

Water, sediment or slurry impoundments and impounding structures; abandonment.

- (a) Prior to abandonment of any water, sediment, or slurry impoundment and impounding structure which meets the requirements of 30 CFR 77.216(a), the person owning, operating, or controlling such an impoundment and impounding structure shall submit to and obtain approval from the District Manager, a plan for abandonment based on current, prudent engineering practices. This plan shall provide for major slope stability, include a schedule for the plan's implementation and, except as provided in paragraph (b) of this section, contain provisions to preclude the probability of future impoundment of water, sediment, or slurry.
- (b) An abandonment plan does not have to contain a provision to preclude the future impoundment of water if the plan is approved by the District Manager and documentation is included in the abandonment plan to ensure that the following requirements are met:
- (1) A registered professional engineer, knowledgeable in the principles of dam design and in the design and construction of the structure, shall certify that it substantially conforms to the approved design plan and specifications and that there are no apparent defects.
- (2) The current owner or prospective owner shall certify a willingness and ability to assume responsibility for operation and maintenance of the structure.
- (3) A permit or approval for the continued existence of the impoundment or impounding structure shall be obtained from the Federal or State agency responsible for dam safety.

[57 FR 7472, Mar. 2, 1992]

Help Printing This Page

## Title 30 Parts 1-199 Mineral Resources Department of Labor Nine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.217 Definitions.

For the purpose of §§77.214 through 77.216-5, the term:

- (a) Abandoned as applied to any refuse pile or impoundment and impounding structure means that work on such pile or structure has been completed in accordance with a plan for abandonment approved by the District Manager.
- (b) Area-capacity curves means graphic curves which readily show the reservoir water surface area, in acres, at different elevations from the bottom of the reservoir to the maximum water surface, and the capacity or volume, in acre-feet, of the water contained in the reservoir at various elevations.
- (c) Impounding structure means a structure which is used to impound water, sediment, or slurry, or any combination of such materials.
- (d) Probable maximum precipitation means the value for a particular area which represents an envelopment of depth-duration-area rainfall relations for all storm types affecting that area adjusted meteorologically to maximum conditions.
- (e) Refuse pile means a deposit of coal mine waste which may contain a mixture of coal, shale, claystone, siltstone, sandstone, limestone, and related materials that are excavated during mining operations or separated from mined coal and disposed of on the surface as waste byproducts of either coal mining or preparation operations. Refuse pile does not mean temporary spoil piles of removed overburden material associated with surface mining operations.
- (f) Safety factor means the ratio of the forces tending to resist the failure of a structure to the forces tending to cause such failure as determined by accepted engineering practice.

(Secs. 101, 508, Pub. L. 91-173, 83 Stat. 745, 803 (30 U.S.C. 811, 957))

[40 FR 41778, Sept. 9, 1975]

Subpart D--Thermal Dryers

Help Printing This Page

# Title 30 Parts 1-199 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.403-1 Mobile equipment; rollover protective structures (ROPS).

- (a) All rubber-tired or crawler-mounted self-propelled scrapers, front-end loaders, dozers, graders, loaders, and tractors, with or without attachments, that are used in surface coal mines or the surface work areas of underground coal mines shall be provided with rollover protective structures (hereinafter referred to as ROPS) in accordance with the requirements of paragraphs (b) through (f) of this section, as applicable.
- (b) Mobile equipment manufactured on and after September 1, 1974. All mobile equipment described in paragraph (a) of this section manufactured on and after September 1, 1974 shall be equipped with ROPS meeting the requirements of the Department of Labor specified in §§1926.1001 and 1926.1002 of Part 1926, Title 29, Code of Federal Regulations—Safety and Health Regulations for Construction.
- (c) Mobile equipment manufactured prior to September 1, 1974. All mobile equipment described in paragraph (a) of this section manufactured prior to September 1, 1974 shall be equipped with ROPS meeting the requirements of paragraphs (d) through (f) of this section, as appropriate, no later than the dates specified in paragraphs (1), (2), and (3) of this paragraph (c), unless an earlier date is required by an authorized representative of the Secretary under paragraph (c)(4) of this section:
- (1) Mobile equipment manufactured between July 1, 1971, and September 1, 1974, shall be equipped with ROPS no later than March 1, 1975.
- (2) Mobile equipment manufactured between July 1, 1970, and June 30, 1971, shall be equipped with ROPS no later than July 1, 1975.
- (3) Mobile equipment manufactured between July 1, 1969, and June 30, 1970, shall be equipped with ROPS no later than January 1, 1976.
- (4) Irrespective of the time periods specified in paragraph (c) (1) through (3) of this section an authorized representative of the Secretary may require such mobile equipment to be equipped with ROPS at an earlier date when necessary to protect the operator of the equipment under the conditions in which the mobile equipment is, or will be operated. The authorized representative of the Secretary shall in writing advise the operator that the equipment shall be equipped with a ROPS and shall fix a time within which the operator shall provide and install the ROPS. If such ROPS is not provided and installed within the time fixed a notice shall be issued to the operator pursuant to section 104 of the Act.
- (5) Nothing in this §77.403-1 shall preclude the issuance of a withdrawal order because of imminent danger.
- (d) Except as provided in paragraph (e) of this section, mobile equipment described in paragraph (a) of this section, manufactured prior to September 1, 1974, shall be deemed in compliance with this section if the ROPS is installed in accordance with the recommendations of the ROPS manufacturer or designer. The coal mine operator shall exhibit certification from the ROPS manufacturer or designer in the form of a label attached to the equipment, indicating the manufacturer's or fabricator's name and address, the ROPS model number, if any, the machine make, model or series number that the structure is designed to fit, and compliance with the applicable specification listed in paragraph (c)(1) or (2) of this section, or he shall, upon request of the authorized representative of the Secretary, furnish certification from a registered professional engineer that:
- (1) The ROPS complies with the Society of Automotive Engineers (SAE) Standard J 397, "Critical Zone--Characteristics and Dimensions for Operators of Construction and Industrial Machinery" or SAE J 397a, "Deflection Limiting Volume for Laboratory Evaluation of Rollover Protective Structures (ROPS) and Falling Object Protective Structures (FOPS) of Construction and Industrial Vehicles" and the following applicable SAE Standards:
- (d)(1)(i) J 320a, "Minimum Performance Criteria for Rollover Protective Structure for Rubber-Tired Self-Propelled Scrapers" or J 320b, "Minimum Performance Criteria for Rollover Protective Structures for Prime Movers"; or
- (d)(1)(ii) J 394, "Minimum Performance Criteria for Rollover Protective Structure for Rubber-Tired Front-End Loaders and Rubber-Tired Dozers" or J 394a, "Minimum Performance Criteria for Rollover Protective Structures for Wheeled Front-End Loaders and Wheeled Dozers"; or
- (d)(1)(iii) J 395, "Minimum Performance Criteria for Rollover Protective Structure for Crawler Tractors and Crawler-Type Loaders" or J 395a, "Minimum Performance Criteria for Rollover Protective Structures for Track-Type Tractors and Track-Type Front-End Loaders"; or

- (d)(1)(iv) J 396 or J 396a, "Minimum Performance Criteria for Rollover Protective Structures for Motor Graders"; or
- (d)(1)(v) J 167, "Protective Frame with Overhead Protection--Test Procedures and Performance Requirements"; or
- (d)(1)(vi) J 334a, "Protective Frame Test Procedures and Performance Requirements"; or
- (2) The ROPS and supporting attachments will:
- (d)(2)(i) Show satisfactory performance by actual test of a prototype involving a roll of 720° or more; or
- (d)(2)(ii) Support not less than the weight of the vehicle applied as a uniformly distributed horizontal load at the top of the structure and perpendicular to a vertical plane through the longitudinal axis of the prime mover, and support two times the weight of the vehicle applied as a uniformly distributed vertical load to the top of the structure; 1 or
- 1 Paragraph (d) of § 77.403-1 is based on the ROPS criteria of the U.S. Army Corps of Engineers, Safety General Safety-Requirements EM 385-1-1, Change 1, No. 21, Para. 18.A.20 (March 27, 1972), except that subparagraph (2)(ii) of this paragraph (d) is substituted for Para. 18.A.20e(2) of the Corps requirements.
- (d)(2)(iii) Support the following separately applied minimum loads:
- (d)(2)(iii)(A) 125 percent of the weight of the vehicle applied as a uniformly distributed horizontal load at the top of the ROPS and perpendicular to a critical plane through the longitudinal axis of the prime mover; and
- (d)(2)(iii)(B) A load of twice the weight of the vehicle applied as a uniformly distributed vertical load to the top of the ROPS after complying with paragraph (d)(1)(iii)(A) of this section. Stresses shall not exceed the ultimate strength. Steel used in the ROPS must have capability to perform at 0° F., or exhibit Charpy V-notch impact strength at 8 ft.-lb. at -20° F. with a standard Charpy V-notch Type A specimen and provide 20 percent elongation over two inches in a standard two inch gauge length on a 0.505 inch diameter tensile specimen. Bolts and nuts shall be SAE grade 8 (reference SAE J 429d, J 429e, J 429f or J 429g and J 995, J 995a or J 995b).
- (e) Mobile equipment manufactured prior to September 1, 1974 meeting certain existing governmental requirements for ROPS. Mobile equipment described in paragraph (a) of this section, manufactured prior to September 1, 1974 and already equipped with ROPS, shall be deemed in compliance with this section if it meets the ROPS requirements of the State of California, the U.S. Army Corps of Engineers, the Bureau of Reclamation of the U.S. Department of the Interior in effect on April 5, 1972, or the Occupational Safety and Health Administration, U.S. Department of Labor. The requirements in effect are:
- (1) State of California: Construction Safety Orders 1591(i), 1596, and Logging and Sawmill Safety Order 5243, issued by the Department of Industrial Relations pursuant to Division 5, Labor Code §6312, State of California;
- (2) U.S. Army Corps of Engineers: Safety--General Safety Requirements, EM-385-1-1 (March 1967);
- (3) Bureau of Reclamation, U.S. Department of the Interior: Safety and Health Regulations for Construction, Part II (September 1971); and
- (4) Occupational Safety and Health Administration, U.S. Department of Labor: Safety and Health Regulations for Construction, 29 CFR 1926.1001 and 1926.1002.
- (f) Field welding on ROPS shall be performed by welders who are certified by the coal mine operator or equipment distributor as being qualified in accordance with the American Welding Society Structural Welding Code AWS D1.1-73, or Military Standard MIL-STD 248, or the equivalent thereof.
- (g) Seat belts required by  $\underline{\$77.1710(i)}$  shall be worn by the operator of mobile equipment required to be equipped with ROPS by  $\underline{\$77.403-1}$ .
- (§ 101(a), Federal Coal Mine Health and Safety Act of 1969, as amended (83 Stat. 745; 30 U.S.C. 811(a))

[39 FR 24007, June 28, 1974]

Help Printing This Page

# Title 30 Parts 1-198 Mineral flescources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.403-2 Incorporation by reference.

In accordance with 5 U.S.C. 552(a), the publications to which references are made in §577.403 and 77.403-1 and which have been prepared by organizations other than the Mine Safety and Health Administration (MSHA), are hereby incorporated by reference and made a part hereof. The incorporated publications are available at each Coal Mine Safety and Health district office of MSHA. The U.S. Army Corps of Engineers, Safety--General Safety Requirements and the Occupational Safety and Health Administration regulations are also available from the U.S. Government Printing Office, Washington, DC 20402. Bureau of Reclamation Safety and Health Regulations for Construction are available from the Bureau of Reclamation, Division of Safety, Engineering and Research Center, Denver, Colorado. SAE documents are available from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096. American Welding Society Structural Welding Code D1-1-73 is available from the American Welding Society, Inc., 550 N.W. LeJeune Road, Miami, FL 33126. Military Standard MIL-STD 248 is available from the Information Dissemination (Superintendent of Documents), P.O. Box 371954, Pittsburgh, PA 15250-7954; Telephone: 866-512-1800 (toll free) or 202-512-1800; <a href="https://bookstore.gpo.gov">http://bookstore.gpo.gov</a>.

(§ 101(a), the Federal Coal Mine Health and Safety Act of 1969, as amended (83 Stat. 745; 30 U.S.C. 811(a))

[39 FR 24008, June 28, 1974; 60 FR 35692, July 11, 1995]

Help Printing This Page

# Title 30 Parts 1-100 Mineral Heacurces Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.409
Shovels, draglines, and tractors.

- (a) Shovels, draglines, and tractors shall not be operated in the presence of any person exposed to a hazard from its operation and all such equipment shall be provided with an adequate warning device which shall be sounded by the operator prior to starting operation.
- (b) Shovels and draglines shall be equipped with handrails along and around all walkways and platforms.

Help Printing This Page

## Title 30 Parts 1-199 Mineral Recources Department of Labor Mine Safety and Boalth Administration Code of Federal Regulations

30 CFR § 77.600 Trailing cables; short-circuit protection; disconnecting devices.

Short-circuit protection for trailing cables shall be provided by an automatic circuit breaker or other no less effective device, approved by the Secretary, of adequate current-interrupting capacity in each ungrounded conductor. Disconnecting devices used to disconnect power from trailing cables shall be plainly marked and identified and such devices shall be equipped or designed in such a manner that it can be determined by visual observation that the power is disconnected.

Help Printing This Page

# Title 30 Parts 1-190 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.601

Trailing cables or portable cables; temporary splices.

Temporary splices in trailing cables or portable cables shall be made in a workmanlike manner and shall be mechanically strong and well insulated. Trailing cables or portable cables with exposed wires or splices that heat or spark under load shall not be used.

Help Printing This Page

## Title 30 Parts 1-188 Mineral Resources Repartment of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.602 Permanent splicing of trailing cables.

When permanent splices in trailing cables are made, they shall be:

- (a) Mechanically strong with adequate electrical conductivity;
- (b) Effectively insulated and sealed so as to exclude moisture; and,
- (c) Vulcanized or otherwise made with suitable materials to provide good bonding to the outer jacket.

Help Printing This Page

# Title 30 Parts 1-199 Minoral Resources Department of Labor Mino Safety and Realth Administration Code of Federal Regulations

30 CFR § 77.603 Clamping of trailing cables to equipment.

Trailing cables shall be clamped to machines in a manner to protect the cables from damage and to prevent strain on the electrical connections.

Help Printing This Page

# Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.604 Protection of trailing cables.

Trailing cables shall be adequately protected to prevent damage by mobile equipment.

Help Printing This Page

# Title 30 Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.605 Breaking trailing cable and power cable connections.

Trailing cable and power cable connections between cables and to power sources shall not be made or broken under load.

👸 Help Printing This Page

#### Title 30 Parts 1-190 Mineral Resources Repartment of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.606 Energized trailing cables; handling.

Energized medium- and high-voltage trailing cables shall be handled only by persons wearing protective rubber gloves (see  $\S77.606-1$ ) and, with such other protective devices as may be necessary and appropriate under the circumstances.

Help Printing This Page

# Title 30 Parts 1-199 Minoral Resources Department of Labor Mino Safety and Health Administration Code of Federal Regulations

30 CFR § 77.606-1 Rubber gloves; minimum requirements.

- (a) Rubber gloves (lineman's gloves) worn while handling high-voltage trailing cables shall be rated at least 20,000 volts and shall be used and tested in accordance with the provisions of §§77.704-6 through 77.704-8.
- (b) Rubber gloves (wireman's gloves) worn while handling trailing cables energized by 660 to 1,000 volts shall be rated at least 1,000 volts and shall not be worn inside out or without protective leather gloves.
- (c) Rubber gloves shall be inspected for defects before use on each shift and at least once thereafter during the shift when such rubber gloves are used for extended periods. All protective rubber gloves which contain defects shall be discarded and replaced prior to handling energized cables.

Subpart H--Grounding

Help Printing This Page

# Title 30 Parts 1-19th Mineral Resources Repartment of Labor Mine Salety and Realth Administration Code of Federal Regulations

30 CFR § 77.906

Trailing cables supplying power to low-voltage mobile equipment; ground wires and ground check wires.

On and after September 30, 1971, all trailing cables supplying power to portable or mobile equipment from low-voltage three-phase resistance grounded power systems shall contain one or more ground conductors having a cross-sectional area of not less than one-half the power conductor. Such trailing cables shall include an insulated conductor for the ground continuity check circuit except where a no less effective device has been approved by the Secretary to assure continuity. Splices made in low-voltage trailing cables shall provide continuity of all components.

Subpart K--Ground Control

Help Printing This Page

#### Title 30 Parts 1-100 Mineral Resources Department of Lahor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1000 Highwalls, pits and spoil banks; plans.

Each operator shall establish and follow a ground control plan for the safe control of all highwalls, pits and spoil banks to be developed after June 30, 1971, which shall be consistent with prudent engineering design and will insure safe working conditions. The mining methods employed by the operator shall be selected to insure highwall and spoil bank stability.

Help Printing This Page

#### Title 30 Parts 1-198 Mineral Resources. Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1000-1 Filing of plan.

The operator shall file a copy of such plan, and revisions thereof, with the MSHA Coal Mine Safety and Health district office for the district in which the mine is located, and shall identify the name and location of the mine; the Mine Safety and Health Administration identification number if known; and the name and address of the mine operator.

(Approved by the Office of Management and Budget under control number 1219-0026) [Removed]

(Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 47 FR 14696, Apr. 6, 1982; 60 FR 33719, June 29, 1995]

📇 Help Printing This Page

#### Title 30 Parts 1-199 Mineral Resources Department of Labor Mine Safety and Realth Administration Code of Federal Regulations

30 CFR § 77.1001 Stripping; loose material.

Loose hazardous material shall be stripped for a safe distance from the top of pit or highwalls, and the loose unconsolidated material shall be sloped to the angle of repose, or barriers, baffle boards, screens, or other devices be provided that afford equivalent protection.

Help Printing This Page

Title 30 Parts 1-199 Mineral Resources Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1002

Box cuts; spoil material placement.

When box cuts are made, necessary precautions shall be taken to minimize the possibility of spoil material rolling into the pit.

Help Printing This Page

# Title 30 Parts 1-199 Mineral Becources Department of Later Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1003 Benches.

To insure safe operation, the width and height of benches shall be governed by the type of equipment to be used and the operation to be performed.

Help Printing This Page

# Title 30 Parts 1-199 Minoral Resources Department of Labor Mino Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1004 Ground control; inspection and maintenance; general.

- (a) Highwalls, banks, benches, and terrain sloping into the working areas shall be examined after every rain, freeze, or thaw before men work in such areas, and such examination shall be made and recorded in accordance with §77.1713.
- (b) Overhanging highwalls and banks shall be taken down and other unsafe ground conditions shall be corrected promptly, or the area shall be posted.

Help Printing This Page

# Title 30 Parts 1-199 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1005 Scaling highwalls; general.

- (a) Hazardous areas shall be scaled before any other work is performed in the hazardous area. When scaling of highwalls is necessary to correct conditions that are hazardous to persons in the area, a safe means shall be provided for performing such work.
- (b) Whenever it becomes necessary for safety to remove hazardous material from highwalls by hand, the hazardous material shall be approached from a safe direction and the material removed from a safe location.

Help Printing This Page

#### Title 30 Parts 1-198 Mineral Resources. Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1006 Highwalls; men working.

- (a) Men, other than those necessary to correct unsafe conditions, shall not work near or under dangerous highwalls or banks.
- (b) Except as provided in paragraph (c) of this section, men shall not work between equipment and the highwall or spoil bank where the equipment may hinder escape from falls or slides.
- (c) Special safety precautions shall be taken when men are required to perform repair work between immobilized equipment and the highwall or spoil bank and such equipment may hinder escape from falls or slides.

Help Printing This Page

Title 30 Parts 1-198 Mineral Resources
Department of Labor
Mine Saloty and Health Administration
Code of Federal Regulations

30 CFR § 77.1007 Drilling; general.

- (a) Equipment that is to be used during a shift shall be inspected each shift by a competent person. Equipment defects affecting safety shall be reported.
- (b) Equipment defects affecting safety shall be corrected before the equipment is used.

Help Printing This Page

#### Title 30 Department of Labor Code of Federal Regulations

30 CFR § 77.1008 Relocation of drills; safeguards.

- (a) When a drill is being moved from one drilling area to another, drill steel, tools, and other equipment shall be secured and the mast placed in a safe position.
- (b) When a drill helper is used his location shall be made known to the operator at all times when the drill is being moved.

Help Printing This Page

# Title 30 Parts 1-199 Mineral Headurese Department of Labor Mine Solety and Health Administration Code of Federal Regulations

30 CFR § 77.1009 Drill; operation.

- (a) While in operation drills shall be attended at all times.
- (b) Men shall not drill from positions that hinder their access to the control levers, or from insecure footing or staging, or from atop equipment not designed for this purpose.
- (c) Men shall not be on a mast while the drill bit is in operation unless a safe platform is provided and safety belts are used.
- (d) Drill crews and others shall stay clear of augers or drill stems that are in motion. Persons shall not pass under or step over a moving stem or auger.
- (e) In the event of power failure, drill controls shall be placed in the neutral position until power is restored.
- (f) When churn drills or vertical rotary drills are used, drillers shall not be permitted to work under suspended tools, and when collaring holes, inspecting, or during any operation in which tools are removed from the hole, all tools shall be lowered to the ground or platform.

Help Printing This Page

#### Title 30 Parts 1-190 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1010 Collaring holes.

- (a) Starter steefs shall be used when collaring holes with hand-held drills.
- (b) Men shall not hold the drill steel while collaring holes, or rest their hands on the chuck or centralizer while drilling.

Help Printing This Page

#### Title 30 Perts 1-198 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1011 Drill holes; guarding.

Drill holes large enough to constitute a hazard shall be covered or guarded.

Help Printing This Page

#### Title 30 Parts 1-199 Mineral States Cources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1012 Jackhammers; operation; safeguards.

Men operating or working near jackhammers or jackleg drills, or other drilling machines shall position themselves so that they will not be struck or lose their balance if the drill steel breaks or sticks.

Help Printing This Page

# Title 30 Parts 1-198 Minoral Resources Department of Labor Nune Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1013 Air drills; safeguards.

Air shall be turned off and bled from the air hoses before hand-held air drills are moved from one working area to another.

Subpart L--Fire Protection

Help Printing This Page

#### Title 30 Parts 1-198 Mineral Resources Repartment of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1200 Mine map.

The operator shall maintain an accurate and up-to-date map of the mine, on a scale of not less than 100 nor more than 500 feet to the inch, at or near the mine, in an area chosen by the mine operator, with a duplicate copy on file at a separate and distinct location, to minimize the danger of destruction by fire or other hazard. The map shall show:

- (a) Name and address of the mine;
- (b) The property or boundary lines of the active areas of the mine;
- (c) Contour lines passing through whole number elevations of the coalbed being mined. The spacing of such lines shall not exceed 25-foot elevation levels, except that a broader spacing of contour lines may be approved by the District Manager for steeply pitching coalbeds. Contour lines may be placed on overlays or tracings attached to mine maps.
- (d) The general elevation of the coalbed or coalbeds being mined, and the general elevation of the surface;
- (e) Either producing or abandoned oil and gas wells located on the mine property;
- (f) The location and elevation of any body of water dammed or held back in any portion of the mine: *Provided, however,* Such bodies of water may be shown on overlays or tracings attached to the mine maps;
- (g) All prospect drill holes that penetrate the coalbed or coalbeds being mined on the mine property;
- (h) All auger and strip mined areas of the coalbed or coalbeds being mined on the mine property together with the line of maximum depth of holes drilled during auger mining operations.
- (i) All worked out and abandoned areas;
- (j) The location of railroad tracks and public highways leading to the mine, and mine buildings of a permanent nature with identifying names shown;
- (k) Underground mine workings underlying and within 1,000 feet of the active areas of the mine;
- (I) The location and description of at least two permanent base line points, and the location and description of at least two permanent elevation bench marks used in connection with establishing or referencing mine elevation surveys; and,
- (m) The scale of the map.

Help Printing This Page

# Title 30 Parts 1-199 Nineral Resources Department of Labor Nine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1201 Certification of mine maps.

Mine maps shall be made or certified by an engineer or surveyor registered by the State in which the mine is located.

Help Printing This Page

# Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1202 Availability of mine map.

The mine map maintained in accordance with the provisions of  $\S 77.1200$  shall be available for inspection by the Secretary or his authorized representative.

Subpart N--Explosives and Blasting

Help Printing This Page

## Title 30 Parts 1-199 Minoral Resources Deportment of Labor Mino Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1300 Explosives and blasting.

(a) No explosives, blasting agent, detonator, or any other related blasting device or material shall be stored, transported, carried, handled, charged, fired, destroyed, or otherwise used, employed or disposed of by any person at a coal mine except in accordance with the provisions of §77.1301 through 77.1304, inclusive.

(b) The term "explosives" as used in this Subpart N includes blasting agents. The standards in this Subpart N in which the term "explosives" appears are applicable to blasting agents (as well as to other explosives) unless blasting agents are expressly excluded.

Help Printing This Page

#### Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Safety and Realth Administration Code of Federal Regulations

#### 30 CFR § 77.1301 Explosives; magazines.

- (a) Detonators and explosives other than blasting agents shall be stored in magazines.
- (b) Detonators shall not be stored in the same magazine with explosives.
- (c) Magazines other than box type shall be:
- (1) Located in accordance with the current American Table of Distances for storage of explosives.
- (2) Detached structures located away from powerlines, fuel storage areas, and other possible sources of fire.
- (3) Constructed substantially of noncombustible material or covered with fire-resistant material.
- (4) Reasonably bullet resistant.
- (5) Electrically bonded and grounded if constructed of metal.
- (6) Made of nonsparking materials on the inside, including floors.
- (7) Provided with adequate and effectively screened ventilation openings near the floor and ceiling.
- (8) Kept locked securely when unattended.
- (9) Posted with suitable danger signs so located that a bullet passing through the face of a sign will not strike the magazine.
- (10) Used exclusively for storage of explosives or detonators and kept free of all extraneous materials.
- (11) Kept clean and dry in the interior, and in good repair.
- (12) Unheated, unless heated in a manner that does not create a fire or explosion hazard.
- (d) Box-type magazines used to store explosives or detonators in work areas shall be constructed with only nonsparking material inside and equipped with covers or doors and shall be located out of the line of blasts.
- (e) Secondary and box-type magazines shall be suitably labeled.
- (f) Detonator-storage magazines shall be separated by at least 25 feet from explosive-storage magazines.
- (g) Cases or boxes containing explosives shall not be stored in magazines on their ends or sides nor stacked more than 6 feet high.
- (h) Ammonium nitrate-fuel oil blasting agents shall be physically separated from other explosives, safety fuse, or detonating cord stored in the same magazine and in such a manner that oil does not contaminate the other explosives, safety fuse or detonating cord.

Help Printing This Page

#### Title 30 Parts 1-1 RR Mineral Resources Department of Labor Hune Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1302 Vehicles used to transport explosives.

- (a) Vehicles used to transport explosives, other than blasting agents, shall have substantially constructed bodies, no sparking metal exposed in the cargo space, and shall be equipped with suitable sides and tail gates; explosives shall not be piled higher than the side or end.
- (b) Vehicles containing explosives or detonators shall be maintained in good condition and shall be operated at a safe speed and in accordance with all safe operating practices.
- (c) Vehicles containing explosives or detonators shall be posted with proper warning signs.
- (d) Other materials or supplies shall not be placed on or in the cargo space of a conveyance containing explosives, detonating cord or detonators, except for safety fuse and except for properly secured nonsparking equipment used expressly in the handling of such explosives, detonating cord or detonators.
- (e) Explosives and detonators shall be transported in separate vehicles unless separated by 4 inches of hardwood or the equivalent.
- (f) Explosives or detonators shall be transported promptly without undue delays in transit.
- (g) Explosives or detonators shall be transported at times and over routes that expose a minimum number of persons.
- (h) Only the necessary attendants shall ride on or in vehicles containing explosives or detonators.
- (i) Vehicles shall be attended, whenever practical and possible, while loaded with explosives or detonators.
- (j) When vehicles containing explosives or detonators are parked, the brakes shall be set, the motive power shut off, and the vehicles shall be blocked securely against rolling.
- (k) Vehicles containing explosives or detonators shall not be taken to a repair garage or shop for any purpose.

Help Printing This Page

### Title 30 Parts 1-199 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1303 Explosives, handling and use.

- (a) Persons who use or handle explosives or detonators shall be experienced men who understand the hazards involved; trainees shall do such work only under the supervision of and in the immediate presence of experienced men.
- (b) Blasting operations shall be under the direct control of authorized persons.
- (c) Substantial nonconductive closed containers shall be used to carry explosives, other than blasting agents to the blasting site.
- (d) Damaged or deteriorated explosives or detonators shall be destroyed in a safe manner.
- (e) Where electric blasting is to be performed, electric circuits to equipment in the immediate area to be blasted shall be deenergized before explosives or detonators are brought into the area; the power shall not be turned on again until after the shots are fired.
- (f) Explosives shall be kept separated from detonators until charging is started.
- (g) Areas in which charged holes are awaiting firing shall be guarded, or barricaded and posted, or flagged against unauthorized entry.
- (h) Ample warning shall be given before blasts are fired. All persons shall be cleared and removed from the blasting area unless suitable blasting shelters are provided to protect men endangered by concussion or flyrock from blasting.
- (i) Lead wires and blasting lines shall not be strung across power conductors, pipelines, railroad tracks, or within 20 feet of bare powerlines. They shall be protected from sources of static or other electrical contact.
- (j) For the protection of underground workers, special precautions shall be taken when blasting in close proximity to underground operations, and no blasting shall be done that would be hazardous to persons working underground.
- (k) Holes shall not be drilled where there is danger of intersecting a charged or misfired hole.
- (I) Only wooden or other nonsparking implements shall be used to punch holes in an explosive cartridge.
- (m) Tamping poles shall be blunt and squared at one end and made of wood, nonsparking material, or of special plastic acceptable to the Mine Safety and Health Administration.
- (n) Delay connectors for firing detonating cord shall be treated and handled with the same safety precautions as blasting caps and electric detonators.
- (o) Capped primers shall be made up at the time of charging and as close to the blasting site as conditions allow.
- (p) A capped primer shall be prepared so that the detonator is contained securely and is completely embedded within the explosive cartridge.
- (q) No tamping shall be done directly on a capped primer.
- (r) Detonating cord shall not be used if it has been kinked, bent, or otherwise handled in such a manner that the train of detonation may be interrupted.
- (s) Fuse shall not be used if it has been kinked, bent sharply, or handled roughly in such a manner that the train of deflagration may be interrupted.
- (t) Blasting caps shall be crimped to fuses only with implements designed for that specific purpose.
- (u) When firing from 1 to 15 blast-holes with safety fuse ignited individually using hand-held lighters, the fuses shall be of such lengths to provide the minimum burning time specified in the following table for a particular size round:

+-----

in a round	Minimum burning   time, minutes
1	2 ! 2 2/3 ! 3 1/3 !

In no case shall any 40-second-per-foot safety fuse less than 36 inches long or any 30-second-per-foot safety fuse less than 48 inches long be used.

- (v) The burning rate of the safety fuse in use at any time shall be measured, posted in conspicuous locations, and brought to the attention of all men concerned with blasting.
  - (w) Electric detonators of different brands shall not be used in the same round.
  - (x) Adequate priming shall be employed to guard against misfires, increased toxic fumes, and poor performance.
    - (y) Except when being tested with a blasting galvanometer:
  - (y)(1) Electric detonators shall be kept shunted until they are being connected to the blasting line or wired into a blasting round.
    - (y)(2) Wired rounds shall be kept shunted until they are being connected to the blasting line.
      - (y)(3) Blasting lines shall be kept shunted until immediately before blasting.
    - (z) Completely wired rounds shall be tested with a blasting galvanometer before connections are made to the blasting line.
      - (aa) Permanent blasting lines shall be properly supported, insulated, and kept in good repair.
      - (bb) At least a 5-foot airgap shall be provided between the blasting circuit and the power circuit.
  - (cc) When instantaneous blasting is performed, the double-trunkline or loop system shall be used in detonating-cord blasting.
- (dd) When instantaneous blasting is performed, trunklines, in multiple-row blasts, shall make one or more complete loops, with crossties between loops at intervals of not over 200 feet.
  - (ee) All detonating cord knots shall be tight and all connections shall be kept at right angles to the trunklines.
  - (ff) Power sources shall be suitable for the number of electrical detonators to be fired and for the type of circuits used.
    - (gg) Electric circuits from the blasting switches to the blast area shall not be grounded.
- (hh) Safety switches and blasting switches shall be labeled, encased in boxes, and arranged so that the covers of the boxes cannot be closed with the switches in the through-circuit or firing position.
- (ii) Blasting switches shall be locked in the open position, except when closed to fire the blast. Lead wires shall not be connected to the blasting switch until the shot is ready to be fired.
- (jj) The key or other control to an electrical firing device shall be entrusted only to the person designated to fire the round or rounds.
- (kk) If branch circuits are used when blasts are fired from power circuits, safety switches located at safe distances from the blast areas shall be provided in addition to the main blasting switch.
- (II) Misfires shall be reported to the proper supervisor and shall be disposed of safely before any other work is performed in that blasting area.
  - (mm) When safety fuse has been used, men shall not return to misfired holes for at least 30 minutes.
  - (nn) When electric blasting caps have been used, men shall not return to misfired holes for at least 15 minutes.
- (oo) If explosives are suspected of burning in a hole, all persons in the endangered area shall move to a safe location and no one should return to the hole until the danger has passed, but in no case within 1 hour.
- (pp) Blasted areas shall be examined for undetonated explosives after each blast and undetonated explosives found shall be disposed of safely.

- (qq) Blasted areas shall not be reentered by any person after firing until such time as concentrations of smoke, dust, or fumes have been reduced to safe limits.
  - (rr) In secondary blasting, if more than one shot is to be fired at one time, blasting shall be done electrically or with detonating cord.
    - (ss) Unused explosives and detonators shall be moved to a safe location as soon as charging operations are completed.
- (tt) When electric detonators are used, charging shall be stopped immediately when the presence of static electricity or stray currents is detected; the condition shall be remedied before charging is resumed.
- (uu) When electric detonators are used, charging shall be suspended and men withdrawn to a safe location upon the approach of an electrical storm.

Help Printing This Page

#### Title 30 Parts 1-199 Mineral Heasources Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1304 Blasting agents; special provisions.

- (a) Sensitized ammonium nitrate blasting agents, and the components thereof prior to mixing, shall be mixed and stored in accordance with the recommendations in Bureau of Mines Information Circular 8179, "Safety Recommendations for Sensitized Ammonium Nitrate Blasting Agents," or subsequent revisions.
- (b) Where pneumatic loading is employed, before any type of blasting operation using blasting agents is put into effect, an evaluation of the potential hazard of static electricity shall be made. Adequate steps, including the grounding and bonding of the conductive parts of pneumatic loading equipment, shall be taken to eliminate the hazard of static electricity before blasting agent use is commenced.
- (c) Pneumatic loading equipment shall not be grounded to waterlines, airlines, rails, or the permanent electrical grounding systems.
- (d) Hoses used in connection with pneumatic loading machines shall be of the semiconductive type, having a total resistance low enough to permit the dissipation of static electricity and high enough to limit the flow of stray electric currents to a safe level. Wire-countered hose shall not be used because of the potential hazard from stray electric currents.

Subpart O--Personnel Hoisting

Help Printing This Page

#### Title 30 Parts 1-199 Himeral Resources Department at Labor Hime Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1500 Auger mining; planning.

Auger mining shall be planned and conducted by the operator to insure against any hazard to underground workings located at or near such auger operations and all auger holes shall be located so as to prevent:

- (a) The disruption of the ventilation system of any active underground mine;
- (b) Inundation hazards from surface water entering any active underground mine;
- (c) Damage to the roof and ribs of active underground workings; and
- (d) Intersection of auger holes with underground mine workings known to contain dangerous quantities of impounded water.

Help Printing This Page

#### Title 30 Parts 1-100 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1501 Auger mining; inspections.

- (a) The face of all highwalls, to a distance of 25 feet on both sides of each drilling site, shall be inspected by a certified person before any augering operation is begun, and at least once during each coal producing shift and all loose material shall be removed from the drilling site before persons are permitted to enter the drilling area. The results of all such inspections shall be recorded daily in a book approved by the Secretary.
- (b) In addition, the face of all highwalls, to a distance of 25 feet on both sides of each drilling site, shall be inspected frequently by a certified person during any auger operation conducted either during or after a heavy rainfall or during any period of intermittent freezing and thawing and the results of such inspections shall be recorded as provided in paragraph (a) of this section.
- (c) When an auger hole penetrates an abandoned or mined out area of an underground mine, tests for methane and oxygen deficiency shall be made at the collar of the hole by a qualified person using devices approved by the Secretary to determine if dangerous quantities of methane or oxygen-deficient air are present or being emitted. If such is found no further work shall be performed until the atmosphere has been made safe.
- (d) Tests for oxygen deficiency shall be conducted with a permissible flame safety lamp or other means approved by the Secretary and all tests for methane shall be conducted with a methane detector approved by the Secretary.
- (e) Internal combustion engines shall not be operated in the vicinity of any auger hole in which tests for methane or oxygen deficiency are being made.

Help Printing This Page

# Title 30 Parts 1-199 Macral Resources Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1502

Auger holes; restriction against entering.

No person shall be permitted to enter an auger hole except with the approval of the MSHA Coal Mine Safety and Health District Manager of the district in which the mine is located and under such conditions as may be prescribed by such managers.

Help Printing This Page

# Title 30 Forts 1-199 Mineral Herouscoal Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1503 Augering equipment; overhead protection.

- (a) Auger machines which are exposed to highwall hazards, together with all those parts of any coal elevating conveyors where persons are required to work during augering operations, shall be covered with heavy gage screen which does not obstruct the view of the highwall and is strong enough to prevent injuries to workmen from falling material.
- (b) No work shall be done under any overhang and, when a crew is engaged in connecting or disconnecting auger sections under a highwall, at least one person shall be assigned to observe the highwall for possible movement.

Help Printing This Page

#### Title 30 Parts 1-198 Mineral Resources Repartment of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1504 Auger equipment; operation.

- (a) Persons shall be kept clear of the auger train while it is in motion and shall not be permitted to pass under or over an auger train, except where adequate crossing facilities are provided.
- (b) Persons shall be kept clear of auger sections being swung into position.
- (c) No person, including the auger machine operator, shall, where practicable, be stationed in direct line with a borehole during augering operations.
- (d) Operator of auger equipment shall not leave the controls of such equipment while the auger is in operation.
- (e) Adequate illumination shall be provided for work areas after dark.

Help Printing This Page

# Title 30 Parts 1-19th Maseral Resources. Repartment of Lahor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1505 Auger holes; blocking.

Auger holes shall be blocked with highwall spoil or other suitable material before they are abandoned.

Subpart Q--Loading and Haulage

Help Printing This Page

## Title 30 Parts 1-108 Mineral Resources. Repartment of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1600 Loading and haulage; general.

- (a) Only authorized persons shall be permitted on haulage roads and at loading or dumping locations.
- (b) Traffic rules, signals, and warning signs shall be standardized at each mine and posted.
- (c) Where side or overhead clearances on any haulage road or at any loading or dumping location at the mine are hazardous to mine workers, such areas shall be conspicuously marked and warning devices shall be installed when necessary to insure the safety of the workers.

Help Printing This Page

## Title 30 Parts 1-188 Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1601
Transportation of persons; restrictions.

No person shall be permitted to ride or be otherwise transported on or in the following equipment whether loaded or empty:

- (a) Dippers, shovels, buckets, forks, and clamshells;
- (b) The cargo space of dump trucks or haulage equipment used to transport coal or other material;
- (c) Outside the cabs and beds of mobile equipment;
- (d) Chain, belt, or bucket conveyors, except where such conveyors are specifically designed to transport persons; and
- (e) Loaded buckets on aerial tramways.

🖺 Help Printing This Page

## Title 30 Parts 1-109 Nineral Resources Department of Labor Nine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1602 Use of aerial tramways to transport persons.

Persons other than maintenance men shall not ride empty buckets on aerial tramways unless the following features are provided:

- (a) Two independent brakes, each capable of holding the maximum load.
- (b) Direct communication between terminals.
- (c) Power drives with emergency power available in case of primary power failure.
- (d) Buckets equipped with positive locks to prevent accidental tripping or dumping.

Help Printing This Page

## Title 30 Parts 1-198 Mineral Heacurcas Repartment of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1603 Trains and locomotives; authorized persons.

- (a) Only authorized persons shall be permitted to ride on trains or locomotives and they shall ride in a safe position.
- (b) Men shall not get on or off moving equipment, except that trainmen may get on or off of slowly moving trains.

## Help Printing This Page

# Title 30 Parts 1-190 Mineral Resources Department of Labor Mine Safety and Realth Administration Code of Federal Regulations

30 CFR § 77.1604
Transportation of persons; overcrowding.

- (a) No man-trip vehicle or other conveyance used to transport persons to and from work areas at surface coal mines shall be overcrowded and all persons shall ride in a safe position.
- (b) Supplies, materials, and tools other than small handtools shall not be transported with men in man-trip vehicles unless such vehicles are specifically designed to make such transportation safe.

Help Printing This Page

## Title 30 Code of Federal Regulations

30 CFR § 77.1605 Loading and haulage equipment; installations.

- (a) Cab windows shall be of safety glass or equivalent, in good condition and shall be kept clean.
- (b) Mobile equipment shall be equipped with adequate brakes, and all trucks and front-end loaders shall also be equipped with parking brakes.
- (c) Positive-action type brakes shall be provided on aerial tramways.
- (d) Mobile equipment shall be provided with audible warning devices. Lights shall be provided on both ends when required.
- (e) Guard nets or other suitable protection shall be provided where tramways pass over roadways, walkways, or buildings.
- (f) Guards shall be installed to prevent swaying buckets from hitting towers.
- (g) Aerial tramway cable connections shall be designed to offer minimum obstruction to the passage of wheels.
- (h) Rocker-bottom or bottom-dump cars shall be equipped with positive locking devices, or other suitable devices.
- (i) Ramps and dumps shall be of solid construction, of ample width, have ample clearance and headroom, and be kept reasonably free of spillage.
- (j) Chute-loading installations shall be designed so that the men pulling chutes are not required to be in a hazardous position during loading operations.
- (k) Berms or guards shall be provided on the outer bank of elevated roadways.
- (I) Berms, bumper blocks, safety hooks, or similar means shall be provided to prevent overtravel and overturning at dumping locations.
- (m) Roadbeds, rails, joints, switches, frogs, and other elements on railroads shall be designed, installed, and maintained in a safe manner consistent with the speed and type of haulage.
- (n) Where practicable, a minimum of 30 inches continuous clearance from the farthest projection of moving railroad equipment shall be provided on at least one side of the tracks; all places where it is not possible to provide 30-inch clearance shall be marked conspicuously.
- (o) Track guardrails, lead rails, and frogs shall be protected or blocked so as to prevent a person's foot from becoming wedged.
- (p) Positive-acting stop-blocks, derail devices, track skates, or other adequate means shall be installed wherever necessary to protect persons from runaway or moving railroad equipment.
- (q) Switch throws shall be installed so as to provide adequate clearance for switchmen.
- (r) Where necessary, bumper blocks or the equivalent shall be provided at all track dead ends.

Help Printing This Page

## Title 30 Parto 1-199 Mineral Resources Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1606

Loading and haulage equipment; inspection and maintenance.

- (a) Mobile loading and haulage equipment shall be inspected by a competent person before such equipment is placed in operation. Equipment defects affecting safety shall be recorded and reported to the mine operator.
- (b) Carriers on aerial tramways, including loading and unloading mechanisms, shall be inspected each shift; brakes shall be inspected daily; ropes and supports shall be inspected as recommended by the manufacturer or as physical conditions warrant. Equipment defects affecting safety shall be reported to the mine operator.
- (c) Equipment defects affecting safety shall be corrected before the equipment is used.

Help Printing This Page

#### Title 30 Parts 1-198 Mineral Resources Department of Labor Wise Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1607 Loading and haulage equipment; operation.

- (a) Vehicles shall follow at a safe distance; passing shall be limited to areas of adequate clearance and visibility.
- (b) Mobile equipment operators shall have full control of the equipment while it is in motion.
- (c) Equipment operating speeds shall be prudent and consistent with conditions of roadway, grades, clearance, visibility, traffic, and the type of equipment used.
- (d) Cabs of mobile equipment shall be kept free of extraneous materials.
- (e) Operators shall sit facing the direction of travel while operating equipment with dual controls.
- (f) When an equipment operator is present, men shall notify him before getting on or off equipment.
- (g) Equipment operators shall be certain, by signal or other means, that all persons are clear before starting or moving equipment.
- (h) Where possible, aerial tramways shall not be started until the tramway operator has ascertained that everyone is in the clear.
- (i) Dust control measures shall be taken where dust significantly reduces visibility of equipment operators.
- (j) Dippers, buckets, loading booms, or heavy suspended loads shall not be swung over the cabs of haulage vehicles until the drivers are out of the cabs and in safe locations, unless the trucks are designed specifically to protect the drivers from falling material.
- (k) Men shall not work or pass under the buckets or booms of loaders in operation.
- (I) Tires shall be deflated before repairs on them are started and adequate means shall be provided to prevent wheel locking rims from creating a hazard during tire inflation.
- (m) Electrically powered mobile equipment shall not be left unattended unless the master switch is in the off position, all operating controls are in the neutral position, and the brakes are set or other equivalent precautions are taken against rolling.
- (n) Mobile equipment shall not be left unattended unless the brakes are set. The wheels shall be turned into a bank or berm, or shall be blocked, when such equipment is parked on a grade.
- (o) Lights, flares, or other warning devices shall be posted when parked equipment creates a hazard to vehicular traffic.
- (p) Dippers, buckets, scraper blades, and similar movable parts shall be secured or lowered to the ground when not in use.
- (q) Shovel trailing cables shall not be moved with the shovel dipper unless cable slings or sleds are used.
- (r) Equipment which is to be hauled shall be loaded and protected so as to prevent sliding or spillage.
- (s) When moving between work areas, the equipment shall be secured in the travel position.
- (t) Any load extending more than 4 feet beyond the rear of the vehicle body should be marked clearly with a red flag by day and a red light at night.
- (u) Tow bars shall be used to tow heavy equipment and a safety chain shall be used in conjunction with each tow bar.
- (v) Railroad cars shall be kept under control at all times by the car dropper. Cars shall be dropped at a safe rate and in a manner that will insure that the car dropper maintains a safe position while working and traveling around the cars.
- (w) Railroad cars shall not be coupled or uncoupled manually from the inside of curves unless the railroad and cars are so designed to eliminate any hazard from coupling or uncoupling cars from inside of curves.

- (x) Persons shall wear safety belts when dropping railroad cars.
- (y) Railcars shall not be left on sidetracks unless ample clearance is provided for traffic on adjacent tracks.
- (z) Parked railcars, unless held effectively by brakes, shall be blocked securely.
- (aa) Railroad cars and all trucks shall be trimmed properly when they have been loaded higher than the confines of their cargo space.
- (bb) When the entire length of a conveyor is visible from the starting switch, the operator shall visually check to make certain that all persons are in the clear before starting the conveyor. When the entire length of the conveyor is not visible from the starting switch, a positive audible or visible warning system shall be installed and operated to warn persons that the conveyor will be started.
- (cc) Unguarded conveyors with walkways shall be equipped with emergency stop devices or cords along their full length.
- (dd) Adequate backstops or brakes shall be installed on inclined-conveyor drive units to prevent conveyors from running in reverse if a hazard to personnel would be caused.
- (ee) Aerial tram conveyor buckets shall not be overloaded, and feed shall be regulated to prevent spillage.

Help Printing This Page

## Title 30 Per la 1-199 Minoral Resources Department of Labor Mino Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1608 Dumping facilities.

- (a) Dumping locations and haulage roads shall be kept reasonably free of water, debris, and spillage.
- (b) Where the ground at a dumping place may fail to support the weight of a loaded dump truck, trucks shall be dumped a safe distance back from the edge of the bank.
- (c) Adequate protection shall be provided at dumping locations where persons may be endangered by falling material.
- (d) Grizzlies, grates, and other sizing devices at dump and transfer points shall be anchored securely in place.
- (e) If truck spotters are used, they shall be well in the clear while trucks are backing into dumping position and dumping; lights shall be used at night to direct trucks.

Subpart R--Miscellaneous

Help Printing This Page

## Title 30 Parts 1-199 Mineral Recognition to Labor Mine Safety and Realth Atministration Code of Federal Regulations

30 CFR § 77.1701 Emergency communications; requirements.

- (a) Each operator of a surface coal mine shall establish and maintain a communication system from the mine to the nearest point of medical assistance for use in an emergency.
- (b) The emergency communication system required to be maintained under paragraph (a) of this section may be established by telephone or radio transmission or by any other means of prompt communication to any facility (for example, the local sheriff, the State highway patrol, or local hospital) which has available the means of communication with the person or persons providing emergency medical assistance or transportation in accordance with the provisions of paragraph (a) of this section.

👸 Help Printing This Page

## Title 30 Parts 1-198 Mineral Resources. Department of Labor Mana Subry and Health Administration Code of Federal Regulations

30 CFR § 77.1702

Arrangements for emergency medical assistance and transportation for injured persons; reporting requirements; posting requirements.

- (a) Each operator of a surface coal mine shall make arrangements with a licensed physician, medical service, medical clinic, or hospital to provide 24-hour emergency medical assistance for any person injured at the mine.
- (b) Each operator shall make arrangements with an ambulance service, or otherwise provide for 24-hour emergency transportation for any person injured at the mine.
- (c) Each operator shall, on or before September 30, 1971, report to the Coal Mine Health and Safety District Manager for the district in which the mine is located the name, title and address of the physician, medical service, medical clinic, hospital, or ambulance service with whom arrangements have been made, or otherwise provided, in accordance with the provisions of paragraphs (a) and (b) of this section.
- (d) Each operator shall, within 10 days after any change of the arrangements required to be reported under the provisions of this section, report such changes to the Coal Mine Health and Safety District Manager. If such changes involve a substitution of persons, the operator shall provide the name, title, and address of the person substituted together with the name and address of the medical service, medical clinic, hospital, or ambulance service with which such person or persons are associated.
- (e) Each operator shall, immediately after making an arrangement required under the provisions of paragraphs (a) and (b) of this section, or immediately after any change, of such agreement, post at appropriate places at the mine the names, titles, addresses, and telephone numbers of all persons or services currently available under such arrangements to provide medical assistance and transportation at the mine.

(Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 36 FR 13143, July 15, 1971; 47 FR 14696, Apr. 6, 1982; 60 FR 33719, June 29, 1995]

Help Printing This Page

## Title 30 Parts 1-190 Mineral Resources Department of Labor Mine Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1703 First-Aid training; supervisory employees.

The mine operator shall conduct first-aid training courses for selected supervisory employees at the mine. Within 60 days after the selection of a new supervisory employee to be so trained, the mine operator shall certify by signature and date the name of the employee and date on which the employee satisfactorily completed the first-aid training course. The certification shall be kept at the mine and made available on request to an authorized representative of the Secretary.

[56 FR 1478, Jan. 14, 1991]

Help Printing This Page

Title 30 Parts 1-198 Mineral Resources Department of Labor Mine Salety and Bealth Administration Code of Federal Regulations

30 CFR § 77.1704 First aid training program; availability of instruction to all miners.

On or before December 30, 1971, each operator of a surface coal mine shall make available to all miners employed in the mine a course of instruction in first aid conducted by the operator or under the auspices of the operator, and such a course of instruction shall be made available to newly employed miners within 6 months after the date of employment.

Help Printing This Page

# Title 30 Parts 1-198 Mineral Resources Department of Labor Mane Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1705

First aid training program; retraining of supervisory employees; availability to all miners.

Beginning January 1, 1972, each operator of a surface coal mine shall conduct refresher first aid training programs each calendar year for all selected supervisory employees and make available refresher first aid training courses to all miners employed in the mine.

[36 FR 9364, May 22, 1971, as amended at 36 FR 13143, July 15, 1971]

Help Printing This Page

## Title 30 Parts 1-1 PR Mineral Resources Department of Labor Mine Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1706 First aid training program; minimum requirements.

- (a) All first aid training programs required under the provisions of  $\frac{5577.1703}{1703}$  and  $\frac{577.1704}{1704}$  shall include 10 class hours of training in a course of instruction similar to that outlined in "First Aid, A Bureau of Mines Instruction Manual."
- (b) Refresher first aid training programs required under the provisions of  $\underline{877.1705}$  shall include 5 class hours of refresher training in a course of instruction similar to that outlined in "First Aid, A Bureau of Mines Instruction Manual."

Help Printing This Page

## Title 30 Parts 1-199 Minoral Resources Department of Labor Mino Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1708
Safety program; instruction of persons employed at the mine.

On or before September 30, 1971, each operator of a surface coal mine shall establish and maintain a program of instruction with respect to the safety regulations and procedures to be followed at the mine and shall publish and distribute to each employee, and post in conspicuous places throughout the mine, all such safety regulations and procedures established in accordance with the provisions of this section.

[36 FR 9364, May 22, 1971, as amended at 36 FR 13143, July 15, 1971]

Help Printing This Page

# Title 30 Parts 1-198 Mineral Resources Department of Labor Nine Safety and Bealth Administration Code of Federal Regulations

30 CFR § 77.1710-1 Distinctively colored hard hats or hard caps; identification for newly employed, inexperienced miners.

Hard hats or hard caps distinctively different in color from those worn by experienced miners shall be worn at all times by each newly employed, inexperienced miner when working in or around a mine or plant for at least one year from the date of his initial employment as a miner or until he has been qualified or certified as a miner by the State in which he is employed.

(§ 101(a), Federal Coal Mine Health and Safety Act of 1969, as amended (83 Stat. 745; 30 U.S.C. 811(a))

[39 FR 7176, Feb. 25, 1974]

Help Printing This Page

Title 30 Parts 1-199 Minoral Resources Department of Leber Mino Safety and Health Administration Code of Federal Regulations

30 CFR § 77.1711 Smoking prohibition.

No person shall smoke or use an open flame where such practice may cause a fire or explosion.

Help Printing This Page

Title 30 Parts 1-198 Minoral Resources Department of Labor Mino Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1712 Reopening mines; notification; inspection prior to mining.

Prior to reopening any surface coal mine after it has been abandoned or declared inactive by the operator, the operator shall notify the Coal Mine Health and Safety District Manager for the district in which the mine is located, and an inspection of the entire mine shall be completed by an authorized representative of the Secretary before any mining operations in such mine are instituted.

Help Printing This Page

# Title 30 Parts 1-199 Mineral Resources Department of Labor Name Salety and Health Administration Code of Federal Regulations

30 CFR § 77.1713

Daily inspection of surface coal mine; certified person; reports of inspection.

- (a) At least once during each working shift, or more often if necessary for safety, each active working area and each active surface installation shall be examined by a certified person designated by the operator to conduct such examinations for hazardous conditions and any hazardous conditions noted during such examinations shall be reported to the operator and shall be corrected by the operator.
- (b) If any hazardous condition noted during an examination conducted in accordance with paragraph (a) of this section creates an imminent danger, the person conducting such examination shall notify the operator and the operator shall withdraw all persons from the area affected, except those persons referred to in section 104(d) of the Act, until the danger is abated.
- (c) After each examination conducted in accordance with the provisions of paragraph (a) of this section, each certified person who conducted all or any part of the examination required shall enter with ink or indelible pencil in a book approved by the Secretary the date and a report of the condition of the mine or any area of the mine which he has inspected together with a report of the nature and location of any hazardous condition found to be present at the mine. The book in which such entries are made shall be kept in an area at the mine designated by the operator to minimize the danger of destruction by fire or other hazard.
- (d) All examination reports recorded in accordance with the provisions of paragraph (c) of this section shall include a report of the action taken to abate hazardous conditions and shall be signed or countersigned each day by at least one of the following persons:
- (1) The surface mine foreman;
- (2) The assistant superintendent of the mine;
- (3) The superintendent of the mine; or,
- (4) The person designated by the operator as responsible for health and safety at the mine.

(Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 47 FR 14706, Apr. 6, 1982; 60 FR 33719, June 29, 1995]

Subpart S--Trolley Wires and Trolley Feeder Wires