

## § 75.1322

units shall be submitted in writing to the District Manager for the district in which the mine is located and shall contain the following information:

- (1) The name and address of the mine;
- (2) The active workings in the mine affected by the permit and the approximate number of boreholes to be fired;
- (3) The period of time during which the permit will apply;
- (4) The nature of the development or construction for which they will be used, e.g., overcasts, undercasts, track grading, roof brushing or boom holes;
- (5) A plan, proposed by the operator designed to protect miners in the mine from the hazards of methane and other explosive gases during each multiple shot, e.g., changes in the mine ventilation system, provisions for auxiliary ventilation and any other safeguards necessary to minimize such hazards;
- (6) A statement of the specific hazards anticipated by the operator in blasting for overcasts, undercasts, track grading, brushing of roof, boom holes or other unusual blasting situations such as coalbeds of abnormal thickness; and
- (7) The method to be employed to avoid the dangers anticipated during development or construction which will ensure the protection of life and the prevention of injuries to the miners exposed to such underground blasting.

(b) The District Manager may permit the firing of more than 20 boreholes of permissible explosives in a round where he has determined that it is necessary to reduce the overall hazard to which miners are exposed during underground blasting. He may also permit the use of nonpermissible blasting units if he finds that a permissible blasting unit does not have adequate blasting capacity and that the use of such permissible units will create any of the following development or construction hazards:

- (1) Exposure to disturbed roof in an adjacent cavity while scaling and supporting the remaining roof prior to wiring a new series of boreholes;
- (2) Exposure to underburden boreholes where prior rounds have removed the burden adjacent to a remaining borehole;
- (3) Exposure to an unsupported roof while redrilling large fragmented roof rock following the loss of predrilled

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boreholes during earlier blasting operations; or

- (4) Any other hazard created by the use of permissible blasting units during underground development or construction.
- (c) Permits shall be issued on a mine-by-mine basis for periods of time to be specified by the District Manager.
- (d) Permits issued under this section shall specify and include as a condition of their use, any safeguards, in addition to those proposed by the operator, which the District Manager issuing such permit has determined will be required to ensure the welfare of the miners employed in the mine at the time of the blasting permitted.

[35 FR 17890, Nov. 20, 1970, as amended at 60 FR 33723, June 29, 1995]

## § 75.1322 Stemming boreholes

- (a) Only noncombustible material shall be used for stemming boreholes.
- (b) Stemming materials other than water stemming bags shall be tamped to fill the entire cross sectional area of the borehole.
- (c) Stemming material shall contact the explosive cartridge nearest the collar of the borehole.
- (d) Each borehole 4 or more feet deep shall be stemmed for at least 24 inches.
- (e) Each borehole less than 4 feet deep shall be stemmed for at least half the depth of the borehole.
- (f) When blasting off the solid in bituminous and lignite mines, only pliable clay dummies shall be used for stemming.
- (g) The diameter of a water stemming bag shall be within  $\frac{1}{4}$  of an inch of the diameter of the drill bit used to drill the borehole.
- (h) Water stemming bags shall be constructed of tear-resistant and flame-resistant material and be capable of withstanding a 3-foot drop when filled without rupturing or developing leaks.

## § 75.1323 Blasting circuits.

- (a) Blasting circuits shall be protected from sources of stray electric current.
- (b) Detonators made by different manufacturers shall not be combined in the same blasting circuit.

(c) Detonator leg wires shall be shunted until connected into the blasting circuit.

(d) Blasting cables shall be—

(1) Well insulated, copper wire of a diameter not smaller than 18-gauge; and

(2) Long enough to permit the round to be fired from a safe location that is around at least one corner from the blasting area.

(e) Blasting cables shall be shunted until immediately before firing, except when testing for circuit continuity.

(f) Wire used between the blasting cable and detonator circuitry shall—

(1) Be undamaged;

(2) Be well insulated;

(3) Have a resistance no greater than 20-gauge copper wire; and

(4) Be not more than 30 feet long.

(g) Each wire connection in a blasting circuit shall be—

(1) Properly spliced; and

(2) Separated from other connections in the circuit to prevent accidental contact and arcing.

(h) Uninsulated connections in each blasting circuit shall be kept out of water and shall not contact the coal, roof, ribs, or floor.

(i) When 20 or fewer boreholes are fired in a round, the blasting circuit shall be wired in a single series.

(j) Immediately prior to firing, all blasting circuits shall be tested for continuity and resistance using a blasting galvanometer or other instrument specifically designed for testing blasting circuits.

[53 FR 46786, Nov. 18, 1988; 54 FR 27641, June 30, 1989]

**§ 75.1324 Methane concentration and tests.**

(a) No shot shall be fired in an area that contains 1.0 volume percent or more of methane.

(b) Immediately before shots are fired, the methane concentration in a working place or any other area where blasting is to be performed, shall be determined by a person qualified to test for methane.

**§ 75.1325 Firing procedures.**

(a) Shots shall be fired by a qualified person or a person working in the pres-

ence of and under the direction of a qualified person.

(b) Only one face in a working place shall be blasted at a time, except that when blasting cut coal up to three faces may be blasted in a round if each face has a separate kerf and no more than a total of 20 shots connected in a single series are fired in the round. A permit to fire more than 20 boreholes in a round under the provisions of 30 CFR 75.1320 and 75.1321 may not be obtained for use when blasting multiple faces.

(c) Before blasting—

(1) All persons shall leave the blasting area and each immediately adjacent working place where a hazard would be created by the blast, to an area that is around at least one corner from the blasting area;

(2) The qualified person shall ascertain that all persons are a safe distance from the blasting area; and

(3) A warning shall be given and adequate time allowed for persons to respond.

(d) All shots shall be fired promptly, after all persons have been removed to a safe location.

[35 FR 17890, Nov. 20, 1970, as amended at 56 FR 51616, Oct. 11, 1991]

**§ 75.1326 Examination after blasting.**

(a) After blasting, the blasting area shall not be entered until it is clear of smoke and dust.

(b) Immediately after the blasting area has cleared, a qualified person or a person working in the presence of and under the direction of a qualified person, shall examine the area for misfires, methane and other hazardous conditions.

(c) If a round has partially detonated, the qualified person shall immediately leave the area and no person shall reenter the affected area for at least 5 minutes.

**§ 75.1327 Misfires.**

(a) When misfires occur, only work by a qualified person to dispose of misfires and other work necessary to protect persons shall be done in the affected area.

(b) When a misfire cannot be disposed of—