

**CHAPTER 211. STORAGE, HANDLING AND USE  
OF EXPLOSIVES**

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**Authority**

The provisions of this Chapter 211 issued under sections 1901-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-1 and 510-20); amended under sections 3 and 7 of the act of July 1, 1937 (P. L. 2681, No. 537) (73 P. S. §§ 157 and 161); section 3 of the act of July 10, 1957 (P. L. 685, No. 362) (73 P. S. §§ 157, 161 and 166); Reorganization Plan No. 8 of 1981 (71 P. S. § 751-35); section 2(f) of the act of May 18, 1937 (43 P. S. § 25-2(f)); Reorganization Plan No. 2 of 1975 (71 P. S. § 751-22); section 4(b) of the Surface Mining Conservation and Reclamation Act (52 P. S. § 1396.4(b)); section 11(e) of the Noncoal Surface Mining Conservation and Reclamation Act (52 P. S. § 3311(e)); and sections 1917-A and 1920-A(b) of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20(b)), unless otherwise noted.

**Source**

The provisions of this Chapter 211 adopted June 14, 1972, effective June 15, 1972, 2 Pa.B. 1067, unless otherwise noted.

**Cross References**

This chapter cited in 25 Pa. Code § 77.561 (relating to general requirements); 25 Pa. Code § 87.124 (relating to use of explosives: general requirements); 25 Pa. Code § 88.134 (relating to blasting: general requirements); 25 Pa. Code § 207.211 (relating to safety requirements); and 25 Pa. Code § 210.19 (relating to suspension, modification and revocation).

**Subchapter A. GENERAL PROVISIONS**

Sec.	
211.1 and 211.2.	[Reserved].
211.31.	[Reserved].
211.32—211.44.	[Reserved].
211.51—211.56.	[Reserved].
211.61 and 211.62.	[Reserved].
211.71.	[Reserved].
211.72.	[Reserved].
211.73—211.76.	[Reserved].
211.81—211.87.	[Reserved].
211.88.	[Reserved].
211.101.	Definitions.
211.102.	Scope.
211.103.	Enforcement.

**§§ 211.1 and 211.2. [Reserved].****Source**

The provisions of these §§ 211.1 and 211.2 reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial pages (243466) to (243469).

**§ 211.31. [Reserved].****Source**

The provisions of this § 211.31 amended November 7, 1980, effective November 8, 1980, 10 Pa.B. 4294; reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial page (243469).

**§§ 211.32—211.44. [Reserved].****Source**

The provisions of these §§ 211.32—211.44 reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial pages (243469) to (243482).

**§§ 211.51—211.56. [Reserved].****Source**

The provisions of these §§ 211.51—211.56 reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial pages (243481) to (243490).

**§§ 211.61 and 211.62. [Reserved].****Source**

The provisions of these §§ 211.61 and 211.62 reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial pages (243490) to (243495).

**§ 211.71. [Reserved].****Source**

The provisions of this § 211.71 reserved October 15, 1982, effective October 16, 1982, 12 Pa.B. 3736. Immediately preceding text appears at serial page (11436).

**§ 211.72. [Reserved].****Source**

The provisions of this § 211.72 amended October 15, 1982, effective October 16, 1982, 12 Pa.B. 3736; reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial pages (243495) to (243496).

**§§ 211.73—211.76. [Reserved].****Source**

The provisions of these §§ 211.73—211.76 reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial pages (243496) to (243497).

**§§ 211.81—211.87. [Reserved].****Source**

The provisions of these §§ 211.81—211.87 reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial text pages (243497) to (243499).

 **§ 211.88. [Reserved].****Source**

The provisions of this § 211.88 amended July 28, 1972, 2 Pa.B. 1439; reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial page (243499).

 **§ 211.101. Definitions.**

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

*Access point*—A point in the outer perimeter security and a point in the inner perimeter security that allows entry to or exit from the magazine or the magazine site.

*Airblast*—An airborne shock wave resulting from an explosion, also known as air overpressure, which may or may not be audible.

*Blast area*—The area around the blast site that should be cleared to prevent injury to persons and damage to property.

*Blast site*—The specific location where the explosives charges are loaded into the blast holes.

*Blaster*—An individual who is licensed by the Department under Chapter 210 (relating to blasters' licenses) to detonate explosives and supervise blasting activities.

*Blaster-in-charge*—The blaster designated to have supervision and control over all blasting activities related to a blast.

*Blasting activity*—The actions associated with the use of explosives from the time of delivery of explosives to a worksite until all postblast measures are taken, including priming, loading, stemming, wiring or connecting, detonating, and all necessary safety, notification and monitoring measures.

*Building*—A structure that is designed for human habitation, employment or assembly.

*Charge weight*—The weight in pounds of an explosive charge.

*Concertina razor wire*—Razor wire that is extended in a spiral for use as a barrier, such as along or on a fence and having a minimum of 101 coils of wire to 50 linear feet.

*Delay interval*—The designed time interval, usually in milliseconds, between successive detonations.

*Detonator*—

- (i) A device containing an initiating or primary explosive that is used for initiating detonation of explosives.

(ii) The term includes electric blasting caps of instantaneous and delay types, blasting caps for use with safety fuses, detonating cord, delay connectors and nonelectric instantaneous and delay blasting caps.

*Display fireworks—*

(i) Large fireworks designed primarily to produce visible or audible effects by combustion, deflagration or detonation.

(ii) The term includes, but is not limited to, salutes containing more than 2 grains (130 mg) of explosive materials, aerial shells containing more than 40 grams of pyrotechnic compositions, and other display pieces which exceed the limits of explosive materials for classification as consumer fireworks. Display fireworks are classified as fireworks UN0333, UN0334 or UN0335 by the United States Department of Transportation at 49 CFR 172.101 (relating to purpose and use of hazardous materials table).

(iii) The term also includes fused setpieces containing components which together exceed 50 mg of salute powder.

*Explosive—*A chemical compound, mixture or device that contains oxidizing and combustible materials or other ingredients in such proportions or quantities that an ignition by fire, friction, concussion, percussion or detonation may result in an explosion.

(i) The term includes safety fuse, squibs, detonating cord and igniters.

(ii) The term does not include the following:

(A) Commercially manufactured black powder, percussion caps, safety and pyrotechnic fuses, matches and friction primers, intended to be used solely for sporting, recreational or cultural purposes in antique firearms or antique devices, as defined in 18 U.S.C.A. § 921 (relating to definitions).

(B) Smokeless powder, primers used for reloading rifle or pistol cartridges, shot shells, percussion caps and smokeless propellants intended for personal use.

*Flyrock—*Overburden, stone, clay or other material ejected from the blast area by the force of a blast.

*Indoor magazine—*A magazine located entirely within a secure intrusion-resistant and theft-resistant building which is primarily used for commercial or industrial purposes.

*Inner perimeter security—*Measures taken to increase the intrusion resistance and theft resistance of a magazine that encircles an individual or a group of magazines. These measures lie within the outer perimeter security measures.

*Magazine—*A structure used for the storage of explosives.

*Misfire—*Incomplete detonation of explosives.

*Outdoor magazine site—*The contiguous area of land upon which the following are located: a magazine or group of magazines; the outer perimeter security, and the inner perimeter security, if any.

*Outer perimeter security—*Measures taken to increase the intrusion resistance of magazines that encircle the area where the magazines are situated.

*Particle velocity*—A measure of the intensity of ground vibration, specifically the time rate of change of the amplitude of ground vibration.

*Peak particle velocity*—The maximum intensity of particle velocity.

*Person*—A natural person, partnership, association, or corporation or an agency, instrumentality or entity of state government.

*Primer*—A cartridge or package of high explosives into which a detonator has been inserted or attached.

*Purchase*—To obtain ownership of explosives from another person.

*Sale or sell*—To transfer ownership of explosives to another person.

*Scaled distance (Ds)*—A value calculated by using the actual distance (D) in feet, measured in a horizontal line from the blast site to the nearest building or structure, neither owned nor leased by the blasting activity permittee or its customer, divided by the square root of the maximum weight of explosives (W) in pounds, that is detonated per delay period of less than 8 milliseconds.

$$Ds = D/(\text{square root}) W$$

*Stemming*—Inert material placed in a blast hole after an explosive charge for the purpose of confining the explosion gases to the blast hole, and inert material used to separate explosive charges in decked holes.

*Structure*—

(i) A combination of materials or pieces of work built or composed of parts joined together in some definite manner for occupancy, use or ornamentation.

(ii) The term includes everything that is built or constructed, including bridges, offices, water towers, silos and dwellings.

*Utility line*—An electric cable, fiber optic line, pipeline or other type of conduit used to transport or transmit electricity, gases, liquids and other media including information.

*Wheeled vehicle*—A vehicle that moves about on three or more wheels and has a gross vehicle weight of less than 11,000 pounds.

#### Source

The provisions of this § 211.101 adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751; amended June 17, 2005, effective June 18, 2005, 35 Pa.B. 3406. Immediately preceding text appears at serial pages (281299) to (281300).

#### § 211.102. Scope.

(a) This chapter applies to persons using, storing, purchasing and selling explosives and engaging in blasting activities within this Commonwealth. Persons using and storing explosives at underground mines are exempt from this chapter. The storage of explosives in magazines on the surface at an underground noncoal mine is subject to the applicable requirements of this chapter. The provisions of this chapter that are more stringent than the blasting provisions in Chapters 77,

87 and 88 (relating to noncoal mining; surface mining of coal; and anthracite coal) apply to blasting activities at coal or noncoal surface mines.

(b) Compliance with this chapter does not relieve a person who is engaged in the purchase or sale of explosives, or blasting activities, from compliance with other applicable laws or regulations of the Commonwealth.

**Source**

The provisions of this § 211.102 adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751.

**§ 211.103. Enforcement.**

(a) The Department may issue orders necessary to implement this chapter including an order to suspend, modify or revoke a license or permit authorized by this chapter.

(b) Before issuing an order modifying peak particle velocity or airblast limits in a blasting activity permit, the Department will first provide the permittee with an opportunity to meet and discuss modifications.

**Source**

The provisions of this § 211.103 adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751.

**Subchapter B. STORAGE AND CLASSIFICATION OF EXPLOSIVES**

Sec.

211.111. Scope.

211.112. Magazine license and fees.

211.113. Application contents.

211.114. Displaying the license.

211.115. Standards for classifying and storing explosives and constructing, maintaining and siting magazines.

**Source**

The provisions of this Subchapter B adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751, unless otherwise noted.

**Cross References**

This subchapter cited in 25 Pa. Code § 211.141 (relating to requirements).

**§ 211.111. Scope.**

(a) This subchapter applies to the classification and storage of explosives. It establishes the requirements, procedures and standards for licensing, constructing, and siting and maintaining magazines.

(b) Persons storing explosives underground in permitted underground mines are exempt from this subchapter.

**Source**

The provisions of this § 211.111 amended June 17, 2005, effective June 18, 2005, 35 Pa.B. 3409. Immediately preceding text appears at serial page (281302).

**§ 211.112. Magazine license and fees.**

(a) A person storing explosives shall do so in a magazine licensed by the Department. A person may not construct, install or modify a magazine until the Department has issued or amended the license in writing. The licensee shall store explosives in accordance with the approved application, the license and this chapter.

(b) The license specifies the types and quantities of explosives to be stored in the magazine and any other condition necessary to ensure that the proposed activity complies with applicable statutes and this chapter.

(c) Licenses expire annually on December 31 of each year. If the Department receives a complete renewal application by December 31, the licensee may continue to operate under the current license until the Department acts on the renewal application.

(d) License fees are as follows:

- (1) License:
  - (i) Application—\$50
  - (ii) Site inspection—\$50
- (2) License modifications—\$50
- (3) License renewals—\$50
- (4) License transfers—no fee

**§ 211.113. Application contents.**

(a) An application to obtain, renew, modify or transfer a magazine license shall be on forms approved by the Department. Before the Department issues, renews, transfers or modifies a license, the application must demonstrate that the applicant has complied with the applicable requirements of this chapter.

(b) A completed license application shall include:

- (1) The applicant's name, address and telephone number.
- (2) A contact person, including name, title and telephone number.
- (3) The types and quantities of explosives to be stored within the magazine.
- (4) A map, plan or a sketch of the site location showing the nearest buildings, nearest railways, nearest highways, and existing barricades, if any, and proposed barricades.
- (5) A plan showing the design and specifications of the magazine to be licensed.

(6) A plan showing the design, specifications, dimensions and locations of all security measures to be installed under § 211.115(d) (relating to standards for classifying and storing explosives and constructing, maintaining and siting magazines).

(7) The latitude and longitude of outdoor magazines except for Type 3 magazines as defined in 27 CFR 555.203(c) (relating to types of magazines).

(8) The latitude and longitude of indoor magazines containing high explosives.

(c) A license renewal application shall include:

(1) The applicant's name, address and telephone number.

(2) A contact person, including name, title and telephone number.

(3) The maximum amount and type of explosives for which the magazine is currently licensed.

#### Source

The provisions of this § 211.113 amended June 17, 2005, effective June 18, 2005, 35 Pa.B. 3409. Immediately preceding text appears at serial pages (281302) to (281303).

#### Cross References

This section cited in 25 Pa. Code § 211.115 (relating to standards for classifying and storing explosives and constructing, maintaining and siting magazines).

### § 211.114. Displaying the license.

The magazine license, or a legible copy of the license, shall be conspicuously displayed. If possible, the license shall be displayed inside the magazine. In all other cases, the license shall be displayed at the site and adjacent to the magazine to which it applies.

### § 211.115. Standards for classifying and storing explosives and constructing, maintaining and siting magazines.

(a) The provisions of 27 CFR Part 555, Subpart K (relating to storage), are incorporated herein by reference. If any provision of 27 CFR Part 555, Subpart K addresses an issue addressed in this section, the more stringent provision applies. These provisions shall be used to:

(1) Classify explosives.

(2) Determine which class of explosives may be stored in each type of magazine.

(3) Determine the quantity of explosives that may be stored.

(4) Determine the applicable construction standards for each type of magazine.

(5) Site the magazine.

(6) Specify maintenance and housekeeping standards for a magazine.

(7) Grant variances.

(b) For purposes of incorporation by reference of 27 CFR Part 555, Subpart K, the term “Department” is substituted for the term “director” and the term “representatives of the Department” is substituted for the term “ATF Official.”

(c) Indoor magazines shall be located in buildings which are in compliance with all applicable building codes and other applicable regulations

(d) Persons storing only display fireworks in Type 4 magazines as defined in 27 CFR 555.203(d) (relating to types of magazines) are exempt from this subsection except for paragraphs (8) and (9). Type 3 magazines as defined in 27 CFR 555.203(c), are exempt from this subsection. The following security measures apply to outdoor magazines and to indoor magazines located in buildings that are not intrusion-resistant and theft-resistant:

(1) Each magazine site shall be inspected by the licensee or his agent at least daily at approximately 24-hour intervals. If all magazines and outer perimeter security gates at the site are equipped with electronic intrusion detection devices conforming with paragraphs (3)(ii) or (iii), and (4)(ii) or (iii), or otherwise approved, in writing, by the Department, the inspection shall be conducted at least every 7 days. Individual magazines or entire magazine sites which do not contain explosives are not required to be inspected provided the inspection records reflect the date the last explosives were removed from the magazine. Each inspection shall include the magazine itself, the access points and perimeter security. The inspection can be performed by a person or electronically by remote cameras. A record of the inspections shall be kept and made available to the Department. Records shall be maintained for at least 3 years. The record of each inspection shall include:

- (i) The names of the persons who inspected the site.
- (ii) The date and time each inspection began and ended.
- (iii) Any information related to the integrity of the magazine site.
- (iv) Actions taken on problems discovered.
- (v) The dates on which no inspections were conducted because no explosives were contained in the magazine.

(2) There may be no more than one access point to each magazine site. The Department may approve, in writing, more than one access point to a magazine site if the Department determines that the security of the site will be maintained.

(3) Each magazine must have outer perimeter security that obstructs, to the greatest extent possible, unauthorized access to the magazine by wheeled vehicles. The outer perimeter security must surround the entire magazine site and be located at least 25 feet away from the exterior of any magazine within the site or at least 25 feet away from the inner perimeter security measures, whichever is applicable. The Department may approve, in writing, a lesser distance upon request when the Department determines a lesser distance is appropriate and will not compromise the security of the magazine site. The outer

perimeter security requirements can be met by measures approved by the Department as provided for in subsection (g) or by one or a combination of the following:

(i) A sufficient number of personnel assigned to physically inspect each magazine containing explosives or detonators at least once every hour. All persons acting in this capacity shall at all times be equipped with a communications device capable of providing direct verbal communications with either the police department having jurisdiction or another person who has the ability to contact the police department having jurisdiction.

(ii) Closed Circuit Television (CCTV) continuously monitoring the entire outer perimeter, or any portion of the outer perimeter that is not protected by another measure.

(A) The images shall be recorded and maintained at least until magazine integrity is confirmed during the next required site inspection.

(B) The latest output images of all CCTV cameras shall be viewed at least once every hour by a person having direct verbal communications with the police department having jurisdiction.

(iii) Electronic intrusion detection devices including, but not limited to: microwave sensors, seismic detectors, vehicle detectors, alarms or infrared motion detectors.

(A) If microwave sensors, seismic sensors, vehicle detectors or similar devices are used, the zone of detection of the devices shall encompass the entire outer perimeter, or any portion of the outer perimeter that is not protected by another measure.

(B) All systems shall have the capability of providing initial notification of an alert within 15 minutes of an event and an onsite presence in response to an alert within 1 hour.

(C) All systems shall have a backup power supply, and provide an alert in the event of a power loss or a compromise of the system integrity.

(iv) An earthen barrier, a minimum of 7 feet in height. Earthen barriers shall be constructed to obstruct, to the greatest extent possible, unauthorized access by wheeled vehicles. If made of loose soils the earthen barrier shall be compacted and vegetated to the greatest extent possible.

(v) A barrier constructed of boulders. The boulders shall be of a size and weight sufficient to deter, to the greatest extent possible, defeat of the barrier by wheeled vehicles.

(vi) A highwall that is a minimum of 7 feet in height and whose face or slopes are sufficient to obstruct, to the greatest extent possible, unauthorized access to the magazine site by wheeled vehicles.

(vii) Barriers composed of natural terrain features which are impassable, to the greatest extent possible, to wheeled vehicles.

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(viii) A fencing system constructed of members that are of sufficient size, strength and anchorage to deter, to the greatest extent possible, the fencing system from being bent over, broken through or uprooted by a wheeled vehicle.

(ix) Other equivalent barriers approved by the Department, in writing.

(4) In addition to the requirements contained in paragraph (3), a magazine or group of magazines within a site that contains high explosives or detonators shall be enclosed by inner perimeter security designed to obstruct, to the greatest extent possible, access by unauthorized persons. The additional inner perimeter security shall be located at least 6 feet away from the exterior of any magazine within the site and at least 25 feet inside and away from the outer perimeter security. The inner perimeter security requirement can be met by measures approved by the Department as provided for in subsection (g) or by one or a combination of the following:

(i) A sufficient number of personnel assigned to physically inspect each magazine containing high explosives or detonators at least once every hour. All persons acting in this capacity shall at all times be equipped with a communications device capable of providing direct verbal communications with either the police department having jurisdiction or another person who has the ability to contact the police department having jurisdiction.

(ii) CCTV continuously monitoring the magazine interior or the exterior of the doors of each magazine containing high explosives or detonators.

(A) The images shall be recorded and maintained at least until magazine integrity is confirmed during the next required site inspection.

(B) The latest output images of all CCTV cameras shall be viewed at least once every hour by a person having direct verbal communications with the police department having jurisdiction.

(iii) Electronic intrusion detection devices including, but not limited to: microwave sensors, seismic detectors, alarms or infrared motion detectors.

(A) If alarms, infrared motion detectors or other similar devices are used, they shall be installed on each magazine containing high explosives or detonators. Alarms shall be installed on all magazine doors. Infrared motion detectors and other similar devices shall be installed on the interior of each magazine.

(B) If microwave sensors, seismic sensors or similar devices are used, the zone of detection of the devices shall encompass the entire inner perimeter, or any portion of the inner perimeter that is not protected by another measure.

(C) All systems shall have the capability of providing initial notification of an alert within 15 minutes of an event and an onsite presence in response to an alert within 1 hour.

(D) All systems shall have a backup power supply, and shall provide an alert in the event of a power loss or a compromise of the system integrity.

(iv) A highwall that is a minimum of 20 feet in height and whose face or slopes are sufficient to obstruct, to the greatest extent possible, access by unauthorized persons.

(v) A fence constructed of a minimum of 9 gauge chain link fencing with a maximum 2-inch mesh that is kept in a condition which maintains its original functionality. The fence shall:

(A) Be buried at least 1 foot at the base or be equipped with a minimum 1.66 inch outside diameter bottom rail.

(B) Have a minimum height of 8 feet above the ground.

(C) Have a top rail with a minimum 1.66 inch outside diameter.

(D) Have firmly anchored posts 10 feet or less on center. End, corner and pull posts shall have a minimum outside diameter of 2.875 inches if round or 2.5-inch square. Intermediate posts shall have a minimum outside diameter of 2.375 inches if round or 2.25-inch C-Section. Posts shall be set in concrete at a minimum depth of 33 inches. The post holes shall be a minimum of 12 inches in diameter and be completely filled with concrete.

(E) Have outriggers at the top with concertina razor wire attached.

(F) Have concertina razor wire attached on the inside at the bottom.

(G) Have as many gates as the licensee demonstrates are necessary to provide for the safe exit of employees in the event of an emergency.

(H) All inner perimeter security emergency exit gates shall meet the requirements specified in paragraph (6).

(I) Vegetation shall be kept trimmed or suppressed to a distance of 6 feet from each side of the fence.

(vi) The Department may approve, in writing, the use of other security fence systems or other barriers that provide at least equivalent security.

(5) In addition to outer perimeter security, all portable magazines being used as stationary magazines and magazines having a volume of less than 3 cubic yards shall be immobilized by fastening the magazine securely to the earth or a terrain feature in a manner sufficient to prevent displacement of the magazine by a wheeled vehicle.

(6) Any single layer of perimeter security measures that obstructs, to the greatest extent possible, unauthorized access to the magazine by wheeled vehicles and deters, to the greatest extent possible, access by unauthorized persons, and is located at least 25 feet away from the exterior of any magazine within the site may be employed to satisfy the requirements of both paragraphs (3) and (4).

(7) Inner perimeter security gates shall be constructed at all access points. Gates shall have firmly anchored posts and shall be kept in a condition which

maintains their original functionality. Each gate shall be securely padlocked whenever the site is unoccupied.

(i) Gates shall be constructed of a minimum of 9 gauge chain link fencing with a maximum 2-inch mesh. Gate frame members shall be a minimum outside diameter of 1.9 inches if round or 2.0-inch if square.

(ii) Gates shall have firmly anchored gate posts with a minimum 6.625-inch outside diameter. Posts shall be set in concrete at a minimum depth of 42 inches. The postholes shall be a minimum of 16 inches in diameter and shall be completely filled with concrete.

(iii) Gates shall have outriggers at the top with concertina razor wire attached.

(iv) The construction of the gates shall be contiguous with the surrounding fence.

(v) All gates shall have 2 locks. The locks shall have separate hasps and staples.

(vi) Each lock shall have a hood of at least 1/4-inch thick steel. The hoods must prevent sawing or lever-cutting action on the locks, hasps, and staples.

(vii) Each lock shall have at least five tumblers and a case-hardened shackle of at least 3/8 inches in diameter.

(viii) When a lock and chain are used to secure a gate, the minimum specification of the chain shall be 3/8 inch Grade 70, Transport.

(ix) The Department may approve, in writing, the use of other security gate systems that provide at least equivalent security.

(8) Outer perimeter security gates shall be constructed at all access points. Gates shall be designed and constructed to deter, to the greatest extent possible, defeat of the gate by wheeled vehicles. Gates shall have firmly anchored posts and be kept in a condition which maintains their original functionality. Gateposts shall be a minimum 6.625-inch outside diameter. Posts shall be set in concrete at a minimum depth of 42 inches. The postholes shall be a minimum of 16 inches in diameter and be completely filled with concrete. The Department may approve, in writing, the use of gateposts having smaller diameters or other shapes or alternate gatepost anchoring methods, or both, that provide at least equivalent security.

(9) Outer perimeter security gates shall be padlocked whenever the site is unoccupied. All gates shall have 2 locks which meet the specifications of paragraph (7)(vi)—(viii).

(10) “No Trespassing” signs shall be placed around the outer perimeter of the site. Warning signs shall be placed at all access points. Signs shall be well maintained.

(i) “No Trespassing” signs shall be spaced so that, except for corners, adjacent signs are visible.

(ii) Signs shall be placed so that a bullet passing directly through the sign will not impact a magazine.

(iii) Warning signs at all access points shall provide notice of private property and no trespassing, in addition to providing a notice substantially conforming to the following: "Danger, never fight explosives fires, explosives are stored on this site" to warn first responders and the public of the hazards contained within.

(iv) Warning signs at all access points shall provide an emergency contact phone number.

(v) Signs may not be obscured by vegetation or other obstructions.

(vi) Signs shall be constructed of a durable, weather-resistant material. Letters and numbers shall be of a minimum height of 2 inches that can be easily seen and read.

(11) Magazines shall be constructed to the standards contained in this paragraph. Magazines shall be constructed according to the construction standards found in 27 CFR Part 555, Subpart K (relating to storage) with the following additions:

(i) Mobile type 5 magazines being used as stationary magazines for more than 1 year must be located within the outer perimeter security, shall be immobilized in accordance with 27 CFR 555.211 (relating to construction of type 5 magazines) and be fastened securely to the earth or a terrain feature in a manner sufficient to prevent movement of the magazine by a motor vehicle. Motor vehicles used to transport bulk blasting agents that are left unattended at a magazine site must have two Department approved methods of disabling the vehicles to render them effectively immobilized and the vehicles must be kept within the outer perimeter security. Disabling methods may include:

(A) Steering locking devices

(B) Pedal locking devices

(C) Fuel or electrical system disablers.

(D) Other equivalent disabling measures approved by the Department.

(ii) Systems of pumps or tanks, or both, used to store, mix or dispense bulk blasting agents at magazine sites shall be equipped with locks or shall otherwise be constructed to prevent the unauthorized removal of blasting agents from the system.

(12) A person who stores explosive materials shall notify both the local police having jurisdiction in the area where the explosives are being stored and the Pennsylvania State Police of the storage. This notification must be made in the manner of and in addition to the notification requirements in 27 CFR 555.201(f) (relating to general).

(13) A person who stores explosive materials shall immediately notify the Department, the Pennsylvania State Police and the local police jurisdiction, if any, when any of the following occur:

#### 211-8.6

(i) Evidence is discovered of a break-in or theft at the magazine, or an attempted theft or break-in has occurred.

(ii) The security measures required by this section have been breached or disabled or partially breached or disabled. Short-term partial breaches of security of less than 48-hour duration need not be reported under this subsection if all of the following apply:

(A) The partial breach was due to equipment failure or accidental or natural causes.

(B) An account of the partial breach was recorded under paragraph (1).

(C) Immediate measures are being taken to repair or replace the partial breach.

(iii) Unauthorized persons exhibiting suspicious behavior are observed in the vicinity of the magazine.

(iv) Inventory records indicate that explosive material is missing and unaccounted for.

(14) The notifications to State and local agencies required in paragraphs (12) and (13) are in addition to any notification required by agencies of the United States.

(e) Licensees of magazines licensed prior to June 18, 2005, shall comply with this section according to the following schedule except as approved by the Department under subsections (f) and (g):

(1) Immediately upon June 18, 2005, the inspection and notification requirements shall be implemented.

(2) Within 180 days of approval of the plan required by subsections (f) or (g), implement either the outer or inner perimeter security measure requirements.

(3) Within 360 days of approval of the plan required by subsections (f) or (g), implement the remaining perimeter security measure requirements.

(4) The Department, at its sole discretion, may approve, in writing, a time extension to the requirements of either paragraph (2) or (3) if the licensee has demonstrated a good faith effort to comply with the perimeter security measure requirements imposed under this chapter.

(f) By August 17, 2005, licensees of magazines licensed prior to June 18, 2005, shall submit to the Department on forms provided by the Department:

(1) The plan required by § 211.113(b)(6) (relating to application contents).

(2) A schedule for the implementation of the plan required by § 211.113(b)(6).

(3) If the security enhancements required by subsection (d) cannot be implemented in the time frames required by subsection (e), the plan must include a request for a time extension. The request for a time extension must include a schedule and a justification for the extension. The Department will act upon time extension requests within 30 days of the receipt of the request.

(g) After consultation with the Pennsylvania State Police and the Pennsylvania Office of Homeland Security, the Department may approve, in writing, alternatives to specific requirements of this section which are based upon advanced technology or other alternatives and which, either alone or in combination with other measures, provide at least equivalent security at magazines or magazine sites. The Department will act upon requests for approval of alternative security measures or, upon the written request of the licensee, for approval of plans submitted pursuant to subsection (f) within 30 days of the receipt of the request. The Department may extend this review period for up to an additional 30 days if additional time is necessary to properly review the request.

(h) Requests for Department approval of plans submitted under subsection (f) or alternate requirements, including alternative security measures and time extensions under this section, shall be on forms provided by the Department.

(i) A licensee will be deemed to be in compliance with this section as to having deterred or obstructed, to the greatest extent possible, unauthorized intrusion upon a magazine site if the licensee constructs, installs, implements and maintains the security measures specified in subsection (d), which meet the requirements of this section and which are specified by the licensee in one of the following:

- (1) A plan submitted to the Department under subsection (f).
- (2) A plan submitted to and approved by the Department under subsection (g).
- (3) A plan submitted to the Department under § 211.113(b)(6) (relating to application contents).

#### Source

The provisions of this § 211.115 amended June 17, 2005, effective June 18, 2005, 35 Pa.B. 3409. Immediately preceding text appears at serial page (281303).

#### Cross References

This section cited in 25 Pa. Code § 211.113 (relating to application contents).

### Subchapter C. PERMITS

- Sec.
- 211.121. General requirements.
  - 211.122. Permits to sell explosives.
  - 211.123. Permits to purchase explosives.
  - 211.124. Blasting activity permits.
  - 211.125. Blasting activity permit-by-rule.

#### Source

The provisions of this Subchapter C adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751, unless otherwise noted.

### 211-8.8

**§ 211.121. General requirements.**

(a) Except as otherwise provided in this subchapter, a person may not engage in blasting activities, or sell or purchase explosives in this Commonwealth without first obtaining the appropriate permit from the Department issued under this chapter.

(b) Permits under this chapter are not required for the sale, purchase or use of fireworks governed by the act of May 15, 1939 (35 P. S. §§ 1271—1277).

(c) A permit issued under the Surface Mining Conservation and Reclamation Act (52 P. S. §§ 1396.1—1396.19b), or the Noncoal Surface Mining Conservation and Reclamation Act (52 P. S. §§ 3301—3326), and the regulations promulgated thereunder, authorizing blasting activity shall act as a blasting activity permit issued under this chapter.

(d) An application for a permit for the sale or purchase of explosives or to conduct blasting activities shall be on a form provided by the Department. A permit will not be issued unless the application is complete and demonstrates that the proposed activities comply with the applicable requirements of this chapter. The Department will notify applicants of an incomplete application and identify the items necessary to complete the application. The permittee shall comply with the approved application, the permit and this chapter.

(e) The Department will not issue a permit to any person who has either:

- (1) Failed and continues to fail to comply with this chapter or a condition of a permit issued under this chapter or an order issued to enforce this chapter.
- (2) Demonstrated an inability or lack of intention to comply with this chapter as indicated by past or continuing violations.

**Authority**

The provisions of this § 211.121 amended under section 5 of The Clean Streams Law (35 P. S. § 691.5); sections 4(a) and 4.2 of the Surface Mining Conservation and Reclamation Act (52 P. S. §§ 1396.4(a) and 1396.4b); and section 1920-A of The Administrative Code of 1929 (71 P. S. § 510-20).

**Source**

The provisions of this § 211.121 amended August 21, 2015, effective August 22, 2015, 45 Pa.B. 4904. Immediately preceding text appears at serial page (311875).

**§ 211.122. Permits to sell explosives.**

(a) An application for a permit to sell explosives shall:

- (1) Identify the applicant's name, address, telephone number and type of business.
- (2) Identify a contact person, including name, title and telephone number.
- (3) Specify the type of explosives to be sold.
- (4) State whether the applicant will purchase or manufacture the explosives to be sold.

- (5) For in-State sellers, include the applicant's magazine license number, if applicable.
- (b) Permits to sell explosives are not transferable.
- (c) Permits to sell explosives expire on April 30 of each year. If the Department receives a complete renewal application by April 30, the permittee may continue to operate under the current permit until the Department acts on the renewal application.
- (d) A permit to sell explosives shall:
  - (1) Identify the permittee.

- (2) Specify the type of explosives that the permittee may sell.
- (3) Contain conditions, as necessary, to ensure that the proposed activity complies with applicable statutes and this chapter.

**§ 211.123. Permits to purchase explosives.**

- (a) An application for a permit to purchase explosives shall:
  - (1) Identify the applicant's name, address, telephone number and type of business.
  - (2) Identify a contact person, including name, title and telephone number.
  - (3) Identify the location and license number of the magazine to be used for storing the explosives, if applicable.
  - (4) Specify the type of explosives that will be purchased.
  - (5) Specify whether the explosives are being purchased for sale or use by the permittee.
- (b) Permits to purchase explosives are not transferable.
- (c) Permits to purchase explosives expire on April 30 of each year. If the Department receives a complete renewal application by April 30, the permittee may continue to operate under the current permit until the Department acts on the renewal.

**§ 211.124. Blasting activity permits.**

- (a) An application for a blasting activity permit shall be prepared by a blaster and shall include:
  - (1) The applicant's name, address, telephone number and type of business.
  - (2) A contact person's name, title and telephone number.
  - (3) The identity of independent subcontractors who will be performing the blasting activities.
  - (4) The type of explosives to be used.
  - (5) The maximum amount of explosives that will be detonated per delay interval of less than 8 milliseconds.
  - (6) The maximum amount of explosives that will be detonated in any one blast.
  - (7) A map indicating the location where the explosives will be used.
  - (8) The purpose for which the explosives will be used.
  - (9) The location and license number of the magazine that will be used to store the explosives, if applicable.
  - (10) A description of how the monitoring requirements of Subchapter G (relating to requirements for monitoring) will be satisfied.
  - (11) Proof of third party general liability insurance in the amount of \$300,000 or greater per occurrence. This requirement is not applicable if the permittee is a noncoal surface mine operator who produces no more than 2,000 tons (1,814 metric tons) of marketable minerals per year from all its noncoal surface mining operations.

(12) The anticipated duration of the blasting activity for which the permit is needed.

(13) The anticipated days of the week and times when blasting may occur.

(14) The distance and direction to the closest building not owned by the permittee or its customer.

(15) Other information needed by the Department to determine compliance with applicable laws and regulations.

(16) The printed name, signature and license number of the blaster who prepared the application.

(17) Proof that residents within 200 feet (65.61 meters) of the blast site were informed of the proposed blasting operation. This notification could be a personal notification, written material left at each residence, or first class mail. The notification will provide general information about the blasting operation including the duration of the operation.

(b) Blasting activity permits are not transferable.

(c) The blasting activity permit shall specify:

(1) The blasting activity permittee.

(2) Any independent subcontractors performing work under this permit.

(3) Limits on particle velocity and airblast.

(4) The types of explosives that may be used.

(5) The duration of the permit.

(6) Other conditions necessary to ensure that the proposed blasting activity complies with the applicable statutes and this chapter.

(d) The permittee may request extensions and modifications by submitting an amended application.

### § 211.125. Blasting activity permit-by-rule.

(a) A person shall be deemed to have a permit for a blasting activity if:

(1) The blasts are designed and performed for a scaled distance of 90 or greater.

(2) No more than 15 pounds (6.81 kilograms) of explosives are detonated per delay interval of less than 8 milliseconds.

(3) The total charge weight per blast does not exceed 150 pounds (68.18 kilograms).

(4) The person notifies the Department either verbally, in writing, or by other means approved by the Department prior to the initial blast. If the person gives verbal notification, a written notice shall be received by the Department within 5 working days. The notification shall indicate the following information for all blasts that will occur under this permit:

(i) The identity of the person.

(ii) The location where the blasting will occur.

(iii) The purpose of the blasting.

- (iv) The distance to the nearest building not owned or leased by the person or its customer.
  - (v) The days of the week and times when blasting may occur.
  - (vi) The duration of blasting activities under this permit by rule.
  - (vii) The minimum scaled distance.
  - (viii) The maximum weight of explosives detonated per delay period of less than 8 milliseconds.
  - (ix) The maximum total weight of explosives per blast.
  - (x) A contact person and telephone number.
- (5) Blast reports are completed in accordance with § 211.133 (relating to blast report).
- (6) The other monitoring and performance standards of this chapter are met.
- (b) The Department may revoke a blasting activity permit by rule under one of the following:
- (1) The permittee has demonstrated an unwillingness or inability to comply with the applicable regulations.
  - (2) The blasting activity possesses a sufficient risk of harm to the public or the environment to warrant an individual blasting activity permit.

#### **Subchapter D. RECORDS OF DISPOSITION OF EXPLOSIVES**

- Sec.  
211.131. Sales records.  
211.132. Purchase records.  
211.133. Blast reports.

#### **Source**

The provisions of this Subchapter D adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751, unless otherwise noted.

#### **§ 211.131. Sales records.**

The seller shall keep an accurate record of every sale of explosives for 3 years. The record shall identify the purchaser's name and address, the Department purchase permit number, the date of the sale and the amount and types of explosives.

#### **§ 211.132. Purchase records.**

The purchaser shall keep a record of all purchases of explosives for 3 years. The record shall identify the date, types and amounts of explosives purchased and the name and address of the seller.

**§ 211.133. Blast reports.**

(a) The blaster-in-charge shall prepare a report of each blast to provide the Department with sufficient information to reconstruct the conditions and events surrounding a blast. The Department may develop and require a blast report form to be used. The blasting activity permittee shall retain the blast report for at least 3 years and shall make the blast report available to the Department upon request. Blast reports shall contain, at a minimum, the following:

- (1) The locations of the blast and monitoring readings.
- (2) The name of the blasting activity permittee.
- (3) The blasting activity permit or appropriate mining permit number.
- (4) The date and time of the blast.
- (5) The printed name, signature and license number of the blaster-in-charge.
- (6) The type of material blasted.
- (7) A sketch showing the number of blast holes, burden, spacing, pattern dimensions and point of initiation.
- (8) The diameter and depth of blast holes.
- (9) The height or length of stemming and deck separation for each hole.
- (10) The types of explosives used and arrangement in blast holes.
- (11) The total weight in pounds of explosives and primer cartridges used.
- (12) The maximum weight in pounds of explosives detonated per delay period of less than 8 milliseconds.
- (13) The type of circuit, if electric detonation was used.
- (14) The direction and distance in feet from the blast site to the nearest building not owned by the blasting activity permittee or its customer.
- (15) A description of the nearest building location not owned or leased by the blasting activity permittee or its customer based upon local landmarks.
- (16) The scaled distance.
- (17) The weather conditions.
- (18) The direction from which the wind was coming.
- (19) The measures taken to control flyrock, including whether or not mats were used.
- (20) The total quantity and type of detonators used and delays used.
- (21) The number of individuals in the blasting crew.
- (22) The maximum number of blast holes or portions of blast holes detonated per delay period less than 8 milliseconds.
- (23) The monitoring records required by § 211.173 (relating to monitoring records). Monitoring records shall be made part of the blast report within 30 days of the blast. Beginning July 14, 2004, monitoring records shall be made part of the blast report within 14 days of the blast. The Department may grant a waiver to allow monitoring records to be made part of the blasting record within 30 days of the blast if all blasts, regardless of scaled distance, are moni-

tored and monthly summaries of these reports, including the information required in subsection (b), are provided. Monitoring records shall be made part of the blast report within 7 days, if requested by the Department.

(24) If a misfire occurred, the actions taken to make the site safe as specified in § 211.157 (relating to postblast measures).

(b) The Department may require monthly summaries of these reports. The summaries shall include the date and time of the blasts, scaled distance, peak particle velocity, airblast, monitoring location, amount and types of explosives used and other information the Department deems necessary to ensure compliance with this chapter.

#### Cross References

This section cited in 25 Pa. Code § 211.135 (relating to blasting activity permit-by-rule); 25 Pa. Code § 211.154 (relating to preparing the blast); and 25 Pa. Code § 211.157 (relating to postblast measures).

### Subchapter E. TRANSPORTATION OF EXPLOSIVES

Sec.  
211.141. General requirements.

#### Source

The provisions of this Subchapter E adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751, unless otherwise noted.

#### § 211.141. General requirements.

The blasting activity, purchase or sale permittee shall:

(1) Immediately unload a vehicle carrying explosives upon reaching a magazine location. The unloaded vehicle shall be removed from the site. The only exception to this requirement is if the vehicle is a licensed magazine under Subchapter B (relating to the storage and classification of explosives).

(2) Load or unload explosives from a vehicle only after the engine is turned off, unless power is needed for the loading or unloading operation. The permittee shall take all precautions necessary, such as blocking the wheels, to prevent the movement of the vehicle while it is being loaded or unloaded.

(3) Load explosives only into a vehicle that is marked in accordance with the Department of Transportation standards for placarding vehicles transporting explosives.

(4) Prohibit smoking within 100 feet of a vehicle used for transporting explosives. "NO SMOKING" signs shall be posted when a vehicle containing explosives is parked at a blast site or magazine.

(5) Load no more than 2,000 pounds (908 kilograms) of explosives into an open body vehicle for transporting. The ends and sides shall be high enough to

prevent explosives from falling off, and the load shall be covered with a fire-resistant tarpaulin, unless the explosives are transported in a magazine securely attached to the vehicle.

(6) Load explosives into a closed body vehicle if the load is more than 2,000 pounds (908 kilograms) of explosives.

(7) Only load explosives into a vehicle with a bed made of wood or other nonsparking material.

(8) Load explosives into a vehicle which is also transporting metal, metal tools, blasting machines or other articles or materials likely to damage the explosives, only if these items are separated from the explosives by substantial nonsparking bulkheads constructed to prevent damage to the explosives.

(9) Load detonators and other explosives into the same vehicle only if the detonators are in containers that conform to the current version of the *Institute of Makers of Explosives Safety Library Publication # 22* available from the Institute of Makers of Explosives, 1120 Nineteenth Street, N. W., Suite 310, Washington, DC 20036-3605.

(10) Not load explosives into the same vehicle with materials such as matches, firearms, electric storage batteries, corrosive compounds, flammable substances, acids, oxidizing agents and ammonium nitrate not in the original containers.

(11) Only load explosives into vehicles equipped with a fire extinguisher having a National Board of Underwriters Laboratories rating of 10 B:C or more. The fire extinguisher shall be easily accessible and ready for immediate use.

(12) Load explosives into a vehicle so that explosives containers are not exposed to sparks or hot gases from the exhaust tailpipe. Exhaust systems that discharge upwards are recommended to avoid possible exposure of sparks or hot gases to explosives.

(13) Only load explosives into vehicles that have passed the State safety inspection or certification.

### Subchapter F. BLASTING ACTIVITIES

- Sec.  
211.151. Prevention of damage.  
211.152. Control of noxious gasses.  
211.153. General requirements for handling explosives.  
211.154. Preparing the blast.  
211.155. Preblast measures.  
211.156. Detonating the blast.  
211.157. Postblast measures.  
211.158. Mudcapping.  
211.159. Electric detonation.  
211.160. Nonelectric detonation.

211.161. Detonating cords.

211.162. Safety fuse.

**Source**

The provisions of this Subchapter F adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751, unless otherwise noted.

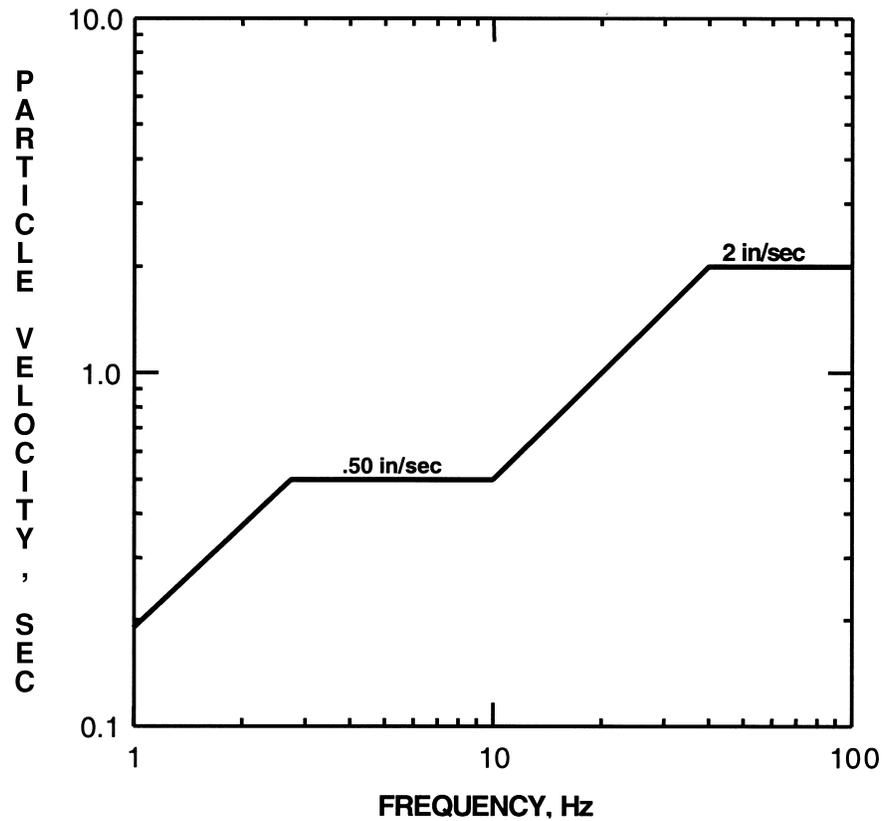
**§ 211.151. Prevention of damage.**

(a) Blasting may not damage real property except for real property under the control of the permittee. If damage occurs, the blaster-in-charge shall notify the Department within 4 hours of learning of the damage.

(b) Blasting may not cause flyrock. If flyrock occurs, the blaster-in-charge shall notify the Department within 4 hours of learning of the flyrock.

(c) Blasts shall be designed and conducted in a manner that achieves either a scaled distance of 90 or meets the maximum allowable peak particle velocity as indicated by Figure 1 at the closest building or other structure designated by the Department. However, blasting activities authorized prior to July 14, 2001, may continue as authorized unless the authorization is modified, suspended or revoked by the Department. The scaled distance and maximum allowable peak particle velocity does not apply at a building or other structure owned or leased by the permittee or its customer.

Figure 1.



(d) Blasts shall be designed and conducted to control airblast so that it does not exceed the noise levels specified in Table 1 at a building or other structure designated by the Department unless the building is owned or leased by the permittee or its customer.

Lower frequency limits of measuring System in Hz(+3dB)	Maximum allowable levels in dBL
0.1 Hz or lower — flat response*	134 peak
2.0 Hz or lower — flat response	133 peak

<i>Table 1</i>	
6.0 Hz or lower — flat response	129 peak
C - weighted — slow response*	105 peak
*only when approved by the Department	

(e) The Department may establish an alternative peak particle velocity or air-blast level if it determines that an alternative standard is appropriate because of density of population, land use, age or type of structure, geology or hydrology of the area, frequency of blasts or other factors.

#### Cross References

This section cited in 25 Pa. Code § 211.173 (relating to monitoring records).

#### § 211.152. Control of noxious gases.

A blast shall be conducted so that the gases generated by the blast do not affect the health and safety of individuals. Effects from gases may be prevented by taking measures such as venting the gases to the atmosphere, interrupting the path along which gases may flow, and evacuating people from areas that may contain gases.

#### § 211.153. General requirements for handling explosives.

(a) Only a nonferrous, nonsparking tool shall be used to open containers of explosives.

(b) Matches, lighters and smoking are prohibited within 100 feet (30.48 meters) of the blast site and areas where explosives are used or stored.

(c) If it becomes necessary to destroy damaged or deteriorated explosives, the permittee shall immediately contact the manufacturer for technical advice and assistance.

(d) Detonators may not be forced into cartridges of explosive or cast boosters. Detonators shall be completely inserted into a hole in an explosive cartridge made with an approved powder punch or into the detonator well of a cast booster.

(e) Explosives may not be left unattended. They are to be stored in a licensed magazine or kept under the permittee's supervision and control.

(f) A loaded blast shall always be under the continuous observation of the blaster-in-charge or a designee.

(g) Shooting or carrying ammunition or firearms on a blast site and in areas where explosives are used or stored is prohibited, except for material needed to initiate the blast.

(h) If blasting activities are conducted in the vicinity of electric lines such as transmission lines or electrified railways, a test shall be made for presence of stray electric currents. Electric blasting caps may not be used if stray electric currents in excess of 50 milliamperes are present.

(i) A package of explosives may not be thrown, slid along floors or over other packages of explosives, or handled roughly.

(j) If an electrical storm approaches an area where there is an activity involving explosives, the area shall be cleared by the permittee or licensee, who shall post guards at all approaches to prevent trespass of unauthorized persons.

(k) Explosives and equipment that are obviously damaged or deteriorated may not be used.

(l) Explosives may not be abandoned.

#### § 211.154. Preparing the blast.

(a) The blasting activity permittee shall designate a blaster-in-charge for each blast. The blaster-in-charge shall control and supervise the blasting activity. The blaster-in-charge is responsible for all effects of the blast.

(b) Only equipment necessary for loading blast holes may be allowed to operate within 50 feet (15.24 meters) of the blast site. The Department may establish, in writing, a different distance limitation.

(c) A blaster-in-charge may not prepare or detonate a blast unless another person is present, able and ready to render assistance in the event of accident or injury.

(d) The blaster-in-charge shall make every effort to determine the condition of the material to be blasted from the individual who drilled the blast holes or from the drill log.

(e) Only the blaster-in-charge, other blasters, and up to six assistants per blaster may be at a blast site once loading of blast holes begins.

(f) While loading a blast hole, the following measures shall be followed:

(1) Ferrous material may not be used in the blast hole unless the use is approved by the Department in writing. This includes the use of steel casings, ferrous tools and retrieving equipment.

(2) Only nonferrous, nonsparking tamping sticks may be used in loading a blast hole. Sectional poles connected by brass fittings are permitted, if only the nonferrous, nonsparking end of the pole is used for tamping. Retrieving hooks shall be made from nonsparking metal such as brass or bronze.

(3) When using a pneumatic loading device, every precaution shall be taken to prevent an accumulation of static electricity. A loading operation shall be stopped immediately if static electricity or stray electrical currents are detected. The condition shall be remedied before loading may be resumed.

(4) The blast hole shall be carefully checked for obstructions with a nonferrous, nonsparking tamping pole, a tape, a light or a mirror before it is

loaded. The use of magnifying mirrors is prohibited. Explosives may not be forced past an obstruction in a blast hole.

(5) Each blast hole shall be logged throughout the loading process to measure the amount and location of explosives placed in the blast hole. The information is to be recorded on the blast report required by § 211.133 (relating to blast report).

(6) A blast hole containing loose dynamite shall be stemmed but not tamped.

(7) The Department may specify the type and amount of stemming.

(g) Before connecting one loaded blast hole to another, all activity within the blast area shall cease, and all nonessential persons shall retreat to a safe place. The blaster-in-charge shall determine the blast area.

(h) Primers shall be prepared only at the hole to be loaded, immediately prior to loading. The components of the primer are to be kept separated at the collar of the blast hole. The primer may not be slit, dropped, deformed or carelessly handled and may not be tamped or forced into the blast hole.

(i) Immediately upon completing the loading of a blast hole, any wood, paper or other materials used to pack explosives shall be inspected for the presence of explosives and removed to an isolated area. These materials may be burned after the blast has been fired. Persons may not be within 100 feet (30.48 meters) of these burning materials.

(j) Measures shall be taken to reduce the chance of flyrock including:

(1) The use of blasting mats or other protective devices, if, in the opinion of the blaster-in-charge, the measures are necessary to prevent injuries to persons or damage to property.

(2) When blasting to an open, vertical face, checking the face for loose, hanging material or other faults prior to loading the blast holes.

(k) Explosives may not be brought to a blast site in greater quantities than are expected to be needed for that blast. Surplus explosives may not be stored in the blast area.

(l) Before a blast hole is loaded, it shall be checked to ensure that it is cool and does not contain any hot metal or smoldering material remaining from drilling the hole.

(m) The use of abrasive or sharp-edged constituents in stemming material shall be avoided if tamping is necessary and the tamping may sever blasting cap leg wires, shock tubes or detonating cords.

(n) Blasting activities may not be conducted within 800 feet (243.84 meters) of a public roadway unless precautionary measures are taken to safeguard the public. Precautionary measures include stopping or slowing of traffic and posting signs.

#### **§ 211.155. Preblast measures.**

Prior to detonating a blast, the blaster-in-charge shall:

- (1) Ensure that all excess explosives have been removed from the blast area and are located in a safe area.
- (2) Inspect the blast site to ensure that connections are proper and adequate.
- (3) Ensure that the blast area is cleared and safeguarded.
- (4) In addition to the warning signal, notify all persons who may be in danger.
- (5) Ensure that the necessary precautions are in place to protect the public on public roads.
- (6) At least 1 minute but no more than 2 minutes prior to detonation, sound a warning signal of three blasts, each lasting approximately 5 seconds. The warning signal shall be of sufficient power to be heard 1,000 feet (304.80 meters) from the blast site.

**§ 211.156. Detonating the blast.**

- (a) A blast may be detonated only between sunrise and sunset unless the Department authorizes a blast at another time of day.
- (b) Only the blaster-in-charge may detonate a blast.

**§ 211.157. Postblast measures.**

- (a) After a blast has been detonated, no one may return to the blast area until all smoke and fumes have dissipated.
- (b) After the smoke and fumes have cleared, the blaster-in-charge shall return to the blast site and closely inspect the blast site to ensure that it is safe with respect to the blasting activity.
- (c) After the blaster-in-charge has determined the blast area is safe, the blaster-in-charge shall sound an all-clear signal, consisting of one long blast, lasting approximately 10 seconds. This all-clear signal shall be of sufficient power to be heard 1,000 feet (304.80 meters) from the blast site.
- (d) The blaster-in-charge shall determine if a misfire occurred and shall take all actions necessary to render the blast site safe. The blast site shall be made safe before drilling or muck removal begins.
- (e) If the blaster-in-charge suspects that undetonated ammonium nitrate/fuel mixture remains in the muck pile, the muck pile shall be thoroughly wetted down with water before any digging is attempted. Special attention shall be given to determine if primers, other explosives or detonators are present in the muck pile.
- (f) The blaster-in-charge shall immediately complete the blast report as required by § 211.133 (relating to blast report).
- (g) The blaster-in-charge shall notify the Department within 24 hours of the occurrence of a misfire. A copy of the blast report shall be forwarded to the Department.

**Cross References**

This section cited in 25 Pa. Code § 211.133 (relating to blast reports).

**§ 211.158. Mudcapping.**

Mudcapping in blasting activities is allowed only if the blaster-in-charge determines that drilling the material to be blasted would endanger the safety of the workers. If mudcapping is necessary, no more than 10 pounds (4.53 kilograms) of explosives shall be used for a blast.

**§ 211.159. Electric detonation.**

(a) Electric blasting caps shall be tested for continuity with a blaster's galvanometer or blaster's multimeter specifically designed for testing blasting circuits. Testing shall be done:

- (1) Before the primers are made up.
- (2) After the blast hole has been loaded but prior to stemming.
- (3) As the final connecting of the circuit progresses.

(b) When a shunt is removed from electric blasting cap leg wires, the exposed wires shall be reshunted.

(c) Electric blasting caps may not be employed in a blast if there is any possibility of wires from the circuit being thrown against overhead or nearby electric lines.

(d) An effort may not be made to reclaim or reuse electric blasting caps if the leg wires have been broken off near the top of the cap.

(e) Leg wires on electric blasting caps shall extend above the top of the blast hole. Wire connections and splices are not allowed in the blast hole.

(f) Only solid wire shall be used in a blasting circuit. The use of stranded wire is prohibited.

(g) When electric detonation is used near public roads, signs shall be erected at least 500 feet (152.40 meters) from the blast areas reading: "BLAST AREA - SHUT OFF ALL TWO-WAY RADIOS."

(h) A blasting machine is the only permissible source of electrical power for a detonation.

(i) The blasting circuit shall remain shunted until the time for detonation unless the circuit is being tested or connections are being made.

(j) A sticker shall be displayed on blasting machines that shows they have been tested within the last 30 days by procedures recommended by the manufacturer or supplier to ensure performance at rated capacity. If blasting caps are used in the test, they shall be covered with earth or sand.

(k) When electronic detonation is used, the blaster-in-charge shall determine that adequate current, as specified by the manufacturer of the detonators, is available to properly energize the detonators in the circuit.

**§ 211.160. Nonelectric detonation.**

Nonelectric initiation systems shall be checked and tested for secure connections in accordance with recommendations of the manufacturer of the system in use.

**§ 211.161. Detonating cords.**

(a) Detonating cord shall be cut from the supply roll immediately after placement in the blast hole. A sufficient length of downlines shall be left at the top of the blast hole for connections to trunk lines. The supply roll shall be immediately removed from the site. Scrap pieces of detonating cord shall be destroyed after connections are made.

(b) A trunk line shall be covered with at least 12 inches (0.30 meter) of earth or sand, unless otherwise authorized by the Department.

(c) Detonating cord may not be spliced if the resulting splice will fall within a blast hole.

**§ 211.162. Safety fuse.**

(a) When safety fuse is used in blasting, it shall be long enough to provide a burn time of 120 seconds or longer.

(b) Prior to using safety fuse, the blaster-in-charge shall conduct a test burn. The test burn will utilize at least a 12-inch (0.30-meter) section of fuse which is lit, then timed to determine actual burn time.

(c) A blasting cap shall only be crimped to a safety fuse with a proper crimping tool. A blasting cap may not be attached to a safety fuse in or within 10 feet (3.05 meters) of a magazine.

**Subchapter G. REQUIREMENTS FOR MONITORING**

Sec.

211.171. General provisions for monitoring.

211.172. Monitoring instruments.

211.173. Monitoring records.

**Source**

The provisions of this Subchapter G adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751, unless otherwise noted.

**§ 211.171. General provisions for monitoring.**

(a) If the scaled distance of a blast is 90 or numerically less at the closest building not owned or leased by the blasting activity permittee or its customer, ground vibration and airblast monitoring shall be conducted. The Department may require the permittee to conduct ground vibration and airblast monitoring at other buildings or structures even if the scaled distance is greater than 90.

(b) Blasting activities without monitoring may be considered in compliance with this chapter if at a specified location, on at least five blasts, monitoring has demonstrated that the maximum peak particle velocity at the specified location represents more than a 50% reduction from the limit in the permit and this chapter. Future blasts shall maintain a scaled distance equal to or greater than the scaled distance for the monitored blasts.

(c) If monitoring is required, a ground vibration and airblast record of each blast shall be made part of the blast report.

(d) If monitoring is performed with instruments that have variable “trigger levels,” the trigger for ground vibration shall be set at a particle velocity of no more than .25 inches per second unless otherwise directed by the Department.

(e) If the peak particle velocity and airblast from a blast are below the set trigger level of the instrument, a printout from the instrument shall be attached to the blast report. This printout shall provide the date and time when the instrument was turned on and off, the set trigger levels and information concerning the status of the instrument during the activation period. When an instrument is used that does not provide this information, the Department will allow the permittee to supply on/off times on a signed statement.

#### § 211.172. Monitoring instruments.

If monitoring is required, the monitoring instrument shall provide a permanent record of each blast.

(1) A monitoring instrument for recording ground vibration, at a minimum, shall have:

- (i) A frequency range of 2 Hz to 100 Hz.
- (ii) Particle velocity range of .02 to 4.0 inches ( $5.08 \times 10^{-4}$  to 0.10 meters) per second or greater.
- (iii) An internal dynamic calibration system.

(2) A monitoring instrument used to record airblast shall have:

- (i) A lower frequency limit of 0.1, 2.0 or 6.0 Hz.
- (ii) An upper end flat-frequency response of at least 200 Hz.
- (iii) A dynamic range that, at a minimum, extends from 106 to 142 dBL.

(3) A monitoring instrument shall be calibrated annually and when an instrument is repaired and the repair may effect the response of the instrument. Calibration shall be done by the manufacturer of the equipment, or by an organization approved by the manufacturer, or by an organization having verifiable knowledge of the calibration procedures developed by the manufacturer. The calibration procedure shall include testing the response of the entire system to externally-generated dynamic inputs. These inputs shall test the entire monitoring system at a sufficient number of discrete frequency intervals to assure flat response throughout the frequency ranges specified by this chapter. Dynamic reference standards used for calibration shall be traceable to the National Insti-

tute of Standards and Technology (NIST). Calibration procedures and documentation of calibration shall be made available for review by the Department.

(4) A nonalterable sticker that is clearly visible shall be firmly affixed to the instrument. The sticker shall indicate the name of the calibration facility, the calibration technician, the date of calibration and frequency range of the airblast monitor.

### § 211.173. Monitoring records.

(a) Anyone using a monitoring instrument shall be trained on the proper use of that instrument by a representative of the manufacturer or distributor, or other competent individual. A record of that training is to be maintained and available for review by the Department.

(b) Monitoring records, at a minimum, shall contain:

(1) A calibration pulse on each of the mutually-perpendicular ground vibration traces. These pulses shall represent the dynamic response of the entire recording system to an internally-generated calibration signal, and shall allow the Department to verify that the seismograph is recording ground vibration to its specific accuracy.

(2) The time history of particle velocities for three mutually perpendicular ground vibration traces and one air-overpressure trace, including time base, amplitude scales and peak values for all traces.

(3) The results of a field calibration test for each channel.

(4) The frequency content of all vibration signals using either single degree of freedom (SDF) response spectrum or half-cycle zero-crossing analysis methods.

(5) Frequency versus particle velocity plots as indicated in § 211.151(c), Figure 1 (relating to prevention of damage).

(6) The name and signature of the individual taking the recording.

(7) The location of the monitoring instrument, date and time of the recording.

(8) The last calibration date of the monitoring instrument.

(c) If the Department questions the validity of a ground vibration or airblast record, or the interpretation of the record, the Department may require a ground vibration or airblast recording to be analyzed or certified by an independent, qualified consultant who is not related to the blasting activity permittee or its customer. When the Department requires that a recording be analyzed or certified, it shall be performed and included with the blast report within 30 days.

#### Cross References

This section cited in 25 Pa. Code § 211.133 (relating to blast reports).

**Subchapter H. BLASTING ACTIVITIES NEAR UTILITY LINES**

Sec.

211.181. Scope.

211.182. General provisions.

**Source**

The provisions of this Subchapter H adopted July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751, unless otherwise noted.

**§ 211.181. Scope.**

This subchapter applies to buried or underground utility lines and utility lines making contact with the surface of the ground.

**§ 211.182. General provisions.**

(a) Blasts shall be designed and conducted so that they provide the greatest relief possible in a direction away from the utility line and to keep the resulting vibration and actual ground movement to the lowest possible level.

(b) Blasting shall use a type of explosive specifically designed to minimize the likelihood of propagation between explosive charges.

(c) When blasting within 200 feet (60.96 meters) of a utility line, blast holes may not exceed 3 inches ( $7.62 \times 10^{-2}$  meters) in diameter.

(d) Blasting in the vicinity of a utility line shall be conducted as follows:

(1) Excavation from the ground surface to a depth corresponding to the elevation of the top of the buried utility line may proceed at the discretion of the blaster-in-charge, using safe, accepted techniques.

(2) Once the excavation has attained a depth equal to the elevation of the top of the buried utility line or if the line is exposed, or makes solid contact with the surface, the vertical depth of subsequent blast holes shall be restricted to one half the horizontal distance from the closest portion of the utility line.

(e) If one or more of the requirements listed in this section are not feasible or creates a potential safety problem, the permittee may apply to the Department for a waiver of the provision or provisions in question. This waiver will be granted if, in the judgment of the Department and the utility owning the lines, the alternate procedure does not endanger the utility line.

**APPENDIX A. [Reserved]****Source**

The provisions of this Appendix A reserved July 13, 2001, effective July 14, 2001, 31 Pa.B. 3751. Immediately preceding text appears at serial pages (243499) to (243502).

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