

# Regulatory Analysis Form

This space for use by IRRC

(1) Agency

Department of Environmental Protection

RECEIVED

2009 MAY 17 PM 3: 30

REGULATORY  
REVIEW COMMISSION

(2) I.D. Number (Governor's Office Use)

#7-349

IRRC Number:

2120

(3) Short Title

Licensing of Blasters and Storage, Handling and Use of Explosives

(4) PA Code Cite

25 Pa. Chapters 210 and 211

(5) Agency Contacts & Telephone Numbers

Primary Contact: Sharon Freeman, 783-1303

Secondary Contact: Barbara Sexton, 783-1303

(6) Type of Rulemaking (Check One)

- Proposed Rulemaking  
 Final Order Adopting Regulation  
 Final Order, Proposed Rulemaking Omitted

(7) Is a 120-Day Emergency Certification Attached?

- No  
 Yes: By the Attorney General  
 Yes: By the Governor

(8) Briefly explain the regulation in clear and nontechnical language.

The provisions of Chapter 210 specify the standards and procedures for the licensing of persons responsible for blasting activities in all surface applications and in underground noncoal mines. The provisions of Chapter 211 specify standards and permitting procedures for the use, storage and handling of explosives for all surface applications including mining, construction and demolition activities.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

Sections 3 and 7 of the Explosives Act of 1937 and Section 3 of the Explosives Act of 1957 (73 P.S. §§ 157, 161 and 166); Reorganization Plan No. 8 of 1981 (71 P.S. §751-35); Section 2(f) of the General Safety Law (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)) and Section 11(e) of the Non-coal Surface Mining Conservation and Reclamation Act (52 P.S. 3311(e)); and Section 1917-A and 1920-A(b) of the Administrative Code of 1929 (§§71 P.S. §§ 510-17 and 20(b)).

## Regulatory Analysis Form

(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

No state or federal law, regulation or court order mandates this rulemaking.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

The storage, use and handling of explosives is an ultra hazardous activity posing a unique blend of health and safety concerns. This proposal is a modernization of regulations that have been in effect for more than 20 years. These regulations ensure that only qualified individuals are authorized to use explosives. They require explosives to be stored in a manner that protects surrounding railways, buildings and highways from an explosion. The regulations pertaining to the use and handling of explosives will ensure that persons located in or near the blast will not be injured and that structures adjacent to the blast will not be damaged.

(12) State the public health, safety, environmental or general welfare risks associated with non-regulation.

Non-regulation of explosives will expose the public to extremely hazardous practices involving explosives, allowing for potentially catastrophic situations. It will also expose the citizens of the Commonwealth to the potential for injury and damage to real property from the use of explosives.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

It is impossible to quantify the number of individuals who will directly benefit from this regulation. However, indirectly we believe that all citizens of the Commonwealth, including the regulated community, benefit from the proper regulation of explosives.

## Regulatory Analysis Form

(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)

The regulated industry will be adversely affected by this proposal to a slight degree. Existing regulations control the use, storage and handling of explosives. These proposed regulations are a modernization of the current explosives regulations. Seismic monitors are proposed so that additional information can be obtained. This information is needed to determine damage probability from blasting operations and will result in increased costs to the operator. The requirement for a blaster to obtain continuing education during the 3-year term of the license is also proposed. This provision is designed to ensure that blasters keep current with methodology, techniques and regulations. For the protection of the public, minimum liability insurance has been proposed. This insurance is needed in cases when blasting causes injury or damage.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

Anyone who purchases, sells, uses or stores explosives will be affected by these regulations. Currently there are over 2600 individuals licensed to detonate explosives in surface operations, 1323 sales permits and 2567 purchase permits. All of these individuals will be expected to comply with these regulations.

(16) Describe the communications with and inputs from the public in the development and drafting of the regulation. List the persons and/or groups who were involved, if applicable.

Prior to developing this package seven roundtables were held throughout the Commonwealth to gain input on how the explosives program should function. Citizens, members of the regulated community, interest groups and others attended these roundtables. In addition, the Department solicited a cross-section of individuals to receive written input. A web site was created to gain the same information electronically. Some of the interest groups who were involved included the Pa. Coal Association, International Society of Explosive Engineers, the Department's Mining and Reclamation Advisory Board and the Pennsylvania Aggregates and Concrete Association.

(17) Provide a specific estimate of the cost and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.

The regulated community will experience cost savings by not having to have seismic records analyzed by an independent third party. The cost for the third party analysis is approximately \$20.00 per record. The costs or expenses to the regulated community depends on how many blasts require seismic monitoring. Those persons using older monitoring instruments not capable of meeting the new requirements will face an additional cost. Monitoring instruments capable of meeting the proposed requirements may cost \$6,000. To ease this cost, persons performing blasting activities have three years to satisfy this requirement. It is impossible to estimate the costs imposed by the new insurance requirement because most responsible persons performing blasting activities already possess insurance. Some additional minor costs will be associated with the public notice requirement, the requirement for a blasting activity permit, and the continuing education requirement for licensed blasters.

## Regulatory Analysis Form

(18) Provide a specific estimate of the cost and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

This proposal does not affect local government.

(19) Provide a specific estimate of the cost and/or savings to state government associated with the implementation of the regulation, including any legal, accounting or consulting procedures which may be required.

There will be an increased cost to the Commonwealth in reviewing and approving permits for blasting operations. It is extremely difficult to quantify these costs because to date, there has not been a way to track the number of blasting operations using explosives, except for mining operations. The Department estimates that two to three positions may be required to accomplish these functions, but intends to perform a detailed evaluation once the new provisions are implemented.

A cost savings may be realized by the Commonwealth by a reduced need to respond to blasting complaints. The Commonwealth receives thousands of blasting complaints annually. It is believed that by using a permit approval process, which requires the need for public notification of a blasting operation, complaints relevant to the operation will be reduced.

## Regulatory Analysis Form

(20) In the table below, provide an estimate of the fiscal savings and cost associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
<b>SAVINGS:</b>	\$	\$	\$	\$	\$	\$
Regulated Community	0	0	0	0	0	0
Local Government	0	0	0	0	0	0
State Governments	0	0	0	0	0	0
<b>Total Savings</b>	0	0	0	0	0	0
<b>COSTS:</b>						
Regulated Community	*	*	*	*	*	*
Local Government	0	0	0	0	0	0
State Governments	0	0	0	0	0	0
<b>Total Cost</b>						
<b>REVENUE LOSSES:</b>						
Regulated Community	0	0	0	0	0	0
Local Government	0	0	0	0	0	0
State Governments	0	0	0	0	0	0
<b>Total Revenue Losses</b>	0	0	0	0	0	0

(20a) Explain how the cost estimates listed above were derived.

Because the state and local government do not perform their own blasting, this section only applies to the regulated community. Since specific nonmining blasting operations are not currently permitted, the Department does not know how many occur within a year.

\* The costs to the regulated community will depend on how many blasting activity permits they apply for. We are anticipating an additional cost of \$100.00 per permit to cover the public notification requirements and staff time to submit the application.

There should not be any additional costs or savings as a result of the proposed revisions to the seismic monitoring requirements. While this proposal requires the use of newer seismographs and more blasts to be monitored, because the records no longer need to be certified or verified, the savings should offset the costs in the long-term.

## Regulatory Analysis Form

(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY-3	FY-2	FY-1	Current FY
Non-mining	*unavailable	\$49,000	\$80,000	\$95,000

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and cost.

Explosives are used in mining and non-mining operations. We have provided the expenditure for the non-mining aspects of the explosives program. The expenditures for the explosives aspects of the coal and industrial mining operations cannot be differentiated within those general programs.

(22) Describe the nonregulatory alternative considered and the cost associated with those alternatives. Provide the reasons for their dismissal.

Nonregulatory options were not considered. The Department is mandated by several different statutes to administer and enforce a program for licensing blasters and for regulating the use, storage and handling of explosives. The regulations implementing this statutory authority have been in effect for more than 25 years and have not been significantly reviewed or updated since their codification in 1972. This proposal is to clarify, simplify and modernize the existing program. The use of explosives is sufficiently complicated that regulations are required for public protection.

(23) Describe alternative regulatory schemes considered and the cost associated with those schemes. Provide the reasons for their dismissal.

No alternative regulatory schemes were considered. (See the answer to question 22.)

## Regulatory Analysis Form

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

Federal standards concerning the use of explosives exist only for surface coal mining activities. Some of the provisions of these regulations are more stringent than the comparable Federal coal mining regulations. Specifically, the vibration limit proposed in this package is more stringent in some cases. The proposed "scaled distance ratio" is higher than the Federal regulation. This higher scaled distance will necessitate more seismic monitoring.

Also, the requirements for monitoring instruments and the monitoring of blasts are more stringent than their Federal counterparts. In Pennsylvania, many surface coal mining operations are located near inhabited areas. In the Department's experience, this stricter vibration limit is necessary to adequately protect adjacent structures from damage due to the blasting and to enable the Department to respond in a timely and effective manner to complaints of damage due to blasting.

Finally, these regulations do not incorporate variances issued by A.T.F. relative to the storage of explosives. The Department believes that state approval is also necessary.

(25) How does the regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

Other states have widely varying requirements that reflect the unique laws of each state. Some states choose to not regulate any activity relating to explosives. Pennsylvania will not be at a competitive disadvantage because in most contexts blasting is an activity that is incidental to a larger purpose, such as road construction, mining and demolition.

(26) Will the regulation affect existing or proposed regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

Regulations found in Chapters 77, 87, and 88 address the use and handling of explosives at surface coal and noncoal mines. If any of the blasting requirements in the mining regulations are less stringent than a comparable provision in Chapter 211, the mining regulation will be superseded by the provision in Chapter 211. Following promulgation of this rulemaking, DEP will update its mining regulations for consistency with Chapter 211 provisions. No other agency regulations will be affected.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

The Department recommends holding four public hearings on the regulations. No dates, times, or locations have been set.

## Regulatory Analysis Form

(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

The amendments will require some additional information when a blaster provides a report on a blast that has occurred. A standard form is not used for the reporting of this information.

In some cases, the operator will need to apply for a blasting activity permit. A 1-page application is anticipated and will need to be developed.

These amendments will require changes to the Department's database for tracking permits, licenses and inspections.

(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

None were developed.

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained?

The regulations go into effect upon publication in the Pennsylvania Bulletin, which is tentatively scheduled to occur in June, 2001. Blasting activities will be expected to comply at that time. Certain aspects of the regulations contain provisions that allow three years to comply.

(31) Provide the schedule for continual review of the regulation.

These regulations will be revised in accordance with the sunset review schedule published by the Department.

FACE SHEET  
FOR FILING DOCUMENTS  
WITH THE LEGISLATIVE REFERENCE BUREAU  
(Pursuant to Commonwealth Documents Law)

RECEIVED

2000 MAY 17 PM 3:30

LEGISLATIVE REGULATORY  
REVIEW COMMISSION

#2120

DO NOT WRITE IN THIS SPACE

Copy below is hereby approved as to  
form and legality. Attorney General

*Cristina J. Caputo*  
DEPUTY ATTORNEY GENERAL

MAY 05 2000

DATE OF APPROVAL

Check if applicable  
Copy not approved. Objections  
scheduled.

Copy below is hereby certified to be a true and correct copy  
of a document issued, prescribed or promulgated by:

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL QUALITY BOARD

(AGENCY)

DOCUMENT/FISCAL NOTE NO. 7-349

DATE OF ADOPTION:

BY:

*James M. Seif*

TITLE: JAMES M. SEIF, CHAIRMAN  
(EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)

Copy below is hereby approved as to  
form and legality. Executive or Independent  
Agency.

*R. E. Grimaldi*  
BY:

4/13/00  
DATE OF APPROVAL

(Deputy General Counsel)  
(~~Chief Counsel, Independent Agency~~)  
(Strike inapplicable title)

Check if applicable. No Attorney General  
approval or objection within 30  
days after submission.

NOTICE OF  
PROPOSED RULEMAKING  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL QUALITY BOARD

Licensing of Blasters and Storage, Handling and Use of Explosives

25 Pa. Chapters 210 and 211

**Notice of Proposed Rulemaking  
Department of Environmental Protection  
Environmental Quality Board**

**Preamble**

The Environmental Quality Board (Board) proposes to amend 25 *Pa. Code* Chapter 210 (relating to use of explosives) and Chapter 211 (relating to storage, handling and use of explosives) as set forth in Annex A. The amendments will rename these chapters and modernize and clarify the Department's blasting regulations. As more fully explained below, the proposed amendments to Chapter 210 will significantly improve the process and criteria for obtaining and retaining a blaster's license. The proposed amendments to Chapter 211 are a comprehensive modernization of the standards and procedures for handling, storing and using explosives.

This proposal was adopted by the Board at its meeting of March 21, 2000.

**A. Effective Date**

These amendments will go into effect upon publication in the *Pennsylvania Bulletin* as final rulemaking.

**B. Contact Persons**

For further information contact J. Scott Roberts, Director, Bureau of Mining and Reclamation, P.O. Box 8461, Rachel Carson State Office Building, Harrisburg, PA 17105-8461, (717) 787-5103, or Marc Roda, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8646, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Information regarding submitting comments on this proposal appears in Section I of this preamble. Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users). This proposal is available electronically through the DEP Web site (<http://www.dep.state.pa.us>).

**C. Statutory Authority**

The proposed rulemaking is being made under the authority of:

- (1) Sections 3 and 7 of the Explosives Act of 1937 and Section 3 of the Explosives Act of 1957 (73 P.S. §§ 157, 161 and 166), and Reorganization Plan No. 8 of 1981 (71 P.S. §751-35), which authorizes the Department to promulgate implementing regulations for the licensing of blasters and the use, storage and handling of explosives in most contexts other than mining.
- (2) Section 2(f) of the General Safety Law (43 P.S. §25-2(f)) and Reorganization Plan No. 2 of 1975 (71 P.S. §751-22) which authorizes the promulgation of regulations addressing, *inter alia*, the use, handling and storage of explosives in underground noncoal mining.

- (3) Section 4(b) of the Surface Mining Conservation and Reclamation Act and Section 11(e) of the Noncoal Surface Mining Conservation and Reclamation Act (52 P.S. §1396.4(b) and 3311(e)), which direct the Department to promulgate regulations concerning the handling and use of explosives at coal and noncoal surface mine sites as well as the licensing of blasters.
- (4) Sections 1917-A and 1920-A(b) of the Administrative Code of 1929 (71 P.S. §§ 510-17 and 20(b)) which authorizes the Board to adopt regulations to prevent the occurrence of a nuisance and to formulate, adopt and promulgate such regulations as are necessary for the Department to perform its work.

#### **D. Background and Purpose**

This regulatory package revises the current explosive regulatory program. The regulation of explosives presents a unique blend of health, safety and environmental concerns. These regulations ensure that only qualified individuals are authorized to use explosives. They contain provisions for the safe storage of explosives, including standards for storage containers and structures and distances from railways, buildings and highways. Public and private buildings and structures will be protected from the adverse effects of blasting by limits placed on ground vibration and air-overpressure. Finally, safety procedures are established for the benefit of the general public, those working in blast areas and the blasters themselves.

These regulations will establish minimum standards for explosives used in all aboveground operations including coal and noncoal mining, construction and demolition. The rulemaking does not apply to underground coal mining, or the use, handling or storage of explosives in underground noncoal mines. Currently, separate regulations exist for anthracite coal mining, bituminous coal mining, and noncoal mining. To the extent that these separate regulations contain requirements that are comparable to, but less stringent than provisions in Chapter 211, they will be superseded by the more stringent provisions in Chapter 211. In addition to complying with the requirements of Chapters 210 and 211, persons using explosives must comply with any other applicable provisions of Pennsylvania Law or implementing regulations. For example, persons planning to use explosives in the waters of the Commonwealth for engineering purposes must obtain a permit from the Fish Commission, 30 Pa.C.S.A. 2906 (relating to permits for use of explosives).

The Federal Government regulates some aspects of explosives. The Bureau of Alcohol, Tobacco and Firearms (ATF) regulates the storage and interstate sale and purchase of explosives. The Office of Surface Mining (OSM) has the authority to regulate the use of explosives at coal mines, however, the Department has received a primary delegation of authority to regulate the use of explosives at coal mines. Finally, the Federal Highway Administration (FHA) regulates the transportation of explosives.

The Mining and Reclamation Advisory Board (MRAB) was involved during the development of the proposed regulations. The regulatory changes were reviewed and discussed with the MRAB's Regulation, Legislation and Technical Committee on August 10, 1999. The Board recommended that the EQB approve the amendments as proposed rulemaking at its

meeting on October 21, 1999. During the meeting the MRAB asked the Department to clarify two issues. The Department discussed these issues with the MRAB at its meeting on January 6, 2000. The MRAB first asked if seismic monitoring could occur “between” the blast location and the closest dwelling instead of “at” the closest dwelling. The Department explained that it normally requires monitoring at the structure to be protected, but in unusual cases the Department will allow monitoring at other locations. The other issue concerned a possible conflict with the mining requirements for analyzing seismic records. The Department explained that it intends to make appropriate revisions to the mining regulations once the EQB has taken final action on this rulemaking. Following this discussion, the MRAB unanimously approved the proposed regulation.

**E. Summary of Regulatory Requirements**

The existing text in Chapters 210 and 211 is being deleted in its entirety. The proposed revisions rename these chapters which only contain new text. The following is a description of the proposed sections along with a brief discussion of the changes. Federal counterpart regulations are identified where they exist.

**CHAPTER 210. BLASTERS’ LICENSES**

Sections 210.1-210.6 are deleted in their entirety.

*§ 210.11 Definitions.*

Section 210.11 defines the following terms: blaster, blaster learner, blaster’s license, and person.

*§ 210.12 Scope.*

Section 210.12 provides that, Chapter 210 applies to all persons responsible for blasting activities at surface coal mines, noncoal surface and underground mines, construction, demolition and all other industrial applications.

*§ 210.13 General.*

Subsection (a) requires any person, which by definition is limited to natural persons, who detonates explosives to have a blaster’s license. Subsection (b) gives the Department authority to waive this requirement for blasts involving extremely small amounts of explosives for industrial or research purposes. Subsection (c) requires a blaster to show his or her license when requested by specific authorities. Subsection (d) prohibits transfers of blaster licenses.

*§ 210.14 Eligibility Requirements.*

Section 210.14 retains the existing qualifications for a blaster’s license: The applicant must have one year of experience in preparing blasts; must take the Department’s course on explosives; and must pass the licensing examination. In addition, the minimum age has been raised to 21 years. The U.S. Highway Administration requires operators who transport

explosives to be at least 21 years old. The Department believes it is appropriate to adopt the Highway Administration's age requirement because the responsibilities of a blaster are more significant than those of a vehicle operator.

Section 210.14 will, for the first time, prohibit the Department from issuing or renewing a blaster's license unless the person is of good moral character. Given the extremely dangerous capabilities of explosives, the Department believes that persons with proven violent tendencies should not be authorized to handle explosives. Further, a license will not be issued or renewed to a person who has demonstrated an unwillingness or lack of intention to comply with the Department's blasting regulations.

*§ 210.15 License Application.*

Section 210.15 retains the current application requirements. The application must be on a form prepared by the Department, be complete, include a \$50 fee and be submitted to the Department at least two weeks prior to the examination. The application must also include documentation of the applicant's experience including an assessment from the applicant's supervisor as to whether the applicant has sufficient experience in the type of blasting operations for which a license is being sought.

*§ 210.16 Examinations.*

The Department will continue to schedule and conduct the blaster license examinations. As under the current regulations, an applicant who misses the examination without prior notice and except for good cause, such as illness, forfeits the application fee. In lieu of refunding the fee, the Department may issue a credit for a future examination.

*§ 210.17 Issuance and Renewal of Licenses.*

Section 210.17 gives the Department the authority and responsibility for specifying the different types of blaster licenses. The general license no longer applies to blasting at demolition sites or underground noncoal mines. In the Department's experience, experience gained in other types of blasting does not sufficiently prepare an individual to blast at a demolition site or at an underground noncoal mine. The proposed regulation still requires compliance with all of the eligibility requirements if the license is to be amended to include another category of blasting.

Under the proposed Section 210.17 the blaster's license will be issued for three years rather than one year. In the Department's experience, requiring licenses to be renewed annually imposes unnecessary paperwork on blasters and the Department. The Department has adequate authority to suspend those few individuals who do not follow the applicable regulations.

To renew a blaster's license, the proposed Section 210-17 requires the applicant to obtain eight hours of continuing education during the three-year term of the license. This provision is designed to ensure that blasters remain current with the technology and regulations affecting their industry. Industry and the public have expressed their support for this proposal. The current fee for renewing a blaster's license is \$10 per year. The fee for renewing this three-year

term license will be \$30. Finally, the proposed Section 210.17 will require any person who fails to renew a license within one year of its expiration date to requalify for that license.

*§ 210.18 Recognition of Out-of-State Blaster's License.*

This new provision will allow the Department to recognize another state's decision to license a blaster as proof of adequate training and experience. The basis for recognizing an out-of-state license will be whether the other state's program training and examination requirements are essentially equal to those required by these regulations.

*§ 210.19 Suspension, Modification and Revocation.*

This section describes the Department's authority to issue orders suspending, modifying or revoking a blaster's license. The proposed regulation allows the licensee an informal meeting to discuss the facts and issues related to the order.

**CHAPTER 211. PROVISIONS FOR THE USE,  
STORAGE AND HANDLING OF EXPLOSIVES IN SURFACE APPLICATIONS**

This chapter establishes standards and procedures for permitting and performing blasting activities. For clarity, §§ 211.1-211.88 are deleted in their entirety, and new regulations begin with § 211.101. The proposed chapter is divided into eight subchapters.

*Subchapter A. General Provisions*

*§ 211.101 Definitions.*

This section defines the key terms used in Chapter 211. Many of the terms have been modified from the existing regulations, several terms have been deleted, and new terms have been added. Following is a summary of changes to this section:

*"Airblast"*

This is the airborne shock wave from an explosion. The proposed definition set limits on airblast.

*"Blast area"*

This is a new term for the area which must be cleared to prevent injury or damage to persons or property. This term has been added for clarity because the proposed regulations impose certain obligations on blasting activity permittees and blasters to prevent injury and damage to persons or property in the area surrounding the blast site.

*"Blaster"*

The term “licensed blaster” was changed to “blaster” to eliminate redundancy. By definition, a person who is a blaster is licensed by the Department to be a blaster.

*“Blaster-in-charge”*

The blaster-in-charge is a new term. It means the blaster responsible for ensuring that all aspects of a particular blast comply with the applicable standards in this chapter. Based on its experience, the Department believes it is necessary to have only one person in control of the blasting activities for the safe and proper performance of a blast.

*“Blasting activity”*

This new term is defined broadly to include all aspects of preparing, performing and reporting on a blast. This term is added because the Department believes it is necessary to require a permit for all blasting activities.

*“Blast site”*

The blast site is the area where the blast is being set. This new term is defined for clarity because the proposed regulations establish requirements for activities within the blast site.

*“Building”*

The definition for building has been broadened and simplified. Unnecessary and redundant language has been eliminated. A building is broadly defined to include all structures used by humans. It now includes buildings that are used in the manufacture of explosives and explosives components.

*“Delay interval”*

This term has been reworded for clarity.

*“Demolition activity”*

Demolition activity is the wrecking of a building or structure with explosives. The term is added because of provisions expressly addressing demolition activities.

*“Detonator”*

Detonator is broadly defined to be any device that uses an explosive to initiate an explosion. The term is added because the proposed regulations place unique requirements on the transportation of detonators.

*“Explosive”*

The proposed regulations continue to define explosive broadly. Almost any material that can cause an explosion or is used to ignite an explosion is an explosive. The definition has been modified to exempt from regulation as an explosive materials such as smokeless powder, commercially manufactured black powder and percussion caps used for sporting events or firearms.

*“Flyrock”*

Flyrock is defined to be any material ejected from the blast site due to the force of the explosion.

*“Magazine”*

This definition has been simplified to include any structure used to store explosives.

*“Misfire”*

A misfire is an incomplete detonation of explosives.

*“Particle velocity” and “Peak particle velocity”*

Particle velocity is the speed at which a particle of ground vibrates in response to a blast. Peak particle velocity is the maximum intensity of particle velocity. The terms are defined because of their use in § 211.151 (relating to prevention of damage).

*“Purchase”*

Purchase is defined as acquiring ownership of explosives. The definition is added for clarity.

*“Sale or sell”*

Sale or sell is defined simply to be a transfer of ownership to another person. The definition is added for clarity.

*“Scaled distance (Ds)”*

Scaled distance is a factor that relates the weight of explosives to distance, usually to the nearest protected structure. The term is defined because of its use in determining the potential for damage and the need for seismic monitoring.

*“Structure”*

This new term is defined broadly as everything that is built or constructed. The prevention of damage provisions of this chapter are directed at structures.

*“Utility lines”*

Generally, utility lines include pipelines, power lines, cables and transmission lines. This new definition is necessary for proper implementation of the provisions for protecting these facilities.

The following terms are not retained in the proposed regulations because they are no longer used. These terms are: “actual distance,” “approved,” “barricade,” “establishment,” “explosive plant,” “factory building,” “highway,” “railroad,” and “vehicle.”

*§ 211.102 Scope.*

The requirements of this chapter apply to the use, storage and handling of explosives in all contexts except underground mining. Even in the underground mining context, this Chapter applies to the storage of explosives on the surface at an underground noncoal mine. Finally, any provision of this Chapter that is more stringent than the comparable provision in the coal or noncoal surface mining blasting regulations supersedes and preempts that regulation.

*§ 211.103 Enforcement Actions.*

As with all regulatory programs, the Department has the authority to issue such orders as are necessary to enforce the implementing regulations. However, before issuing an order modifying the peak particle velocity or air blast limit in a permit, the permittee will be given an opportunity to discuss the proposed modifications with the Department.

*Subchapter B. The Classification and Storage of Explosives*

*§ 211.111 Scope.*

This subchapter establishes the standards and procedures for licensing and maintaining explosive storage magazines. It also specifies how explosives are to be classified.

*§ 211.112 Magazine License and Fees.*

This section contains the existing requirements for licensing magazines as well as the fee structure. The key requirements include that no magazine may be constructed or modified until the Department has approved the license or proposed modification. The license will be valid for a period of one year, will specify the types and quantities of explosives to be stored, and will contain such conditions as are necessary to ensure compliance with applicable statutes and the requirements of this chapter.

*§ 211.113 Application Contents.*

Except for a site map, the existing regulations do not specify what information is to be included in the application. Proposed § 211.113 specifies the information to be included in

applications to obtain, renew or modify a magazine license. All applications must identify the applicant and contact person for the applicant as well as the types and quantities of explosives to be stored at the facility. In addition, applications to obtain or modify a license shall also include plans depicting the site and the magazine.

*§ 211.114 Displaying the License.*

This section contains the existing requirement that the magazine license or a legible copy of it be displayed at the magazine.

*§ 211.115 Standards for Classifying and Storing Explosives and Constructing, Maintaining and Siting Magazines*

The proposed regulations do not retain the existing classifications for explosives and standards for siting, constructing, and maintaining explosive magazines. Instead, this section is proposed to incorporate by reference the United States Department of the Treasury's Bureau of Alcohol, Tobacco and Firearms' regulations found at 27 CFR Part 55 Subpart K (relating to commerce in explosives) ("ATF regulations"). The standards in the ATF regulations ensure that magazines are constructed, sited and maintained in a manner that protects the public's health, safety and welfare. Therefore, maintaining different and possibly more stringent standards for storing explosives than contained in the ATF regulations merely imposes additional costs on industry without providing any additional protections to the public.

The ATF regulations establish five categories of explosives and specify standards for constructing a magazine to house each type of explosive. Siting criteria for each type of magazine ensures that the public is protected from harm if there is an explosion at the magazine. A variance provision allows the Department to approve magazines other than those specified in the regulations on a case-by-case basis. However, the proposed regulations do not incorporate by reference the variances issued by the Federal government under the ATF regulations. In the Department's experience many of the variances issued under the ATF regulations do not adequately protect the public from the hazards posed by storing explosives.

*Subchapter C. Permits*

*§ 211.121 General Requirements*

The proposed Section 211.121 retain the requirement that the purchase and sale of explosives must be authorized by a permit. The purchase and sale permits are primarily used for tracking the ownership of explosives. The Department proposes to directly regulate the use of explosives through a blasting activity permit. The requirement for a blasting activity permit will only affect the use and handling of explosives in the nonmining context. Surface mining permits will continue to regulate the use of explosives at surface mine sites. Finally, the purchase, sale and use of fireworks is not subject to the requirements of this chapter.

To obtain a purchase, sale or blasting activity permit, the application must demonstrate that the proposed activity complies with the requirements of this Chapter. The Department will not issue a purchase, sale or blasting activity permit to a person who either is currently in

violation of any provision of this Chapter or a permit issued thereunder, or who has demonstrated an unwillingness or inability to properly perform the activities authorized by these permits.

*§ 211.122 Permits to Sell Explosives.*

Under the proposed Section 211.122, the permit to sell is a tracking mechanism to identify who is selling what explosives in Pennsylvania. The sale permit will continue to be nontransferable, expire on April 30 of each year and be renewable. The proposed regulations require the permit application to identify the applicant, the type of business, the types of explosives to be sold, whether the applicant is the manufacturer of the explosives, and if applicable, the license number of the magazine used to store the explosives.

*§ 211.123 Permits to Purchase Explosives.*

The proposed Section 211.123 retains the requirement that the person who purchases explosives must have a purchase permit. Persons purchasing explosive services will no longer be required to obtain a purchase permit. In the Department's experience, the purchase permit is not an effective mechanism for tracking and controlling the use of explosives. As explained below, the new blasting activity permit will be the mechanism for regulating the use of explosives.

The purchase permit application will no longer be required to identify all blasters working for the permittee. This information is now irrelevant because the permit is simply a mechanism for tracking and controlling who can purchase explosives. The application must identify the purchaser, a contact person, the location of storage magazine, the types and quantities of explosives purchased, and whether the explosives are being purchased for resale or use.

As with the existing regulations, purchase permits are not transferable. In addition, they are effective for a maximum of 12 months, terminating on April 30. The proposed regulations will expressly allow persons to act under an expired permit, provided a complete renewal application was submitted by April 30.

*§ 211.124 Blasting Activity Permits.*

The new blasting activity permit controls where and how blasting activities occur. The requirement for a permit is only new for blasting in nonmining operations. Blasting at coal and noncoal surface mines will continue to be authorized by the surface mining permit.

At a minimum, the application for a blasting activity permit must identify the applicant, the types and quantities of explosives to be used, the purpose of the blasting activity, the location and timing of the blasts, the duration of the blasting activity, how monitoring will be conducted, and the blaster who prepared the application. The application should contain any other information necessary to demonstrate that the proposed activity will comply with the applicable requirements of this Chapter. There is no fee for a blasting activity permit.

Section 211.124 also imposes on blasting activity permittees two obligations not contained in the existing regulations. First, notice of the proposed blasting activity must be

given to persons who could be affected by the proposed blasting activity. This was an issue raised by the Citizens Advisory Council and discussed at the meeting of the MRAB. This requirement is a result of that discussion. This provision will ensure that, just as with blasting at surface mines, persons who could be affected by blasting at nonmining operations are provided notice of that activity. Second, the blasting activity permittee must possess general third-party liability insurance of at least \$300,000 per occurrence. Again, as in the surface mining context, this insurance requirement is necessary to ensure that damage due to blasting is corrected.

The blasting activity permit is not transferable. It identifies who can operate under the permit and the types of explosives, the duration of the permit, and limits on peak particle velocity and air blasts. The permit will contain any other conditions the Department considers necessary to ensure compliance with the law.

*§ 211.125 Blasting Activity Permit-by-Rule.*

The Department recognizes that a full blasting activity permit is not needed for small blasts. Further, the Department believes it is reasonable to give permit applicants the ability to continue their operation by conducting small-scale blasting while their permit application is pending. Therefore, this proposal establishes a permit-by-rule (“PBR”) for small blasting activities.

To be small enough to qualify for this PBR the blast must have a scale distance of at least 90, not use more than 15 pounds (6.81 kilograms) of explosives per delay interval of less than eight milliseconds, and must not use more than 150 pounds per blast (68.18 kilograms). The permittee must notify the Department before blasting activity can occur. Notices can be given orally, but they must be confirmed in writing. The information in the notice will identify the permittee and the activity for the Department to ensure that it does not pose a risk of damage to people or property. Finally, the Department can revoke a PBR if the permittee fails to comply with the applicable regulations or the blasting activity proves to be sufficiently dangerous to warrant an individual permit.

*Subchapter D. Records of Disposition of Explosives*

The proposed regulations in this subchapter specify the record-keeping requirements applicable to sales, purchase and blasting activity permittees. This chapter no longer contains the requirement that a competent person maintain a daily inventory of all explosives used or received in the field. The existing language is unclear and creates an unnecessary and ambiguous obligation.

*§ 211.131 Sales Records.*

Section 211.131 retains the requirement that the seller maintain a record of all sales of explosives. The retention time has been extended from two to three years to be consistent with other record-keeping requirements of this chapter. The proposed Section 211.131 simply requires the seller to identify the purchaser and the types of explosives sold. In the Department's experience, the existing requirement to identify the vehicle, the person picking up the explosives, and that person's business is not relevant.

*§ 211.132 Purchase Records.*

The proposed Section 211.132 requires purchasers of explosives to keep a record of when they buy explosives and from whom. The record will assist in tracking the disposition and use of explosives.

*§ 211.133 Blast Report.*

The proposed Section 211.133 establishes a requirement to prepare a blast report to provide the Department with sufficient information to reconstruct the conditions and events surrounding a blast. This information is essential if the Department is to effectively investigate incidents at blast sites and damage complaints. To ensure the accuracy of these reports, the blaster-in-charge is responsible for the blast report. This is because the blaster-in-charge is responsible for ensuring that all aspects of the blast conform to the regulations. The time for retaining these reports is extended from two to three years. Broadly speaking, as with the existing regulations, the report must identify who did the blasting, where and when the blasting occurred, how the blast was designed and detonated, and where the monitoring was done.

The time for generating and attaching the monitoring record to the blast plan is reduced from thirty to seven days. This reduction in time will enable the Department to respond more quickly to complaints of blast damage. As explained below, the proposed Section 211.133 requires the use of modern monitoring instruments that generate reports data that do not have to be analyzed by a third party. However, some permittees may need some time to acquire these monitoring instruments. Therefore, the requirement that monitoring reports be attached within seven days does not become effective until three years after these proposed regulations go into effect. In the Department's opinion, the cost savings from not having to analyze monitoring reports outweighs the cost of acquiring new equipment.

*Subchapter E. Transportation of Explosives*

*§ 211.141 General Requirements.*

This proposed Section 211.141 establishes the requirements for loading and holding explosives in vehicles. This proposal restates requirements in the current regulations. However, in the Department's experience, some of the transportation requirements in the existing regulations are unnecessary and have not been included in this proposal.

### *Subchapter F. Blasting Activities*

This subchapter establishes the requirements for preparing and conducting a blast.

#### *§ 211.151 Prevention of Damage.*

This regulation retains the requirement that blasting be conducted so as not to cause flyrock or damage to real property not owned by the permittee. If damage to property or flyrock should occur, the Department must now be notified within four hours of the occurrence. This notification is necessary if the Department is to make an effective and timely investigation of the incident.

Subsection 211.151(c) establishes limits on ground vibration. Currently, there are different standards for blasting at noncoal, bituminous and anthracite surface mines. The standards for bituminous surface coal mines are consistent with the comparable Federal standards for coal mining. In the Department's experience these standards do not adequately protect nearby buildings from damage by ground vibration. Consequently, the Department proposes the standard described below to ensure that blasting in any context will not cause damage to surrounding buildings.

All blasts shall be performed and conducted to achieve either a scaled distance of 90 or meet the ground vibration limits (peak particle velocity) established in Figure 1 of Subsection 211.151(c). Scaled distance is derived from the amount of explosives and distance to the nearest structure. A higher scaled distance will have less effect on adjacent structures. A scaled distance of 90 is more restrictive than counterpart Federal regulations for coal mining and will require operators to conduct more monitoring. This higher scaled distance will ensure that the blast will meet the lower allowable vibration limit in Figure 1 of Subsection 211.151(c) and will not cause damage.

Figure 1, Subsection 211.151(c), establishes a variable ground vibration limit. This limit is based on frequency. The former U.S. Bureau of Mines (BOM), in Report of Investigation 8507, recommended this method to regulate blast vibration. According to the BOM, if ground vibration is below this limit, there is essentially no probability of damage to structures located near the blasts.

Subsection 211.151(d) establishes an airblast limit for blasts. Airblast, if high enough, can break windows. Previous to this regulation, airblast limits applied only to mining operations. This regulation uses the proven regulation of airblasts in mining operations and establishes a statewide limit for all blasting operations.

If necessary, the Department can establish a more stringent peak particle velocity or scaled distance limit or airblast limit. Such a reduction in limits would be based upon site-specific factors such as the density and age of structures and the frequency of blasting.

*§ 211.152 Control of Noxious Gases.*

This new provision results from several reported occurrences of gases from construction blasting migrating through the soil and bedrock to nearby homes.

*§ 211.153 General Requirements for Handling Explosives.*

This section deals with the safe handling of explosives to prevent accidental detonation. It restates the existing requirements.

*§ 211.154 Preparing the Blast.*

This section contains many provisions from the current regulations. It also adds the requirement that the blasting activity permittee designate a blaster-in-charge.

*§ 211.155 Preblast Measures.*

A standard warning signal is being proposed for all blasting operations. Warning signals have been required for all blasting operations, but there has never been any standardization of these signals. This has been confusing for individuals who visit many different operations. A warning signal in one operation could be the all-clear signal for another operation. Standardized signals will make all operations safer.

*§ 211.156 Detonating the Blast.*

This section adds a new requirement that allows only the blaster-in-charge to detonate a blast.

*§ 211.157 Postblast Measures.*

A standardized all-clear signal is being proposed in this section. Standardized all-clear signals will ensure that all persons working on blasting operation, will know that a blast has been detonated and it is safe to resume other activities.

*§ 211.158 Mudcapping.*

This provision is a carry-over from the current regulations.

*§ 211.159 Electric Detonation.*

This section proposes to require blasting machines, which provide the electric power for detonation, to have a sticker showing that they have been properly tested.

*§ 211.160 Non-Electric Detonation.*

This is a new provision. It requires non-electric initiation or detonation systems to be checked for proper installation.

*§ 211.161 Detonating Cords.*

The requirements for the safe use of detonating cord, have been rewritten to clarify the language dealing with how detonating must be used.

*§ 211.162 Safety Fuse.*

The requirements for the safe handling of safety fuse have been rewritten to clarify the language dealing with testing the rate at which fuse burns.

*Subchapter G. Requirements for Monitoring*

*§ 211.171 General Provisions for Monitoring.*

This regulation proposes trigger levels for automated seismographs. The purpose of a seismograph is to ensure that vibration and airblast are below the compliance limits. Therefore, this regulation establishes a ground vibration trigger level at 50% of the compliance option.

*§ 211.172 Monitoring Instruments.*

The standards for seismographs have been updated. The standards for calibrating instruments have been expanded.

*§ 211.173 Monitoring Records.*

Seismographs are used to monitor and record the effects of blasts. Given the importance of this information, this proposal requires that a competent individual train those who operate seismographs.

Subsection (b) identifies the acceptable methods for determining the frequency component of a ground vibration waveform. The frequency component of a waveform is a factor in regulatory compliance. The methods most commonly used to determine frequency in blasting are called the “half-cycle zero crossing analysis” and the “single degree of freedom response spectrum”. Therefore, these methods have been proposed in these regulations.

Because this regulation establishes a vibration limit based on frequency, a particle velocity verses frequency plot is needed to determine compliance. Therefore, paragraph (b)(6) includes such a plot as part of the monitoring requirements.

*Subchapter H. Blasting Activities near Utility Lines*

*§ 211.181 Scope.*

This new Subchapter contains standards for blasting near underground utility lines.

*§ 211.182 General Provisions.*

This new section requires blasts near utility lines to be designed to minimize vibration and ground movement. The section also sets standards for the diameter and depth of blast holes and for the types of explosives.

**F. Benefits, Costs and Compliance**

Executive Order 1996-1 requires a cost/benefit analysis of the proposed regulation.

**Benefits**

The changes to these regulations are designed to modernize an outdated explosives regulatory program. The explosives industry will benefit because current products and technologies are addressed in a manner that is consistent with their current use. Citizens will benefit because this proposal establishes limits on ground vibration and airblast that are designed to prevent damage to structures. In addition, annoyance from unexpected blasts will be reduced because the public will be notified prior to the commencement of most blasting operations. Additionally, the public and blasting industry will benefit from the continuing education that is required for renewing a blaster's license.

**Compliance Costs**

The explosives industry will see an increase in the cost of compliance because of the requirement for continuing education for blasters. The new requirement for general liability insurance is not expected to create a significant increase in costs, since most blasting companies currently carry liability insurance. This regulation requires more monitoring than previously required. However, because the records produced from the monitoring no longer require analysis or verification by an independent third party, cost savings will be realized. These savings can be used by the operator to purchase additional modern monitoring equipment that provides more information more quickly. There is no change to the current fee structure.

**Compliance Assistance Plan**

The Department will provide written notification of these changes to all Pennsylvania licensed blasters. Outreach sessions are planned with the Pennsylvania chapters of the International Society of Explosive Engineers and various mining organizations. If requested, public meetings will be scheduled to share this information with concerned citizens, industry representatives or others.

**Paperwork Requirements**

This proposal will result in a slight increase in paperwork. Licensed blasters will be required to document their continuing education. The new blasting activity permit will require a new application form. Additional information will be required in the post-blast report.

**G. Sunset Review**

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

**I. Regulatory Review**

Under Section 5(a) of the Regulatory Review Act (71 P.S. §745.5(a)), on May 17, 2000, the Department submitted a copy of the proposed amendments to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the House and Senate Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department in compliance with Executive Order 1996-1, "Regulatory Review and Promulgation." A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, if IRRC has objections to any portion of the proposed amendments, it will notify the Department within 10 days of the close of the Committees' review period. The notification shall specify the regulatory review criteria that have not been met by the portion of the proposed amendments to which an objection is made. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the amendments; by the Department, the General Assembly and the Governor of objections raised.

**J. Public Comments**

**Written Comments** - Interested persons are invited to submit comments, suggestions, or objections regarding the proposed regulation to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 15th Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions or objections must be received by the Board by August 2, 2000 (within 60 days of publication in the *Pennsylvania Bulletin*). Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received by August 2, 2000 (within 60 days following publication in the *Pennsylvania Bulletin*). The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final regulation will be considered.

**Electronic Comments** - Comments may be submitted electronically to the Board at RegComments@dep.state.pa.us and must also be received by the Board by August 2, 2000. A subject heading of the proposal and a return name and address must be included in each transmission. If an acknowledgment of electronic comments is not received by the sender within two working days, the comments should be retransmitted to ensure receipt.

**K. Public Hearings**

The Environmental Quality Board will hold four public hearings for the purpose of accepting comments on this proposal. The hearings will be held at 1:00 p.m. as follows:

- |               |   |
|---------------|---|
| July 5, 2000  | Greensburg Four Points Sheraton<br>100 Sheraton Drive (Route 30 East)<br>Greensburg, Pa.                            |
| July 6, 2000  | Holiday Inn - Clarion<br>I-80 at Route 68<br>Clarion, Pa.   |
| July 11, 2000 | Best Western - Exton Hotel<br>and Conference Center<br>815 North Pottstown Pike (at Turnpike Exit 23)<br>Exton, Pa. |
| July 12, 2000 | Quality Hotel<br>100 South Centre Street<br>Pottsville, Pa.   |

Persons wishing to present testimony at a hearing are requested to contact Joan Martin at the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least one week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to ten minutes for each witness. Witnesses are requested to submit three written copies of their oral testimony to the hearing chairperson at the hearing. Organizations are limited to designating one witness to present testimony on their behalf at each hearing.

Persons in need of accommodations as provided for in the Americans With Disabilities Act of 1990 should contact Joan Martin directly at (717) 787-4526 or through the Pennsylvania AT&T Relay Service at 1-800-654-5984 (TDD) to discuss how the Department may accommodate their needs.

BY:

JAMES M. SEIF  
Chairman  
Environmental Quality Board

Persons filing Form 6 applications for the importation of plastic explosives on or after April 24, 1997, shall attach to the application the following written statement, prepared in triplicate, executed under the penalties of perjury:

(a) "I declare under the penalties of perjury that the plastic explosive to be imported contains a detection agent as required by 27 CFR 55.180(b)"; or

(b) "I declare under the penalties of perjury that the plastic explosive to be imported is a "small amount" to be used for research, training, or testing purposes and is exempt from the detection agent requirement pursuant to 27 CFR 55.182."  
[T.D. ATF-387, 62 FR 8377, Feb. 25, 1997]

#### Sec. 55.184 Statements of process and samples.

(a) A complete and accurate statement of process with regard to any plastic explosive or to any detection agent that is to be introduced into a plastic explosive or formulated in such plastic explosive shall be submitted by a licensed manufacturer or licensed importer, upon request, to the Director.

(b) Samples of any plastic explosive or detection agent shall be submitted by a licensed manufacturer or licensed importer, upon request, to the Director.

(Paragraph (a) approved by the Office of Management and Budget under control number 1512-0539)

[T.D. ATF-387, 62 FR 8378, Feb. 25, 1997]

#### Sec. 55.185 Criminal sanctions.

Any person who violates the provisions of 18 U.S.C. 842(1)-(o) shall be fined under title 18, U.S.C., imprisoned for not more than 10 years, or both.

[T.D. ATF-387, 62 FR 8378, Feb. 25, 1997]

#### Sec. 55.186 Seizure or forfeiture.

Any plastic explosive that does not contain a detection agent in violation of 18 U.S.C. 842(1)-(n) is subject to seizure and forfeiture, and all provisions of 19 U.S.C. 1595a, relating to seizure, forfeiture, and disposition of merchandise introduced or attempted to be introduced into the U.S. contrary to law, shall extend to seizures and forfeitures under this subpart. See Sec. 72.27 of this chapter for regulations on summary destruction of plastic explosives that do not contain a detection agent.

[T.D. ATF-387, 62 FR 8378, Feb. 25, 1997]

[[Page 747]]

### Subpart K--Storage

#### Sec. 55.201 General.

(a) Section 842(j) of the Act and Sec. 55.29 of this part require that the storage of explosive materials by any person must be in accordance with the regulations in this part. Further, section 846 of this Act authorizes regulations to prevent the recurrence of accidental explosions in which explosive materials were involved. The storage standards prescribed by this subpart confer no right or privileges to store explosive materials in a manner contrary to State or local law.

(b) The Director may authorize alternate construction for explosives storage magazines when it is shown that the alternate magazine construction is substantially equivalent to the standards of safety and

security contained in this subpart. Any alternate explosive magazine construction approved by the Director prior to August 9, 1982, will continue as approved unless notified in writing by the Director. Any person intending to use alternate magazine construction shall submit a letter application to the regional director (compliance) for transmittal to the Director, specifically describing the proposed magazine. Explosive materials may not be stored in alternate magazines before the applicant has been notified that the application has been approved.

(c) A licensee or permittee who intends to make changes in his magazines, or who intends to construct or acquire additional magazines, shall comply with Sec. 55.63.

(d) The regulations set forth in Secs. 55.221 through 55.224 pertain to the storage of special fireworks, pyrotechnic compositions and explosive materials used in assembling fireworks.

(e) The provisions of Sec. 55.202(a) classifying flash powder and bulk salutes as high explosives are mandatory after March 7, 1990: Provided, that those persons who hold licenses or permits under this part on that date shall, with respect to the premises covered by such licenses or permits, comply with the high explosives storage requirements for flash powder and bulk salutes by March 7, 1991.

[T.D. ATF-87, 46 FR 40384, Aug. 7, 1981, as amended by T.D. ATF-293, 55 FR 3722, Feb. 5, 1990]

#### Sec. 55.202 Classes of explosive materials.

For purposes of this part, there are three classes of explosive materials. These classes, together with the description of explosive materials comprising each class, are as follows:

(a) High explosives. Explosive materials which can be caused to detonate by means of a blasting cap when unconfined, (for example, dynamite, flash powders, and bulk salutes). See also Sec. 55.201(e).

(b) Low explosives. Explosive materials which can be caused to deflagrate when confined, (for example, black powder, safety fuses, igniters, igniter cords, fuse lighters, and "special fireworks" defined as Class B explosives by U.S. Department of Transportation regulations in 49 CFR part 173, except for bulk salutes).

(c) Blasting agents. (For example, ammonium nitrate-fuel oil and certain water-gels (see also Sec. 55.11)).

[T.D. ATF-87, 46 FR 40384, Aug. 7, 1981, as amended by T.D. ATF-293, 55 FR 3722, Feb. 5, 1990]

#### Sec. 55.203 Types of magazines.

For purposes of this part, there are five types of magazines. These types, together with the classes of explosive materials, as defined in Sec. 55.202, which will be stored in them, are as follows:

(a) Type 1 magazines. Permanent magazines for the storage of high explosives, subject to the limitations prescribed by Secs. 55.206 and 55.213. Other classes of explosive materials may also be stored in type 1 magazines.

(b) Type 2 magazines. Mobile and portable indoor and outdoor magazines for the storage of high explosives, subject to the limitations prescribed by Secs. 55.206, 55.208(b), and 55.213. Other classes of explosive materials may also be stored in type 2 magazines.

(c) Type 3 magazines. Portable outdoor magazines for the temporary storage of high explosives while attended (for example, a "day-box"), subject to the limitations prescribed by Secs. 55.206 and 55.213. Other classes of explosives

[[Page 748]]

materials may also be stored in type 3 magazines.

(d) Type 4 magazines. Magazines for the storage of low explosives, subject to the limitations prescribed by Secs. 55.206(b), 55.210(b), and 55.213. Blasting agents may be stored in type 4 magazines, subject to

the limitations prescribed by Secs. 55.206(c), 55.211(b), and 55.213. Detonators that will not mass detonate may also be stored in type 4 magazines, subject to the limitations prescribed by Secs. 55.206(a), 55.210(b), and 55.213.

(e) Type 5 magazines. Magazines for the storage of blasting agents, subject to the limitations prescribed by Secs. 55.206(c), 55.211(b), and 55.213.

#### Sec. 55.204 Inspection of magazines.

Any person storing explosive materials shall inspect his magazines at least every seven days. This inspection need not be an inventory, but must be sufficient to determine whether there has been unauthorized entry or attempted entry into the magazines, or unauthorized removal of the contents of the magazines.

#### Sec. 55.205 Movement of explosive materials.

All explosive materials must be kept in locked magazines meeting the standards in this subpart unless they are:

- (a) In the process of manufacture;
- (b) Being physically handled in the operating process of a licensee or user;
- (c) Being used; or
- (d) Being transported to a place of storage or use by a licensee or permittee or by a person who has lawfully acquired explosive materials under Sec. 55.106.

#### Sec. 55.206 Location of magazines.

(a) Outdoor magazines in which high explosives are stored must be located no closer to inhabited buildings, passenger railways, public highways, or other magazines in which high explosives are stored, than the minimum distances specified in the table of distances for storage of explosive materials in Sec. 55.218.

(b) Outdoor magazines in which low explosives are stored must be located no closer to inhabited buildings, passenger railways, public highways, or other magazines in which explosive materials are stored, than the minimum distances specified in the table of distances for storage of low explosives in Sec. 55.219, except that the table of distances in Sec. 55.224 shall apply to the storage of special fireworks. The distances shown in Sec. 55.219 may not be reduced by the presence of barricades.

(c) (1) Outdoor magazines in which blasting agents in quantities of more than 50 pounds are stored must be located no closer to inhabited buildings, passenger railways, or public highways than the minimum distances specified in the table of distances for storage of explosive materials in Sec. 55.218.

(2) Ammonium nitrate and magazines in which blasting agents are stored must be located no closer to magazines in which high explosives or other blasting agents are stored than the minimum distances specified in the table of distances for the separation of ammonium nitrate and blasting agents in Sec. 55.220. However, the minimum distances for magazines in which explosives and blasting agents are stored from inhabited buildings, etc., may not be less than the distances specified in the table of distances for storage of explosives materials in Sec. 55.218.

[T.D. ATF-87, 46 FR 40384, Aug. 7, 1981, as amended by T.D. ATF-293, 55 FR 3722, Feb. 5, 1990]

#### Sec. 55.207 Construction of type 1 magazines.

A type 1 magazine is a permanent structure: a building, an igloo or 'Army-type structure', a tunnel, or a dugout. It is to be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and

ventilated.

(a) Buildings. All building type magazines are to be constructed of masonry, wood, metal, or a combination of these materials, and have no openings except for entrances and ventilation. The ground around building magazines must slope away for drainage or other adequate drainage provided.

(1) Masonry wall construction. Masonry wall construction is to consist of brick, concrete, tile, cement block, or cinder block and be not less than 6 inches in thickness. Hollow masonry units used in construction must have

[[Page 749]]

all hollow spaces filled with well-tamped, coarse, dry sand or weak concrete (at least a mixture of one part cement and eight parts of sand with enough water to dampen the mixture while tamping in place). Interior walls are to be constructed of, or covered with, a nonsparking material.

(2) Fabricated metal wall construction. Metal wall construction is to consist of sectional sheets of steel or aluminum not less than number 14-gauge, securely fastened to a metal framework. Metal wall construction is either lined inside with brick, solid cement blocks, hardwood not less than four inches thick, or will have at least a six inch sand fill between interior and exterior walls. Interior walls are to be constructed of, or covered with, a nonsparking material.

(3) Wood frame wall construction. The exterior of outer wood walls is to be covered with iron or aluminum not less than number 26-gauge. An inner wall of, or covered with nonsparking material will be constructed so as to provide a space of not less than six inches between the outer and inner walls. The space is to be filled with coarse, dry sand or weak concrete.

(4) Floors. Floors are to be constructed of, or covered with, a nonsparking material and shall be strong enough to bear the weight of the maximum quantity to be stored. Use of pallets covered with a nonsparking material is considered equivalent to a floor constructed of or covered with a nonsparking material.

(5) Foundations. Foundations are to be constructed of brick, concrete, cement block, stone, or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the buildings is to be enclosed with metal.

(6) Roof. Except for buildings with fabricated metal roofs, the outer roof is to be covered with no less than number 26-gauge iron or aluminum, fastened to at least  $\frac{7}{8}$  inch sheathing.

(7) Bullet-resistant ceilings or roofs. Where it is possible for a bullet to be fired directly through the roof and into the magazine at such an angle that the bullet would strike the explosives within, the magazine is to be protected by one of the following methods:

(i) A sand tray lined with a layer of building paper, plastic, or other nonporous material, and filled with not less than four inches of coarse, dry sand, and located at the tops of inner walls covering the entire ceiling area, except that portion necessary for ventilation.

(ii) A fabricated metal roof constructed of  $\frac{3}{16}$ -inch plate steel lined with four inches of hardwood. (For each additional  $\frac{1}{16}$  inch of plate steel, the hardwood lining may be decreased one inch.)

(8) Doors. All doors are to be constructed of not less than  $\frac{1}{4}$  inch plate steel and lined with at least two inches of hardwood. Hinges and hasps are to be attached to the doors by welding, riveting or bolting (nuts on inside of door). They are to be installed in such a manner that the hinges and hasps cannot be removed when the doors are closed and locked.

(9) Locks. Each door is to be equipped with (i) two mortise locks; (ii) two padlock fastened in separate hasps and staples; (iii) a combination of a mortise lock and a padlock; (iv) a mortise lock that requires two keys to open; or (v) a three-point lock. Padlocks must have at least five tumblers and a casehardened shackle of at least  $\frac{3}{8}$  inch

diameter. Padlocks must be protected with not less than  $\frac{1}{4}$  inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(10) Ventilation. Ventilation is to be provided to prevent dampness and heating of stored explosive materials. Ventilation openings must be screened to prevent the entrance of sparks. Ventilation openings in side walls and foundations must be offset or shielded for bullet-resistant purposes. Magazines having foundation and roof ventilators with the air circulating between the side walls and the floors and between the side walls and the ceiling must have a wooden lattice lining or equivalent to prevent the packages of explosive materials from being stacked against the side walls and blocking the air circulation.

[[Page 750]]

(11) Exposed metal. No sparking material is to be exposed to contact with the stored explosive materials. All ferrous metal nails in the floor and side walls, which might be exposed to contact with explosive materials, must be blind nailed, countersunk, or covered with a nonsparking lattice work or other nonsparking material.

(b) Igloos, "Army-type structures", tunnels, and dugouts. Igloo, "Army-type structure", tunnel, and dugout magazines are to be constructed of reinforced concrete, masonry, metal, or a combination of these materials. They must have an earthmound covering of not less than 24 inches on the top, sides and rear unless the magazine meets the requirements of paragraph (a)(7) of this section. Interior walls and floors must be constructed of, or covered with, a nonsparking material. Magazines of this type are also to be constructed in conformity with the requirements of paragraph (a)(4) and paragraphs (a)(8) through (11) of this section.

#### Sec. 55.208 Construction of type 2 magazines.

A type 2 magazine is a box, trailer, semitrailer, or other mobile facility.

(a) Outdoor magazines--(1) General. Outdoor magazines are to be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and ventilated. They are to be supported to prevent direct contact with the ground and, if less than one cubic yard in size, must be securely fastened to a fixed object. The ground around outdoor magazines must slope away for drainage or other adequate drainage provided. When unattended, vehicular magazines must have wheels removed or otherwise effectively immobilized by kingpin locking devices or other methods approved by the Director.

(2) Exterior construction. The exterior and doors are to be constructed of not less than  $\frac{1}{4}$ -inch steel and lined with at least two inches of hardwood. Magazines with top openings will have lids with water-resistant seals or which overlap the sides by at least one inch when in a closed position.

(3) Hinges and hasps. Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

(4) Locks. Each door is to be equipped with (i) two mortise locks; (ii) two padlocks fastened in separate hasps and staples; (iii) a combination of a mortise lock and a padlock; (iv) a mortise lock that requires two keys to open; or (v) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$ -inch diameter. Padlocks must be protected with not less than  $\frac{1}{4}$ -inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(b) Indoor magazines--(1) General. Indoor magazines are to be fire-resistant and theft-resistant. They need not be bullet-resistant and weather-resistant if the buildings in which they are stored provide protection from the weather and from bullet penetration. No indoor magazine is to be located in a residence or dwelling. The indoor storage of high explosives must not exceed a quantity of 50 pounds. More than one indoor magazine may be located in the same building if the total quantity of explosive materials stored does not exceed 50 pounds. Detonators must be stored in a separate magazine (except as provided in Sec. 55.213) and the total quantity of detonators must not exceed 5,000.

(2) Exterior construction. Indoor magazines are to be constructed of wood or metal according to one of the following specifications:

(i) Wood indoor magazines are to have sides, bottoms and doors constructed of at least two inches of hardwood and are to be well braced at the corners. They are to be covered with sheet metal of not less than number 26-gauge (.0179 inches). Nails exposed to the interior of magazines must be countersunk.

(ii) Metal indoor magazines are to have sides, bottoms and doors constructed of not less than number 12-gauge (.1046 inches) metal and be lined inside with a nonsparking material. Edges of metal covers must overlap sides at least one inch.

[[Page 751]]

(3) Hinges and hasps. Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

(4) Locks. Each door is to be equipped with (i) two mortise locks; (ii) two padlocks fastened in separate hasps and staples; (iii) a combination of a mortise lock and a padlock; (iv) a mortise lock that requires two keys to open; or (v) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$ -inch diameter. Padlocks must be protected with not less than  $\frac{1}{4}$ -inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. Indoor magazines located in secure rooms that are locked as provided in this subparagraph may have each door locked with one steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$ -inch diameter, if the door hinges and lock hasp are securely fastened to the magazine. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(c) Detonator boxes. Magazines for detonators in quantities of 100 or less are to have sides, bottoms and doors constructed of not less than number 12-gauge (.1046 inches) metal and lined with a nonsparking material. Hinges and hasps must be attached so they cannot be removed from the outside. One steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$ -inch diameter is sufficient for locking purposes.

Sec. 55.209 Construction of type 3 magazines.

A type 3 magazine is a "day-box" or other portable magazine. It must be fire-resistant, weather-resistant, and theft-resistant. A type 3 magazine is to be constructed of not less than number 12-gauge (.1046 inches) steel, lined with at least either  $\frac{1}{2}$ -inch plywood or  $\frac{1}{2}$ -inch Masonite-type hardboard. Doors must overlap sides by at least one inch. Hinges and hasps are to be attached by welding, riveting or bolting (nuts on inside). One steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$ -inch diameter is sufficient for locking purposes. Explosive materials are not to be left unattended in type 3 magazines and must be removed to type 1 or 2 magazines for unattended storage.

Sec. 55.210 Construction of type 4 magazines.

A type 4 magazine is a building, igloo or "Army-type structure", tunnel, dugout, box, trailer, or a semitrailer or other mobile magazine.

(a) Outdoor magazines--(1) General. Outdoor magazines are to be fire-resistant, weather-resistant, and theft-resistant. The ground around outdoor magazines must slope away for drainage or other adequate drainage be provided. When unattended, vehicular magazines must have wheels removed or otherwise be effectively immobilized by kingpin locking devices or other methods approved by the Director.

(2) Construction. Outdoor magazines are to be constructed of masonry, metal-covered wood, fabricated metal, or a combination of these materials. Foundations are to be constructed of brick, concrete, cement block, stone, or metal or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the building is to be enclosed with fire-resistant material. The walls and floors are to be constructed of, or covered with, a nonsparking material or lattice work. The doors must be metal or solid wood covered with metal.

(3) Hinges and hasps. Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

(4) Locks. Each door is to be equipped with (i) two mortise locks; (ii) two padlocks fastened in separate hasps and staples; (iii) a combination of a mortise lock and a padlock; (iv) a mortise lock that requires two keys to open; or (v) a three-point lock. Padlocks must have at least five tumblers and case-hardened shackle of at least  $\frac{3}{8}$  inch diameter. Padlocks must be protected with

[[Page 752]]

not less than  $\frac{1}{4}$  inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(b) Indoor magazine--(1) General. Indoor magazines are to be fire-resistant and theft-resistant. They need not be weather-resistant if the buildings in which they are stored provide protection from the weather. No indoor magazine is to be located in a residence or dwelling. The indoor storage of low explosives must not exceed a quantity of 50 pounds. More than one indoor magazine may be located in the same building if the total quantity of explosive materials stored does not exceed 50 pounds. Detonators that will not mass detonate must be stored in a separate magazine and the total number of electric detonators must not exceed 5,000.

(2) Construction. Indoor magazines are to be constructed of masonry, metal-covered wood, fabricated metal, or a combination of these materials. The walls and floors are to be constructed of, or covered with, a nonsparking material. The doors must be metal or solid wood covered with metal.

(3) Hinges and hasps. Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

(4) Locks. Each door is to be equipped with (i) two mortise locks; (ii) two padlocks fastened in separate hasps and staples; (iii) a combination of a mortise lock and padlock; (iv) a mortise lock that requires two keys to open; or (v) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$  inch diameter. Padlocks must be protected with not less than  $\frac{1}{4}$  inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. Indoor magazines located in secure rooms that are locked as provided in this subparagraph may have each door locked with one steel padlock (which need not be protected by a steel hood)

having at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$  inch diameter, if the door hinges and lock hasp are securely fastened to the magazine. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

Sec. 55.211 Construction of type 5 magazines.

A type 5 magazine is a building, igloo or ``Army-type structure'', tunnel, dugout, bin, box, trailer, or a semitrailer or other mobile facility.

(a) Outdoor magazines--(1) General. Outdoor magazines are to be weather-resistant and theft-resistant. The ground around magazines must slope away for drainage or other adequate drainage be provided. When unattended, vehicular magazines must have wheels removed or otherwise be effectively immobilized by kingpin locking devices or other methods approved by the Director.

(2) Construction. The doors are to be constructed of solid wood or metal.

(3) Hinges and hasps. Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

(4) Locks. Each door is to be equipped with (i) two mortise locks; (ii) two padlocks fastened in separate hasps and staples; (iii) a combination of a mortise lock and a padlock; (iv) a mortise lock that requires two keys to open; or (v) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$  inch diameter. Padlocks must be protected with not less than  $\frac{1}{4}$  inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. Trailers, semitrailers, and similar vehicular magazines may, for each door, be locked with one steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$  inch diameter, if the door hinges and lock hasp are securely fastened to the magazine and to the door frame. These requirements do not apply to magazine doors that are adequately secured on the inside by means

[[Page 753]]

of a bolt, lock, or bar that cannot be actuated from the outside.

(5) Placards. The placards required by Department of Transportation regulations at 49 CFR part 172, subpart F, for the transportation of blasting agents shall be displayed on all magazines.

(b) Indoor magazines--(1) General. Indoor magazines are to be theft-resistant. They need not be weather-resistant if the buildings in which they are stored provide protection from the weather. No indoor magazine is to be located in a residence or dwelling. Indoor magazines containing quantities of blasting agents in excess of 50 pounds are subject to the requirements of Sec. 55.206 of this subpart.

(2) Construction. The doors are to be constructed of wood or metal.

(3) Hinges and hasps. Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

(4) Locks. Each door is to be equipped with (i) two mortise locks; (ii) two padlocks fastened in separate hasps and staples; (iii) a combination of a mortise lock and a padlock; (iv) a mortise lock that requires two keys to open; or (v) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$  inch diameter. Padlocks must be protected with not less than  $\frac{1}{4}$  inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. Indoor magazines located in secure rooms that are locked as provided in this subparagraph may have each door locked with one steel padlock (which need not be protected by a steel hood)

having at least five tumblers and a case-hardened shackle of at least  $\frac{3}{8}$  inch diameter, if the door hinges and lock hasps are securely fastened to the magazine and to the door frame. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside. [T.D. ATF-87, 46 FR 40384, Aug. 7, 1981, as amended by T.D. ATF-298, 55 FR 21863, May 30, 1990]

Sec. 55.212 Smoking and open flames.

Smoking, matches, open flames, and spark producing devices are not permitted:

- (a) In any magazine;
- (b) Within 50 feet of any outdoor magazine; or
- (c) Within any room containing an indoor magazine.

Sec. 55.213 Quantity and storage restrictions.

(a) Explosive materials in excess of 300,000 pounds or detonators in excess of 20 million are not to be stored in one magazine unless approved by the Director.

(b) Detonators are not to be stored in the same magazine with other explosive materials, except under the following circumstances:

(1) In a type 4 magazine, detonators that will not mass detonate may be stored with electric squibs, safety fuse, igniters, and igniter cord.

(2) In a type 1 or type 2 magazine, detonators may be stored with delay devices and any of the items listed in paragraph (b)(1) of this section.

Sec. 55.214 Storage within types 1, 2, 3, and 4 magazines.

(a) Explosive materials within a magazine are not to be placed directly against interior walls and must be stored so as not to interfere with ventilation. To prevent contact of stored explosive materials with walls, a nonsparking lattice work or other nonsparking material may be used.

(b) Containers of explosive materials are to be stored so that marks are visible. Stocks of explosive materials are to be stored so they can be easily counted and checked upon inspection.

(c) Except with respect to fiberboard or other nonmetal containers, containers of explosive materials are not to be unpacked or repacked inside a magazine or within 50 feet of a magazine, and must not be unpacked or repacked close to other explosive materials. Containers of explosive materials must be closed while being stored.

(d) Tools used for opening or closing containers of explosive materials are to be of nonsparking materials, except that metal slitters may be used for opening fiberboard containers. A wood

[[Page 754]]

wedge and a fiber, rubber, or wooden mallet are to be used for opening or closing wood containers of explosive materials. Metal tools other than nonsparking transfer conveyors are not to be stored in any magazine containing high explosives.

Sec. 55.215 Housekeeping.

Magazines are to be kept clean, dry, and free of grit, paper, empty packages and containers, and rubbish. Floors are to be regularly swept. Brooms and other utensils used in the cleaning and maintenance of magazines must have no spark-producing metal parts, and may be kept in magazines. Floors stained by leakage from explosive materials are to be cleaned according to instructions of the explosives manufacturer. When any explosive material has deteriorated it is to be destroyed in accordance with the advice or instructions of the manufacturer. The area

surrounding magazines is to be kept clear of rubbish, brush, dry grass, or trees (except live trees more than 10 feet tall), for not less than 25 feet in all directions. Volatile materials are to be kept a distance of not less than 50 feet from outdoor magazines. Living foliage which is used to stabilize the earthen covering of a magazine need not be removed.

Sec. 55.216 Repair of magazines.

Before repairing the interior of magazines, all explosive materials are to be removed and the interior cleaned. Before repairing the exterior of magazines, all explosive materials must be removed if there exists any possibility that repairs may produce sparks or flame. Explosive materials removed from magazines under repair must be (a) placed in other magazines appropriate for the storage of those explosive materials under this subpart, or (b) placed a safe distance from the magazines under repair where they are to be properly guarded and protected until the repairs have been completed.

Sec. 55.217 Lighting.

(a) Battery-activated safety lights or battery-activated safety lanterns may be used in explosives storage magazines.

(b) Electric lighting used in any explosives storage magazine must meet the standards prescribed by the 'National Electrical Code,' (National Fire Protection Association, NFPA 70-81), for the conditions present in the magazine at any time. All electrical switches are to be located outside of the magazine and also meet the standards prescribed by the National Electrical Code.

(c) Copies of invoices, work orders or similar documents which indicate the lighting complies with the National Electrical Code must be available for inspection by ATF officers.

Sec. 55.218 Table of distances for storage of explosive materials.

Quantity of explosives		Dis			
		Inhabited buildings		Public highways glass A t	
Pounds over	Pounds not over	Barricaded	Unbarricaded	Barricaded	Unbarrica
2.....	5	70	140	30	60
5.....	10	90	180	35	70
10.....	20	110	220	45	90
20.....	30	125	250	50	100
30.....	40	140	280	55	110
40.....	50	150	300	60	120
50.....	75	170	340	70	140
75.....	100	190	380	75	150
100.....	125	200	400	80	160
125.....	150	215	430	85	170
150.....	200	235	470	95	190
200.....	250	255	510	105	210
250.....	300	270	540	110	220
300.....	400	295	590	120	240
400.....	500	320	640	130	260
500.....	600	340	680	135	270

[[Page 755]]

600.....	700	355	710	145	290
700.....	800	375	750	150	300
800.....	900	390	780	155	310
900.....	1,000	400	800	160	320
1,000.....	1,200	425	850	165	330
1,200.....	1,400	450	900	170	340
1,400.....	1,600	470	940	175	350
1,600.....	1,800	490	980	180	360
1,800.....	2,000	505	1,010	185	370
2,000.....	2,500	545	1,090	190	380
2,500.....	3,000	580	1,160	195	390
3,000.....	4,000	635	1,270	210	420
4,000.....	5,000	685	1,370	225	450
5,000.....	6,000	730	1,460	235	470
6,000.....	7,000	770	1,540	245	490
7,000.....	8,000	800	1,600	250	500
8,000.....	9,000	835	1,670	255	510
9,000.....	10,000	865	1,730	260	520
10,000.....	12,000	875	1,750	270	540
12,000.....	14,000	885	1,770	275	550
14,000.....	16,000	900	1,800	280	560
16,000.....	18,000	940	1,880	285	570
18,000.....	20,000	975	1,950	290	580
20,000.....	25,000	1,055	2,000	315	630
25,000.....	30,000	1,130	2,000	340	680
30,000.....	35,000	1,205	2,000	360	720
35,000.....	40,000	1,275	2,000	380	760
40,000.....	45,000	1,340	2,000	400	800
45,000.....	50,000	1,400	2,000	420	840
50,000.....	55,000	1,460	2,000	440	880
55,000.....	60,000	1,515	2,000	455	910
60,000.....	65,000	1,565	2,000	470	940
65,000.....	70,000	1,610	2,000	485	970
70,000.....	75,000	1,655	2,000	500	1,000
75,000.....	80,000	1,695	2,000	510	1,020
80,000.....	85,000	1,730	2,000	520	1,040
85,000.....	90,000	1,760	2,000	530	1,060
90,000.....	95,000	1,790	2,000	540	1,080
95,000.....	100,000	1,815	2,000	545	1,090
100,000....	110,000	1,835	2,000	550	1,100
110,000....	120,000	1,855	2,000	555	1,110
120,000....	130,000	1,875	2,000	560	1,120
130,000....	140,000	1,890	2,000	565	1,130
140,000....	150,000	1,900	2,000	570	1,140
150,000....	160,000	1,935	2,000	580	1,160
160,000....	170,000	1,965	2,000	590	1,180
170,000....	180,000	1,990	2,000	600	1,200
180,000....	190,000	2,010	2,010	605	1,210
190,000....	200,000	2,030	2,030	610	1,220
200,000....	210,000	2,055	2,055	620	1,240
210,000....	230,000	2,100	2,100	635	1,270
230,000....	250,000	2,155	2,155	650	1,300
250,000....	275,000	2,215	2,215	670	1,340
275,000....	300,000	2,275	2,275	690	1,380

[[Page 756]]

Table: American Table of Distances for Storage of Explosives (December 1910), as Revised and Approved by The Institute of Makers of Explosives--November 5, 1971

Notes to the Table of Distances for Storage of Explosives

(1) Terms found in the table of distances for storage of explosive materials are defined in Sec. 55.11.

(2) When two or more storage magazines are located on the same property, each magazine must comply with the minimum distances specified from inhabited buildings, railways, and highways, and, in addition, they should be separated from each other by not less than the distances shown for "Separation of Magazines," except that the quantity of explosives contained in cap magazines shall govern in regard to the spacing of said cap magazines from magazines containing other explosives. If any two or more magazines are separated from each other by less than the specified "Separation of Magazines" distances, then such two or more magazines, as a group, must be considered as one magazine, and the total quantity of explosives stored in such group must be treated as if stored in a single magazine located on the site of any magazine of the group, and must comply with the minimum of distances specified from other magazines, inhabited buildings, railways, and highways.

(3) All types of blasting caps in strengths through No. 8 cap should be rated at 1 1/2 lbs. of explosives per 1,000 caps. For strengths higher than No. 8 cap, consult the manufacturer.

(4) For quantity and distance purposes, detonating cord of 50 or 60 grains per foot should be calculated as equivalent to 9 lbs. of high explosives per 1,000 feet. Heavier or lighter core loads should be rated proportionately.

Sec. 55.219 Table of distances for storage of low explosives.

Pounds		From inhabited building distance (feet)	From public railroad and highway distance (feet)	From above ground magazine (feet)
Over	Not over			
0.....	1,000	75	75	50
1,000.....	5,000	115	115	75
5,000.....	10,000	150	150	100
10,000.....	20,000	190	190	125
20,000.....	30,000	215	215	145
30,000.....	40,000	235	235	155
40,000.....	50,000	250	250	165
50,000.....	60,000	260	260	175
60,000.....	70,000	270	270	185
70,000.....	80,000	280	280	190
80,000.....	90,000	295	295	195
90,000.....	100,000	300	300	200
100,000.....	200,000	375	375	250
200,000.....	300,000	450	450	300

Sec. 55.220 Table of separation distances of ammonium nitrate and blasting agents from explosives or blasting agents.

Table: Department of Defense Ammunition and Explosives Standards, Table 5-4.1 Extract; 4145.27 M, March 1969

Donor weight (pounds)		Min dist f ba
Over	Not over	----- Amm nit

100	100
300	300
600	600
1,000	1,000
1,600	1,600
2,000	2,000
3,000	3,000
4,000	4,000
6,000	6,000
8,000	8,000
10,000	10,000
12,000	12,000
16,000	16,000
20,000	20,000
25,000	25,000
30,000	30,000
35,000	35,000
40,000	40,000
45,000	45,000
50,000	50,000
55,000	55,000
60,000	60,000
70,000	70,000
80,000	80,000
90,000	90,000
100,000	100,000
120,000	120,000
140,000	140,000
160,000	160,000
180,000	180,000
200,000	200,000
220,000	220,000
250,000	250,000
275,000	275,000
	300,000

Table: National Fire Protection Association (NFPA) Official Standard No. 492, 1968

Notes of Table of Separation Distances of Ammonium Nitrate and Blasting Agents From Explosives or Blasting Agents

(1) This table specifies separation distances to prevent explosion of ammonium nitrate and ammonium nitrate-based blasting agents by propagation from nearby stores of high

[[Page 757]]

explosives or blasting agents referred to in the table as the "donor." Ammonium nitrate, by itself, is not considered to be a donor when applying this table. Ammonium nitrate, ammonium nitrate-fuel oil or combinations thereof are acceptors. If stores of ammonium nitrate are located within the sympathetic detonation distance of explosives or blasting agents, one-half the mass of the ammonium nitrate is to be included in the mass of the donor.

(2) When the ammonium nitrate and/or blasting agent is not barricaded, the distances shown in the table must be multiplied by six. These distances allow for the possibility of high velocity metal fragments from mixers, hoppers, truck bodies, sheet metal structures, metal containers, and the like which may enclose the "donor." Where explosives storage is in bullet-resistant magazines or where the storage is protected by a bullet-resistant wall, distances and barricade thicknesses in excess of those prescribed in the table in Sec. 55.218

are not required.

(3) These distances apply to ammonium nitrate that passes the insensitivity test prescribed in the definition of ammonium nitrate fertilizer issued by the Fertilizer Institute. <SUP>1</SUP> Ammonium nitrate failing to pass the test must be stored at separation distances in accordance with the table in Sec. 55.218.

<SUP>1</SUP> Definition and Test Procedures for Ammonium Nitrate Fertilizer, Fertilizer Institute 1015-18th St. N.W. Washington, DC 20036.

(4) These distances apply to blasting agents which pass the insensitivity test prescribed in regulations of the U.S. Department of Transportation (49 CFR part 173).

(5) Earth or sand dikes, or enclosures filled with the prescribed minimum thickness of earth or sand are acceptable artificial barricades. Natural barricades, such as hills or timber of sufficient density that the surrounding exposures which require protection cannot be seen from the "donor" when the trees are bare of leaves, are also acceptable.

(6) For determining the distances to be maintained from inhabited buildings, passenger railways, and public highways, use the table in Sec. 55.218.

Sec. 55.221 Requirements for special fireworks, pyrotechnic compositions, and explosive materials used in assembling fireworks.

(a) Special fireworks, pyrotechnic compositions and explosive materials used to assemble fireworks shall be stored at all times as required by this subpart unless they are in the process of manufacture, assembly, packaging, or are being transported.

(b) No more than 500 pounds (227 kg) of pyrotechnic compositions or explosive materials are permitted at one time in any fireworks mixing building, any building or area in which the pyrotechnic compositions or explosive materials are pressed or otherwise prepared for finishing or assembly, or any finishing or assembly building. All pyrotechnic compositions or explosive materials not in immediate use will be stored in covered, non-ferrous containers.

(c) The maximum quantity of flash powder permitted in any fireworks process building is 10 pounds (4.5 kg).

(d) All dry explosive powders and mixtures, partially assembled special fireworks, and finished special fireworks shall be removed from fireworks process buildings at the conclusion of a day's operations and placed in approved magazines.

[T.D. ATF-293, 55 FR 3722, Feb. 5, 1990]

Sec. 55.222 Table of distances between fireworks process buildings and between fireworks process and fireworks nonprocess buildings.

Net weight of fireworks \1\ (pounds)	Special fireworks \2\ (feet)	Common fireworks \3\ (feet)
0-100.....	57.....	37
101-200.....	69.....	37
201-300.....	77.....	37
301-400.....	85.....	37
401-500.....	91.....	37
Above 500.....	Not permitted \4\ \5.	Not permitted \4\ \5\

\1\ Net weight is the weight of all pyrotechnic compositions, and

explosive materials and fuse only.

- \2\ The distances in this column apply only with natural or artificial barricades. If such barricades are not used, the distances must be doubled.
- \3\ While common fireworks in a finished state are not subject to regulation, explosive materials used to manufacture or assemble such fireworks are subject to regulation. Thus, fireworks process buildings where common fireworks are being processed must meet these requirements.
- \4\ A maximum of 500 pounds of in-process pyrotechnic compositions, either loose or in partially-assembled fireworks, is permitted in any fireworks process building. Finished special fireworks may not be stored in a fireworks process building.
- \5\ A maximum of 10 pounds of flash powder, either in loose form or in assembled units, is permitted in any fireworks process building. Quantities in excess of 10 pounds must be kept in an approved magazine.

[T.D. ATF-293, 55 FR 3723, Feb. 5, 1990]

[[Page 758]]

Sec. 55.223 Table of distances between fireworks process buildings and other specified areas.

Distance From Passenger Railways, Public Highways, Fireworks Plant Buildings Used To Store Common Fireworks, Magazines and Fireworks Shipping Buildings, and Inhabited Buildings \3\ \4\.

Net weight of fireworks \1\ (pounds)	Special fireworks \1\ (feet)	Common fireworks \2\ (feet)
0-100.....	200.....	25
101-200.....	200.....	50
201-300.....	200.....	50
301-400.....	200.....	50
401-500.....	200.....	50
Above 500.....	Not permitted.....	Not permitted.

- \1\ Net weight is the weight of all pyrotechnic compositions, and explosive materials and fuse only.
- \2\ While common fireworks in a finished state are not subject to regulation, explosive materials used to manufacture or assemble such fireworks are subject to regulation. Thus, fireworks process buildings where common fireworks are being processed must meet these requirements.
- \3\ This table does not apply to the separation distances between fireworks process buildings (see Sec. 55.222) and between magazines (see Secs. 55.218 and 55.224).
- \4\ The distances in this table apply with or without artificial or natural barricades or screen barricades. However, the use of barricades is highly recommended.

[T.D. ATF-293, 55 FR 3723, Feb. 5, 1990]

Sec. 55.224 Table of distances for the storage of special fireworks (except bulk salutes).

Net weight of firework \1\ (pounds)	Distance between magazine and inhabited building, passenger railway, or	Distance between
0-100.....	200.....	25
101-200.....	200.....	50
201-300.....	200.....	50
301-400.....	200.....	50
401-500.....	200.....	50
Above 500.....	Not permitted.....	Not permitted.

(pounds)	public highway \3\ \4\ (feet)	magazines \2\ (feet)
0-1000.....	150.....	100
1001-5000.....	230.....	150
5001-10000.....	300.....	200
Above 10000.....	Use table Sec. 55.218	.....

- \1\ Net weight is the weight of all pyrotechnic compositions, and explosive materials and fuse only.
- \2\ For the purposes of applying this table, the term ``magazine'' also includes fireworks shipping buildings for special fireworks.
- \3\ For fireworks storage magazines in use prior to (30 days from the date of publication of the final rule in the Federal Register), the distances in this table may be halved if properly barricaded between the magazine and potential receptor sites.
- \4\ This table does not apply to the storage of bulk salutes. Use table at Sec. 55.218.

[T.D. ATF-293, 55 FR 3723, Feb. 5, 1990]

[[Page 759]]

**Editor's Note: As part of this proposal, the EQB is proposing to delete the existing text of Chapter 210 which appears at *Pennsylvania Code* pages 210-1 through 210-5, serial numbers (243459-243463).**

**TITLE 25. ENVIRONMENTAL PROTECTION  
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION  
SUBPART D. ENVIRONMENTAL HEALTH AND SAFETY  
ARTICLE IV. OCCUPATIONAL HEALTH AND SAFETY  
CHAPTER 210. BLASTERS' LICENSES**

**GENERAL PROVISIONS**

- 210.11. Definitions.
- 210.12. Scope.
- 210.13. General.
- 210.14. Eligibility Requirements.
- 210.15. License Application.
- 210.16. Examinations.
- 210.17. Issuance and Renewal of Licenses.
- 210.18. Reciprocity.
- 210.19. Suspension, Modification and Revocation.

**§210.11. Definitions.**

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

**Blaster** – A person who is licensed by the Department under this chapter to detonate explosives and supervise blasting activities.

**Blaster Learner** – An individual who is learning to be a blaster and who participates in blasting activities under the direct supervision of a blaster.

**Blaster's License** - A license to detonate explosives and supervise blasting activities issued by the Department under this chapter.

**Person** – A natural person.

**§210.12. Scope.**

The provisions of this chapter apply to persons engaging in the detonation of explosives within the Commonwealth. However, the requirements of this chapter do not apply to persons authorized to detonate explosives or to supervise blasting activities under the Pennsylvania Anthracite Coal Mine Act, Act of November 10, 1965, P.L. 721, *as amended*, 52 P.S. §§70.101-70.1405; and the Pennsylvania Bituminous Coal Mine Act, Act of July 17, 1961, P.L. 659, *as amended*, 52 P.S. §§701-101 – 701 – 701 – 706.

**§210.13. General.**

(a) No person may detonate explosives or supervise blasting activities unless the person has obtained a Blaster's License.

(b) The Department may exempt certain individuals from needing a Blaster's License if the person is detonating extremely small amounts of explosives for industrial or research purposes. The Department will consider a written request for such exemption from the person seeking an exemption.

(c) A blaster upon request shall exhibit a Blaster's License to an authorized representative of the Department, to the blaster's employer or to an authorized representative of the employer, or to a police officer acting in the line of duty.

(d) A Blaster's License is not transferable.

**§210.14. Eligibility Requirements.**

(a) To be eligible for a Blaster's License, a person shall:

(1) Be 21 years of age or older.

(2) Have at least one year of experience as a blaster learner in preparing blasts in the classification for which a license is being sought.

(3) Have taken the Department's class on explosives. It is not necessary for a blaster to retake the class when adding an additional classification to a license.

(4) Have successfully passed the Department's examination for a Blaster's License.

(b) The Department shall not issue or renew a license:

(1) Unless the applicant is of good moral character.

(2) If the applicant has demonstrated an inability or lack of intention to comply with the Department's regulations concerning blasting activities.

**§210.15. License Application.**

(a) The license application shall be on forms prepared by the Department and be accompanied by a check for \$50 payable to the Commonwealth of Pennsylvania. The complete application shall be submitted to the Department at least two weeks prior to the examination.

(b) The license application shall include a signed notarized statement from the blaster who supervised the applicant, or the applicant's employer. The statement shall:

(1) Describe the applicant's experience in blasting. In particular the statement shall describe in detail how the applicant assisted in the preparation of the blasts and for how long.

(2) State the author's opinion as to whether the applicant is competent to prepare and detonate blasts in the classification for which the license is being sought.

**§210.16. Examinations.**

(a) The Department will conduct examinations for specific types of blasting, as specified in §210.17(a) (relating to issuance and renewal of licenses).

(b) The Department will schedule and conduct examinations as needed.

(c) An applicant failing to appear for a scheduled examination forfeits the application fee unless the applicant provides written notice to the Department prior to the examination date or submits a valid medical excuse in writing.

(d) Refund of the fee or admittance to a subsequent examination without a reapplication fee will be at the discretion of the Department.

**§210.17. Issuance and Renewal of Licenses.**

(a) A Blaster's License is issued for a specific classification of blasting activities. The classifications will be determined by the Department and may include general blasting (which includes all classifications except demolition and underground noncoal mining), trenching and construction, seismic and pole line work, well perforation, surface mining, underground noncoal mining, industrial, limited and demolition.

(b) A person may apply to amend his or her Blaster's License for other classifications by meeting the requirements of §210.14 (relating to eligibility requirements) and by submitting a complete application.

(c) A Blaster's License will be issued for a term of 3 years.

(d) A Blaster's License is renewable provided the blaster can demonstrate that he or she has had 8 hours of continuing education in Department-approved courses related to blasting and safety within the 3-year period.

(e) The Blaster's License may be renewed for a 3-year term by submitting a renewal application to the Department and a check for \$30, payable to the Commonwealth of Pennsylvania.

(f) A person who intends to be a blaster and whose Blaster's License was not renewed within one year of its expiration date shall apply for a new license under §§210.14-210.16.

#### **§210.18. Recognition of Out-of-State Blaster's License.**

(a) The Department may license a person who holds a blaster's license or its equivalent in another state. The Department may issue the license if, in the opinion of the Department, that state's licensing program provides training on the use, storage and handling of explosives and an examination that is equivalent to the requirements of this chapter.

(b) A request for a license under this section shall be made in writing. Copies of the other state's explosives training and examination material and proof that the applicant holds a license in the other state shall be provided to the Department in order that the Department can make a proper evaluation.

#### **§210.19. Suspension, Modification and Revocation.**

The Department may issue orders suspending, modifying or revoking a Blaster's License. Before an order is issued, the Department will give the blaster an opportunity for an informal meeting to discuss the facts and issues that form the basis of the Department's determination to suspend, modify or revoke the license. The Department may suspend, modify or revoke a Blaster's License for violations of this chapter and Chapter 211 (relating to provisions for the use, storage, and handling of explosives in surface applications).

**Editor's Note: As part of this proposal, the EQB is proposing to delete the existing text of Chapter 211 which appears at *Pennsylvania Code* pages 211-1 through 211-38, serial numbers (243465-243502).**

**TITLE 25. ENVIRONMENTAL PROTECTION  
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION  
SUBPART D. ENVIRONMENTAL HEALTH AND SAFETY  
ARTICLE IV. OCCUPATIONAL HEALTH AND SAFETY  
CHAPTER 211. PROVISIONS FOR THE USE, STORAGE, AND  
HANDLING OF EXPLOSIVES IN SURFACE APPLICATIONS**

**SUBCHAPTER A  
GENERAL PROVISIONS**

- 211.101. Definitions.
- 211.102. Scope.
- 211.103. Enforcement.

**SUBCHAPTER B  
STORAGE AND CLASSIFICATION OF EXPLOSIVES**

- 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.

**SUBCHAPTER C  
PERMITS**

- 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.

**SUBCHAPTER D  
RECORDS OF DISPOSITION OF EXPLOSIVES**

- 211.131. Sales Records.
- 211.132. Purchase Records.
- 211.133. Blast Report.

**SUBCHAPTER E  
TRANSPORTATION OF EXPLOSIVES**

- 211.141. General Requirements.

**SUBCHAPTER F  
BLASTING ACTIVITIES**

- 211.151. Prevention of Damage.
- 211.152. Control of Noxious Gases.
- 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. Non-electric Detonation.
- 211.161. Detonating Cords.
- 211.162. Safety Fuse.

**SUBCHAPTER G  
REQUIREMENTS FOR MONITORING**

- 211.171. General Provisions for Monitoring.
- 211.172. Monitoring Instruments.
- 211.173. Monitoring Records.

**SUBCHAPTER H  
BLASTING ACTIVITIES NEAR UTILITY LINES**

- 211.181. Scope
- 211.182. General Provisions.

## SUBCHAPTER A GENERAL PROVISIONS

### §211.101. Definitions.

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

**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 area where the explosive charges are located.

**Blaster** – An individual who is licensed by the Department under Chapter 210 (relating to licensing blasters) 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** – All actions associated with the use of explosives from the time of delivery of explosives to a worksite until all post-blast measures are taken, including priming, loading, stemming, wiring or connecting, detonating, and all necessary safety, notification and monitoring measures.

**Building** – A structure that is regularly occupied where people live, work or assemble.

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

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

**Demolition Activity** – The act of wrecking or demolishing a structure with explosives.

**Detonator** – A device containing an initiating or primary explosive that is used for initiating detonation of explosives. The term includes electric blasting caps of instantaneous and delay types, blasting caps for use with safety fuses, detonating cord, delay connectors and non-electric instantaneous and delay blasting caps.

**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. The term includes safety fuse, squibs, detonating cord, and igniters. The term does not include the following:

(1) 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 Section 921(a)(16) of Title 18 of the United States Code.

(2) 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 site by the force of a blast.

**Magazine** – A building or structure used for the storage of explosives.

**Misfire** – Incomplete detonation of explosives.

**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. Whenever used in any clause prescribing and imposing a penalty, or imposing a fine or imprisonment, or both, the term “person” shall not exclude the members of an association and the directors, officers or agents of a corporation.

**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, neither owned nor leased by the blasting activity permittee or their customer, divided by the square root of the maximum weight of explosives (W) in pounds, that is detonated per delay period of less than eight (8) milliseconds.

$$D_s = D \div \sqrt{W}$$

**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** – A combination of materials or piece of work built or composed of parts joined together in some definite manner for occupancy, use, or ornamentation. The term includes everything that is built or constructed, including bridges, offices, water towers, silos and dwellings.

**Utility Lines** – 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.

**§211.102. Scope.**

(a) The provisions in this chapter apply 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 the provisions of this chapter provided, however, that 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 apply to blasting activities at coal or noncoal surface mines.

(b) Compliance with the requirements of 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.

**§211.103. Enforcement.**

(a) The department may issue such orders as are necessary to implement the regulations in 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.

**SUBCHAPTER B  
STORAGE AND CLASSIFICATION OF EXPLOSIVES**

**§211.111. Scope.**

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

**§211.112. Magazine License and Fees.**

(a) A person storing explosives shall do so in a magazine licensed by the Department. No person shall 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 the requirements of 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:

(1) License

(a) Application - \$50.00

(b) Site Inspection - \$50.00

(2) License Modifications - \$50.00

(3) License Renewals - \$50.00

(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 all applicable requirements of this chapter.

(b) A license application shall include:

(1) The applicant's identity, including 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 at 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.

- (c) A license renewal application shall include:
- (1) The applicant's identity, including 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.

**§211.114. Displaying the License.**

The magazine license, or a legible copy of the license, shall be conspicuously displayed. Where 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 the Code of Federal Regulations (CFR) at 27 CFR Part 55, Subpart K (relating to commerce in explosives), are incorporated herein by reference. 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 55 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".

## SUBCHAPTER C PERMITS

### §211.121. General Requirements.

(a) Except as otherwise provided in this subchapter, no person may engage in blasting activities, or sell or purchase explosives in the Commonwealth of Pennsylvania 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, P.L. 134, *as amended* (35 P.S. §§1271, et. seq.).

(c) A permit issued under the Surface Mining Conservation and Reclamation Act, Act of May 31, 1945, P.L. 1198, *as amended* (52 P.S. §§1396.1 – 1396.18); or the Noncoal Surface Mining and Conservation and Reclamation Act, Act of December 19, 1984, P.L. 1093, No. 219, *as amended* (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. No permit will be issued unless the application is complete and demonstrates that the proposed activities comply with the applicable requirements of this chapter. The permittee shall comply with the approved application, the permit and this chapter.

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

(1) Has failed and continues to fail to comply with any provisions of this chapter or any condition of a permit issued under this chapter or any order issued to enforce the requirements of this chapter.

(2) Has demonstrated an inability or lack of intention to comply with the requirements of this chapter as indicated by past or continuing violations.

### §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.

(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 the requirements of 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.

(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 their 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 requirements of 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) All 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 their 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 phone number.
- (5) Blast reports are completed in accordance with §211.133 (relating to blast report).
- (6) All other monitoring and performance standards of this chapter are met.
- (b) The Department may revoke a blasting activity permit-by-rule if:
- (1) The permittee has demonstrated an unwillingness or inability to comply with the applicable regulations; or
  - (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**

**§211.131. Sales Records.**

The seller shall keep an accurate record of every sale of explosives for a period of three 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 a period of three years. The record shall identify the date, types and amounts of explosives purchased, and the name and address of the seller.

**§211.133. Blast Report.**

(a) The blaster-in-charge shall prepare a report of each blast report 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 three 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 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.

- (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 eight (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 their customer.
- (15) A description of the nearest building location 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 eight (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 \_\_\_\_\_ (3 years from the effective date of the regulation), monitoring records shall be made part of the blast report within 7 days of the blast.
- (24) If a misfire occurred, the actions taken to make the site safe.

(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 any other information the Department deems necessary to ensure compliance with this chapter.

**SUBCHAPTER E**  
**TRANSPORTATION OF EXPLOSIVES**

**§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 pursuant to Subchapter B (relating to the storage 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 Pennsylvania 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) Only load explosives into a closed body vehicle if the load is 2,000 pounds (908 kilograms) or more of explosives.

(7) Only load explosives into a vehicle with a bed made of wood or other non-sparking 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 such items are separated from the explosives by substantial non-sparking bulkheads so constructed as 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 at least two fire extinguishers approved and coded by the National Board of Underwriters. All fire extinguishers shall be easily accessible and ready for immediate use. If the vehicle has:

(A) A gross weight of 14,000 pounds (6356 kilograms) or less, the extinguishers shall have a combined capacity of 4-A:20-B,C, or equivalent.

(B) A gross weight of greater than 14,000 pounds (6356 kilograms) and for tractor/semi-trailers, the extinguishers shall have a combined capacity of 4-A:70-B,C, or equivalent.

(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**

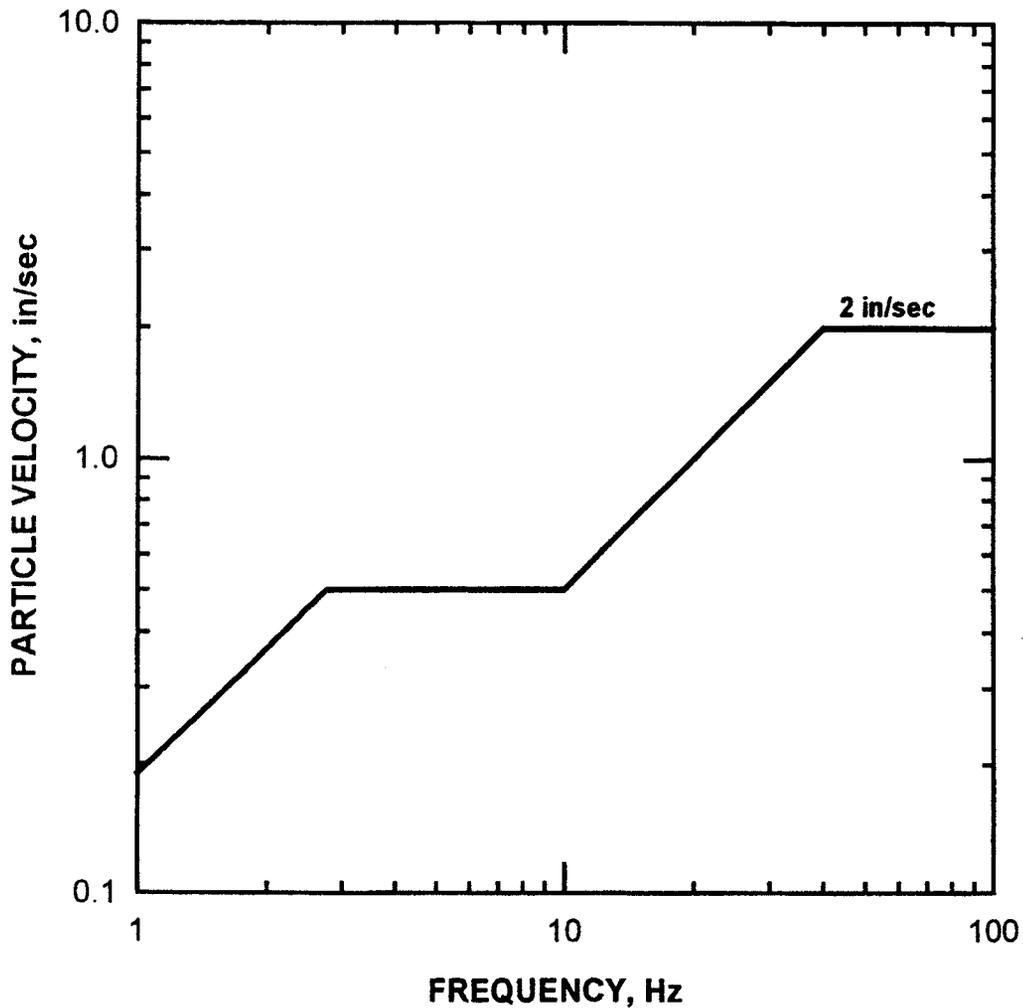
### **§211.151. Prevention of Damage.**

(a) Blasting shall 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 four hours of learning of the damage.

(b) Blasting shall not cause flyrock. If flyrock occurs, the blaster-in-charge shall notify the Department within four 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. However, blasting activities authorized prior to \_\_\_\_\_ (effective date of the regulation) 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 their 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 based by the permittee or their customer.

Table 1	
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
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 reduce the maximum peak particle velocity or airblast level if it determines that a lower 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.

#### **§211.152. Control of Noxious Gases.**

A blast shall be conducted in such a manner 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, evacuating people from areas that may contain gases.

#### **§211.153. General Requirements for Handling Explosives.**

(a) Only a non-ferrous, non-sparking tool shall be used to open containers of explosives.

(b) Matches, lighters and smoking are prohibited within 100 feet (30.84 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 shall 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 shall 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 his 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 shall not be thrown, slid along floors or over other packages of explosives, or handled roughly in any manner.

(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 shall 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) No person shall 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 shall 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 non-ferrous, non-sparking tamping sticks may be used in loading a blast hole. Sectional poles connected by brass fittings are permitted, provided that only the wooden end of the pole is used for tamping. Retrieving hooks shall be made from non-sparking 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 wooden tamping pole, a tape, a light, or a mirror before it is loaded. The use of magnifying mirrors is prohibited. Explosives shall not be forced past an obstruction in a blast hole.

(5) The blast hole shall be logged 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 must cease, and all non-essential 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. No person shall be within 100 feet (30.48 meters) of these burning materials.

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

(1) The use of blasting mats or other protective devices, if, in the opinion of the blaster-in-charge, such 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 shall not be brought to a blast site in greater quantities than that needed for that blast. Surplus explosives may not be stored at the blast site.

(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, see that all persons who may be in danger are notified.
- (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 3 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 1 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 must be thoroughly wetted down with water before any digging is attempted. Special attention must 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.

#### **§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 workmen. 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 re-shunted.

(c) Electric blasting caps shall 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) No effort shall be made to reclaim or re-use 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) Blasting machines must display a sticker 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. Non-Electric Detonation.**

Non-electric 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 trunklines. The supply roll shall be immediately removed from the site. All 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 meters) of earth or sand, unless otherwise authorized by the Department.

(c) Detonating cord shall 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. No blasting cap shall be attached to safety fuse in or within 10 feet (3.05 meters) of a magazine.

**SUBCHAPTER G  
REQUIREMENTS FOR MONITORING**

**§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 their 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 5 blasts, monitoring has demonstrated that the maximum peak particle velocity at the specified location represents more than a fifty percent (50%) reduction from the limit in the permit and this chapter. All 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 50% of the compliance limit 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.

**§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:

(A) A frequency range of 2 Hz to 100 Hz.

(B) Particle velocity range of .02 to 4.0 inches ( $5.08 \times 10^{-4}$  to 0.10 meters) per second or greater.

(C) An internal dynamic calibration system.

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

(A) A lower frequency limit of 0.1, 2.0 or 6.0 Hz.

(B) An upper end flat-frequency response of at least 200 Hz.

(C) 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 must include testing the response of the entire system to externally-generated dynamic inputs. These inputs must test the entire monitoring system at a sufficient number of discrete frequency intervals to assure flat response throughout the frequency ranges specified by the regulations. Dynamic reference standards used for calibration must be traceable to the National Institute of Standards and Technology (NIST). Calibration procedures and documentation of calibration shall be made available for review by the Department.

(4) A non-alterable 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) Calibration pulse.
  - (2) Calibration signal of the gain setting, for instruments with variable gain settings.
  - (3) Time history of particle velocities for 3 mutually perpendicular ground vibration traces and 1 air-overpressure trace, including time base, amplitude scales and peak values for all traces.
  - (4) Results of a field calibration test for each channel.
  - (5) Frequency content of all vibration signals using either single degree of freedom (SDF) response spectrum or half-cycle zero-crossing analysis methods.
  - (6) Frequency versus particle velocity plots as indicated in Figure 1 of §211.151(c) (relating to prevention of damage).
  - (7) Name and signature of the individual taking the recording.
  - (8) The location of the monitoring instrument, date and time of the recording.
  - (9) The last calibration date of the monitoring instrument.
- (c) 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 must be performed and included with the blast report within 30 days.

## **SUBCHAPTER H BLASTING ACTIVITIES NEAR UTILITY LINES**

### **§211.181. Scope.**

The provisions of this subchapter apply 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 in a manner that provides the greatest relief possible in a direction away from the utility line, so as to keep the resulting vibration and actual ground movement to the lowest possible level.



Rachel Carson State Office Building  
P.O. Box 2063  
Harrisburg, PA 17105-2063  
May 17, 2000

**The Secretary**

**717-787-2814**

Mr. Robert E. Nyce  
Executive Director  
Independent Regulatory Review Commission  
14th Floor, Harrisstown II  
Harrisburg, PA 17101

RE: Proposed Rulemaking: Licensing of Blasters and Storage, Handling, and Use of Explosives (#7-349)

Dear Bob:

Enclosed is a copy of a proposed regulation for review and comment by the Commission pursuant to Section 5(a) of the Regulatory Review Act. This proposal is scheduled for publication as a proposed rulemaking in the *Pennsylvania Bulletin* on June 3, 2000, with a 60-day public comment period. Four public hearings have been scheduled as indicated on the enclosed public notice. This proposal was approved by the Environmental Quality Board (EQB) on March 21, 2000.

This proposal is a comprehensive update of the existing explosives regulations in Chapters 210 and 211. The regulations, which were adopted in 1972, are inflexible and do not reflect changes that have occurred in the industry over time. As a result, the existing text of Chapters 210 and 211 is being deleted, and new, clearer language is proposed. Chapter 210 establishes procedures and standards for licensing individuals who perform blasting activities at all surface mining operations and underground coal mines. Among these provisions are raising the minimum age requirement from 18 to 21 years for applicants to obtain a blaster's license; continuing education requirements for license renewals, authorization for DEP to issue licenses based on out-of-state qualifications; and expanding the term of the license from one to three years. No fee revisions are proposed.

Chapter 211 addresses the storage, handling, and use of explosives related to any surface activity. It also incorporates by reference the federal regulations at 27 CFR Part 55, Subpart K, for classifying and storing explosives, which will eliminate duplicative and conflicting regulatory requirements for magazine operators.

The Department gathered public input through a series of statewide public roundtable meetings that were held early in the regulatory development process. These meetings were attended by citizens and members of interest groups and the regulated community. The Mining and Reclamation Advisory Board's (MRAB) Regulation, Legislation and Technical Committee reviewed a draft of the proposal in August 1999. The full MRAB considered the proposal at meetings in October 1999 and January 2000 and unanimously approved it on January 6, 2000.

The Department will provide the Commission with any assistance required to facilitate a thorough review of this proposal. Section 5(g) of the Act provides that the Commission may,

Mr. Robert E. Nyce

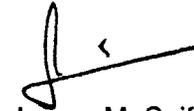
- 2 -

May 17, 2000

within ten days after the expiration of the Committee review period, notify the agency of any objections to the proposed regulation. The Department will consider any comments or suggestions received by the Commission, together with Committee and other public comments prior to final adoption.

For additional information, please contact Sharon Freeman, Regulatory Coordinator, at 783-1303.

Sincerely,

A handwritten signature in black ink, appearing to read 'James M. Seif', with a long horizontal stroke extending to the right.

James M. Seif  
Secretary

Enclosures

**ENVIRONMENTAL QUALITY BOARD  
NOTICE OF PUBLIC HEARINGS**

**Proposed Rulemaking – Licensing of Blasters and  
Storage, Handling, and Use of Explosives**

Notice is hereby given by the Environmental Quality Board (EQB) of four public hearings on proposed amendments to Pennsylvania's regulations pertaining to licensing of blasters and storage, handling, and use of explosives.

This proposal is a comprehensive update of the existing explosives regulations in Chapters 210 and 211. The regulations, which were adopted in 1972, are inflexible and do not reflect changes that have occurred in the industry over time. As a result, the existing text of Chapters 210 and 211 is being deleted, and new, clearer language is proposed. Chapter 210 establishes procedures and standards for licensing individuals who perform blasting activities at all surface mining operations and underground coal mines. Among these provisions are raising the minimum age requirement from 18 to 21 years for applicants to obtain a blaster's license; continuing education requirements for license renewals, authorization for DEP to issue licenses based on out-of-state qualifications; and expanding the term of the license from one to three years. No fee revisions are proposed.

Chapter 211 addresses the storage, handling, and use of explosives related to any surface activity. It also incorporates by reference the federal regulations at 27 CFR Part 55, Subpart K, for classifying and storing explosives, which will eliminate duplicative and conflicting regulatory requirements for magazine operators.

The EQB will hold four public hearings to accept comments on the proposed amendments. The hearings will be held at 1:00 p.m. as follows:

July 5, 2000	Greensburg Four Points Sheraton 100 Sheraton Drive (Route 30 East) Greensburg, Pa.
July 6, 2000	Holiday Inn – Clarion I-80 at Route 68 Clarion, Pa.
July 11, 2000	Best Western - Exton Hotel and Conference Center 815 North Pottstown Pike (at Turnpike Exit 23) Exton, Pa.
July 12, 2000	Quality Hotel 100 South Centre Street Pottsville, Pa.

Persons wishing to present testimony at any of the hearings are requested to contact Joan Martin at the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least one week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to ten minutes for each witness. Witnesses are requested to submit three written copies of their testimony to the hearing chairperson.

Persons with a disability who wish to attend a hearing and require an auxiliary aid, service or other accommodation in order to participate should contact Joan Martin at (717) 787-4526, or through the

**TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE  
REGULATORY REVIEW ACT**

RECEIVED

2000 MAY 17 PM 3:30

INDEPENDENT REGULATORY  
REVIEW COMMISSION

I.D. NUMBER: 7-349  
 SUBJECT: Licensing of Blasters & Storage, Handling & Use of Explosives  
 AGENCY: DEPARTMENT OF ENVIRONMENTAL PROTECTION

#2120

**TYPE OF REGULATION**

- X Proposed Regulation
- Final Regulation
- Final Regulation with Notice of Proposed Rulemaking Omitted
- 120-day Emergency Certification of the Attorney General
- 120-day Emergency Certification of the Governor
- Delivery of Tolled Regulation
  - a. With Revisions
  - b. Without Revisions

**FILING OF REGULATION**

DATE	SIGNATURE	DESIGNATION
5-17-00	<i>Cindy Zim</i>	HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
5-17-00	<i>Dante Castelle</i>	SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
5-17-00	<i>Tim Eckert</i>	INDEPENDENT REGULATORY REVIEW COMMISSION  ATTORNEY GENERAL
5/17/00	<i>Marysa Garas</i>	LEGISLATIVE REFERENCE BUREAU

May 8, 2000