

Regulatory Analysis Form		This space for use by IRRC RECEIVED 2001 MAY - 9 AM 10:09 REVIEW DIVISION IRRC Number: <u>2120</u>
(1) Agency Department of Environmental Protection		
(2) I.D. Number (Governor's Office Use) #7-349		
(3) Short Title Licensing of Blasters and Storage, Handling and Use of Explosives		
(4) PA Code Cite 25 Pa. Code Chapters 210 and 211	(5) Agency Contacts & Telephone Numbers Primary Contact: Sharon Trostle, 783-8727 Secondary Contact: Barbara Sexton, 783-8727	
(6) Type of Rulemaking (Check One) <input type="checkbox"/> Proposed Rulemaking <input checked="" type="checkbox"/> Final Order Adopting Regulation <input type="checkbox"/> Final Order, Proposed Rulemaking Omitted	(7) Is a 120-Day Emergency Certification Attached? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes: By the Attorney General <input type="checkbox"/> 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 storage, handling and use 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)).		

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(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, handling and use 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, we believe that all citizens of the Commonwealth, including the regulated community, benefit indirectly from the proper regulation of explosives.

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(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 storage, handling and use of explosives. These regulations are a modernization of the current explosives regulations. Seismic monitors are required 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. There is a requirement for a blaster to obtain continuing education during the 3-year term of the license. This provision is designed to ensure that blasters keep current with methodology, techniques and regulations. For the protection of the public, minimum liability insurance is required. 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 2,600 individuals licensed to detonate explosives in surface operations, 1,323 sales permits and 2,567 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 roundtable meetings 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 Aggregate 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 eliminating seismic records analysis 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.

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(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.

The additional costs to local governments would be minimal. Local governments or their contractors engaging in construction activities that require blasting will have to acquire a blasting activity permit. There is no charge for the blasting activity permit but there is minimal time involved in application preparation.

(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 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.

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(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
SAVINGS:	\$	\$	\$	\$	\$	\$
Regulated Community	0	0	0	0	0	0
Local Government	0	0	0	0	0	0
State Governments	0	0	0	0	0	0
Total Savings	0	0	0	0	0	0
COSTS:						
Regulated Community	*	*	*	*	*	*
Local Government	0	0	0	0	0	0
State Governments	73,600	88,000	88,000	88,000	88,000	88,000
Total Cost						
REVENUE LOSSES:						
Regulated Community	0	0	0	0	0	0
Local Government	0	0	0	0	0	0
State Governments	0	0	0	0	0	0
Total Revenue Losses	0	0	0	0	0	0

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

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 regulation 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.

The costs to state government was estimated from the average costs of two additional employees, two Ford Ranger four-wheel drive trucks equipped with explosive magazines, and the maintenance costs for operation of the trucks.

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(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 storage, handling and use 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 an ultra-hazardous activity and 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.)

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(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 the Federal Bureau of Alcohol, Tobacco and Firearms 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 not to 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. 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 held four public hearings on the regulations during the public comment period. No further events are scheduled.

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(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. An application form has been developed. On the effective date of these regulations, the form will be available from the Bureau of Mining and Reclamation, any of the District Mining Offices, and electronically on the Department's web site. In addition, the Department will provide the necessary forms to all licensed blasters through direct mailing.

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 reviewed 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)

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<p>Copy below is hereby approved as to form and legality. Attorney General</p> <p>_____ (DEPUTY ATTORNEY GENERAL)</p> <p>_____ DATE OF APPROVAL</p> <p>Check if applicable copy not approved. Objections attached.</p>	<p>Copy below is hereby certified to be a true and correct copy of a document issued, prescribed or promulgated by:</p> <p>DEPARTMENT OF ENVIRONMENTAL PROTECTION ENVIRONMENTAL QUALITY BOARD</p> <p>_____ (AGENCY)</p> <p>DOCUMENT/FISCAL NOTE NO. <u>7-349</u></p> <p>DATE OF ADOPTION: _____</p> <p>BY: <u>David E. Hess</u></p> <p>TITLE: <u>DAVID E. HESS, ACTING SECRETARY</u> (EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)</p>	<p>Copy below is hereby approved as to form and legality. Executive or Independent Agencies.</p> <p>BY: <u>[Signature]</u></p> <p><u>4/20/01</u> DATE OF APPROVAL</p> <p>(Deputy General Counsel) (Chief Counsel, Independent Agency) (Strike inapplicable title)</p> <p><input type="checkbox"/> Check if applicable. No Attorney General approval or objection within 30 days after submission.</p>
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ORDER ADOPTING REGULATIONS

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

25 Pa. Code, Chapters 210 and 211

Licensing of Blasters and Storage, Handling, and Use of Explosives

NOTICE OF FINAL RULEMAKING
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD
25 Pa. Code Chapters 210 and 211
Licensing of Blasters and Storage, Handling and
Use of Explosives

Order

The Environmental Quality Board (Board) by this order amends Chapters 210 (relating to blasters' licenses) and 211 (relating to storage, handling and use of explosives). These amendments modernize and clarify the Department's blasting regulations. As more fully explained below, the amendments to Chapter 210 significantly improve the process and criteria for obtaining and retaining a blaster's license. The amendments to Chapter 211 are a comprehensive modernization of the standards and procedures for handling, storing and using explosives.

These amendments were adopted by order of the Board at its meeting of April 17, 2001.

A. Effective Date

These amendments are effective upon publication in the *Pennsylvania Bulletin*.

B. Contact Persons

For further information contact J. Scott Roberts, P.G., Director, Bureau of Mining and Reclamation, Rachel Carson State Office Building, 5th floor, 400 Market Street, P.O. Box 8461, Harrisburg, PA 17105-8461, (717) 787-5103, or Marc A. Roda, Assistant Counsel, Bureau of Regulatory Counsel, Rachel Carson State Office Building, 9th floor, 400 Market Street, P.O. Box 8646, Harrisburg, PA 17105-8464, (717) 787-7060. 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 regulation is available electronically through the DEP web site (<http://www.dep.state.pa.us>).

C. Statutory Authority

The final 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 storage, handling and use 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 storage, handling and use 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 Summary

This regulatory package revises the current explosives regulatory program. The regulation of explosives presents a unique blend of health, safety and environmental concerns. Chapter 210 ensures that only qualified individuals are authorized to use explosives. The Chapter name has been changed from "use of explosives" to "blasters' licenses." Chapter 211 contains 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 are 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 the vicinity of a blast and the blasters themselves.

This rulemaking establishes minimal standards for explosives used in all above-ground operations including coal and noncoal mining, construction and demolition. The rulemaking does not apply to the storage, handling and use of explosives in underground mines.

Currently, separate blasting regulations exist for anthracite surface coal mining, bituminous surface coal mining, and noncoal surface 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 Chapters 210 and 211, persons using explosives must comply with other applicable provisions of Pennsylvania law or implementing regulations. For example, persons planning to use explosives in the waters of this Commonwealth for engineering purposes must obtain a permit from the Pennsylvania Fish and Boat Commission, 30 Pa. C.S. §2906 (relating to permits for use of explosives).

The federal government regulates some aspects of explosives. The federal Bureau of Alcohol, Tobacco and Firearms (ATF) regulates the storage and interstate sale and purchase of explosives. The Office of Surface Mining has the authority to regulate the use of explosives at surface coal mines. The Department has received general primacy authority to regulate surface coal mining in Pennsylvania, including the use of explosives. Finally, the Federal Highway Administration regulates the transportation of explosives on public roads.

The Mining and Reclamation Advisory Board (MRAB) was involved in the development of the proposed rulemaking. The regulatory changes were reviewed and discussed with the

MRAB's Regulation, Legislation and Technical Committee on August 10, 1999. The MRAB recommended that the Board 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, which is typically the closest dwelling, but in unusual cases the Department will allow monitoring at other locations. The other issue concerned a possible conflict with the requirements for analyzing seismic records in the mining regulations. The Department explained that it intends to make appropriate revisions to the mining regulations once the Board has taken final action on this rulemaking. Following this discussion, the MRAB unanimously approved the proposed rulemaking. The Board adopted the proposed regulations at its March 21, 2000 meeting.

Chapters 210 and 211 were published as proposed rulemaking in the June 3, 2000, *Pennsylvania Bulletin*. There was a 60-day comment period, and four public hearings were held. The Department has considered all comments received and has prepared a comment and response document. The comment and response document is available on the Department's web site and from the contact persons listed in Section B of this order. The MRAB reviewed and unanimously approved the draft final rulemaking at its January 4, 2001 meeting.

E. Summary of Comments and Responses on the Proposed Rulemaking and Changes Made in the Final Rulemaking

General

A commentator noted that a reference should be included in the regulation to 73 P.S. §176 *et seq.* to clearly establish that blasters are also required to comply with this state law and notify the Pennsylvania One Call System. The Board has determined that 73 P.S. §179 and 180 apply to the contractor and designer. Blasting activities are subordinate to excavation activities. Furthermore, blasters are not considered primary contractors or designers. To avoid confusion over who contacts Pennsylvania One Call, the entity who is responsible for the excavation, normally the contractor, should contact Pennsylvania One Call and inform them of the anticipated blasting activities. No changes were made to the final regulations as a result of this comment.

Some commentators were concerned that information on where to obtain applications and other forms should be included in the regulations. Copies of all applications will be available on the effective date of these regulations through the Bureau of Mining and Reclamation, any of the District Mining Offices, and electronically on the Department's web site. In addition, the Department will provide the necessary forms to all licensed blasters through direct mailing.

CHAPTER 210. BLASTERS' LICENSES

§210.11. Definitions.

Demolition and demolition blasting

The definition "Demolition Activity" has been deleted from §211.101 and added to §210.11 as "Demolition and demolition blasting" because these references appear only in Chapter 210.

§210.13. General.

A commentator noted that §210.13(b) states that certain individuals may be exempted from obtaining a blaster's license if they are detonating "extremely small amounts of explosives" and wanted clarification on what qualifies as "extremely small amounts of explosives." The applicable statutes do not obligate the Department to license all persons conducting blasting activities. The Department has found that in most industrial and research applications, the quantities of explosives and blasting operations are such that limited risk is posed to the blaster or anyone in the vicinity of the blasting activity. Due to many variables, it is impossible to set an arbitrary limit on what constitutes "extremely small amounts of explosives." Exemptions from the licensing requirement will be based on the level of risk rather than an arbitrarily established amount of explosives. The Department will evaluate the blasting activity and determine the level of risk. No changes were made to the regulation as a result of this comment, although a minor grammatical change was made for readability.

§210.14. Eligibility Requirements.

Several commentators suggested that the term "good moral character" found in §210.14(b)(1) is vague. The Board agrees that the term is vague and difficult to determine, and has deleted the requirement that an applicant for a blaster's license or renewal of a blaster's license be of "good moral character" from the final rulemaking.

Two commentators suggested that the grammatical structure of §210.14(b)(1) should be changed. The Board revised this paragraph and added the phrase "as indicated by past or continuing violations, has demonstrated a lack of ability or intention."

§210.15. License Application.

In §210.15(a) the Board added the word "provided" and deleted the word "prepared" for clarity.

A commentator suggested that the Board revise the language in §210.15(b) to ensure the notarized statement confirming experience is from a person who has direct knowledge of the applicant's expertise. The Board agrees and has added the language "a person who has direct knowledge of the applicant's expertise" to §210.15(b).

§210.17. Issuance and Renewal of Licenses.

One commentator stated that demolition has always been an activity that was authorized by holding a general blaster's license, and the regulations in §210.17(a) should not require that a blaster be licensed specifically to conduct demolition blasting. The Board disagrees. Demolition blasting is a specialty field that differs greatly from construction, mining or other categories of blasting. The demolition of structures requires analysis of the support members of the structure to determine where to place explosive charges. However, the Board recognizes that individuals have been conducting demolition blasting under the existing regulations. A new subsection (g) has been added to the regulations to provide for reclassification to a demolition blaster's license without examination or application fee based on three years of experience in demolition blasting.

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

§211.101. Definitions.

"Blast site"

A commentator noted that use of the term "area" in the definition of "Blast site" could cause confusion. The Board, for clarity, added the language "the specific location where the explosives charges are loaded into the blast holes" and deleted the language "the area where the explosive charges are located."

"Building"

A commentator asked what is meant by the term "regularly occupied" when referring to buildings. To avoid confusion on this point, the Board has changed the definition of building to "a structure that is designed for human habitation, employment or assembly."

"Flyrock"

Several commentators indicated that the definition of "flyrock" in the proposed regulations caused confusion by using the term "blast site." They noted that the term "blast site" is the area directly affected by the blast. The Board agrees and has changed the definition of "flyrock" by using the term "blast area."

"Person"

A commentator stated that the definition of "person" in the proposed Chapter 211 may imply liability that exceeds the boundaries of the law. The Board agrees and has changed the definition of "person" by deleting the reference to fines, penalties or imprisonment.

"Scaled distance"

The Board has revised this definition to clarify that "scaled distance" can apply to buildings or structures.

§211.102. Scope.

A commentator indicated that §211.102 states that there are provisions of the proposed regulations more stringent than mining regulations. The commentator suggested that this will lead to confusion and may result in inconsistent regulation of explosives usage. The commentator noted that the language should be revised to specifically identify the regulatory provisions that are more stringent than those of the mining regulations. The Board does not believe that listing these provisions is necessary or practical. Chapter 211 deals exclusively with blasting. Since Chapter 211 contains a number of detailed provisions not found in the mining regulations, any attempt to list these provisions would be confusing.

The commentator suggested that implementation of the provisions that are more stringent than the current mining regulations should be deferred until the mining regulations are amended to be consistent with the requirements of this chapter. The primary purpose of these regulations is to provide uniform standards for all blasting in Pennsylvania. The Board feels that deferring the application of some provisions of the proposed regulations until the mining regulations are amended delays attaining that goal. There were no changes made to the final rulemaking as a result of this comment.

§211.113. Application Contents.

The Board has modified the wording in several subsections for clarity.

§211.121. General Requirements.

A commentator suggested that the proposed rulemaking should indicate that the Department will notify applicants for blasting activity permits of an incomplete application and identify the missing items necessary to complete the application. The Board agrees and has added the appropriate language to the final rulemaking.

§211.122. Permits to Sell Explosives.

The word "number" has been added so that §211.121(a)(2) reads "...telephone number."

§211.133. Blast Report.

The title of this section has been revised to read "blast reports."

A commentator suggested the Department should develop a standardized blast report form. The Board agrees. The Department has developed a standardized blast report which is available on the Department's web site and from the district mining offices.

Another commentator noted that the first sentence in §211.133(a) should correctly read "shall prepare a report of each blast...." The Board agrees and has revised subsection (a) accordingly.

Two commentators noted that §211.133(a)(3) needs to specify which permit number is to be included in the blast report. The Board agrees and has reworded this paragraph to specify “blasting activity permit or appropriate mining permit.”

Two commentators suggested that the requirement to describe the height or length of stemming and deck separation on the shot report needs to be more specific. They asked if these requirements are for each hole, collectively, or average. For clarity the Board has added “for each hole” to §211.133(a)(9).

The Board has added “not owned or leased by the blasting activity permittee or its customer” to §211.133(a)(15) to further clarify the building of concern.

Two commentators suggested that it is not always reasonable to require the seismograph monitoring to be part of the blast record within 7 days and that the requirement should be extended to 14 days. The Board agrees that 14 days is acceptable under normal circumstances and has changed §211.133(a)(23) accordingly. The Board also added additional flexibility by inserting two provisions. The first allows the Department to grant waivers to allow the seismograph report to be made a part of the blast record within 30 days. The second provision gives the Department the authority to require the blast report be made part of the record within 7 days.

A commentator suggested that §211.133(a)(24) include a reference to §211.157(e) which describes the appropriate actions to take when there is a misfire. The Board has inserted the suggested reference.

Three commentators noted that §211.133(b) allows the Department to require monthly summaries. They asked the Department to explain the necessity for monthly summaries, the circumstances when monthly summaries would be required and how the blaster will be notified. In the Board’s opinion, monthly summaries are appropriate when blasting is being conducted in an area where there is considerable public concern or potential for property damage. This information would be in addition to the blast reporting requirements. The Department’s Blasting and Explosives Inspector will notify the blaster of the need to provide a monthly summary.

§211.141. General Requirements.

Commentators noted that the proposed §211.141(6) requires the permittee to only load explosives into a closed body vehicle if the load is two thousand pounds or more. They suggested language to improve clarity. The Board agrees and has made the appropriate changes.

Paragraph 211.141(11), which deals with fire extinguishers, has been revised to be consistent with Pennsylvania Department of Transportation regulations based on the recommendations of three commentators.

§211.151. Prevention of Damage.

One commentator noted that the bituminous coal regulations, Chapter 87, appear to be effective in preventing damage from the use of explosives in connection with surface mining.

The commentator asked for an explanation of why the mining regulations need to be superceded by more stringent regulations. The best science available, U.S. Bureau of Mines Report of Investigations R.I. 8507, "Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting," concludes that damage can occur to homes at ground vibration levels lower than the requirements in the present mining regulations. The adoption of more stringent ground vibration limits provides better protection of all structures. There have been situations when the limits in the proposed regulations have been applied to mining activities in order to be more protective of specific structures. Also, if necessary, these regulations allow the Department to establish alternative particle velocity or airblast limits. This change in limits would be based upon site-specific factors such as the population density, age and type of structures and geology of the area.

Two commentators felt that §211.151(c) provides an unnecessary increase of 61% over the current standard (scaled distance of 55) by requiring that blasts be designed at a scaled distance of 90. They felt that the change would put an unnecessary burden on the blasting industry. They also suggested that the former U.S. Bureau of Mines Safe Blasting Criteria (Z-Curve) should not be the regulatory limit as current standards are adequate. The Board feels that the current regulations do not adequately protect all buildings. The best available science, the former U.S. Bureau of Mines Study, R.I. 8507, "Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting," concluded that damage could possibly occur to some structures at peak particle velocities as low as .5 inches per second. The U.S. Bureau of Mines Study, R.I. 8507, predicts the highest probable ground vibration from a blast designed at a scaled distance of 90 is .5 inches per second peak particle velocity. The practical application of this requirement is to prevent property damage.

A commentator noted that §211.151(c) requires a blast to achieve either a scaled distance of 90 or the maximum peak particle velocity as indicated in Figure 1 in the regulations. The commentator believes that these standards may be too restrictive when applied to unconsolidated materials in the vicinity of a blast, and questioned if geologic variation should be considered in the determination of vibration limits. Geology influences the character of the ground vibration; it does not affect dynamics of a structure's response. Designing a blast at the scaled distance of 90 insures that ground vibration will not exceed .5 inches per second under any circumstances. The scaled distance limit of 90 was derived from a large number of blasts under a variety of geologic conditions. While the scaled distance of 90 may be conservative in some areas, the blaster may elect to use Figure 1 as the standard in those areas.

Figure 1, in §211.151(c), was changed to add .50 in./sec. on the graph. This change was made for clarity.

In §211.151(c) the language was changed by adding "at the closest building or other structure designated by the Department" and by replacing the word "based" with "leased" in §211.151(d). These changes were made to maintain consistency with other provisions of this section and to correct a typographical error.

In response to comments on §211.151 and §211.151(c), §211.151(e) has been changed to allow the Department to establish an alternative peak particle velocity or airblast level instead of just reducing these levels. Commentators expressed concern that the limits may be too stringent.

The Department recognizes that some structures may be adequately protected by applying less stringent limits.

§211.153. *General Requirements for Handling Explosives.*

In 211.153(b), relating to prohibiting matches, lighters and smoking within a specified distance of a blast site or area where explosives are stored or used, "30.48 meters" was added and "30.84" was deleted. The language change was made to correct a typographical error.

§211.154. *Preparing the Blast.*

In response to a number of comments, the Board has revised §211.154(c), (f)(2), (4), and (5), and (k) for clarity, readability, and consistency.

§211.171. *General Provisions for Monitoring.*

A commentator noted that the proposed rulemaking should be revised to specify the circumstances under which the Department may require ground vibration and air blast monitoring at scaled distance above 90 or at a structure other than the building closest to the blast. The Board does not agree that the regulations should specify when the Department may require additional monitoring. Blasting is an ultra-hazardous activity and occasionally has unintentional impacts on the public. It is impossible to articulate in the regulations all the circumstances under which the Department should require additional monitoring.

In response to these comments, the language in §211.171(d) has been changed by revising the minimum trigger to be .25 inches per second rather than 50% of the compliance limit.

Two commentators noted that the older model and brick seismographs do not record the date and time when the instrument was turned on or off. They felt that a 3-year phase-in period should be included in §211.171(e) as was done in §211.133(a)(23). They suggested that language can be added which would allow a blaster to supply the on/off times for the instrument on a signed statement. The Department has revised the regulation to allow the blaster to supply on/off times on a signed statement when using an instrument that doesn't provide a print out. This revision allows blasters to continue using existing seismographs, thereby eliminating the need for a phase-in period.

§211.173. *Monitoring Records.*

Language changes in §211.173(b) were made for clarification and accuracy.

A commentator suggested that §211.173(c), which authorizes the Departments to require a ground vibration or airblast recording to be analyzed or certified by an independent qualified consultant, should specify what circumstances would exist to require this type of analysis or certification. The Board agrees. The section has been revised by adding "If the Department questions the validity of a ground vibration or airblast record or the interpretation of the record" to §211.173(c).

§211.182. General Provisions.

Several commentators suggested that the Board consider adding language to the proposed rulemaking to allow the use of measures for protecting the lines other than those specified in the regulations upon approval of the Department as well as the owner of the utility. The Board agrees and has changed the language of §211.182(e) to include this provision.

F. Benefits, Costs and Compliance

Benefits

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 the regulation establishes new 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 proposed rulemaking requires more monitoring than previously required. However, because monitoring records are no longer required to be analyzed or verified by an independent third party, cost savings will be realized. There is no change to the current fee structure.

Compliance Assistance Plan

The Department will provide written notification of this rulemaking to all blasters in the Commonwealth. The Department will also hold outreach sessions with the Pennsylvania Chapters of the International Society of Explosive Engineers and various mining organizations.

Paperwork Requirements

This regulation 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 that will be available on the effective date of these regulations. The form will be available from the Bureau of Mining and Reclamation, any of the District Mining Offices, and electronically on the Department's web site. In addition, the form will be provided to all licensed blasters through direct mailing. Additional information will be required in the blast report.

G. Sunset Review

These regulations will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

H. 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 notice of proposed rulemaking published at 30 Pa. B. 2768, and to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing these final-form regulations, the Department has considered all comments from IRRC and the public. The Committees will not submit comments on the proposed rulemaking.

Under section 5.1(d) of the Regulatory Review Act (71 P.S. §745.5(a)(d)), on _____, these final-form regulations were deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on _____, and approved the final-form regulations.

I. Findings of the Board

The Board finds that:

(1) Public notice of the proposed rulemaking was given under Sections 201 and 202 of the Act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§1201 and 1202), and regulations promulgated thereunder at 1 Pa. Code §§7.1 and 7.2.

(2) A public comment period was provided as required by law and all comments were considered.

(3) These final-form regulations do not enlarge the purpose of the proposed amendments published at 30 Pa. B. 2768.

(4) These final-form regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this order.

J. Order of the Board

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapters 210 and 211, are amended to read as set forth in Annex A.

(b) The Chairperson shall submit this order and Annex A to the Office of General Counsel and the Office of the Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to IRRC and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act.

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislature Reference Bureau, as required by law.

(e) This order shall take effect immediately.

BY:

DAVID E. HESS
Chairman
Environmental Quality Board

(Editor's Note: As part of this proposal, the Board is deleting the existing text of Chapter 210, §§210.1-210.6, which appears at 25 Pa. Code pages 210-1-210-5, serial numbers (243459)-(243463).)

ANNEX A

TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE IV. OCCUPATIONAL HEALTH AND SAFETY
CHAPTER 210. [USE OF EXPLOSIVES] BLASTERS' LICENSES
GENERAL PROVISIONS

Sec.

- 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. Recognition of out-of-State blaster's license.
- 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.

DEMOLITION AND DEMOLITION BLASTING - THE ACT OF WRECKING OR DEMOLISHING A STRUCTURE WITH EXPLOSIVES.

Person - A natural person.

§ 210.12. Scope.

This chapter applies to persons engaging in the detonation of explosives within this Commonwealth. This chapter does not apply to persons authorized to detonate explosives or to supervise blasting activities under:

- (1) The Pennsylvania Anthracite Coal Mine Act (52 P. S. §§ 70.101-70.1405).
- (2) The Pennsylvania Bituminous Coal Mine Act (52 P. S. §§ 701-101-701-706).

§ 210.13. General.

(a) A person may not 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 an exemption from the person seeking the exemption.

(c) **UPON REQUEST, A BLASTER** [A blaster upon request] shall exhibit a blaster's license to the following:

- (1) An authorized representative of the Department.
 - (2) The blaster's employer or an authorized representative of the employer.
 - (3) 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 1 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 will not issue or renew a license **IF [unless the following conditions are met:**

(1) **The applicant is of good moral character.**

(2) **The] THE applicant, AS INDICATED BY PAST OR CONTINUING VIOLATIONS, HAS DEMONSTRATED A LACK OF ABILITY OR INTENTION [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] **PROVIDED** 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 2 weeks prior to the examination.

(b) The license application shall include a signed notarized statement from **A PERSON WHO HAS DIRECT KNOWLEDGE OF THE APPLICANT'S EXPERTISE, SUCH AS** 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 the 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 3 years.

(d) A blaster's license is renewable if the blaster can demonstrate that he 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 1 year of its expiration date shall apply for a new license under §§ 210.14-210.16 (relating to eligibility requirements; license application; and examinations).

(g) A PERSON WHO CONDUCTED DEMOLITION BLASTING UNDER A GENERAL BLASTER'S LICENSE MAY CONDUCT DEMOLITION BLASTING AFTER _____ (EDITOR'S NOTE: THE BLANK REFERS TO THE EFFECTIVE DATE OF THE ADOPTION OF THIS PROPOSAL.) BY APPLYING FOR AND RECEIVING A DEMOLITION BLASTER'S LICENSE. THE DEPARTMENT MAY WAIVE THE EXAMINATION REQUIRED BY § 210.14 (RELATING TO ELIGIBILITY REQUIREMENTS) AND THE APPLICATION FEE IF THE BLASTER DEMONSTRATES AT LEAST THREE YEARS OF EXPERIENCE IN DEMOLITION BLASTING. THE DEMONSTRATION MUST BE IN THE FORM OF A NOTARIZED STATEMENT FROM THE BLASTER'S EMPLOYER THAT DESCRIBES THE BLASTER'S EXPERIENCE.

§ 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 storage, handling and use 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 to 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 storage, handling and use of explosives in surface applications).

(Editor's Note: As part of this proposal, the Board is deleting the existing text of Chapter 211, §§ 211.1, 211.2, 211.31-211.44, 211.51-211.56, 211.61, 211.62, 211.71-211.76 and 211.81-211.88 which appears at 25 Pa. Code pages 211-1-211-38, serial numbers (243465)-(243502).)

CHAPTER 211. STORAGE, HANDLING AND USE OF EXPLOSIVES

Subch.

- A. GENERAL PROVISIONS
- B. STORAGE AND CLASSIFICATION OF EXPLOSIVES
- C. PERMITS
- D. RECORDS OF DISPOSITION OF EXPLOSIVES
- E. TRANSPORTATION OF EXPLOSIVES
- F. BLASTING ACTIVITIES
- G. REQUIREMENTS FOR MONITORING
- H. BLASTING ACTIVITIES NEAR UTILITY LINES

SUBCHAPTER A. GENERAL PROVISIONS

Sec.

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

§ 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 SPECIFIC LOCATION WHERE THE EXPLOSIVES CHARGES ARE LOADED INTO THE BLAST HOLES. [The area where the explosive charges are located.]

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

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

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

Building - A structure that is **DESIGNED FOR HUMAN HABITATION, EMPLOYMENT OR ASSEMBLY** [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 nonelectric 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.

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

(ii) The term does not include the following:

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

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

Flyrock - Overburden, stone, clay or other material ejected from the blast **AREA [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 includes 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 **OR STRUCTURE**, neither owned nor leased by the blasting activity permittee or its customer, divided by the square root of the maximum weight of explosives (W) in pounds, that is detonated per delay period of less than 8 milliseconds.

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

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) This chapter applies to persons using, storing, purchasing and selling explosives and engaging in blasting activities within this Commonwealth. Persons using and storing explosives at underground mines are exempt from this chapter. The storage of explosives in magazines on the surface at an underground noncoal mine is subject to the applicable requirements of this chapter. The provisions of this chapter that are more stringent than the blasting provisions in Chapters 77, 87 and 88 (relating to noncoal mining; surface mining of coal; and anthracite coal) apply to blasting activities at coal or noncoal surface mines.

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

§ 211.103. Enforcement.

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

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

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

Sec.

- 211.111. Scope.
- 211.112. Magazine license and fees.
- 211.113. Application contents.
- 211.114. Displaying the license.
- 211.115. Standards for classifying and storing explosives, and constructing, maintaining and siting magazines.

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

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

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

(d) License fees are as follows:

(1) License:

(i) Application - \$50

(ii) Site inspection - \$50

(2) License modifications - \$50

(3) License renewals - \$50

(4) License transfers - no fee

§ 211.113. Application contents.

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

(b) A **COMPLETED** license application shall include:

(1) The applicant's [**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 **WITHIN** [**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. If possible, the license shall be displayed inside the magazine. In all other cases, the license shall be displayed at the site and adjacent to the magazine to which it applies.

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

(a) The provisions of 27 CFR Part 55, Subpart K (relating to storage), 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

Sec.

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

§ 211.121. General requirements.

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

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

(c) A permit issued under the Surface Mining Conservation and Reclamation Act (52 P. S. §§ 1396.1-1396.18), or the Noncoal Surface Mining and Conservation and Reclamation Act (52 P. S. §§ 3301-3326), and the regulations promulgated thereunder, authorizing blasting activity shall act as a blasting activity permit issued under this chapter.

(d) An application for a permit for the sale or purchase of explosives or to conduct blasting activities shall be on a form provided by the Department. A permit will not be issued unless the application is complete and demonstrates that the proposed activities comply with the applicable requirements of this chapter. **THE DEPARTMENT WILL NOTIFY APPLICANTS OF AN INCOMPLETE APPLICATION AND IDENTIFY THE ITEMS NECESSARY TO COMPLETE THE APPLICATION.** The permittee shall comply with the approved application, the permit and this chapter.

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

(1) Failed and continues to fail to comply with this chapter or a condition of a permit issued under this chapter or an order issued to enforce this chapter.

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

§ 211.122. Permits to sell explosives.

- (a) An application for a permit to sell explosives shall:
- (1) Identify the applicant's name, address, telephone number and type of business.
 - (2) Identify a contact person, including name, title and telephone NUMBER.
 - (3) Specify the type of explosives to be sold.
 - (4) State whether the applicant will purchase or manufacture the explosives to be sold.
 - (5) For in-State sellers, include the applicant's magazine license number, if applicable.
- (b) Permits to sell explosives are not transferable.
- (c) Permits to sell explosives expire on April 30 of each year. If the Department receives a complete renewal application by April 30, the permittee may continue to operate under the current permit until the Department acts on the renewal application.
- (d) A permit to sell explosives shall:
- (1) Identify the permittee.
 - (2) Specify the type of explosives that the permittee may sell.
 - (3) Contain conditions, as necessary, to ensure that the proposed activity complies with applicable statutes and this chapter.

§ 211.123. Permits to purchase explosives.

- (a) An application for a permit to purchase explosives shall:
- (1) Identify the applicant's name, address, telephone number and type of business.
 - (2) Identify a contact person, including name, title and telephone number.

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

§ 211.124. Blasting activity permits.

- (a) An application for a blasting activity permit shall be prepared by a blaster and shall include:
- (1) The applicant's name, address, telephone number and type of business.
 - (2) A contact person's name, title and telephone number.
 - (3) The identity of independent subcontractors who will be performing the blasting activities.
 - (4) The type of explosives to be used.
 - (5) The maximum amount of explosives that will be detonated per delay interval of less than 8 milliseconds.
 - (6) The maximum amount of explosives that will be detonated in any one blast.
 - (7) A map indicating the location where the explosives will be used.
 - (8) The purpose for which the explosives will be used.
 - (9) The location and license number of the magazine that will be used to store the explosives, if applicable.
 - (10) A description of how the monitoring requirements of Subchapter G (relating to requirements for monitoring) will be satisfied.
 - (11) Proof of third party general liability insurance in the amount of \$300,000 or greater per occurrence. This requirement is not applicable if the permittee is a noncoal surface

mine operator who produces no more than 2,000 tons (1,814 metric tons) of marketable minerals per year from all its noncoal surface mining operations.

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

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

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

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

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

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

(b) Blasting activity permits are not transferable.

(c) The blasting activity permit shall specify:

(1) The blasting activity permittee.

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

(3) Limits on particle velocity and airblast.

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

(5) The duration of the permit.

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

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

§ 211.125. Blasting activity permit by rule.

- (a) A person shall be deemed to have a permit for a blasting activity if:
- (1) The blasts are designed and performed for a scaled distance of 90 or greater.
 - (2) No more than 15 pounds (6.81 kilograms) of explosives are detonated per delay interval of less than 8 milliseconds.
 - (3) The total charge weight per blast does not exceed 150 pounds (68.18 kilograms).
 - (4) The person notifies the Department either verbally, in writing, or by other means approved by the Department prior to the initial blast. If the person gives verbal notification, a written notice shall be received by the Department within 5 working days. The notification shall indicate the following information for all blasts that will occur under this permit:
 - (i) The identity of the person.
 - (ii) The location where the blasting will occur.
 - (iii) The purpose of the blasting.
 - (iv) The distance to the nearest building not owned or leased by the person or its customer.
 - (v) The days of the week and times when blasting may occur.
 - (vi) The duration of blasting activities under this permit by rule.
 - (vii) The minimum scaled distance.
 - (viii) The maximum weight of explosives detonated per delay period of less than 8 milliseconds.
 - (ix) The maximum total weight of explosives per blast.
 - (x) A contact person and telephone number.
 - (5) Blast reports are completed in accordance with § 211.133 (relating to blast report).
 - (6) The other monitoring and performance standards of this chapter are met.

(b) The Department may revoke a blasting activity permit by rule under one of the following:

(1) The permittee has demonstrated an unwillingness or inability to comply with the applicable regulations.

(2) The blasting activity possesses a sufficient risk of harm to the public or the environment to warrant an individual blasting activity permit.

SUBCHAPTER D. RECORDS OF DISPOSITION OF EXPLOSIVES

Sec.

- 211.131. Sales records.
- 211.132. Purchase records.
- 211.133. Blast [report.] **REPORTS.**

§ 211.131. Sales records.

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

§ 211.132. Purchase records.

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

§ 211.133. Blast [report.] REPORTS.

(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 3 years and shall make the blast report available to the Department upon request. Blast reports shall contain, at a minimum, the following:

- (1) The locations of the blast and monitoring readings.

- (2) The name of the blasting activity permittee.
- (3) The **BLASTING ACTIVITY PERMIT OR APPROPRIATE MINING** permit number.
- (4) The date and time of the blast.
- (5) The printed name, signature and license number of the blaster-in-charge.
- (6) The type of material blasted.
- (7) A sketch showing the number of blast holes, burden, spacing, pattern dimensions and point of initiation.
- (8) The diameter and depth of blast holes.
- (9) The height or length of stemming and deck separation **FOR EACH HOLE.**
- (10) The types of explosives used and arrangement in blast holes.
- (11) The total weight in pounds of explosives and primer cartridges used.
- (12) The maximum weight in pounds of explosives detonated per delay period of less than 8 milliseconds.
- (13) The type of circuit, if electric detonation was used.
- (14) The direction and distance in feet from the blast site to the nearest building not owned by the blasting activity permittee or its customer.
- (15) A description of the nearest building location **NOT OWNED OR LEASED BY THE BLASTING ACTIVITY PERMITTEE OR ITS CUSTOMER** based upon local landmarks.
- (16) The scaled distance.
- (17) The weather conditions.
- (18) The direction from which the wind was coming.
- (19) The measures taken to control flyrock, including whether or not mats were used.
- (20) The total quantity and type of detonators used and delays used.

(21) The number of individuals in the blasting crew.

(22) The maximum number of blast holes or portions of blast holes detonated per delay period less than 8 milliseconds.

(23) The monitoring records required by § 211.173 (relating to monitoring records). Monitoring records shall be made part of the blast report within 30 days of the blast. Beginning _____ (*Editor's Note: The blank refers to a date 3 years from the effective date of adoption of this proposal.*), monitoring records shall be made part of the blast report within 14[7] days of the blast. **THE DEPARTMENT MAY GRANT A WAIVER TO ALLOW MONITORING RECORDS TO BE MADE PART OF THE BLASTING RECORD WITHIN 30 DAYS OF THE BLAST IF ALL BLASTS, REGARDLESS OF SCALED DISTANCE, ARE MONITORED AND MONTHLY SUMMARIES OF THESE REPORTS, INCLUDING THE INFORMATION REQUIRED IN §211.133(24)(b), ARE PROVIDED. MONITORING RECORDS MUST BE MADE PART OF THE BLAST REPORT WITHIN 7 DAYS, IF REQUESTED BY THE DEPARTMENT.**

(24) If a misfire occurred, the actions taken to make the site safe AS SPECIFIED IN SECTION 211.157 (RELATING TO POSTBLAST MEASURES).

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

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 under Subchapter B (relating to the storage and classification of explosives).

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

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

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

(5) Load no more than 2,000 pounds (908 kilograms) of explosives into an open body vehicle for transporting. The ends and sides shall be high enough to prevent explosives from falling off, and the load shall be covered with a fire-resistant tarpaulin, unless the explosives are transported in a magazine securely attached to the vehicle.

(6) [Only] load explosives into a closed body vehicle if the load is **MORE THAN** 2,000 pounds (908 kilograms) [or more] of explosives.

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

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

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

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

(11) Only load explosives into vehicles equipped with A [at least two] fire extinguisher[s] **HAVING A [approved and coded by the] National Board of Underwriters LABORATORIES RATING OF 10 B:C OR MORE.** The fire extinguisher[s] shall be easily accessible and ready for immediate use. [If the vehicle has:

(i) A the extinguishers gross weight of 14,000 pounds (6,356 kilograms) or less, the extinguishers shall have a combined capacity of 4-A:20-B,C, or equivalent.

(ii) A gross weight of greater than 14,000 pounds (6,356 kilograms) and for tractor/semitrailers, 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**

Sec.

- 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. Nonelectric detonation.
- 211.161. Detonating cords.
- 211.162. Safety fuse.

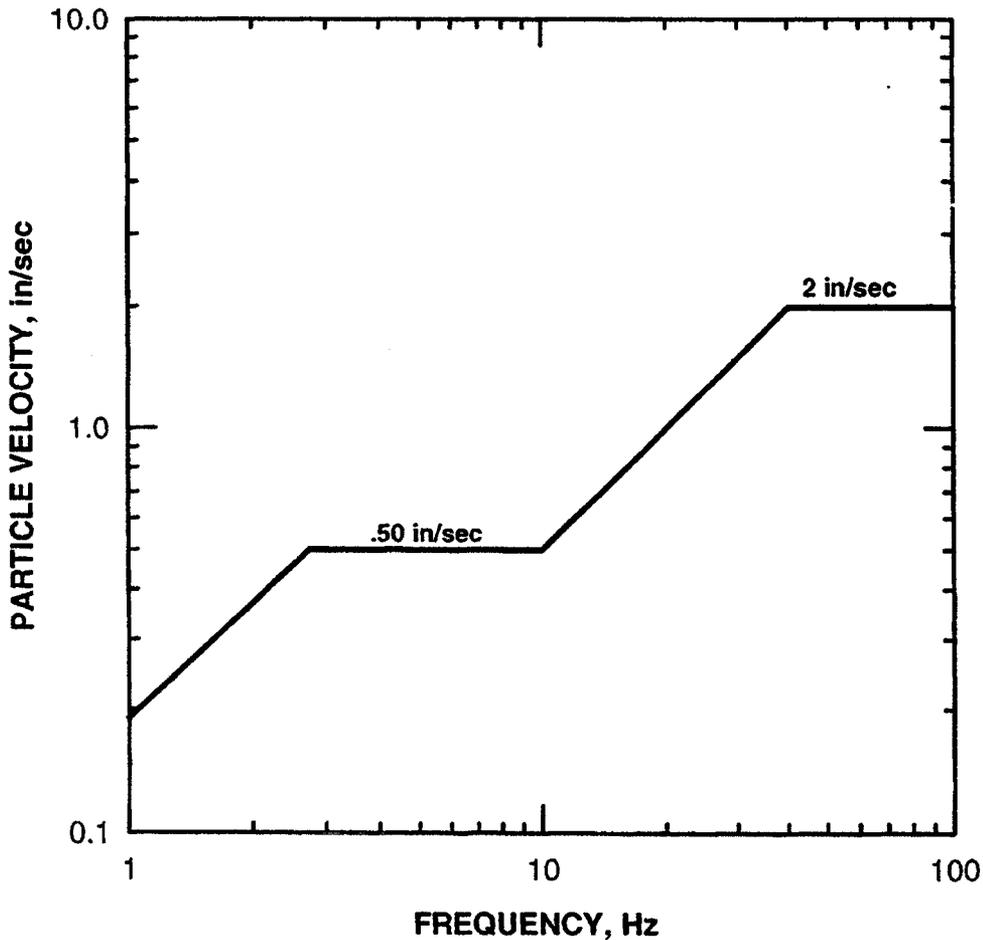
§ 211.151. Prevention of damage.

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

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

(c) Blasts shall be designed and conducted in a manner that achieves either a scaled distance of 90 or meets the maximum allowable peak particle velocity as indicated by Figure 1 **AT THE CLOSEST BUILDING OR OTHER STRUCTURE DESIGNATED BY THE DEPARTMENT.** However, blasting activities authorized prior to _____ (*Editor's Note: The blank refers to the effective date of the adoption of this proposal.*) Figure 1 appears on the following page and may continue as authorized unless the authorization is modified, suspended or revoked by the Department. The scaled distance and maximum allowable peak particle velocity does not apply at a building or other structure owned or leased by the permittee or its customer.

Figure 1.



(d) Blasts shall be designed and conducted to control airblast so that it does not exceed the noise levels specified in Table 1 at a building or other structure designated by the Department unless the building is owned or **LEASED** [based] by the permittee or its 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 **ESTABLISH AN ALTERNATIVE** [reduce the maximum] peak particle velocity or airblast level if it determines that **AN ALTERNATIVE** [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 so that the gases generated by the blast do not affect the health and safety of individuals. Effects from gases may be prevented by taking measures such as venting the gases to the atmosphere, interrupting the path along which gases may flow, and evacuating people from areas that may contain gases.

§ 211.153. General requirements for handling explosives.

- (a) Only a nonferrous, nonsparking tool shall be used to open containers of explosives.
- (b) Matches, lighters and smoking are prohibited within 100 feet (~~30.48~~ [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 may not be forced into cartridges of explosive or cast boosters. Detonators shall be completely inserted into a hole in an explosive cartridge made with an approved powder punch or into the detonator well of a cast booster.
- (e) Explosives may not be left unattended. They are to be stored in a licensed magazine or kept under the permittee's supervision and control.
- (f) A loaded blast shall always be under the continuous observation of the blaster-in-charge or a designee.
- (g) Shooting or carrying ammunition or firearms on a blast site and in areas where explosives are used or stored is prohibited, except for material needed to initiate the blast.
- (h) If blasting activities are conducted in the vicinity of electric lines such as transmission lines or electrified railways, a test shall be made for presence of stray electric currents. Electric blasting caps may not be used if stray electric currents in excess of 50 milliamperes are present.
- (i) A package of explosives may not be thrown, slid along floors or over other packages of explosives, or handled roughly.
- (j) If an electrical storm approaches an area where there is an activity involving explosives, the area shall be cleared by the permittee or licensee, who shall post guards at all approaches to prevent trespass of unauthorized persons.

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

§ 211.154. Preparing the blast.

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

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

(c) A **BLASTER-IN-CHARGE** [person] may not prepare or detonate a blast unless another person is present, able and ready to render assistance in the event of accident or injury.

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

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

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

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

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

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

(4) The blast hole shall be carefully checked for obstructions with a **NONFERROUS, NONSPARKING** [wooden] tamping pole, a tape, a light or a mirror before it is loaded. The use of magnifying mirrors is prohibited. Explosives may not be forced past an obstruction in a blast hole.

(5) **EACH** [The] blast hole shall be logged **THROUGHOUT THE LEADING PROCESS** to measure the amount and location of explosives placed in the blast hole. The information is to be recorded on the blast report required by § 211.133 (relating to blast report).

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

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

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

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

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

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

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

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

(k) Explosives may not be brought to a blast site in greater quantities than **ARE EXPECTED TO BE** [that] needed for that blast. Surplus explosives may not be stored **IN** [at] the blast **AREA** [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, notify all persons who may be in danger.
- (5) Ensure that the necessary precautions are in place to protect the public on public roads.
- (6) At least 1 minute but no more than 2 minutes prior to detonation, sound a warning signal of three blasts, each lasting approximately 5 seconds. The warning signal shall be of sufficient power to be heard 1,000 feet (304.80 meters) from the blast site.

§ 211.156. Detonating the blast.

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

§ 211.157. Postblast measures.

- (a) After a blast has been detonated, no one may return to the blast area until all smoke and fumes have dissipated.
- (b) After the smoke and fumes have cleared, the blaster-in-charge shall return to the blast site and closely inspect the blast site to ensure that it is safe with respect to the blasting activity.
- (c) After the blaster-in-charge has determined the blast area is safe, the blaster-in-charge shall sound an all-clear signal, consisting of one long blast, lasting approximately 10 seconds. This all-clear signal shall be of sufficient power to be heard 1,000 feet (304.80 meters) from the blast site.

(d) The blaster-in-charge shall determine if a misfire occurred and shall take all actions necessary to render the blast site safe. The blast site shall be made safe before drilling or muck removal begins.

(e) If the blaster-in-charge suspects that undetonated ammonium nitrate/fuel mixture remains in the muck pile, the muck pile shall be thoroughly wetted down with water before any digging is attempted. Special attention shall be given to determine if primers, other explosives or detonators are present in the muck pile.

(f) The blaster-in-charge shall immediately complete the blast report as required by § 211.133 (relating to blast report).

(g) The blaster-in-charge shall notify the Department within 24 hours of the occurrence of a misfire. A copy of the blast report shall be forwarded to the Department.

§ 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 reshunted.

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

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

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

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

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

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

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

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

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

§ 211.160. Nonelectric detonation.

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

§ 211.161. Detonating cords.

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

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

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

§ 211.162. Safety fuse.

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

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

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

**SUBCHAPTER G.
REQUIREMENTS FOR MONITORING**

Sec.

- 211.171. General provisions for monitoring.
- 211.172. Monitoring instruments.
- 211.173. Monitoring records.

§ 211.171. General provisions for monitoring.

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

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

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

(d) If monitoring is performed with instruments that have variable "trigger levels," the trigger for ground vibration shall be set at a particle velocity of no more than **.25 INCHES PER SECOND [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. **WHEN AN INSTRUMENT IS USED THAT DOES NOT PROVIDE THIS INFORMATION, THE DEPARTMENT WILL ALLOW THE PERMITTEE TO SUPPLY ON/OFF TIMES ON A SIGNED STATEMENT.**

§ 211.172. Monitoring instruments.

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

- (1) A monitoring instrument for recording ground vibration, at a minimum, shall have:
 - (i) A frequency range of 2 Hz to 100 Hz.
 - (ii) Particle velocity range of .02 to 4.0 inches (5.08×10^{-4} to 0.10 meters) per second or greater.
 - (iii) An internal dynamic calibration system.
- (2) A monitoring instrument used to record airblast shall have:
 - (i) A lower frequency limit of 0.1, 2.0 or 6.0 Hz.
 - (ii) An upper end flat-frequency response of at least 200 Hz.
 - (iii) A dynamic range that, at a minimum, extends from 106 to 142 dBL.
- (3) A monitoring instrument shall be calibrated annually and when an instrument is repaired and the repair may effect the response of the instrument. Calibration shall be done by the manufacturer of the equipment, or by an organization approved by the manufacturer, or by an organization having verifiable knowledge of the calibration procedures developed by the manufacturer. The calibration procedure shall include testing the response of the entire system to externally-generated dynamic inputs. These inputs shall test the entire monitoring system at a sufficient number of discrete frequency intervals to assure flat response throughout the frequency ranges specified by this chapter. Dynamic reference standards used for calibration shall be traceable to the National Institute of Standards and Technology (NIST). Calibration procedures and documentation of calibration shall be made available for review by the Department.
- (4) A nonalterable sticker that is clearly visible shall be firmly affixed to the instrument. The sticker shall indicate the name of the calibration facility, the calibration technician, the date of calibration and frequency range of the airblast monitor.

§ 211.173. Monitoring records.

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

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

(1) **[The calibration pulse] A CALIBRATION PULSE ON EACH OF THE MUTUALLY-PERPENDICULAR GROUND VIBRATION TRACES. THESE PULSES SHALL REPRESENT THE DYNAMIC RESPONSE OF THE ENTIRE RECORDING SYSTEM TO AN INTERNALLY-GENERATED CALIBRATION SIGNAL, AND SHALL ALLOW THE DEPARTMENT TO VERIFY THAT THE SEISMOGRAPH IS RECORDING GROUND VIBRATION TO ITS SPECIFIC ACCURACY.**

[(2) The calibration signal of the gain setting, for instruments with variable gain settings.]

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

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

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

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

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

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

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

(c) **IF THE DEPARTMENT QUESTIONS THE VALIDITY OF A GROUND VIBRATION OR AIRBLAST RECORD, OR THE INTERPRETATION OF THE RECORD, T**he Department may require a ground vibration or airblast recording to be analyzed or certified by an independent, qualified consultant who is not related to the blasting activity permittee or its customer. When the Department requires that a recording be analyzed or certified, it shall be performed and included with the blast report within 30 days.

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

Sec.

- 211.181. Scope.
211.182. General provisions.

§ 211.181. Scope.

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

§ 211.182. General provisions.

- (a) Blasts shall be designed and conducted so that they provide the greatest relief possible in a direction away from the utility line and to keep the resulting vibration and actual ground movement to the lowest possible level.
- (b) Blasting shall use a type of explosive specifically designed to minimize the likelihood of propagation between explosive charges.
- (c) When blasting within 200 feet (60.96 meters) of a utility line, blast holes may not exceed 3 inches (7.62×10^{-2} meters) in diameter.
- (d) Blasting in the vicinity of a utility line shall be conducted as follows:
- (1) Excavation from the ground surface to a depth corresponding to the elevation of the top of the buried utility line may proceed at the discretion of the blaster-in-charge, using safe, accepted techniques.
- (2) Once the excavation has attained a depth equal to the elevation of the top of the buried utility line or if the line is exposed, or makes solid contact with the surface, the vertical depth of subsequent blast holes shall be restricted to one half the horizontal distance from the closest portion of the utility line.
- (e) If one or more of the requirements listed in this section are not feasible or creates a potential safety problem, the permittee may apply to the Department for a waiver of the provision or provisions in question. This waiver will be granted if, in the judgment of the Department **AND THE UTILITY OWNING THE LINES**, the alternate procedure does not endanger the utility line.

**LICENSING OF BLASTERS AND STORAGE, HANDLING AND
USE OF EXPLOSIVES**

PROPOSED RULEMAKING

25 PA CODE CHAPTERS 210 AND 211

COMMENT AND RESPONSE DOCUMENT

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

This is a list of corporations, organizations and interested individuals from whom the Environmental Quality Board has received comments regarding the above referenced regulation.

ID	Name/Address	Zip	Submitted 1 pg Summary	Provided Testimony	Req Final Rulemaking
1	Mr. Keith Pucalik Vibra-Tech Engineers, Inc. 359 Northgate Drive Warrendale, PA	15086		T	
2	Messrs. Jay Elkin and Ed King Wampum Hardware 636 Payden Road New Galilee, PA	16141		T	
3	William B. Boots, ARM, CSHM Senior Loss Control Consultant HRH Risk Management USX Tower, Suite 5500 600 Grant Street Pittsburgh, PA	15219		T	
4	David Harrison, Regional V.P. Dr. Edward J. Walter & Assoc., Inc. P.O. Box 544 Gibsonia, PA	15044-0544		T	
5	Mr. Ron Frye Hall Explosives 2981 Elizabethtown Road Hershey, PA	17033		T	
6	Mr. Kirk Whitaker SENEX Corp. 710 Millers Run Road Cuddy, PA	15031		T	
7	Mr. Alvin L. Best RFI Energy, Inc. P.O. Box 162 Sligo, PA	16255		T	
8	Breck Neeper D.C. Guelich Explosive Co. R.D. 3, Box 125 Clearfield, PA	16830		T	X
9	Mr. Jim Shuster Brubacher Excavating, Inc. 825 Reading Road Bowmansville, PA	17507		T	
10	Gilbert M. Freedman, P.E. 49 Sample Bridge Road Mechanicsburg, PA	17055-2386			X
11	Mr. James A. Elkin BL 4088 Wampum Hardware Co. 636 Paden Road New Galilee, PA	16141			
12	Mr. Richard F. Tallini 3343 Brantford Rd. Toledo, OH	43606			

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

13	Pa. One Call System, Inc. c/o Mr. William P. Boswell McGuire Woods LLP CNG Tower 625 Liberty Avenue, 23 rd Floor Pittsburgh, PA	15222-3142	S		
14	Mr. Michael G. Young Director of Regulatory Affairs Pennsylvania Coal Association 212 North Third Street, Suite 102 Harrisburg, PA	17101	S		X
15	Daniel Ray Leach, President Hall Explosives Inc. 2981 Elizabethtown Road Hershey, PA	17033			
16	Michael F. Salley, P.E. 106 Center Street Forty Four, PA	18704-5018			
17	Mr. David Harrison Dr. Edward J. Walter & Assoc., Inc. P.O. Box 544 Gibsonia, PA	15044			
18	Dennis Kisthart, Regulatory Chairperson Daniel Ray Leach, Program Chairperson Randy May, President Eastern Pennsylvania Chapter Society of Explosives Engineers 559 Nor Bath Blvd. Northampton, PA	18067			
19	Mr. Randall S. May Maurer & Scott, Inc. Blasting Committee Chairman c/o Pennsylvania Aggregates and Concrete Assn. 3509 North Front Street Harrisburg, PA	17110-1438			
20	Independent Regulatory Review Commission 14 th Floor 333 Market Street Harrisburg, PA	17101			

COMMENTS AND RESPONSES

GENERAL

Comment: A reference should be included in the regulation to 73 P.S. §176 *et seq.* to clearly establish that blasters are also required to comply with this state law with regard to notification of the Pennsylvania One Call System. (13)

Response: 73 P.S. §179 and 180 require the contractor and designer to contact Pennsylvania One Call. Blasting activities are subordinate to excavation activities. Furthermore, blasters are not considered contractors or designers. To avoid confusion over who contacts Pennsylvania One Call, the entity responsible for the excavation should contact Pennsylvania One Call and inform them if blasting activities are anticipated.

CHAPTER 210

§210.13. General.

§210.13(b)

Comment: Subsection (b) states that certain individuals may be exempted from obtaining a blaster's license if they are detonating "extremely small amounts of explosives." What qualifies as "extremely small amounts of explosives?" (20)

Response: The Department is not obligated to license all persons conducting blasting activities. In most industrial and research applications, the quantities of explosives and blasting operations are such that limited risk is posed to the blaster or anyone in the vicinity of the blasting activity. Due to many variables, it is impossible to set an arbitrary limit on what constitutes "extremely small amounts of explosives." Exemptions from the licensing requirement will be based on risk rather than an arbitrarily established amount of explosives. Risk will be determined by Department review.

§210.14. Eligibility requirements.

§210.14(b)(1)

Comment: The term "good moral character" is vague. What degree of proof will be required and how will a determination of "good moral character" be made? (14) (15) (18) (20)

Response: The Department agrees that the term "good moral character" is vague and difficult to determine. The Department has deleted §210.14(b)(1) from the regulations.

§210.14(b)(2)

Comment: The wording in the qualifications for eligibility blasting license stated that the applicant should demonstrate a lack of intention to comply with Department regulations. This statement should be “applicant has demonstrated an ability and intention to comply.” (8) (20)

Response: The Department recognizes the awkwardness of this wording, which resulted from an inadvertent printing error, and has revised this statement based on a similar provision in Chapter 77, Noncoal Mining.

§210.15. License application.

§210.15

Comment: This section provides application requirements, but does not state how an applicant can obtain the application form. For clarity, this section should state where applications can be obtained. (20)

Response: The Department has revised this section to state that the form will be provided by the Department. On the effective date of these regulations, the form will be available from the Bureau of Mining and Reclamation, any of the District Mining Offices, and electronically on the Department’s web site.

§210.15(b)

Comment: Subsection (b) requires a notarized statement from the blaster who supervised the applicant, “or the applicant’s employer.” Given the broad range of employment situations, it is possible the applicant’s employer may not have supervised the applicant. It is also possible the supervising blaster’s employer could vouch for the applicant if the supervising blaster is no longer available. The Department should review this provision to ensure the notarized statement is from the person or organization with direct knowledge of the applicant’s expertise. (20)

Response: In order to provide the information required in §210.15(b)(1) and (2), the applicant’s employer and the supervising blaster would have to have direct knowledge of the applicant’s expertise. For clarity, the language “a person who has direct knowledge of the applicant’s expertise, such as” has been added to §210.15(b).

§210.15(b)(1)

Comment: Subsection (b)(1) establishes that a notarized statement is to describe “how the applicant assisted in preparation of the blasts and for how long.” Since there are different categories of blasting licenses, this subsection should also require a description of the types of materials that the applicant worked with. (20)

Response: A description of a person's experience in blast preparations would inherently include a description of the materials that the applicant used.

§210.17. Issuance and renewal of licenses.

§210.17(a)

Comment: Demolition has always been an activity that was authorized by holding a general blaster's license. The proposed regulations should not require that a blaster be licensed specifically to conduct demolition blasting but be authorized to conduct demolition blasting if he holds a general blaster's license. (8)

Response: The Department disagrees. Demolition blasting is a specialty field that differs greatly from construction, mining or other categories of blasting. The demolition of structures requires analysis of the support members of the structure to determine where to place explosive charges. However, the Department recognizes that individuals have been conducting demolition blasting pursuant to existing regulations with general blasting licenses. A new subsection (g) has been added to the regulations to provide for reclassification to a demolition blaster's license without examination or application fee based on three years of experience in demolition blasting.

§210.17(c)

Comment: PCA supports the proposed change to a three-year licensing period.

Response: The Department appreciates PCA's support for a three-year term for a blaster's license.

§210.17(d)

Comment: The Department should clarify what is considered acceptable in terms of continuing education requirements. (8)

Response: The Department does not intend for this requirement to be prescriptive. The Department has requested input from the International Society of Explosives Engineers and the Institute of Makers of Explosives in determining what is acceptable. The Department has compiled a list of acceptable training sessions and sources. This list is available on the DEP web site and through request.

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

Comment: The Department should identify the states that are found to have equivalent programs and should notify blasting companies and other employers of blasters as states are added or deleted from this

list. This will help ensure that those who wish to employ blasters from out-of-state are able to determine whether the blaster is qualified to obtain a license without going through the full licensing procedure. (14)

Response: The Department agrees and has compiled a list of states with similar requirements to Pennsylvania's. The states' licenses that appear on the list will be considered acceptable. That list is available on DEP's web site and will be continually updated.

CHAPTER 211

§211.101. Definitions.

Blast area and Blast site

Comment: “Blast site ” is defined as “the area where the explosive charges are located.” The use of the term “area” could cause confusion with the defined term “blast area”. For clarity the definition of “blast site” should use another term such as “point(s)” instead of “area.” (20)

Response: The Department agrees and has changed the language of the definition of “blast site” to “the specific location where the explosives charges are loaded into the blast holes.”

Comment: The “blast area” definition should coincide with MSHA 30 CFR Subpart E. Explosives (56.6000) Definitions. (15) (18)

Response: The definition of “Blast area” in the proposed regulations is equivalent to the definition of “blast area” in 30 CFR Subpart E. Explosives (56.6000) Definitions.

Building

Comment: In this definition, what is meant by the term “regularly occupied”? This definition is used throughout Chapter 211. Whether a building is occupied only matters if the building is occupied when the explosives are detonated. Why is the frequency of occupation relevant? Why isn’t an unoccupied building protected? What criteria would the blaster use to determine if a structure is “regularly occupied? (20)

Response: To avoid confusion, the definition of building has been changed to “a structure that is designed for human habitation, employment or assembly.” For the most part, these buildings, with their finished interiors, are the most vulnerable to damage from ground vibration or airblast. The peak particle velocity and airblast standards in §211.151(c) and (d) were chosen to protect these structures.

Comment: The proposed regulations broadly define buildings and structures. The prevention of damage provisions of the proposed regulations is directed at structures, and all structures would require monitoring. This language causes confusion when determining where to monitor the blasting activities. (1) (6)

Response: This comment incorrectly characterizes the regulations. Subsection 211.171(a) requires monitoring at the nearest building. The Department recognizes there is some confusion as to the applicability of the scaled distance and peak particle velocity standards. These standards apply to buildings or other structures designated by the Department, and §211.151(c) has been revised accordingly. Monitoring is to be conducted at the nearest building, unless another structure is designated by the Department.

Flyrock

Comment: The definition of flyrock in the proposed regulations causes confusion because it states debris ejected from blast site. Almost all blasting operations cause flyrock according to the proposed regulations the way they are currently written. The proposed regulations should define flyrock as material ejected from the blast area instead of the blast site. (2) (5) (15)

Response: The Department agrees and has made the appropriate changes to the definition of flyrock. Flyrock is now defined as material ejected from the blast area.

Person

Comment: The definition of “person” as it applies to fines and liability may imply liability that exceeds the boundaries of the law. The definition should be clarified to conform to the law. (14)

Response: The purpose of the second sentence was to establish personal liability of members of associations and corporate directors, officers and agents for enforcement actions and penalties. However, Chapter 211 does not include provisions for fines and penalties or imprisonment. Consequently, this sentence has been deleted.

Structure

Comment: The definition of structure should be revised to exclude utility lines. Utility lines are defined separately and separate procedures are proposed for their protection. (14)

Response: The Department disagrees. The applicability of Subchapter H is clear and unambiguous in its application to utility lines that are in contact with the ground or buried in the ground. The term “structure” includes everything that is built or constructed to ensure that in appropriate circumstances the Department can require monitoring pursuant to §211.171 or, if necessary, a specific scaled distance or peak particle velocity pursuant to §211.151.

§211.102. Scope.

Comment: The preamble language of the proposed regulations regarding provisions of Chapter 211 and the Scope section in §211.102 state that there are provisions of the proposed regulations more stringent than mining regulations. These statements will lead to confusion and may result in inconsistent application of explosive regulation. This language should be revised to specifically identify the regulatory provisions that are more stringent than those of the mining regulations. (14)

Response: The Department disagrees. Chapter 211 deals exclusively with blasting. Since Chapter 211 contains a great number of detailed provisions not found in the mining regulations, any attempt to list specific differences would be an unnecessary and frivolous exercise.

Comment: The proposed regulations have provisions that are more stringent than the current mining regulations. Application of provisions more stringent than mining regulations should be deferred until the mining regulations are amended to be consistent with the requirements of the proposed regulations. (14)

Response: The primary purpose of these regulations is to provide uniform standards for all blasting in Pennsylvania. The Department feels that deferring the application of some provisions of the proposed regulations until the mining regulations are amended delays attaining that goal.

Subchapter B. Storage and Classification of Explosives.

Comment: The proposed regulations for explosives storage are inadequate. The inadequacies include construction of magazines, magazine site location, and security of magazine sites from theft. (16)

Response: The Department disagrees. The Department feels that adoption of the Federal Bureau of Alcohol, Tobacco and Firearms regulations for storage of explosives adequately address magazine siting and construction. The proposed regulations deal primarily with issues of safety from detonation of the explosives while stored in the magazines.

§211.121. General requirements.

§211.121(d)

Comment: A permit will not be issued unless the application is complete and demonstrates that the proposed activities comply with the applicable regulations. When will the applicant receive notice from the Department that the application is complete? Can the applicant amend the application to provide the necessary information or materials to complete the application? If so, the regulation should indicate that the Department will notify applicants of an incomplete application and identify the missing items necessary to complete the application. (20)

Response: The final regulation includes a statement in §211.121(d) that the Department will notify the applicant when the application is incomplete and will identify the items necessary to make it complete. In general, these permits contain a relatively small amount of information and the anticipated review time is short.

§211.124. Blasting activity permits.

Comment: Department-required activity permits are an unnecessary duplication of the permits required by PennDOT and municipalities and would cause needless delay in construction projects. The customer of the blasting activities would unnecessarily endure higher costs as rock would have to be broken using hydraulic hammers or blasts designed with numerous delay intervals, increasing complexity and costs to fit under the criteria for permit-by-rule activity permits. (9)

Response: The Department recognizes that additional approvals may be required by PennDOT and some municipalities. However, the state blasting laws identify the Department as the agency responsible for regulating blasting. This responsibility cannot be delegated to other entities. The Department anticipates the blasting activity permit review period to be approximately two weeks. The Department does not believe that two weeks will cause needless delay for construction projects that require advanced planning.

Comment: Oil and Gas operators should be exempt from obtaining Blasting Activity Permits. Oil and gas wells are inspected by DEP Oil and Gas Inspectors, and the blasting generates very little ground vibration. Permit-by-rule activity permits should apply to oil and gas operations, and scaled distance calculations shouldn't apply to oil and gas operations. (12)

Response: Most oil and gas blasting operations will use the permit-by-rule. The Blasting and Explosives Inspectors of the Bureau of District Mining Operations inspect all commercial blasting operations, including oil and gas operations, because there are no explosives use provisions in the oil and gas regulations. Scaled distance will be used to gauge whether oil and gas operations require blasting activity permits or permits-by-rule. In the case of oil and gas operations, scaled distance will be determined vertically and horizontally. However, if the scaled distance is below 90, a blasting activity permit will be required as the same risk is posed to structures at a scaled distance of 90 regardless of the reason for the blasting activity.

§211.124(a)(11)

Comment: The proposed regulations establish liability insurance in the amount of \$300,000 or more per occurrence. The limit should be increased to \$1,000,000 per occurrence as this is an industry standard. (18)

Response: The Department recognizes that the industry standard is \$1,000,000; however, the Department believes that setting a minimum of \$300,000 is appropriate for small projects. The \$300,000 limit was taken from the noncoal mining regulations at 25 Pa. Code 77.231(e).

Comment: Is there a mechanism that provides that insurance will be made available to all at a reasonable cost? (12)

Response: There is no mechanism in the regulations for insurance to be made available to all at a reasonable cost.

§211.124(a)(17)

Comment: Paragraph (a)(17) requires a permit application to include proof that residents within 200 feet of the blast site were informed of the proposed blasting operation. This notification could be "personal notification, written material left at each residence or first class mail." We have two questions. What constitutes proof of notification? In situations involving rental units or business properties, should the blaster notify the current tenants or property owner? (20)

Response: Proof of notification should include but not be limited to a list of people notified, a copy of the notification (if written), the name of the person who conducted the notification, and the time and date of each notification. In situations involving rental properties, the blaster would notify the current tenants.

§211.133. Blast report.

§211.133(a)

Comment: Blasting reports should be conveniently available to the public and Blasting Activity Plans should be made available to persons within 200 feet of the blasting operations. Also, information on how to report blasting damage and make claims should be made available and a time limit for the blasting permittee's response to such claims. (10)

Response: Blasting reports and Blasting Activity Plans are available to the public through the Department. Information on how to contact the Department to express concerns about blasting is on the DEP web site.

Comment: Subsection (a) requires the blaster-in-charge to prepare a report of "each blast report." Should this read "each blast" rather than "each blast report"? (20)

Response: Yes. The Department has changed the language to "each blast."

Comment: Department should develop a standardized blast report form. (3)

Response: The Department agrees that a standardized blast report form should be required and has developed a form. It is available on the DEP web site and directly from the Department.

Comment: Subsection (a) includes this sentence: "The Department may develop and require a blast report form to be used." How and when will licensees and permittees be notified that the Department has opted to require a report form? How and where will people obtain copies of the form? (20)

Response: The Pennsylvania chapters of the Society of Explosives Engineers have been notified of the requirement to employ a standardized blast report and have been provided with sample copies of the report will be available on the effective date of these regulations. The form will be available from the Bureau of Mining and Reclamation, any of the District Mining Offices, and electronically on the Department's web site. In addition, the form will be provided to all licensed blasters through direct mailing.

§211.133(a)(1)

Comment: The word "specific" should be inserted in §211.133(a)(1). It should say "The specific locations of the blast and monitoring readings." (15) (18) (19)

Response: The Department feels that the language in the proposed regulations is adequate. The locations of the blast and monitoring readings are specific, and adding “specific” to the language is redundant.

§211.133(a)(3)

Comment: Requiring the permit number to be listed on the blast report needs to specify what permit needs to be listed on the report. (15) (18)

Response: The Department agrees and has changed the language of the proposed regulations to state “blasting activity permit or appropriate mining permit number.”

§211.133(a)(7)

Comment: Do the burden, spacing, and pattern dimensions need to be on the sketch required on the blast report or listed on the report? (15) (18)

Response: The burden, spacing, and pattern dimensions need to be shown on the sketch and listed on the report. The sketch must show a schematic of the blast design and the point of initiation.

§211.133(a)(9)

Comment: The requirement that height or length of stemming and deck separation be listed on the shot report needs to be more specific. The requirement that the types of explosives used and their arrangements in the blast hole be listed in the blast report needs to be more specific. Are these requirements for each hole, collectively, or average? (15) (18)

Response: The height or length of stemming and deck separation must be provided for each hole on the shot report. The appropriate change has been made to the proposed regulations to clarify this point.

§211.133(a)(19)

Comment: The wording of the requirement that the measures to control flyrock be listed on the shot report needs to be specific. (15) (18)

Response: The Department gives the blaster discretion on how to describe the measures that are taken to prevent flyrock. The Department feels the language in the proposed regulations is adequate.

§211.133(a)(23)

Comment: It is not always reasonable to require the seismograph monitoring to be part of the blast record within 7 days. Seismograph monitoring reports should be required to be part of the blast record within 30 days under normal circumstances and 7 days if specifically requested by the Department. (1) The 7 day requirement should be extended to 14 days. (14) (20)

Response: The Department agrees that requiring seismograph monitoring reports to be part of the blast record within 7 days is not always necessary. The timeliness of information is critical in order for the entity conducting the blasting or the Department to determine if adjustments to blasting designs are necessary to avert problems. The Department feels that requiring seismograph monitoring reports to be part of the blast record within 14 days would be acceptable under normal circumstances and within 7 days if specifically requested and has changed 211.133(a)(23) accordingly. In appropriate circumstances the Department is willing to grant waivers to allow the seismograph report to be made a part of the blast record within 30 days provided that when deemed necessary by the Department the seismograph report must be available in 7 days. Appropriate circumstances include operations in which all blasts are monitored, regardless of scaled distance and summaries of the seismograph monitoring reports, as specified by §211.133(b), are made available to the Department.

§211.133(a)(24)

Comment: If a misfires occur, actions are required to make the site safe. The language should be changed to say "if a known misfire occurs." (15)(18)

Response: The Department disagrees with the suggested change. Misfires are not always readily apparent because the blasted material may be heaped over the area where the misfire occurred. Misfires are sometimes discovered during excavation, well after the blaster has left the site. Misfires constitute a hazard whenever they are discovered and the site should be made safe. In the event that a misfire is discovered after the blaster-in-charge has left the site, the blaster-in-charge must be contacted to assure safety at the site and must prepare an addendum to the blast report. The addendum to the blast report would explain what actions were taken to make a site safe after a misfire was discovered during excavation.

Comment: Subsection (a)(24) states the report will include "the actions to make the site safe" after a misfire occurred. For clarity §211.133(a)(24) should reference the appropriate actions to take when there is a misfire listed in §211.157(e). (20)

Response: The Department agrees. Paragraph (24) has been revised to refer to §211.157.

§211.133(b)

Comment: Subsection (b) states the Department may require monthly summaries. The Department should explain the necessity for monthly summaries, the circumstances when monthly summaries would be required and how the blaster will be notified. (15) (18) (20)

Response: The Department may require monthly summaries if blasting is being conducted in an area where there is considerable public concern or potential for property damage. This information would be in addition to the blast reporting requirements. The blaster will be notified in writing by the Department Blasting and Explosives Inspector.

§211.141. General requirements.

§211.141(4)

Comment: The proposed regulations should not prohibit smoking within 100 feet of a vehicle transporting explosives. The limit should remain 50 feet. Posting of “No Smoking” signs when the vehicle is parked at a blast site isn’t necessary. (15) (18)

Response: The Department disagrees. Smoking near explosives constitutes a hazard. Maintaining a distance of 100 feet is not unreasonably burdensome. The current regulations do not specify the distance one may smoke from vehicles carrying explosives. The current regulations at §211.52(b)(6) merely require the posting of “No Smoking” signs.

§211.141(5)

Comment: The proposed regulations require the permittee to load no more than 2,000 pounds of explosives into a open body vehicle. This should be changed to load 2,000 pounds or less explosives into a open body vehicle. (18)

Response: The Department disagrees. The suggested language change offers no benefit. The current language clearly indicates that 2,000 pounds is a maximum limit.

§211.141(6)

Comment: The proposed regulations require the permittee to only load explosives into a closed body vehicle if the load is two thousand pounds or more. The language should be changed to “Any load of explosives that exceeds two thousand pounds of explosives must be transported in a closed body vehicle.” (8) (15) (18)

Response: The Department disagrees. The suggested wording is not grammatically correct in this context. The Department has revised the wording to eliminate a conflict with §211.141(5).

§§211.141(11)(i) and (ii)

Comment: The proposed regulations establish requirements for fire extinguishers based on vehicle weight. The Department should adopt current DOT regulations. (15) (18) (20)

Response: The Department agrees and has incorporated the language of the PA Department of Transportation's existing regulations.

§211.141(12)

Comment: Subsection (12) requires explosives to be loaded into a vehicle that the "explosives containers are not exposed to sparks or hot gases from the exhaust tailpipe." This subsection further recommends the use of exhaust systems that discharge upwards to avoid possible exposures of the explosives to sparks or hot gases. If the explosive containers are loaded onto the bed of a truck, how will an upward exhaust discharge protect the containers from exposure to sparks? (20)

Response: Hot gases and sparks typically rise, so an upwardly discharging exhaust system would cause the hot gases and sparks to be discharged away from the vehicle's cargo. Additionally, all explosives stored in open bodied trucks must be covered by a fire proof tarp. Lower exhaust pipes would potentially constitute a greater hazard by generating hot spots in the bed of the truck and causing the rising hot gases and sparks to potentially come in contact with the explosives containers in the truck.

§211.151. Prevention of Damage.

Comment: The bituminous coal regulations, Chapter 87, were revised in 1998 after a full and thorough review. The Chapter 87 regulations conform to federal mining regulations. The Department presented to the MRAB Regulation, Legislation, and Technical Committee in August 1999 that there had been only one order issued for blasting damage in the previous three years. Why do regulations that appear to be effective in preventing damage from the use of explosives in connection with surface mining need to be superseded by more stringent regulations? (14)

Response: The issuance of one order for blasting damage does not accurately reflect the effect blasting has on homes. The best science available, U. S. Bureau of Mines Report of Investigations RI 8507, "Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting," concludes that damages can occur to homes at ground vibration levels lower than the present mining regulations. The adoption of more stringent ground vibration limits provides better protection of all structures. The Pennsylvania mining regulations, Chapters 77, 87 and 88, specify that the Department may reduce the maximum peak particle velocity allowed if it determines that a lower standard is necessary. There have been situations when the limits in the proposed regulations have been applied to mining activities in order to more adequately protect structures. Such pre-emptive measures may have prevented damages to homes.

§211.151(b)

Comment: The proposed regulations do not adequately protected the public from fly rock or debris ejected from the blast area. Mats should be employed on all blasts within 1,000 feet of houses. Enforcement actions taken when flyrock occurs, including \$10,000 fines, are inadequate. The

Department should close mining operations for a minimum of thirty days and revoke blaster's licenses for a minimum of thirty days. (10)

Response: The Department believes that the proposed regulations provide adequate protection from flyrock. Large scale blasting operations do not lend themselves to safe use of mats. However, the risk of flyrock is minimized by proper blast design. The proposed regulations do not address fines and penalties. Fines and penalties are established by the applicable statutes. When flyrock events occur, the Department will cease all further blasting until the cause of the flyrock is determined and corrected. The Department will suspend a blaster's license in cases where there is negligence or public endangerment.

Comment: Subsection (b) states that blasting may not cause flyrock. It also states that if flyrock occurs, the blaster-in-charge shall notify the Department within 4 hours of learning of the flyrock. Commentators believe flyrock is so common that blasters will be required to notify the Department after every blast. Is this the Department's intent? If the goal is to prevent flyrock from being ejected from the blast area, the regulation should be amended to clarify this objective. (20)

Response: The definition of flyrock has been changed to material leaving the "blast area" in order to clarify the Department's intent.

§211.151(c)

Comment: Scaled distance should be at minimum of 90 for all blasts, with no loopholes. (10)

Response: The Department disagrees. The regulations state that blasts "shall be designed and conducted in a manner that either achieves a scaled distance of 90 or meets the maximum allowable peak particle velocity." §211.171(a) requires blasts below a scaled distance of 90 to be monitored for ground vibration and airblast. The U. S. Bureau of Mines Study, R. I. 8507, "Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting," conservatively predicts the highest probable ground vibration from a blast designed at a scaled distance of 90 is .5 inches per second peak particle velocity. Most blasts designed at a scaled distance of 90 result in a peak particle velocity significantly lower than .5 inches per second peak particle velocity.

Comment: The proposed regulations should state that all blasting shall be designed and conducted in a manner that meets the allowable peak particle velocity. Using this criteria would eliminate the concern over determining scaled distance. (18)

Response: Scaled distance is a reliable tool for predicting ground vibration prior to blasting to determine if a blast design will result in safe ground vibration levels. There should be no concern over the use of scaled distance because all licensed blasters have been tested on their ability to calculate scaled distance.

Comment: The proposed regulations provide an unnecessary increase of 61% over the current standard (scaled distance of 55) by requiring blasts be designed at a scaled distance of 90. Changing the required minimum scaled distance requirement for monitoring of 50 for construction and 60 for mining to 90 puts

unnecessary burden on the blasting industry. The former U. S. Bureau of Mines Safe Blasting Criteria (Z-Curve) should not be the regulatory limit as current standards are adequate. (7) (8)

Response: The Department feels that the current regulations do not adequately protect all structures. The best available science, the former U. S. Bureau of Mines Study, R. I. 8507, "Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting," concluded that damage could possibly occur to some structures at peak particle velocities as low as .5 inches per second. The U. S. Bureau of Mines Study, R. I. 8507, predicts the highest probable ground vibration from a blast designed at a scaled distance of 90 is .5 inches per second peak particle velocity. The practical application of this requirement is to prevent property damage.

Comment: The proposed regulations do not address damage from fatigue to single family, wood frame, or concrete block foundation homes from the effects of repeated blasting. The U. S. Bureau of Mines testing (U. S. Bureau of Mines Report of Investigations RI 8507, "Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting") was limited in scope with respect to the structures tested for fatigue damage and the geology of the areas where the tests were performed is profoundly different than the area around a limestone quarry. To adequately protect homes from damage due to fatigue the peak particle velocity should be .10 inches per second in the 10-18 hertz frequency range. (10)

Response: Additional work has been completed since the publication of U. S. Bureau of Mines Report of Investigations RI 8507, "Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting." This information can be found in "Ground Vibration Effects on Structures," DESA, D. E. Siskind and Associates, LLC. According to this research, the load exerted on building materials must be a significant fraction of the ultimate strength of the material, typically 50%, to cause damage due to fatigue. The Siskind study found that if blasting-generated ground vibration levels are below the limit in the proposed regulations, then ground vibration is lower than the levels that would cause fatigue damage. The maximum response of a dwelling to ground vibration occurs when the frequency of the ground vibration, measured at the dwelling, matches the frequency of the home. Since ground vibration is measured at the dwelling or structure, the geologic medium through which the vibration traveled is not a factor. Although RI 8507 did not include a fatigue study on the seventy-six homes monitored during the study, RI 8507 did determine the maximum response and natural frequencies for single family, wood frame, concrete block foundation homes.

Comment: There is no method of predicting ground vibration frequency. How can a blaster insure that he doesn't exceed the ground vibration limit in the proposed regulations, the U. S. Bureau of Mines Safe Blasting Criteria (Z-Curve)? (7)

Response: Designing a blast for a scaled distance of 90 or above will adequately ensure that the "Z-curve" is not exceeded. Alternately, the effects of local geology on frequency and amplitude of ground vibration can be determined by monitoring small test blasts at different distances and directions from the blast site. The information from these tests can be used to design blasts to meet the standards in Figure 1.

Comment: Subsection (c) requires a blast to achieve either a scaled distance of 90 or the maximum peak particle velocity as indicated in Figure 1. One commentator believes these standards may be too

restrictive when applied to unconsolidated materials in the vicinity of a blast. Should geologic variations be considered in the determination of vibration limits? (20)

Response: Geology does affect the frequency and magnitude of ground vibrations as they travel from a blast site to a building. The scaled distance limit of 90 was derived from a large number of blasts under a variety of geologic conditions. While 90 may be conservative in some areas, the blaster may elect to use Figure 1 as the standard. Since geology does not influence a building's response to ground vibration, and since ground vibration is measured at the building, geology is irrelevant when applying Figure 1.

§211.151(d)

Comment: Airblast pressure limits proposed are like proposing a highway speed limit of 200 miles per hour-they do nothing to protect the public. Even if not physiologically injurious they can be very upsetting. (10)

Response: According to U. S. Bureau of Mines Report of Investigations RI 8485, "Structure Response and Damage Produced by Airblast from Surface Mining", there is minimal probability of the most superficial type of damage occurring in residential structures at the limits set in the regulations. U. S. Bureau of Mines Report of Investigations RI 8485 recommends the airblast limits set in the regulations and states that the limits should provide 95 to 99 percent non-damage probability and 90 to 95 percent annoyance acceptability. According to the International Society of Explosive Engineers Blaster's Handbook, 17th Edition, depending on which method is used to convert decibels to pressure, an maximum allowable airblast under the regulations is equivalent to the effects of a 20-28 miles per hour wind gust.

§211.152. Control of Noxious Gases.

Comment: The proposed regulations do not deal with air pollution control. (10)

Response: The DEP Bureau of Air Quality has concluded that the gases generated by blasting operations and released to the atmosphere are not of a significant quantity to threaten the environment. This regulation addresses the gases generated by blasting that can pose a threat to the safety of persons in the vicinity of the blast if not properly vented.

§211.153. General requirements for handling explosives.

§211.153(b)

Comment: In §211.153 (b) the language should be changed to "The use of matches and lighters, and smoking is prohibited." (15) (18)

Response: The Department disagrees with the suggested language. If someone possesses matches or lighters when working with explosives, it is far more likely they will unconsciously use them.

§211.154. Preparing the blast.

§211.154(b)

Comment: Subsection (b) allows the Department to establish a different distance limitation. The Department should explain the necessity for this provision. The regulation should provide information regarding the circumstances for which the Department would establish a different distance limitation and how the blaster will be notified. (20)

Response: Site conditions may dictate that it is safer to require a greater distance or to allow a lesser distance between operating machinery and loading activities. This is determined by an inspection of the site by the Department Blasting and Explosives Inspector.

§211.154(c)

Comment: In §211.154(c) the language should be changed to clarify what “present” means. (15) (18)

Response: The Department feels that the language in §211.154(c) is clear. Its intent is to ensure that another person is there and is able and ready to render assistance in the event of accident or injury.

Comment: Subsection (c) states that a “person may not prepare or detonate a blast unless another person is present....” However, §211.156(b) states that “only the blaster in charge may detonate a blast.” Further, subsection (e) states that “only the blaster-in-charge, other blasters, and up to six assistants per blaster may be at a blast site....” To make these subsections consistent, the first reference to the term “person” in Subsection (c) should be changed to “blaster-in-charge.” The second reference to person in Subsection (c) should be changed to “blaster or assistant” to be consistent with Subsection (e). (20)

Response: The Department agrees that for clarity and consistency, the first reference to “person” in subsection (c) should be changed to “blaster-in-charge.” The second reference to “person” should not be changed. On small blasting operations, the blaster-in-charge may not need other blasters or assistants. However, another person must be present and able to render assistance in the even of an emergency.

§211.154(f)(2) and (4)

Comment: The proposed regulations should allow for the use of sectional poles connected by brass fittings that have non-sparking plastic and rubber ends that are intended for that use. For consistency, the language “wooden tamping pole” should be changed to “non-metallic, non-sparking tamping pole.” (15) (18) The references to the “wooden end” of the pole in subsection (f)(2) and (f)(4) should be changed to “non-sparking material end.” (20)

Response: The Department agrees with these suggestions. The language has been changed in paragraphs (2) and (4) to allow a tamping pole constructed of non-ferrous, non-sparking, material and to allow the use of the non-ferrous, non-sparking, material end of the pole.

§211.154(f)(5)

Comment: The proposed regulations require the blast hole to be logged. It is not clear whether each hole is to be logged, how frequently, and to what degree. (15)(18)

Response: The language has been changed to say that each hole is to be logged throughout the loading process. The Department believes that specifying how frequently and to what degree of accuracy logging must be conducted is adequately characterized by revising the regulations to state "each blast hole shall be logged throughout the loading process."

§211.154(f)(7)

Comment: Section (f)(7) states the Department may specify the type and amount of stemming. The Department should explain the necessity for this provision. The regulation should provide information regarding the circumstances for which the Department would establish a different limitation for stemming and how the blaster will be notified. (15) (18) (20)

Response: The Department has encountered incidents in which flyrock and excessive air overpressure occurred as a result of inadequate quality or amounts of stemming. The blaster will be notified by the Department Blasting and Explosives Inspector.

§211.154(k)

Comment: The proposed regulations state that explosives may not be brought to a blast site in greater quantities than needed for the blast. Site and weather conditions can affect the amount of explosives that would be used. Should "blast site" be replaced by "blast hole"? (18)

Response: For loading activities "blast site" is a more appropriate term than "blast hole." However, "blast area" is the appropriate term for storing surplus explosives. The wording of §211.154(k) has been revised to clarify this point. The Department is concerned that an excessive volume of explosives, far greater than necessary for the blasting operation, could be delivered to the site and left remaining on the truck. To allow for changes in site and weather conditions, the Department has further changed the language of §211.154(k) to state that explosives may not be brought to the blast site in greater quantities than are expected to be needed for that blast.

§211.154(n)

Comment: The proposed regulations should state "Precautionary measures include but not be limited to stopping or slowing of traffic and posting signs. (15) (18)

Response: The Department disagrees. The proposed regulations provide an illustrative list of the appropriate, precautionary measures. According to the Pennsylvania Statutory Construction Act "including" means "including but not limited to." Therefore, the proposed language does not prohibit alternative or additional precautions.

§211.156. Detonating the blast.

§211.156(b)

Comment: The proposed regulations state that only the licensed blaster-in-charge may detonate a blast. The proposed regulations should state that only the blaster-in-charge or a designated licensed blaster may detonate a blast. (18)

Response: The Department disagrees. The blaster-in-charge is ultimately responsible for the blast and should be more aware than anyone else of the safe time to detonate the blast. All other activities associated with the blast are less critical and can be delegated.

§211.159. Electronic detonation.

Comment: Provisions for programmable electronic detonators should be added to the proposed regulations. (15)

Response: Programmable electronic detonators are not excluded by the proposed regulations. They are a type of electronic detonation system.

§211.162. Safety fuse.

Comment: The technology of safety fuse is very antiquated. The quality of safety fuse is suspect and its use doesn't allow for stopping a blast due to an unforeseen emergency once the fuse is lit. Safety fuse shouldn't be permitted for use in surface blasting. (11)

Response: Safety fuse is used commonly in slate production, where small amounts of black powder are employed as the explosive charge. The small charges are used so the slate will not be damaged. In this application safety fuse is adequate. Safety fuse is rarely used for large, multiple hole blasting operations.

§211.171. General Provisions for Monitoring.

§211.171(a)

Comment: The proposed rulemaking should be revised to specify the circumstances under which the Department may require ground vibration and air blast monitoring at scaled distances above 90 and at structures other than the structure closest to the blasting. There should be a reasonable basis for requiring monitoring, and the basis should be articulated. (14)

Response: Specifying when the Department may require additional monitoring could limit its ability to deal with unusual, unanticipated situations. Additional monitoring will be required when in the Department's opinion such monitoring is necessary to ensure that the requirements of these regulations are being satisfied regarding the protection of unusual structures from damage.

§211.171(d)

Comment: For purposes of clarification the minimum trigger level for seismograph measurement of ground vibration should be set at half the most conservative limit. The conservative limit is .5 inches peak particle velocity. The minimum required ground vibration recording level should be specified as .25 inches per second peak particle velocity. (1) (4) (17) (19) (20)

Response: The Department agrees that the required lowest peak particle velocity trigger level be .25 inches per second. The Department has made the appropriate change to §211.171(d).

§211.171(e)

Comment: Older model and brick seismographs do not provide a date and time for when the instrument was turned on and off. A 3-year phase in period should be included here as was done in §211.133(a)(22). Language can be added which would allow a blaster to supply the on/off times for the instrument on a signed statement. (19) (20)

Response: The Department agrees. The revised regulation will allow the blaster to supply on/off times on a signed statement when he is using an instrument that doesn't provide a print out. There is no need for a phase-in period.

§211.172. Monitoring instruments.

Comment: The Department should change the numbering system in §211.172 to be consistent with the rest of the regulations. (19)

Response: The numbering system in §211.172 is consistent with the numbering system required by the Pennsylvania Code and *Pennsylvania Bulletin*.

Section 211.173. Monitoring records.

§211.173(a)

Comment: Persons conducting seismograph monitoring may not be qualified to conduct seismograph monitoring. (1)

Response: The Department shares that concern. The proposed regulations require that persons conducting seismograph monitoring be adequately trained by competent individuals.

§§211.173(b)(1) and (4)

Comment: Subsection (b)(1) requires monitoring records to include the calibration pulse. Subsection (b)(4) requires the results of a field calibration test for each channel. Are these requirements redundant? (19)

Response: Checking the field calibration on an instrument prior to its use ensures that it is properly calibrated prior to recording the blast. Most instruments perform this function automatically while some instruments require manual input. The presence of the calibration pulse on the monitoring record demonstrates that the instrument was properly calibrated while recording the blast.

§211.173(b)(2)

Comment: Subsection (b)(2) requires the calibration of the gain setting, for instruments with variable gain settings. This section needs clarification. (19)

Response: The Department agrees that clarification is necessary and has made the appropriate changes to paragraph (1) in the regulations.

§211.173(c)

Comment: 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. Under what circumstances would the Department require this type of analysis or certification? The regulation should provide information regarding the circumstances when it may require this type of analysis and how the blaster will be notified. (20)

Response: The Department agrees that information regarding the circumstances when the Department requires independent analysis of ground vibration or airblast records should be included in the regulations. For clarity the Department has added "If the Department questions the validity of a ground vibration or airblast record or the interpretation of the record" to §211.173(c).

Comment: Independent party analysis of seismograph monitoring reports should continue to be a requirement in Pennsylvania. Independent analysis of seismograph monitoring reports is not always necessary but oftentimes nuances appear on the seismograph monitoring reports that require explanations. (1)

Response: The regulations retain the provision to allow the Department to request independent analysis.

Comment: Subsection (c) should be revised to clarify the situations which will allow the Department to require third party analysis and/or certification. The Department has consistently maintained, throughout the development of this regulation, that third party certification would be unnecessary with the modern instruments now available. PCA agrees with that position. DEP should therefore limit this requirement for third party verification to circumstances that indicate a specified deficiency in the monitoring record. (14)

Response: For clarification the Department has added the language "If the Department questions the validity of a ground vibration and airblast record or the interpretation of the record" to §211.173(c). Identifying specific deficiencies in the regulations would take away the latitude from the Department to address situations where independent party analysis would be beneficial but not for the specific deficiencies listed.

§211.181. Scope.

Comment: A clarification is necessary in the proposed regulations for blasting in the vicinity of utility lines. Electric transmission lines should not be included as utility lines with regard to these provisions. (7)

Response: Overhead, electric transmission lines are not included in the provisions. This section clearly states that it deals only with buried utility lines, underground utility lines, and utility lines making contact with the ground. Electric power lines do not make contact with the ground, but are supported by poles to prevent them from making contact with the ground.

§211.182. General provisions.

§§211.182(c) and (d)

Comment: Procedures that were developed to ensure that blasting near utility lines doesn't damage the lines have been effective. These procedures allowed measures other than methods specified in the regulations to be approved after consideration of the Department and approval of the utility owning the lines. The proposed regulations should allow acceptance of measures agreed to by the utility owning the line and consideration of the Department. (15) (14) (19) (20) The Department should also consider revising the language to allow blasting to accommodate "other measures, as approved by the Department and agreed to by the utility" to permit some flexibility for blasting in the vicinity of utility lines. (20)

Response: The Department agrees and has inserted language in subsection (e) to allow acceptance of measures agreed to by the utility that owns the line and approved by the Department.

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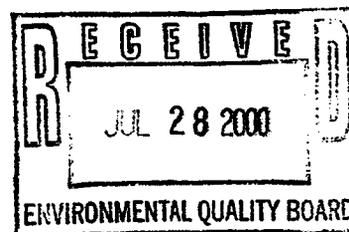
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July 26, 2000

VIA OVERNIGHT MAIL

Ms. Joan Martin
Environmental Quality Board
Rachael Carson Building
15th Floor, 400 Market Street
Harrisburg, PA 17101-2301



**Re: Proposal 25 PA. Code 210 & 211 (30 Pa.B.2768) Licensing of
Blasters and Storage, Handling and Use of Explosives**

Gentlemen:

Below are the comments of the Pennsylvania One Call System, Inc. (POCS) with respect to the above-captioned proposal. POCS asks that you consider them as you complete your work in this matter. POCS membership includes in excess of 2100 utilities, contractors, municipalities, locators and others operating in Pennsylvania. As indicated below, POCS handles all of the statutorily required communication between excavators and facility owners within the Commonwealth. POCS thus has a direct and substantial interest in this proposal.

COMMENTS OF PENNSYLVANIA ONE CALL SYSTEM, INC. (POCS)

- A. POCS is the statewide entity established pursuant to PA Act 287 of 1974, as amended, 73 P.S. § 176 et seq., inter alia, to receive and communicate notification of demolition and excavation work within the Commonwealth.
- B. Blasting is a covered activity under the statute, and anyone wishing to blast is obliged to provide notice to POCS not less than three nor more than ten working days prior to so doing. This duty applies to each contractor ("contractor" means any person who or which performs excavation or demolition work for himself or for another person), and is not merely the responsibility of the project director or general contractor of a construction project.
- C. POCS requests that the department include in its regulations a specific provision making reference to the statute and its provisions as they apply to blasting, in as much as state law is clear on the subject. If this is done, there will be no confusion in the minds of those engaged in blasting and related operations as to their responsibilities under either the statute or the proposed regulations.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "W.P. Boswell".

Counsel for Pennsylvania One Call System, Inc.

cc: William G. Kiger, Executive Director, POCS

**Proposed Rulemaking: Revision of 25 Pa. Code Chapters 210-211, Licensing of
Blasters and Storage, Handling and Use of Explosives
June 3, 2000 Pa. Bulletin**

One-Page Summary of Comments of Pennsylvania Coal Association (PCA)

- PCA opposes the Proposed Rulemaking's preemption of blasting regulations promulgated specifically for the mining program and approved by the federal Office of Surface Mining. The mining regulations have effectively prevented damage from blasting activities carried out in conjunction with surface coal mining.
- PCA supports the proposed three-year license period.
- Additional clarity is needed for some terms. "Good moral character" is not very well defined or explained in the pre-amble, while the definitions of "person" and "structure" are overly broad.
- PCA supports extending the effective date of the reduction in time (from 30 to seven days) for submitting blast reports under §211.133. However, seven days is a hardship for some operators, who have widely-scattered monitoring points. The report time should be extended to 14 days.
- The proposed requirements for increased scaled distance will require seismographic records for the majority of blasting events. The requirement should be deferred to allow the mining regulations to be amended for consistency with Chapter 211, rather than superseding the mining regulations through this proposal. This would be consistent with the three-year deferral of the reduction in time from 30 to seven days for submission of blasting reports, would allow blasting concerns to modernize their equipment and would ensure clarity, consistency and proper review of the regulations.
- The Proposed Rulemaking should be revised to specify the circumstances in which the Department may require ground vibration and airblast monitoring and third-party certification of monitoring records. The proposal provides no standards for the exercise of the Department's discretion.
- The proposed provisions for blasting near utility lines should be revised to provide greater flexibility and to conform to the procedure negotiated by the Mining and Reclamation Advisory Board and coal, oil and gas industry representatives, which effectively ensures protection of utility lines.



Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063
May 8, 2001

The Secretary

717-787-2814

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

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

Dear Bob:

Pursuant to Section 5.1(a) of the Regulatory Review Act, enclosed is a copy of a final-form regulation for review by the Commission. This final rulemaking was approved by the Environmental Quality Board (EQB) on April 17, 2001.

This rulemaking is a comprehensive update of the existing 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 replaced by new, clearer language. Chapter 210 establishes procedures and standards for licensing individuals who perform blasting activities at all surface mining operations and underground noncoal 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 requirements for license renewals; and expanding the term of the license from one to three years. No fee revisions are included.

Chapter 211 addresses the storage, handling, and use of explosives related to any surface activity. The rulemaking establishes performance standards in Section 211.151 for ground vibration and air blast limits for prevention of damage to buildings and structures. This section is expanded in the final rulemaking to authorize DEP to establish alternate levels when appropriate. The rulemaking also incorporates by reference the federal regulations for classifying and storing explosives, which will eliminate conflicting regulatory requirements for magazine operators.

The proposed rulemaking was adopted by the EQB on March 21, 2000, and published on June 3. Four public hearings were held during the 60-day public comment period, and 20 commentators responded to the proposal.



The rulemaking is based on suggestions received through a statewide series of public roundtable meetings, input from the Mining and Reclamation Advisory Board (MRAB), comments on the proposed rulemaking, and DEP recommendations. The MRAB unanimously approved the draft final rulemaking at its January 4, 2001, meeting.

The Department will provide the Commission with any assistance required to facilitate a thorough review of this final-form regulation. Section 5.1(e) of the Act provides that the Commission shall, within ten days after the expiration of the committee review period, approve or disapprove the final-form regulation.

For additional information, please contact Sharon Trostle, Regulatory Coordinator, at 783-8727.

Sincerely,

A handwritten signature in black ink, appearing to read "David E. Hess". The signature is fluid and cursive, with a prominent initial "D" and "H".

David E. Hess
Acting Secretary

Enclosures

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE
REGULATORY REVIEW ACT

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

TYPE OF REGULATION

- Proposed Regulation
X 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

RECEIVED
2001 MAY -8 AM 10:10
REGULATORY REVIEW COMMISSION

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
5/8/01	<i>Nancy Boufford</i>	HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
5-8-01	<i>Bob Castelli</i>	SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
5-8-01	<i>Elena Pagan</i>	INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL
		LEGISLATIVE REFERENCE BUREAU