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SECRETARY OF STATE

NOTICE OF AGENCY APPROVAL

LEGISLATIVE RULE: Rules & Regulations Governning Performance
Standards for Blasting on Surface Mines

The attached legislative rule constitutes the official rule approved
by the West Virginia Department of Energy
on 9th day of April, 198 7 and filed pursuant
to law with the West Virginia Secretary of State and the Legislative
Rule-Making Review Committee.



Roger T. Hall
Administrator

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Title 38

WEST VIRGINIA LEGISLATIVE REGULATIONS
DEPARTMENT OF ENERGY
~~CHAPTER 22A ARTICLE 3~~
SERIES ~~1~~ 4

SECRETARY OF STATE

SUBJECT: RULES AND REGULATIONS GOVERNING PERFORMANCE
STANDARDS FOR BLASTING ON SURFACE MINES

Section 1. General

1.01 Scope - These rules and regulations establish minimum standards for blasting on surface mining operations.

1.02 Authority - These rules and regulations are issued under the authority of the West Virginia Code, Chapter 22A, Article 3, Section 4, as amended, and in accordance with the provisions of Chapter 29A, Article 3 of the Code of West Virginia, 1931, as amended.

1.03 Effective Date - These rules and regulations become effective on the _____ day of _____, 1987.

1.04 Filing Date - These rules and regulations were filed in the Office of the Secretary of State on _____, 1987.

1.05 Repeal of Former Rule - These rules and regulations repeal Legislative Rules, Department of ^{Energy} ~~Natural Resources~~, Chapter ~~20~~, Article ~~6~~; Series ~~VII~~ (1985), Section 4C.

File June 13, 1985

Sec. 4C.2 BLASTING

2.1 4C.01 General Requirements - Each operator shall comply with all applicable state and federal laws in the use of explosives. A blaster certified by the Department of Mines Energy shall be responsible for all blasting operations including the transportation, storage and use of explosives within the permit area. Only blasts that use more than five (5) pounds of explosive or blasting agent shall be conducted in accordance with ~~this subsection~~ the blasting schedule required under section 4C.03.2.3

2.2 4C.02 Blasting Plan - Each application for an operation subject to section 6 of these regulations shall include a blasting plan. The blasting plan shall explain how the applicant will comply with the requirements of this subsection.

2.3 4C.03 Public Notice of Blasting Operations - At least ten (10) days, but not more than thirty (30) days, prior to any blasting operations, the operator shall publish on a form prescribed by the director Commissioner, a blasting schedule in a newspaper of general circulation in the county of the proposed permit area. Copies of the schedule shall be distributed by certified mail to local governments, public utilities and each resident within one-half mile of the permit area, excluding drainage structures, haulroads and access roads unless there will be blasting on or near such structures or roads. The operator shall republish and redistribute the schedule at least every twelve (12) months and revise and republish the schedule at least ten (10) days, but not more than thirty (30) days, prior to blasting whenever the area covered by the schedule changes or actual time periods for blasting significantly differ from the prior announcement. The schedule shall contain at a minimum:

- (a) Name, address and telephone number of the operator;
- (b) Identification of the specific areas in which blasting will take place;
- (c) Dates and times when explosives are to be detonated;
- (d) Methods to be used to control access to the blasting area; and
- (e) Types of audible warning and all clear signals to be used before and after blasting.

Surface blasting activities incident to underground coal mining are not subject to the requirements of this paragraph so long as all residents or owners of dwellings or structures located within one-half mile of the blasting area is notified by the operator approximately 24 hours prior to any surface blast.

~~2.4.4C.04~~ Blast Record - The format for the arrangement and the recording of items in the blasting log book is to be on forms approved by the ~~director~~ Commissioner. A blasting log book shall be kept current daily and is to be made available at the operation for inspection by the ~~director~~ Commissioner and upon written request by the public. The blasting log shall include any seismograph reports and shall be retained for three (3) years and shall include at a minimum the following data:

- (a) Name of permittee, operator or other person conducting the blast;
- (b) Location, date and time of blast;
- (c) Name, signature and certification number of blaster-in-charge;
- (d) Identification of nearest structure not owned or leased by the operator and direction and distance, in feet, to such structures;
- (e) Weather conditions;
- (f) Type of material blasted;
- (g) Number of holes, burden and spacing;
- (h) Diameter and depth of holes;
- (i) Types of explosives used;
- (j) Total weight of explosives used;
- (k) Maximum weight of explosives detonated within any 8 milli-second period;
 - (l) Method of firing and type of circuit;
 - (m) Type and length of stemming;
 - (n) If mats or other protections were used;
 - (o) Type of delay detonator used and delay periods used;
 - (p) Seismograph records shall include but not be limited to:
 1. Seismograph reading, including exact location of seismograph and its distance from the blast;
 2. Name of person taking the seismograph reading;
 3. Name of person and firm analyzing the seismograph record.

4. Type of instrument, sensitivity and calibration signal or certification of annual calibration.

(q) Shot location;

(r) Sketch of delay pattern; and

(s) Reasons and conditions for unscheduled blasts.

2. ~~4C.05~~ Blasting Procedures

(a) All blasting shall be conducted only during daytime hours, between sunrise and sunset; Provided, that based on public requests or other consideration, including the proximity to residential areas, the ~~director~~ Commissioner may specify more restrictive time periods. No blasting shall be conducted on Sunday. Blasting may not be conducted at times different from those announced in the blasting schedule except in emergency situations where rain, lightning or other atmospheric conditions, or operator or public safety requires unscheduled detonations.

(b) Safety precautions

1. Three (3) minutes prior to blasting, a warning signal audible to a range of one-half (1/2) mile from the blast site will be given. This preblast warning shall consist of three (3) short warning signals of five (5) seconds duration with five (5) seconds between each signal. One (1) long warning signal of twenty (20) seconds duration shall be the "all clear" signal;

2. All approaches to the blast area shall be guarded against unauthorized entry prior to and immediately after blasting; and

3. All charged holes shall be guarded and posted against unauthorized entry.

(c) A maximum air blast level of 128 decibel linear peak shall not be exceeded at any residence or occupied structure within one-half (1/2) mile of the blasting site other than operational facilities of the mine.

(d) Use of explosives: Surface blasting requirements. Flyrock, including blasted material traveling along the ground, shall not be cast from the blasting vicinity more than half the distance to the nearest dwelling or other occupied structure and in no case beyond the bounds of the area under permit, or beyond the area of regulated access required under paragraph (b) of this section.

Access to the area shall be controlled to prevent the presence of livestock or unauthorized personnel during blasting and until an authorized representative of the person who conducts the surface mining activities has reasonably determined;

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1. That no unusual circumstances exist such as imminent slides or undetonated charges, etc.; and

2. That access to and travel in or through the area can be safely resumed.

(e) If required by the ~~director~~ Commissioner, air blast levels will be measured by an instrument with a linear frequency response range of 6Hz to 200 Hz or greater.

(f) No blasting within five hundred (500) feet of an underground mine not totally abandoned shall be permitted except with the concurrence of the West Virginia Department of Mines Energy, the operator of the underground mine and MSHA. The ~~director~~ Commissioner may prohibit blasting on specific areas where it is deemed necessary for the protection of public or private property or the general welfare and safety of the public.

(g) The operator may use the following scaled distance formulas to determine the allowable maximum weight of explosives to be detonated in any eight millisecond period without seismic monitoring: $W = (D/50)^2$ if the nearest structure is within three hundred (300) feet, $W = (D/55)^2$ if the nearest structure is between three hundred (300) and five thousand (5000) feet, or $W = (D/65)^2$ if the nearest structure is greater than five thousand (5000) feet from the blast. "W" represents the maximum weight of explosives in pounds that can be detonated in any eight millisecond period and "D" represents the distance in feet from the nearest protected structure.

(h) The scaled distance formulas need not be used if a seismograph record at the nearest protected structure is obtained and maintained for every blast. The peak particle velocity in inches per second in any one of the three mutually perpendicular directions shall not exceed the following values at any protected structure: 1.25 if the structure is within three hundred (300) feet, 1.0 if the structure is between three hundred (300) and five thousand (5000) feet, and 0.75 if the structure is greater than five thousand feet from the blast site.

(i) The ~~director~~ Commissioner, based on the physical conditions of the site and in order to prevent injury to persons or damage to property, may require a seismograph recording of any or all blasts.

(j) Protected structures include any dwellings, public buildings, schools, churches or community or institutional buildings outside the permit area in addition to those identified in ~~2.105~~ unless they are owned by the permittee. Structures owned by the permittee and leased to another person without a written waiver by the lessee are also protected.

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2.5(h)

2.5(g)

(k) The ~~Director~~ Commissioner may waive the provisions of ~~4C.05(g)~~ and ~~4C.05(h)~~ of the Rules and Regulations in regard to the protection of gas or oil wells, liquid or gas transmission lines, and other utility transmission structures provided all of the following criteria are met:

(1) The Permittee obtains a statement from the owner and when appropriate the operator of said structure, waiving the provisions of ~~4C.05(g)~~ and (h).

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(2) The Permittee submits a blasting plan detailing the protective measures to be taken in lieu of ~~4C.05(g)~~ and ~~4C.05(h)~~ and supporting documentation for those protective measures.

(3) Permittee shall submit an approval by the owner of the structure of alternative protective measures.

(4) Approval for the use of such alternative measures is obtained from the ~~director~~ Commissioner prior to the use of those measures in lieu of ~~4C.05(g)~~ or (h).

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(1) Alternative measures taken under ~~4C.05(K)~~ shall not reduce the level of protection for other structures below the levels provided for in ~~4C.05(g)~~ and (h).

2.5

~~2.6 4C.06~~ Certified Blasting Personnel - Each person responsible for blasting operations shall possess a valid certification from the ~~director~~ Commissioner of the West Virginia Department of Mines Energy.

~~2.7 4C.07~~ Preblast Survey - The operator shall inform all residents or owners of man-made dwellings or structures located within one-half mile of the permit area on how to request a preblast survey at least thirty (30) days prior to initiation of blasting. For purposes of this section, drainage structures, haulroads and access roads are not considered part of the permit area unless blasting is necessary for construction. Requirements for a preblasting survey shall be governed by the following:

(a) Upon a written request to the ~~director~~ Commissioner by a resident or owner of a man-made dwelling or structure that is located within one-half (1/2) mile of the permit area, the operator shall conduct a preblast survey of the dwelling or structure and submit a report of the survey to the ~~director~~ Commissioner. If a structure is added to or renovated subsequent to a preblast survey, then upon request, a survey of such additions and/or renovation shall be performed in accordance with this section;

(b) The applicant or permittee shall conduct the survey to determine the condition of the dwelling or structure, and to document any preblasting damage and to document other physical factors that could reasonably be affected by the blasting. Assessments of the preblasting condition of

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structures such as pipes, cables, transmission lines, wells and water systems shall be based on the exterior or ground surface conditions and other readily available data. Special attention shall be given to the preblasting condition of wells and other water systems; and

(c) A written report of the survey shall be prepared and signed by the person or persons approved by the ~~director~~ Commissioner who conducted the survey. Copies of the report shall be provided to the person requesting the survey and to the ~~director~~ Commissioner.

(d) Surveys requested more than ten (10) days before the planned initiation of blasting shall be completed before blasting is initiated.

(e) Any person who requests a survey who disagrees with the results of the survey may submit a detailed description of the specific areas of disagreement.

~~4D. POST~~ e



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KENNETH R. FAERBER
COMMISSIONER

PUBLIC HEARING RECORD

West Virginia Department of Energy

February 20, 1987

A public hearing was held February 20, 1987 in the Department of Energy conference room at 1615 Washington Street, East, Charleston, West Virginia, to review comments on Rules and Regulations Governing the Performance Standards for Blasting on Surface Mines. Presiding at the hearing was Roger T. Hall, Administrator for the Department of Energy. Mr. Hall opened the hearing record at 10:00 a.m. No persons coming forth with either oral or written comments, the hearing record was closed at 11:00 a.m.

No amendments to the proposed regulations have been made.