

# RULES AND REGULATIONS

## Title 25—ENVIRONMENTAL PROTECTION

### BOARD OF COAL MINE SAFETY

[ 25 PA. CODE CH. 208 ]

#### Sensitive Ground Fault

The Board of Coal Mine Safety (Board) amends Chapter 208 (relating to underground coal mine safety) to read as set forth in Annex A. This final-form rulemaking adds a provision to require operators to equip certain circuits with sensitive ground fault protection, and adds related definitions. This protection will enhance miner safety with respect to electric cables.

This final-form rulemaking was adopted by the Board at its meeting of September 5, 2017.

#### A. *Effective Date*

This final-form rulemaking will be effective upon publication in the *Pennsylvania Bulletin*.

#### B. *Contact Persons*

For further information, contact Craig Carson, Director, Bureau of Mine Safety, 131 Broadview Road, New Stanton, PA 15672, (724) 404-3154 or cocarson@pa.gov; or Joseph Iole, Assistant Counsel, Bureau of Regulatory Counsel, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-9376 or jirole@pa.gov. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department of Environmental Protection's (Department) web site at [www.dep.pa.gov](http://www.dep.pa.gov).

#### C. *Statutory Authority*

Sections 106 and 106.1 of the Bituminous Coal Mine Safety Act (BCMSA) (52 P.S. §§ 690-106 and 690-106.1) authorize the Board to adopt regulations necessary and appropriate to implement the BCMSA and to protect the health, safety and welfare of miners and other individuals in and about mines.

#### D. *Background and Purpose*

The BCMSA was enacted on July 7, 2008, and was the first significant update of the Commonwealth's underground bituminous coal mine safety laws since 1961. See section 103(a) of the BCMSA (52 P.S. § 690-103(a)). Section 334(c) of the BCMSA (52 P.S. § 690-334(c)) directed the mining industry to initiate studies into possible means of enhancing safety of underground cables, including through, among other things, "more sensitive ground fault limiting and detection." Section 334(c) of the BCMSA further required both laboratory and underground testing of these systems, and that the Board act on the industry's reports and recommendations.

To comply with this requirement, the Pennsylvania Coal Alliance (PCA) formed a committee with representatives from several coal mine operators to convene, manage the studies, and ultimately produce a report in March 2012 entitled "Pennsylvania Coal Association Bituminous Coal Mine Safety Act Section 334 Industry Studies Final Report" (Final Report). The Board, which includes three members representing mine workers, three members representing underground bituminous coal mine operators and the Secretary of the Department, who serves as the

Board's chairperson, conducted extensive deliberations of the Final Report for over 3 years.

This final-form rulemaking adds a provision to Chapter 208 to enhance miner safety by improving the sensitive ground fault mechanisms on certain electrical circuits powering machinery within the mines to prevent injury and electrocution. This final-form rulemaking requires operators to ensure that certain new and rebuilt power centers are equipped with these more sensitive ground fault protection devices (including sensing relays, limiting resistors and interrupting devices) thus enhancing the safety of persons working with or around the electric cables supplying power to certain machinery.

To improve miner safety consistent with the BCMSA, this final-form rulemaking includes requirements that are more stringent than Federal regulations in certain regards. The Federal Mine Safety and Health Administration (MSHA) regulation in 30 CFR 75.901(a) (relating to protection of low- and medium-voltage three-phase circuits used underground) requires a ground fault current limit (trip setting) of 25 amperes or less, and section 75.900 of the MSHA Program Policy Manual recommends that the device be adjusted to operate at not more than 50% of the current rating of the grounding resistor.

The Final Report indicates that a setting of 125 milli-amperes would be too low to functionally operate equipment at the mine, but concludes that 300 milli-amperes would be more protective than the current Federal regulatory requirement of 25 amperes. This final-form rulemaking requires a trip setting of 300 milli-amperes or less nominally, except in the case of circuits powering equipment using variable speed drives. If nuisance tripping of these circuits occurs at 300 milli-amperes, the operator may adjust the setting to no greater than the lower value of 500 milli-amperes or 1/2 of the neutral ground resistor's current rating, with the latter being consistent with the MSHA policy. These settings improve safety while maintaining mining operations.

A compelling public interest exists in ensuring that miners are safe in the workplace. Miners, their families, mining companies and others will benefit from electrical safety in underground mines. As a result of this final-form rulemaking, the risk of workplace injuries and deaths related to these electric cables will decline. This final-form rulemaking ensures that operations at underground bituminous coal mine sites are safely conducted and maintained.

#### E. *Summary of this Final-Form Rulemaking*

##### § 208.1. *Definitions*

This final-form rulemaking adds the following terms: "crosscut," "inby" and "working section," which are used in § 208.600 (relating to sensitive ground fault); and "working face," which is used in the definition of "inby."

##### § 208.600. *Sensitive ground fault*

This section requires that all three-phase electrically operated equipment operated on a working section inby the last open crosscut receive power from a circuit equipped with specified sensitive ground fault protection. This section also specifies the settings of the sensitive ground fault devices powering various machines; and sets an implementation schedule for utilizing these devices on new, rebuilt and existing power centers.

#### F. *Summary of Comments and Responses on the Proposed Rulemaking*

No public comments were submitted on the proposed rulemaking published at 47 Pa.B. 1636 (March 18, 2017). On May 17, 2017, the Independent Regulatory Review Commission (IRRC) submitted two comments based on criteria in section 5.2 of the Regulatory Review Act (71 P.S. § 745.5b).

IRRC's first concern was whether giving operators 60 months to upgrade existing load centers in § 208.600(2) is in the best interest of miners if load centers "operating under the existing regulations present a potential hazard." To that end, IRRC requested that the Board explain its rationale for this 60-month phase-in and how it adequately protects the safety of miners.

During the Board's meeting on March 10, 2015, the Board deliberated on the implementation schedule and discussed e-mail correspondence from PCA to the Board. In the e-mail, available on the Board's webpage on the Department's web site, PCA explained that due to logistical barriers inherent to the rebuilding and retrofitting process (for example, cost, timing and halting of operations while equipment is rebuilt) it supported a 60-month implementation schedule for existing equipment. PCA further noted that its member operators have an average of 21 load centers per operator, and "to remove, rebuild and put these load centers back in service" would require an average of 3 months per unit. PCA averred that the 60-month schedule was sensitive to the regulated community's "need to maintain enough load centers underground to sustain operations." Although the Department's Bureau of Mine Safety also shared concerns regarding the 60-month time frame, the Board agreed with the 60-month implementation schedule because: the current level of protection complies with all existing Federal and Commonwealth statutes and regulations; the new sensitive ground fault requirements will improve upon that protection; and the operator's ability to remain operational through the process of becoming compliant, especially in light of the scale of the required upgrades, is an important consideration.

IRRC's second related concern is that § 208.600(2) requires load centers rebuilt at new mines to comply as of the effective date of this final-form rulemaking, whereas § 208.600(2) is silent regarding load centers rebuilt at existing mines, and recommends expanding the requirement for rebuilt load centers to apply at existing mines as well.

This final-form rulemaking is not silent on the compliance date for operators that will need to rebuild load centers at existing mines. For the reasons previously provided, the Board is giving these operators 60 months to comply with the new requirement. The implementation schedule requires compliance upon publication in the *Pennsylvania Bulletin* for all load centers purchased after the effective date of this final-form rulemaking at existing mines and all load centers at new mines, new or rebuilt. All other load centers, that is, load centers at existing mines that shall be rebuilt, are subject to the 60-month phase-in, a period which is tailored to the rebuilding and maintenance schedule the regulated community follows for this equipment. The Board anticipates that operators will comply with the requirements in this final-form rulemaking as load centers need to be rebuilt at existing mines over the next 5 years to avoid the cost and operational impact that would be associated with rebuilding all load centers at existing mines just prior to the deadline for compliance.

IRRC also inquired whether the definition of "working section" in § 208.1 (relating to definitions) should use "working face" rather than "face." The definition in § 208.1 is the same as the definition in section 104 of the BCMSA (52 P.S. § 690-104) and has simply been included in § 208.1 for the convenience of the regulated community.

#### G. *Benefits, Costs and Compliance*

##### *Benefits*

This final-form rulemaking enhances cable safety by requiring, on certain circuits, a sensitive ground fault protective device. Sensitive ground fault protective devices improve cable safety by shutting off electrical power through the circuit when it detects that a current is flowing along an unintended path, thereby reducing the risk of bodily harm from electrocution.

##### *Compliance costs*

This final-form rulemaking will cost the nine operators engaged in regulated activity in this Commonwealth approximately \$500,000 over 5 years. This cost reflects the purchase of new power centers equipped with the sensitive ground fault devices and the rebuilding of existing machines to include these devices.

##### *Paperwork requirements*

This final-form rulemaking does not generate additional paperwork.

#### H. *Pollution Prevention*

The Federal Pollution Prevention Act of 1990 (42 U.S.C.A. §§ 13101—13109) establishes a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance. This final-form rulemaking has minimal impact on pollution prevention since it is focused on mine safety.

#### I. *Sunset Review*

The Board is not establishing a sunset date for these regulations, since they are needed for the Department to carry out its statutory authority. The Department will continue to closely monitor these regulations for their effectiveness and recommend updates to the Board as necessary.

#### J. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on March 3, 2017, the Department submitted a copy of the notice of proposed rulemaking, published at 47 Pa.B. 1636, to IRRC and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, the Department shall submit to IRRC and the House and Senate Committees copies of comments received during the public comment period, as well as other documents when requested. In preparing the final-form rulemaking, the Department has considered all comments from IRRC.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on November 15, 2017, the final-form

rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on November 16, 2017, and approved the final-form rulemaking.

*K. Findings*

The Board finds that:

(1) Public notice of 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) This final-form rulemaking does not make changes to the proposed rulemaking published at 47 Pa.B. 1636.

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

*L. Order*

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

(a) The regulations of the Department, 25 Pa. Code Chapter 208, are amended by adding § 208.600 and amending § 208.1 to read as set forth in Annex A.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as required by the Regulatory Review Act (71 P.S. §§ 745.1—745.14).

(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 (71 P.S. §§ 745.1—745.14).

(d) Upon completion of review under the Regulatory Review Act, the Chairperson of the Board shall certify this order and Annex A, as approved to legality and form, and deposit them with the Legislative Reference Bureau, as required by law.

(e) This order shall take effect upon publication in the *Pennsylvania Bulletin*.

PATRICK McDONNELL,  
Chairperson

*(Editor's Note: See 47 Pa.B. 7402 (December 2, 2017) for IRRC's approval order.)*

**Fiscal Note:** Fiscal Note 7-527 remains valid for the final adoption of the subject regulations.

**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 208. UNDERGROUND COAL MINE SAFETY**  
**GENERAL PROVISIONS**

**§ 208.1. Definitions.**

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

*AED—Automated external defibrillator*—A portable device that uses electric shock to restore a stable heart rhythm to an individual in cardiac arrest.

*Act*—The Bituminous Coal Mine Safety Act (52 P.S. §§ 690-101—690-708).

*Approval or approved*—The term as defined in section 104 of the act (52 P.S. § 690-104).

*Barricaded*—To obstruct passage of persons, vehicles or flying materials.

*Berm*—A pile or mound of material capable of restraining a vehicle.

*Certified or registered*—A person certified or registered by the state in which the coal mine is located to perform duties prescribed by 30 CFR Part 77 (relating to mandatory safety standards, surface coal mines and surface work areas of underground coal mines), except that, in a state where a program of certification or registration is not provided or when the program does not meet at least minimum Federal standards established by the Secretary of the United States Department of Labor, the certification or registration shall be by the Secretary of the United States Department of Labor.

*Crosscut*—A passageway driven between the entry and its parallel air course or air courses for ventilation purposes.

*Flash point*—The minimum temperature at which sufficient vapor is released by a liquid or solid to form a flammable vapor-air mixture at atmospheric pressure.

*Inby*—In the direction of the working face.

*MSHA*—The term as defined in section 104 of the act.

*Miner*—The term as defined in section 104 of the act.

*NIOSH*—The term as defined in section 104 of the act.

*Operator*—The term as defined in section 104 of the act.

*Overpressure*—The pressure over the background atmospheric pressure that could result from an explosion, which includes the impact of the pressure wave on an object.

*psi*—Pounds per square inch.

*Qualified person*—The term means either of the following as determined by the context of the regulation:

(i) An individual deemed qualified by the Secretary of the United States Department of Labor and designated by the operator to make tests and examinations required under 30 CFR Part 77.

(ii) An individual deemed, in accordance with the minimum requirements to be established by the Secretary of the United States Department of Labor, qualified by training, education and experience to perform electrical work, to maintain electrical equipment, and to conduct examinations and make tests of all electrical equipment.

*Representative of the miners*—The term as defined in section 104 of the act.

*Roll protection*—A framework, safety canopy or similar protection for the operator when equipment overturns.

*SCSR—Self-contained self-rescue device*—A type of closed-circuit, self-contained breathing apparatus approved by MSHA and NIOSH under 42 CFR Part 84 (relating to approval of respiratory protective devices) for escape only from underground mines.



*Safety can*—An approved container, of not over 5 gallons capacity, having a spring-closing lid and spout cover.

*Trailing cable*—The cable connecting portable and mobile equipment to a power source. A cable is not considered a trailing cable if it connects to equipment which is installed in a stationary location and is permanently wired.

*Underground bituminous coal mine or mine*—The term as defined in section 104 of the act.

*Working face*—Any place in a mine where coal is extracted during a mining cycle.

*Working section*—The area in a mine from the face extending back 1,000 feet.

### CABLE SAFETY

#### § 208.600. Sensitive ground fault.

All three-phase electrically operated equipment operated on a working section in by the last open crosscut must receive power from a circuit equipped with a sensitive ground fault protection as specified in this section.

(1) *Sensitive ground fault.*

(i) A sensitive ground fault protective device must be connected so that the associated circuit will be instantaneously interrupted upon the occurrence of a ground fault which may not exceed 300 milli-amperes nominally.

(ii) A sensitive ground fault protective device on these circuits on equipment utilizing variable speed drives must be connected so that the associated circuit will be instantaneously interrupted upon the occurrence of a ground fault which may not exceed 300 milli-amperes nominally. If nuisance tripping occurs on these circuits, the devices shall be permitted to be adjusted to the minimum setting necessary to prevent nuisance tripping. In no case shall a device be adjusted greater than the lower value of 500 milli-amperes or 1/2 of the neutral ground resistor's current rating.

(iii) The secondary main circuit breaker protecting any sensitive ground fault circuit subject to this section must also provide backup sensitive ground fault protection. Relay settings may include a short time delay (250mS) or a higher current setting, or both, to provide coordination. In no case shall a device be adjusted greater than the lower value of 500 milli-amperes or 1/2 of the neutral ground resistor's current rating.

(2) *Implementation schedule.* This section is effective January 13, 2018, for load centers that power equipment that operates in by the last open crosscut and that are purchased after January 13, 2018, and load centers that are rebuilt at new mines after January 13, 2018. For load centers that power equipment that operates in by the last open crosscut that are located in or at a mine on January 13, 2018, sensitive ground fault protection shall be installed by January 13, 2023.

[Pa.B. Doc. No. 18-56. Filed for public inspection January 12, 2018, 9:00 a.m.]