

Regulatory Analysis Form

(Completed by Promulgating Agency)

INDEPENDENT REGULATORY REVIEW COMMISSION

(All Comments submitted on this regulation will appear on IRRC's website)

(1) Agency
Department of Environmental Protection

(2) Agency Number:
Identification Number: 7-527

IRRC Number:

(3) PA Code Cite: 25 Pa Code Chapter 208 Underground Coal Mine Safety

(4) Short Title: Sensitive Ground Fault

(5) Agency Contacts (List Telephone Number and Email Address):
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(6) Type of Rulemaking (check applicable box):

- Proposed Regulation
 Final Regulation
 Final Omitted Regulation

- Emergency Certification Regulation;
 Certification by the Governor
 Certification by the Attorney General

(7) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

This proposed rulemaking will add a provision to 25 Pa. Code Chapter 208, and four definitions. The proposed regulation will add Section 208.600 (relating to sensitive ground fault) and related definitions to § 208.1, to read as set forth in Annex A.

Specifically, this proposed regulation adds a provision requiring operators to equip certain electrical circuits at the mine with sensitive ground fault protection – a protection scheme that will shut off electrical power through the circuit when it detects that a current is flowing along an unintended path – which will reduce risk of injury or death from electrocution.

(8) State the statutory authority for the regulation. Include specific statutory citation.

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

Further, 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.” The statute further required both laboratory and underground testing of such systems, and that the Board will take action on the industry’s reports and recommendations. To that end, the Pennsylvania Coal Alliance (PCA) (representing the coal mining industry) formed a committee with representatives from several coal mine operators to convene, manage the studies, and ultimately produce a report and recommendations to the

Board. The committee produced a report in March of 2012, titled “Pennsylvania Coal Association Bituminous Coal Mine Safety Act Section 334 Industry Studies Final Report” (Final Report). This proposed rulemaking is the product of the Final Report, which was followed by extensive deliberations by the Board.

(9) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as, any deadlines for action.

This regulation is not mandated by any federal or state law, court order, or federal regulation.

(10) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

This proposed rulemaking enhances miner safety from electrocution by improving the sensitive ground fault mechanisms on certain electrical circuits powering machinery within the mines. This proposed rulemaking will require operators to ensure that certain new and rebuilt power centers are equipped with this more sensitive ground fault protection devices (these 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. Moreover, there is a compelling public interest in ensuring that miners are safe in the workplace. While estimating an exact number of individuals who will benefit from this rulemaking is difficult, miners, their families, mining companies, and others will benefit from electrical safety in underground mines. As a result of this proposed rulemaking, the risk of workplace injuries and deaths related to these electric cables will decline.

(11) 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.

This proposed rulemaking is more stringent than federal regulations, but is less stringent than recent federal best practice recommendations.

The federal Mine Safety and Health Administration (MSHA) regulation at 30 CFR 75.901(a) requires a ground fault current limit (trip setting) of 25 Amperes or less, and an MSHA policy manual recommends that the device be adjusted to operate at not more than 50 percent of the current rating of the grounding resistor. However, a recent MSHA Safety Alert (published on February 4, 2015) recommended sensitive ground fault relays with instantaneous trip setting of 125 milli-amperes or less.

The proposed rulemaking requires a trip setting of 300 milli-amperes or less nominally, except in the case of circuits powering equipment using variable speed drives, in which case, if nuisance tripping occurs at 300 milli-amperes, the operator may adjust the setting no greater than the lower value of 500 milli-amperes or one half of the neutral ground resistor’s current rating. The need for improved miner safety from electrical hazards and that a practical and commercially available means of providing improved safety exists present a compelling Pennsylvania interest that calls for stronger regulation.

(12) How does this regulation compare with those of the other states? How will this affect Pennsylvania's ability to compete with other states?

The proposed rulemaking is industry-leading regulation that is more stringent than those of other states. However, it is not more stringent than MSHA recommended best practices. Regardless, the industry-lead Final Report concluded that more sensitive ground fault relays, with the settings that this proposed rulemaking would require, "is practical, commercially available, and provides a significant enhancement to the safety of miners...."

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

No. The proposed regulation does not affect any other regulations of the promulgating agency or other state agencies.

(14) Describe the communications with and solicitation of input from the public, any advisory council/group, small businesses and groups representing small businesses in the development and drafting of the regulation. List the specific persons and/or groups who were involved. ("Small business" is defined in Section 3 of the Regulatory Review Act, Act 76 of 2012.)

This proposed rulemaking was prepared at the direction of the Board and pursuant to Section 334(c) of the BCMSA. Section 334(c) required the industry to study certain means of enhancing cable safety and create a report and recommendations, on which the Board must act. The seven-member Board is chaired by the Secretary of the Department of Environmental Protection and consists of three members who represent mine workers and three members who represent coal mine operators. Three of the members of the Board were nominated by the United Mine Workers of America (UMWA) to represent miners, and three were nominated by the Pennsylvania Coal Alliance (PCA) to represent coal mine operators.

The development and drafting of this proposed rulemaking was aided by input from the Board which received recommendations and advice on the rulemaking from its constituents. The three members of the Board nominated by the UMWA provided input on the regulations on behalf of mine workers. Likewise, the three representatives on the Board nominated by PCA made recommendations on the regulation on behalf of the nine underground bituminous mining companies and affiliates that currently operate in Pennsylvania. As such, both UMWA and PCA participated in the decision of the Board to prepare this regulation. The comment, review, and deliberation process extended for approximately three years after production of the 2012 report.

The Board has determined that three small businesses, as that term is defined under Section 3 of the Regulatory Review Act, will be affected by this proposed rulemaking. According to the Small Business Size Regulations under 13 CFR Part 121, for NAICS Code 212112 (bituminous coal underground mining), a small business is one that employs fewer than 500 persons. The Board determined that this rulemaking would apply to the nine underground bituminous mining companies currently operating in Pennsylvania, three of which employ fewer than 500 persons. The Board made this determination by reviewing its own internal data and publicly available data from the companies.

(15) Identify the types and number of persons, businesses, small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012) and organizations which will be affected by the regulation. How are they affected?

There are approximately 40 bituminous underground mines operating in Pennsylvania that are owned by nine underground bituminous mining companies. Three of these nine companies are small businesses. This proposed rulemaking will require these operators to ensure that any new or rebuilt load centers that operate in by the last open crosscut of the mine must include sensitive ground fault protective devices. For such load centers in operation at the time of the effective date of the regulation, operators must ensure that these load centers have sensitive ground fault protective devices within 60 months.

(16) List the persons, groups or entities, including small businesses that will be required to comply with the regulation. Approximate the number that will be required to comply.

There are approximately 40 underground bituminous coal mines operating in Pennsylvania that are owned by nine underground bituminous mining companies. These companies collectively employ approximately 5,300 persons. Three of these nine companies are small businesses. All of these entities will be required to comply with the regulation.

(17) Identify the financial, economic and social impact of the regulation on individuals, small businesses, businesses and labor communities and other public and private organizations. Evaluate the benefits expected as a result of the regulation.

This proposed rulemaking will have a financial impact on the operators related to the cost of acquiring and installing the sensitive ground fault devices. The potential benefits of the proposed rulemaking include the continued prevention of bodily harm and loss of life at underground mine sites.

(18) Explain how the benefits of the regulation outweigh any cost and adverse effects.

Although the benefit of reducing the risk of bodily harm and loss of life or property is difficult to quantify, the Final Report prepared pursuant to the BCMSA concluded that employing the devices required by this proposed rulemaking “is practical, commercially available, and provides a significant enhancement to the safety of miners working in a section power center, the equipment powered from it, and handling the trail cable.” Moreover, the BCMSA explicitly noted the issue of cable safety with the expectation that this issue would be addressed after study and Board deliberation.

(19) Provide a specific estimate of the costs and/or savings to the **regulated community** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The Board anticipates that this rulemaking will cost the industry approximately \$500,000.00 over the next five years. As with any reduction of potentially hazardous risks, there are possible savings to the regulated industry as a result of enhancing worker safety.

This proposed rulemaking does not directly require additional accounting or consulting procedures, recordkeeping, or other paperwork. There may be indirect accounting or paperwork costs, but the Board anticipates that these costs will be minimal because most of the accounting or other paperwork is that which is already being performed on a routine basis when new equipment is purchased, or existing equipment is replaced or rebuilt. The proposed rulemaking includes no reporting requirement.

(20) Provide a specific estimate of the costs and/or savings to the **local governments** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

This question does not apply because local governments do not engage in underground bituminous coal mining.

(21) Provide a specific estimate of the costs and/or savings to the **state government** associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

The costs incurred by the state government as a result of this proposed rulemaking are expected to be negligible, as the Commonwealth already conducts mine safety inspections. Nothing in this proposed rulemaking will alter current state government practices or costs.

(22) For each of the groups and entities identified in items (19)-(21) above, submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulation and an explanation of measures which have been taken to minimize these requirements.

This proposed rulemaking requires minimal additional accounting or consulting procedures, recordkeeping, or other paperwork because most of the paperwork required is that which is already being performed on a routine basis when new equipment is purchased or existing equipment is replaced or rebuilt. The proposed rulemaking includes no reporting requirement.

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

	Current FY 2015/16	FY +1 2016/17	FY +2 2017/18	FY +3 2018/19	FY +4 2019/20	FY +5 2020/21
SAVINGS:	\$	\$	\$	\$	\$	\$
Regulated Community	\$0	\$0	\$0	\$0	\$0	\$0
Local Government	N/A	N/A	N/A	N/A	N/A	N/A
State Government	N/A	N/A	N/A	N/A	N/A	N/A
Total Savings	\$0	\$0	\$0	\$0	\$0	\$0
COSTS:	\$	\$	\$	\$	\$	\$
Regulated Community	\$0	\$50,625	\$75,938	\$101,250	\$126,563	\$151,875
Local Government	N/A	N/A	N/A	N/A	N/A	N/A
State Government	N/A	N/A	N/A	N/A	N/A	N/A
Total Costs	\$0	\$50,625	\$75,938	\$101,250	\$126,563	\$151,875

REVENUE LOSSES:	\$	\$	\$	\$	\$	\$
Regulated Community	\$0	\$0	\$0	\$0	\$0	\$0
Local Government	N/A	N/A	N/A	N/A	N/A	N/A
State Government	N/A	N/A	N/A	N/A	N/A	N/A
Total Revenue Losses	\$0	\$0	\$0	\$0	\$0	\$0

(23a) Provide the past three-year expenditure history for programs affected by the regulation.

Program	FY-3 2012-13	FY-2 2013-14	FY-1 2014-15	FY 2015-16
Environmental Protection Operations (#160-10381)	\$74,547,000	\$75,184,000	\$84,438,000	\$87,172,000
Environmental Program Management (#161-10382)	\$24,965,000	\$25,733,000	\$28,517,000	\$28,277,000

(24) For any regulation that may have an adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), provide an economic impact statement that includes the following:

- (a) An identification and estimate of the number of small businesses subject to the regulation.

Three small businesses operate underground bituminous coal mines in Pennsylvania. The Board does not anticipate that the proposed rulemaking will have an adverse impact on these businesses.

- (b) The projected reporting, recordkeeping and other administrative costs required for compliance with the proposed regulation, including the type of professional skills necessary for preparation of the report or record.

There will be no additional costs incurred with respect to reporting, recordkeeping, and other administrative costs required for compliance with the rulemaking.

- (c) A statement of probable effect on impacted small businesses.

This proposed rulemaking is not expected to have a great effect on the three small businesses subject to this regulation. According to the Small Business Size Regulations under 13 CFR Part 121, for NAICS Code 212112 (bituminous coal underground mining) a small business is one that employs fewer than 500 persons. Three of the nine underground bituminous coal mining companies currently operating in Pennsylvania employ fewer than 500 persons. The three small businesses will be somewhat impacted, but these businesses were represented on the committee that undertook the study and created the Final Report that concluded that the devices required by this proposed rulemaking are practical and commercially available. The three small businesses are also represented on the Board that deliberated on this proposed rulemaking.

(d) A description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation.

Section 334(b)-(c) requires that the industry study various means of achieving greater cable safety. Implementation of sensitive ground fault devices is the first product of these studies.

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

No special provisions were developed to meet the particular needs of affected groups or persons as no groups were identified to be impacted. Three small businesses will be somewhat impacted, but these businesses were represented on the committee that undertook the study and created the Final Report that concluded that the devices required by this proposed rulemaking are practical and commercially available. The three small businesses are also represented on the Board that deliberated on this proposed rulemaking.

(26) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

The Board considered various adjusted settings of the ground fault detection devices and determined that on most systems, a setting of 300 milli-amperes is the lowest value that could be maintained without frequent nuisance tripping. For equipment utilizing variable-speed drives, which are more prone to nuisance tripping, operators may adjust the setting up to the lesser of 500 milli-amperes or one half of the neutral ground resistor's current rating.

The Board chose these settings in light of federal regulation requiring a maximum setting of 25 Amperes, and a federal recommended best practice of 125 milli-amperes. The former of which the Board determined to be unsafe, and the latter too low to functionally operate the machinery powered by the load centers.

Moreover, Section 334(b)-(c) requires that the industry study various means of achieving greater cable safety. Implementation of sensitive ground fault devices is the first product of these studies.

(27) In conducting a regulatory flexibility analysis, explain whether regulatory methods were considered that will minimize any adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), including:

- a) The establishment of less stringent compliance or reporting requirements for small businesses;
- b) The establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;
- c) The consolidation or simplification of compliance or reporting requirements for small businesses;
- d) The establishment of performing standards for small businesses to replace design or operational standards required in the regulation; and
- e) The exemption of small businesses from all or any part of the requirements contained in the regulation.

According to the Small Business Size Regulations under 13 CFR Part 121, for NAICS Code 212112 (bituminous coal underground mining) a small business is one that employs fewer than 500 persons. Three of the nine underground bituminous coal mining companies currently operating in Pennsylvania employ fewer than 500 persons. This proposed rulemaking is not expected to have a significant effect on the three small businesses subject to this regulation.

- a) Less stringent compliance requirements for small businesses were not considered because the industry-led study required by Sections 334(c) of the BCMSA into various means of enhancing cable safety (in which the relevant small businesses were represented) resulted in a Final Report that concluded - “more sensitive ground fault relays is practical, commercially available, and provides a significant enhancement to the safety of miners.” This proposed rulemaking includes no reporting requirement.
- b) Less stringent schedules or deadlines for compliance were considered and ultimately adopted in the proposed rulemaking in the form of a 60-month phase-in requirement for all operators based on the logistics of maintaining operations while equipment rebuilding/replacing takes place. This proposed rulemaking includes no reporting requirement.
- c) The consolidation or simplification of compliance requirements for small business was not considered because this proposed rulemaking encompasses one rule regarding specific mining equipment. This proposed rulemaking includes no reporting requirement.
- d) The establishment of performing standards for small businesses to replace design or operational standards required in the regulation was not considered because the industry-led study required by Sections 334(c) of the BCMSA into various means of enhancing cable safety (in which the relevant small businesses were represented) resulted in a Final Report that concluded - “more sensitive ground fault relays is practical, commercially available, and provides a significant enhancement to the safety of miners.” This rulemaking is a product of that study.
- e) The exemption of small businesses from all or any part of the requirements contained in the regulation was not considered because the industry-led study required by Sections 334(c) of the BCMSA into various means of enhancing cable safety (in which the relevant small businesses were represented) resulted in a Final Report that concluded - “more sensitive ground fault relays is practical, commercially available, and provides a significant enhancement to the safety of miners.”

(28) If data is the basis for this regulation, please provide a description of the data, explain in detail how the data was obtained, and how it meets the acceptability standard for empirical, replicable and testable data that is supported by documentation, statistics, reports, studies or research. Please submit data or supporting materials with the regulatory package. If the material exceeds 50 pages, please provide it in a searchable electronic format or provide a list of citations and internet links that, where possible, can be accessed in a searchable format in lieu of the actual material. If other data was considered but not used, please explain why that data was determined not to be acceptable.

Section 334(c) of the BCMSA (52 P.S. § 690-334(b)-(c)) direct the mining industry to initiate studies into means of enhancing safety of underground cables. The statute further required both laboratory and underground testing of various equipment. To that end, PCA formed a committee with representatives from several operators to convene, manage the studies, and ultimately produce a report. The committee produced a report in March of 2012, titled “Pennsylvania Coal Association Bituminous Coal Mine Safety Act Section 334 Industry Studies Final Report” (attached). The Final Report concluded, among other things, that the lowest setting at which sensitive ground fault devices could be reliably employed without nuisance tripping was 300 milli-amperes.

Moreover, Department staff presented to the Board at its June 2015 meeting information that indicated that the ground fault device setting that would ensure the lowest risk of fatality from electrocution is 125 milli-amperes.

(29) Include a schedule for review of the regulation including:

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| A. The date by which the agency must receive public comments: | Quarter 4, 2016 |
| B. The date or dates on which public meetings or hearings will be held: | Not Applicable |
| C. The expected date of promulgation of the proposed regulation as a final-form regulation: | Quarter 4, 2017 |
| D. The expected effective date of the final-form regulation: | Quarter 4, 2017 |
| E. The date by which compliance with the final-form regulation will be required: | Quarter 4, 2017 |
| F. The date by which required permits, licenses or other approvals must be obtained: | Not Applicable |

(30) Describe the plan developed for evaluating the continuing effectiveness of the regulations after its implementation.

The Board is committed to ensuring the health and safety of all persons in the underground bituminous coal mine industry. As a result, the Board periodically reviews all regulations within this industry to ensure their continued effectiveness. This periodic review occurs at all Board meetings. The Board meets a minimum of four times each calendar year.