

PROMULGATION HISTORY ABSTRACT
WEST VIRGINIA DEPARTMENT OF ENERGY

TITLE 48 SERIES 7

Amendment to: Rules and Regulations Governing
the Standards of Certification
of Coal Mine Electricians

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WEST VIRGINIA ADMINISTRATIVE REGULATIONS
BOARD OF MINER TRAINING, EDUCATION, AND CERTIFICATION
TITLE 48 SERIES 7

TITLE: RULES AND REGULATIONS GOVERNING THE STANDARDS FOR
CERTIFICATION OF COAL MINE ELECTRICIANS IN WEST VIRGINIA

WEST VIRGINIA LEGISLATIVE RULE
DEPARTMENT OF ENERGY
TITLE 38 SERIES 14

TITLE: Rules and Regulations Governing the Standards for Certification
of Coal Mine Electricians

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WEST VIRGINIA LEGISLATIVE RULE
DEPARTMENT OF ENERGY
~~TITLE 38~~ SERIES ~~44~~ 7

TITLE: Rules and Regulations Governing the Standards for
Certification of Coal Mine Electricians

Section 38.14.1 General

1.1 Scope - This legislative rule establishes standards for certification of persons performing electrical work in coal mines.

1.2 Authority - West Virginia Code 22-1-15

1.3 Filing Date - May 1, 1987

1.4 Effective Date - May 1, 1987

Section 38.14.2 Definitions

2.1 Electrical work - The term "electrical work" shall mean work consisting primarily of electrical construction, installation, testing, inspection, maintenance and repair tasks on electrical coal mining equipment, apparatus, circuits, and/or distribution circuits used in or around a coal mine.

(a) Listed below are examples of work that are required to be performed by a certified electrician or apprentice electrician, under the supervision required by Section 4.1(d) of these rules:

- (1) Locating faults in cables;
- (2) Installation of couplers on the end of cables;
- (3) Repair of electric components of electrically powered portable, mobile or stationary equipment;
- (4) Installation of electric wiring (excluding mine trolley wire);
- (5) Electrical maintenance of permissible equipment;
- (6) Any type of work performed inside transformers, power centers, rectifiers, switch boxes, switch houses, panels and other enclosures of electric equipment or conductors;
- (7) Electrical troubleshooting and testing.

(b) Listed below are examples of work that is not required to be performed by a certified electrician or apprentice electrician:

- (1) Operation of electric equipment;
- (2) Normal operation of control switches, switch boxes, or circuit breakers provided no energized parts or conductors are exposed;
- (3) Operation of cutout switches in trolley circuits;

- (4) Hanging or removing fuse nips on or from trolley wires;
- (5) Changing bits;
- (6) Lubrication;
- (7) Handling energized trailing cables;
- (8) Inserting low- and medium-voltage cable couplers from receptacles;
- (9) Transportation of electric equipment and cables;
- (10) Mechanical repairs on electrically-powered equipment provided no energized parts or conductors are exposed;
- (11) Installation and repair of equipment and circuits in which shock hazards do not exist (having a normal rating of 40 volts or less when energized) provided such equipment is not required to be permissible;
- (12) Installation, repair and guarding of trolley feeder wires when deenergized;
- (13) Reinsulate or tape cables when there are no conductors or bare wires showing, and
- (14) Replace blown fuses on trolley poles and nips.

2.2 Work area - The term "work area" means within 500 feet in any direction of the area in the mine where electrical work is being performed.

2.3 Certified Electrician - The term "certified electrician" means an individual who is (a) qualified as a mine electrician who has passed an examination administered by the Department of Energy, and has satisfactorily completed a coal mine electrical training program approved by the Department of Energy; or (b) has at least three (3) years of experience in performing electrical work underground in a coal mine, in a non-coal mine, in the mine equipment manufacturing industry, or in any other industry using or manufacturing similar equipment.

2.4 Direct Supervision - The term "direct supervision" means the supervision of an apprentice electrician by a certified electrician in the work area where electrical work is being performed.

2.5 Immediate Supervision - The term "immediate supervision" means the physical presence of a certified electrician with the apprentice electrician.

2.6 Certified Person - The term "certified person" when used to designate the kind of person to whom the performance of duty in connection with the operation of a mine shall be assigned, means a person who is qualified under the provisions of the law to perform such duty. (Refer to WV Code 22A-1A-1).

2.7 Qualified Person - The term "qualified person" means a person who has completed an examination and is considered qualified on record by the Department of Energy. (Refer to WV Code 22A-1A-1).

2.8 Approved - The term "approved" means in strict compliance with mining law, or in the absence of law, accepted by a recognized standardizing body or organization whose approval is generally

recognized as authoritative on the subject. (Refer to WV Code 22A-1A-1).

2.9 Apprentice Electrician - The term "apprentice electrician" means an individual who is the holder of an apprentice electrician's card, and is in training to perform maintenance work on electrical circuits or electrically operated equipment.

2.10 Certification Examinations - The term "certification examinations" means the examinations in specific categories within these regulations which have been approved by the Board of Miner Training, Education, and Certification, and which are administered by the Department of Energy.

Section 38.14.3 Qualifications for Electrical Certification

3.1 Qualification of Certification. After the effective date of these rules and regulations, electrical certification shall be in the following categories:

- (1) Electrician (Low-, medium-, and high-voltage)
- (2) Electrician (Low- and medium-voltage)

Apprentice electricians may become certified electricians in any or all of the above categories by the methods of certification as provided in Section 38.14.4 of these rules and regulations.

Section 38.14.4 Qualification of Certification

4.1 Apprentice Electrician. A person becoming an apprentice electrician to be trained to perform work on electrical circuits or electrically operated equipment shall be issued an apprentice electrician's card by the West Virginia Department of Energy upon verification by the employer that the individual has attended an eight (8) hour classroom training course in the hazards of electricity, and is to be trained in accordance with these rules and regulations for the next twelve (12) months.

(a) During the twelve (12) month training period the apprentice electrician shall complete an approved 40 hour classroom training program concerning the subjects of:

- (1) State and Federal mining laws which apply to electricity
- (2) Permissibility
- (3) AC and DC theory
- (4) Basic electricity
- (5) Schematic reading
- (6) Gas detection and fire prevention
- (7) National Electric Code

(b) Twenty percent (20%) of the twelve (12) month training period shall be directly involved with electrical work.

(c) All types of training experience shall be logged and kept by the operator specifically for apprentice experience with the operator and apprentice both validating the experience by signatures. Records verifying an apprentice's electrical experience shall be presented prior to electrical certification.

(d) All electrical work performed by an apprentice electrician in the work area shall be examined by a certified electrician prior to any work being performed, and again prior to the circuits or equipment being energized and returned to service. Testing and/or troubleshooting electrical problems on energized electrical circuits may be performed by an apprentice electrician under the immediate supervision of a certified electrician.

4.2 Electrician (Low- and medium-voltage). A person may become certified as a low- and medium-voltage electrician when such person has at least twelve (12) months of experience in performing electrical work as an apprentice electrician with low- and medium-voltage, and has satisfactorily passed a certification examination.

4.3 Electrician (Low-, medium-, and high-voltage). A person may become certified as a low-, medium-, and high-voltage electrician when such person has at least twelve (12) months experience in performing electrical work as an apprentice electrician, has worked with low, medium, and high voltage, (at least 20% of the required electrical experience during the twelve (12) month training program shall be directly related to high voltage) and has satisfactorily passed a certification examination.

(NOTE: The low, medium, and high voltage certified electrician is permitted to perform all types of electrical work at any mining operation.)

4.4 Low- and Medium-Voltage Certification to Low-, Medium-, and High-Voltage Electrician. A person certified as a low and medium voltage electrician shall have four (4) months experience, at least 10% of which must be in performing high voltage work, and shall satisfactorily pass that portion of the electrical certification examination devoted to high voltage. During the period of time the low and medium voltage electrician is working on high voltage, he shall work under the direct supervision of a certified low, medium, and high voltage electrician. The high voltage electrical work performed by the low and medium voltage electrician shall be examined by a certified low, medium, and high voltage electrician before the circuits or equipment are energized and returned to service.

The high voltage electrical experience of the low and medium voltage electrician shall be logged by the operator in a record book specifically for that purpose during the four (4) month training period.

4.5 Degree in Electrical Engineering. A person who has a Bachelor's Degree or Associate Degree in electrical engineering from an accredited college or university, and has at least six (6) months experience in performing electrical work under the supervision of a certified electrician may be permitted to become certified as an electrician (low-, medium-, and high-voltage, or low- and medium-voltage) when such person has satisfactorily passed a certification examination for such category.

4.6 Electrical Training Programs Already in Effect. All persons in training to become certified electricians prior to the effective date of these rules and regulations, shall be allowed to continue training and become certified as an electrician after the completion of one years experience in performing electrical work under the supervision of a certified electrician and after successful passage (at least 80% score) of the certification examination.

Any person starting training to become a certified electrician on or after the effective date of these rules and regulations, shall comply with these rules and regulations.

4.7 Prior certification. All valid electrical certifications issued by the Department of Mines or the Department of Energy prior to the effective date of these regulations shall remain valid.

Any person holding a prior certification and wishing to be certified in another category must:

- (1) document his experience;
- (2) successfully pass any other portion of the electrical certification examination not previously taken for low- and medium-voltage, or low-, medium-, and high-voltage, as required in Section 38.14.5 of these regulations; and
- (3) successfully pass the hands-on (skill) portion of the electrical certification examination.

(EXAMPLE: Prep plant to low-, medium-, and high voltage).

Section 38.14.5 Examinations

5.1 Electrical examinations for Low- and Medium-Voltage. Examinations for low- and medium-voltage electrician certifications shall consist of seven parts:

- (a) Direct current theory and application
- (b) Alternating current theory and application
- (c) Electric equipment and circuits
- (d) Permissibility of electric equipment
- (e) Legal requirements - State and Federal law
- (f) National Electrical Code
- (g) Hands-on (skill)

In order to pass the electrical certification examination, an applicant must score at least 80 percent on parts (a) through (f), and must pass part (g). The hands-on (skill) part (g), is graded on a pass/fail basis only.

An applicant who fails to pass the examination must reapply to take the examination within thirty (30) days after notification of a failing score. An applicant who fails the examination two (2) times, must receive at least forty (40) hours of additional classroom training, as provided in Section 4.1(a) of these regulations prior to retaking the examination. An applicant who fails the examination the third time must repeat the twelve (12) month apprentice program as required in Section 4.1 of these regulations.

5.2 Electrician Examination for Low-, Medium-, and High-Voltage. Examinations for low-, medium-, and high-voltage electrician certification shall consist of eight parts:

- (a) Direct current theory and application
- (b) Alternating current theory and application
- (c) Electric equipment and circuits
- (d) Permissibility of electric equipment
- (e) Legal requirements - State and Federal laws
- (f) National Electric Code
- (g) Dangers of high voltage
- (h) Hands-on (skill)

In order to pass the electrical certification examination, the applicant must score at least 80 percent in parts (a) through (g), and must pass part (h). The hands-on (skill) part (h), is graded on a pass/fail basis only.

An applicant who fails to pass the examination must reapply to take the examination within thirty (30) days after notification of a failing score. An applicant who fails the examination two (2) times must receive at least forty (40) hours of additional classroom training as provided in Section 4.1(a) of these regulations prior to retaking the examination. An applicant who fails the examination the third time must repeat the twelve (12) month apprentice program as required in Section 4.1 of these regulations.

Section 38.14.6 Certification Procedures

6.1 Application for Certification. Prior to taking an examination for certification in any of the categories listed in Section 3.1 of these regulations, an individual must submit an application to the Department of Energy to take such examination in the form provided in Appendix A of these regulations. Such application must be submitted to the Department of Energy within thirty (30) days of completion of the apprentice training program.

Upon receipt of an application for examination, the Department of Energy shall provide for the applicant to be examined at the next available examination which is at least fifteen days from receipt of the application, and shall inform the applicant of the time and place for examination. Within fifteen days after the completion of the examination, the Department of Energy shall inform the applicant of his score upon the examination.

6.2 Certification. Upon determination that an applicant for certification has satisfactorily passed an examination for certification in any category listed in Section 3.1 of these regulations, and has presented prior documented electrical experience, the Department of Energy shall promptly issue to such individual a certificate indicating that he has been certified in the particular category for which he has applied.

6.3 Effect of Certification. Except where otherwise provided in these regulations, no person shall perform electrical work of any type (a) until such person has become a certified electrician to perform such work; or (b) unless such work is performed by an apprentice electrician under the direct supervision or immediate supervision of a certified electrician; or (c) unless such work is performed on circuits of ~~twenty-four~~ forty (40) volts or less. This provision does not prohibit a person already being trained prior to the effective date of these rules and regulations, to continue to perform electrical work under the direct supervision of a certified electrician until he has met the experience requirements. (See Section 38.14.4)

Section 38.14.7 Exceptions

7.1 Mining equipment manufacturer's service representatives are not required to be certified as mine electricians or apprentice electricians in order to perform work on equipment which is manufactured or serviced by the company they are representing. Such individuals are considered to be persons trained to perform electrical work and to maintain electrical equipment. When work is performed by manufacturer's service representatives who are not a certified electrician or an apprentice electrician, such work shall be performed under the direct supervision of a certified electrician and the completed work is to be examined by a certified electrician before the machine or equipment is placed in service.

~~6.4~~ 7.2 Certification from other States. Any person holding a mine electrician certification issued by any other state may act in the capacity of electrician until the next available electrical certification examination is held by the Department of Energy, but for a period not to exceed a maximum of ninety (90) days.

Section 7- 38.14.8 Criteria for Apprentice Electrical Training Program

~~7.4~~ 8.1 Apprentice Electrician Card. An apprentice electrician card shall be issued by the West Virginia Department of Energy when applied

for by the miner, with a statement from the mine operator stating that the miner will be in an electrical training program for the next twelve (12) months. The apprentice electrician card will be issued for twelve (12) months and may be extended for valid reasons by the Department of Energy.

7-2 8.2 Approved Electrical Training Program. A minimum of 40 hours of classroom training is required, and shall cover the following subjects:

- (a) State and Federal laws which apply to electricity
- (b) Permissibility
- (c) AC and DC theory
- (d) Basic electricity
- (e) Schematic reading
- (f) Gas detection

The twelve (12) month training will include electrical and mechanically related work with 20 percent (20%) of the twelve (12) months being directly involved with electrical work. (NOTE: 12 month training is at least 80 percent (80%) of all regularly scheduled days in 12 months).

7-3 8.3 Failure to Complete Apprentice Training. If for valid reasons accepted by the Commissioner, an apprentice electrician is unable to complete the twelve (12) month apprentice training program within twelve (12) consecutive months, the Commissioner may permit such individual a time extension of such apprentice card; however, such time period extension shall not exceed two (2) years.

Section 8 38.14.9 Annual Training

8-1 9.1 Electrical Retraining. In order to maintain electrical certification, an individual must complete an annual approved eight (8) hour refresher course. The course will include, but not be limited to, permissibility, state and federal law, safety in job performance and training on equipment applicable to the card holders' work. A minimum of eight (8) hours of refresher training will be required regardless of the number of cards held.

8-2 9.2 Failure to Maintain Electrical Certification. An individual who fails to attend the required refresher training annually will be required to retake the electrical certification examination and the hands-on (skill) portion of the examination. Upon scoring at least 80 percent on each subject of the initial examination, and successful passage of the hands-on portion of the examination, the individual will be issued a new electrical certification card.

This provision will not apply to an individual who was unable to take the annual electrical refresher training for valid reasons accepted by the Commissioner. The individual must, however, complete eight (8) hours of refresher training within ninety (90) days after returning to work.