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OFFICE WEST VIRGINIA
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Form #6

**NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE RULE AUTHORIZED
BY THE WEST VIRGINIA LEGISLATURE**

AGENCY: Board of Miner Training, Education and Certification TITLE NUMBER: 48

AMENDMENT TO AN EXISTING RULE: YES NO

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: 8


TITLE OF RULE BEING PROPOSED: Criteria and Standards for Alternative Training
Programs for Apprentice Coal Mine Electricians

THE ABOVE RULE HAS BEEN AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AUTHORIZATION IS CITED IN (house or senate bill number) HB4255

SECTION 64-10-2, PASSED ON March 6, 2008

THIS RULE IS FILED WITH THE SECRETARY OF STATE. THIS RULE BECOMES EFFECTIVE ON THE
FOLLOWING DATE: APRIL 3, 2008


Authorized Signature

TITLE 48
EMERGENCY RULE
BOARD OF MINER TRAINING, EDUCATION, AND CERTIFICATION

SERIES 8
CRITERIA AND STANDARDS FOR ALTERNATIVE TRAINING
PROGRAMS FOR APPRENTICE COAL MINE ELECTRICIANS

§48-8-1. General.

1.1. Scope. -- This rule establishes criteria and standards for programs, serving as an alternative to the traditional program established in the "Rules and Regulations Governing the Standards for Certification of Coal Mine Electricians," 48CSR7, for the training of apprentices to become Certified Coal Mine Electricians. This rule is only intended to regulate the structure and content of an alternative training program and it does not alter or affect any other requirement for the certification of coal mine electricians.

1.2. Authority. -- W. Va. Code §22A-7-5 and §22A-7-6.

1.3. Filing Date. -- .

1.4. Effective Date. --

§48-8-2. Definitions.

2.1. Alternative Training Program -- For the purpose of this rule, the term "alternative training program" refers to a program of instruction, practical exercises and supervised, hands-on electrical work that is intended as an alternative to the traditional twelve-month program provided in the Board's Rules and Regulations Governing the Standards for Certification of Coal Mine Electricians," 48CSR7.

2.2. 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.

2.3. 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 W. Va. Code §22A-1-2(3)).

2.4. 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 Office of Miners' Health, Safety and Training.

2.5. Certified Electrician -- The term "certified electrician" means any person who is:

(a) qualified as a mine electrician, and who has passed an examination administered by the Office of Miners' Health, Safety and Training and has satisfactorily completed a coal mine electrical training program approved by the Office of Miner' Health, Safety and Training; or, any person who

(b) has at least three (3) years of experience in performing electrical work underground in a coal mine, in the surface work areas of an underground coal mine, in a surface coal mine, in a noncoal mine, in the mine equipment manufacturing industry, or in any other industry using or manufacturing similar equipment, and who has passed a certification examination administered by the Office of Miners' Health, Safety and Training; or

(c) any person who is qualified as a mine electrician in any state that recognizes certified electricians licensed in West Virginia.

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 W. Va. Code §22A-1-2(d)(3)).

2.7. 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.

2.8. Electrical work -- The term "electrical work" means 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.

2.9. High Voltage -- The term "high voltage" means voltages of more than one thousand volts.

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

2.11. Low Voltage -- The term "low voltage" means up to and including six hundred sixty volts.

2.12. Medium Voltage -- The term "medium voltage" means voltages from six hundred sixty one to one thousand volts.

2.13. Qualified Person-Electrician Alternative Program -- The term "qualified person-electrician-alternative program" means a person who has completed all of the educational and testing requirements established by the Board of Miner Training, Education, and Certification pursuant to 48 CSR Series 8.

2.14. Traditional Training Program -- The term "traditional training program" refers to the standard, certified electrician training program established by the Board of Miner Training, Education, and Certification pursuant to 48 CSR

7, 4.1 and 8.2.

2.15. Work Area -- The term "work area" means within five-hundred (500) feet in any direction of the area in a mine where electrical work is being performed.

§48-8-3. Requirement for Board Approval

3.1. In lieu of training under the traditional training program established under "Rules and Regulations Governing the Standards for Certification of Coal Mine Electricians," 48CSR7, the Board of Miner Training, Education and Certification may accept apprentice training through programs that meet the criteria and standards of this rule. No alternative training program shall be accepted as a basis for performing unsupervised electrical work in a mine unless it complies with the provisions of this rule.

3.2. A person becoming an apprentice electrician shall first possess an experienced miner card (certified miner card). Exceptions to this requirement are found in 48 CSR 8-7.1 *et seq.*

§48-8-4. Initial Training

4.1. Each apprentice electrician shall complete an initial 8-hour electrical hazards class. Upon completion of the class, the instructor shall submit required documentation to the West Virginia Office of Miners' Health, Safety and Training for issuance of apprentice electrician cards. The class shall include but not be limited to:

- (a) Lockout and tag procedures -- apprentice electrician shall receive a lock, tag and multi-hole lockout device
- (b) Electrical hazards identification -- apprentice electrician shall receive a 1000VAC rated voltage detector
- (c) Electrical grounding
- (d) Voltage effects on the human body

- (e) High voltage power systems
- (f) Electric arc welding safety
- (g) PPE - Personnel Protective Equipment
- (h) Fatal electrical accidents

4.2. Once the initial training is completed, the apprentice electrician will begin a formal training class. Each apprentice electrician shall be offered 360 total classroom and lab training hours as described in 48-8-6 of this rule. Each apprentice electrician shall be required to attend and document 90% of these hours for a minimum total of 324 hours. The training shall be conducted in a classroom and practical lab environment. All classroom and practical training shall be completed by a Mine Safety and Health Administration certified electrical instructor. All classroom and lab training shall be documented and cosigned by a West Virginia certified mine electrician, see appendix A. The training session shall be in progress for a minimum of six calendar months and shall not exceed nine calendar months. During the training period, the apprentice electrician shall document all hands-on practical electrical mine experience, both underground and in the lab. All electrical experience shall be cosigned by a West Virginia certified mine electrician. The apprentice electrician shall maintain a low/medium and high voltage experience log, see appendix B.

4.3. Electrical contractors, employees of preparation plants and employees working on the surface areas which do not require miner certification, may become certified as an apprentice electrician provided they are enrolled in an approved electrical training program for twelve (12) month period or in an alternative apprentice electrical program as set forth in 8.1. After completion of the approved twelve (12) month electrical training program, the apprentice may file an application and take the electrical certification test to become a certified electrician. After becoming a certified electrician if he or she seeks employment in an underground mine, which requires a miner certification and works in the capacity of an

electrician, all work must be under the direct supervision of a certified electrician who is also a certified miner. A written record shall be kept at the mine site reflecting the work being performed. After the employee has obtained a valid miner certification, working at least six (6) months and one hundred and eight (108) shifts, he or she would be qualified to perform the duties as a certified electrician unsupervised.

4.4. The apprentice electrician shall:

- (a) Work at an underground mine, surface mine or preparation plant. The apprentice electrician shall complete and log a minimum of 277 electrical experience hours with 56 hours of this to be high voltage. The mine electrical experience shall be on low, medium, and high voltage mine systems that he or she has worked on both at the mine site or in the practical hands on labs. All electrical work experience shall be logged as required in 48CSR7-4.
- (b) 20% of the 56 hours of high voltage electrical training shall be hands-on training.

§48-8-5. Certified Electrician Training Plan

5.1. During the first six months of the training program the apprentice electrician shall attend nine weeks of electrical class for a total of 360 electrical training hours. Of these 360 hours, normally 220 hours shall be classroom training, and at least 140 hours shall be of hands-on laboratory type training on mine electrical circuits. This hands-on laboratory type training shall be documented and countersigned by the certified electrical instructor who administered the training sessions. See Appendix "A". The apprentice electrician shall also be working at the mine site as an apprentice electrician during the first six months of the training period. He or she shall perform a minimum of 40 hours of actual hands on electrical work at the mine site which shall be documented and countersigned by the certified

electrician who supervised the work. See appendix "B".

5.2. When the apprentice electrician is enrolled in an approved alternative electrical training program of at least 6 months and meets the requirements of the approved program, they may take the electrical test and be issued a qualified person-electrician card.

5.3. A qualified person-electrician can not perform the following duties without the direct supervision of a certified electrician. Duties which shall not be permitted by a qualified person-electrician include: troubleshooting high voltage circuits; repairing high voltage substations; energizing or de-energizing open mounted type high voltage disconnects; splicing high voltage cables; and testing and troubleshooting high voltage transformers, high voltage vacuum breakers and high voltage line splitters.

5.4. A qualified person-electrician is not permitted to perform the required monthly tests of high voltage circuit protective devices except under the direct supervision of a certified electrician. After twelve (12) months from the issue date of the electrician's apprentice card, the qualified person-electrician may apply for an electrician certification card. This application shall be submitted on a document provided by the West Virginia Office of Miner's Health, Safety and Training at which time an electrician certification card shall be issued.

5.5. During the six months period after receiving a Qualified Person – Electrical Card, he or she shall perform a minimum of 97 hours of actual hands-on electrical work at the mine site which shall be documented and countersigned by the certified electrician who supervised the work. See appendix "B". Upon completion of the required six month period and the completion of the required hands-on electrical experience, and a signed affidavit from mine management stating that he or she has accomplished the required work experience, he or she shall be issued a final Certified Electrician's Certificate.

§48-8-6. Classroom and Lab Training Plan (360 hours, documented with cosigned log)

6.1. The apprentice electrician shall be instructed in all aspects of mining electricity, which shall include:

- (a) State and Federal mining laws which apply to electricity
- (b) Permissibility
- (c) AC and DC Theory
- (d) Basic Electricity
- (e) Schematic Reading
- (f) Gas Detection and Fire Prevention
- (g) National Electric Code

6.2. In support of the above sections as well as additional material, the following material shall be covered in the classroom:

- (a) Basic Electricity
 - 1. Introduction
 - 2. History of electricity
 - 3. Dangers of Electricity
 - a. Shocks and Burns
 - b. Rubber gloves
 - c. Removing a person from power
 - d. Artificial Respiration
 - 4. Lock-out and Tag-Out Procedures
 - 5. Electrical Fundamentals
 - 6. How is electricity produced – Power Generation
 - 7. Magnetism
 - 8. Insulators and conductors
 - 9. Electrical quantities and Ohm's Law
 - 10. Getting Electricity to the Mine
 - 11. Getting electricity into the mine
 - 12. Supplying power to the face area
 - 13. Basic Trailing Cables
 - 14. Basic Batteries
 - 15. Basic Trolley and Track Systems
- (b) DC Theory and Application
 - 1. DC Symbols
 - a. Test and discussion
 - 2. Ohms Law and discussion
 - 3. Volt Ohm Meters
 - a. Analog

- b. Digital
- c. Discussion, Demonstration, and Hands-on Practice
- d. Test on Meter Principals
- e. Test on Meter Readings
- 4. Ammeters
 - a. Analog
 - b. Digital
 - c. Discussion, Demonstration, and Hands-on Practice
 - d. Test on Meter Principals
 - e. Test on Meter Readings
- 5. Meggers
 - a. Analog
 - b. Digital
 - c. Discussion, Demonstration, and Hands-on Practice
 - d. Test on Meter Principals
 - e. Test on Meter Readings
- 6. Series and Parallel Circuits
 - a. Discussion, Demonstration, and Hands-on Practice
 - b. Test and discussion
- 7. Batteries
 - a. Discussion, Demonstration, and Hands-on Practice
 - b. Test and discussion
- 8. Basic DC Panel
- 9. Switches
 - a. Discussion, Demonstration, and Hands-on Practice
 - b. Test and discussion
- 10. Contactor Assembly and Disassembly
 - a. Discussion, Demonstration, and Hands-on Practice
- 11. Fuses
 - a. Discussion, Demonstration, and Hands-on Practice
 - b. Test and discussion
- 12. Mercury Tubes
 - a. Types and Operation
 - b. Holding Circuits
 - c. Timing Circuits
 - d. Discussion, Demonstration, and Hands-on Practice
- 13. Master Contactors
 - a. Discussion, Demonstration, and Hands-on Practice
- 14. Resistors
 - a. Series circuits
 - b. Parallel circuits
 - c. Combination circuits
- 15. Motor Starting Resistance
 - a. Discussion, Demonstration, and Hands-on Practice
- 16. Cross the Line Contactors
 - a. Discussion, Demonstration, and Hands-on Practice
- 17. Motor Overloads
 - a. Discussion, Demonstration, and Hands-on Practice
- 18. Complete Schematic of Control Circuit
 - a. Discussion, Demonstration
- 19. Complete Wiring of Control Circuit
 - a. Discussion, Demonstration, and Hands-on Practice
- 20. Component Labeling Test
 - a. Discussion, Demonstration
- 21. Troubleshooting Control Circuits
 - a. Discussion, Demonstration, and Hands-on Practice
- 22. DC Motors
 - a. Types – Series, Shunt, and Compound
 - b. Wiring
 - c. Reversing
 - d. Checking
 - e. Discussion, Demonstration, and Hands-on Practice
- 23. Troubleshooting Control and Motor Circuits
 - a. Discussion, Demonstration, and Hands-on Practice
- 24. DC Motor Fundamentals Test
- 25. Solenoids
- 26. Cables
 - a. Conductor
 - b. Three Conductor
 - c. Frame Grounding
 - d. Discussion, Demonstration, and a Hands-on examination of different DC Cables
 - e. Troubleshooting DC Cables
 - f. Cable Test
- 27. Solid State Devices
- 28. Diode Systems
 - a. Diodes
 - b. Types of Diodes
 - c. Testing
 - d. Discussion, Demonstration, and Hands-on Practice
- 29. Rectifiers

- a. Half Wave
- b. Full Wave
- 30. Diode Grounding Panel
 - a. Discussion
 - b. Wiring
 - c. Troubleshooting
 - d. Discussion, Demonstration, and Hands-on Practice
- 31. Tests on DC Grounding Systems
- 32. Hands-On Wiring and Troubleshooting of DC Equipment
 - a. Basic DC Panel with 3 Contactors, Resistance, and Series, Shunt, and Compound Motor
 - b. Basic Grounding Diode Panel
 - c. Basic DC Panel with Two-Pole Contactors, Resistance, and Motor
 - d. Basic DC Panel with 4 contactors, Resistance, and motor
 - e. Basic DC WV Test Panel
 - f. DC Bolt Machine Panel
 - g. Trolley Operated Jeep Panel
 - h. SCR Drive Scoop Panel
 - i. Drive Scoop Panel
 - j. Transistor Drive Coal Hauler Panel
 - k. SCR Drive Coal Hauler Panel
 - l. Transistor Drive Coal Hauler Panel
- c. AC Theory and Application
 - 1. How AC electricity is generated
 - 2. AC Electricity
 - a. Single Phase
 - b. Three Phase
 - 3. AC Symbols
 - a. Discussion, Demonstration, and Practice
 - b. Test and discussion
 - 4. Circuit Breakers
 - 5. Transformers
 - a. Simple
 - b. Tapped
 - c. Combination
 - d. Discussion, Demonstration, and Hands-on Practice
 - e. Transformer Test
 - 6. Line Starters
 - a. Tips
 - b. Coils
 - c. Auxiliary Relays
 - d. Discussion, Demonstration, and Hands-on Practice
 - 7. Thermal Overloads
 - a. Discussion, Demonstration, and Hands-on Practice
 - 8. AC Motors
 - a. Types – Squirrel Cage and Wound Rotor Motors
 - b. Wiring
 - c. Reversing
 - d. Testing
 - e. Discussion, Demonstration, and Hands-on Practice
 - 9. Reading Schematic Drawings
 - 10. Reading Wiring Drawings
 - 11. Wiring of Motor and Control Circuits
 - a. Discussion, Demonstration, and Hands-on Practice
 - 12. Troubleshooting of Motor and Control Circuits
 - a. Discussion, Demonstration, and Hands-on Practice
 - 13. Silicon Controlled Rectifiers (SCRs)
 - a. Discussion, Demonstration, and Hands-on Practice
 - 14. AC Fundamentals Test
 - 15. AC Protection Devices
 - 16. Circuit Breakers
 - a. Breaker Short Circuit Adjustments
 - b. Breaker Ampere Capacity
 - c. Breaker Thermal Trip Units
 - d. Discussion, Demonstration, and Hands-on Practice
 - 17. Receptacle and Plug Layout
 - a. Discussion, Demonstration, and Hands-on Practice
 - 18. Operation of Current Transformers
 - a. Discussion, Demonstration, and Hands-on Practice
 - 19. Operation of Ground Trip Devices
 - a. Discussion, Demonstration, and Hands-on Practice
 - 20. Operation of Ground Check Devices
 - a. Impedance type ground monitors
 - b. Continuity type ground monitors
 - c. Wireless type ground monitors
 - d. Hands-on wiring and Troubleshooting of Ground Monitors
 - 21. AC Power Simulator System
 - a. Discussion, Demonstration, and Hands-on Practice

- b. Testing
- 22. Troubleshooting of Complete AC Power Supply Systems
- 23. Hands-On Wiring and Troubleshooting of AC Equipment
 - a. Basic AC Training Panel – 1
Linestarter, breaker, transformer, fuses, overloads, three phase motor
 - b. Basic AC Training Panel – 2
Linestarters, breaker, transformer, fuses, overloads, 2 three phase motors
 - c. Two different Basic AC Panels for Prep Plant
 - d. Basic AC WV Test Panel
 - e. AC Bolt Machine
 - f. Power Distribution Box
 - g. Section Power Center
 - h. Remote Control Continuous Miner with DC Tram
 - i. Remote Control Continuous Miner with AC Tram
 - j. Programmable Logic Controller Belt Starter Panel
 - k. Programmable Logic Controller Prep Plant Panel
 - l. Programmable Logic Controller Pump Panel
 - m. CO Monitor System
 - n. WV Test Panel for Power Center
- 24. Electrical Cables
 - a. Types and Construction
 - b. Splicing techniques
 - c. Trouble-shooting Cables
 - (1) With Ohmmeter
 - (2) With Cable Thumper
- d. High Voltage
 - 1. High Voltage gloves
 - 2. Hot sticks
 - 3. Visible disconnects
 - 4. Isolation transformers
 - 5. Circuit breakers
 - 6. Oil Breakers
 - 7. Vacuum Breakers
 - 8. Ground resistors
 - 9. Ground monitors
 - 10. Splicing high voltage cables
 - 11. Lightning arrestors
 - 12. Hands-On Wiring and Troubleshooting of High Voltage AC Equipment
- a. High Voltage Vacuum Breaker Panel
- b. WV High Voltage Relay Test Panel
- e. Alternating Current Certification Test
 - 1. Discussion and Practice
 - 2. Test and discussion
- f. Direct Current Certification Test
 - 1. Discussion, Demonstration, and Practice
 - 2. Test and discussion
- g. Legal Requirements Certification Test
 - 1. Review of Electrical Sections of Part 75 of the Federal Register
 - 2. Discussion, Demonstration, and Practice
 - 3. Test and discussion
- h. Permissibility Certification Test
 - 1. Review of Permissibility
 - 2. Cover complete MSHA manual “Permissibility: Electric Face Equipment” (Safety Manual No. 16)
 - 3. Review Permissibility Slides
 - 4. Discussion, Demonstration, and Practice
 - 5. Test and discussion
- i. National Electrical Code Certification Test
 - 1. Review Selected Sections of National Electrical Code
 - 2. Discussion, Demonstration, and Practice
 - 3. Test and discussion
- j. High Voltage Systems Certification Test
 - 1. Review of Electrical Sections WV Law and of Part 75 and 77 of the Federal Register
 - 2. High Voltage Training Panel
 - 3. Discussion, Demonstration, and Practice
 - 4. Test and discussion

- k. Circuits and Equipment Certification Test
1. Discussion and Practice
 2. Test and discussion
- l. Final Complete Electrical Exam
- m. During the formal classes, the apprentice electrician shall complete other practical lab exercises that shall include but are not limited to the following:
1. Identifying electrical hazards
 2. Trailing cable splices
 3. Use of medium voltage rubber gloves and voltmeter
 4. Installation of packing glands
 5. Resealing a plane joint on an XP controller panel
 6. Installing a cable coupler
 7. Installing and testing a ground fault device
 8. Installing and calibrating a ground monitor
 9. Checking and changing brushes in a DC motor
 10. Troubleshooting an DC motor
 11. Troubleshooting an AC motor
 12. Replacing a fuse in a pole mounted, high voltage cutout
 13. Testing high voltage rubber gloves with air
 14. Installing an AC plug
 15. Reentering a trailing cable into a junction box
 16. Replacing a tape switch on a roof bolter or scoop
 17. Wiring a basic stop/start circuit to turn on a light with a relay
 18. Adjusting the magnetic trip setting on a circuit breaker
 19. Adding a new CO sensor to a CO system and calibrating
 20. Troubleshooting a conveyor belt pull cord circuit
 21. Proper use of an impulse generator (Thumper) for trailing cable troubleshooting
 22. Calibrating a machine methane monitor system
 23. Ground faulting a circuit breaker
 24. Installation of machine trailing cables
 25. Control wiring in a belt conveyor starter
 26. Replacing the bulb in a permissible headlight
 27. Proper adjustment of micro switches on direction tram contactors
 28. Troubleshooting Continuous Miner with DC Tram
 29. Troubleshooting a Continuous Miner with VFD Tram
 30. Troubleshooting a Bolt Machine
 31. Troubleshooting CO Monitor System
 32. Troubleshooting an Programmable Logic Controller System
- n. Other classes that are not electrical but shall be included in the training plan are:
1. Hand and Power Tools
 - a. The student shall attend 4 hours of Basic hand and power tool safety
 2. Welding & Cutting Systems
 - a. The student shall attend 76 hours of Basic Cutting And Welding Safety
 3. Principals of Hydraulics
 - a. The student shall attend 40 hours of Basic Hydraulic Principals and Safety

§48-8-7. Exceptions

7.1. Mining equipment manufacturer's service representatives, electrical contractors, employees of preparation plants and employees working on the surface area at underground mines, which does not require a miner's certificate, may receive an apprentice electrician card in the following manner:

- (a) Be enrolled in an approved electrical training program for twelve (12) months, **or**;
- (b) Be enrolled in an approved alternative apprentice electrical program set forth in 48 CSR Series 8, **and**;

- (c) Eight (8) hours of classroom training in the hazards of electricity and his or her employer must submit a request in writing to the Office of Miners' Health, Safety and Training that an apprentice electrician card be issued.

7.2. All electrical work performed by the apprentice electrician must be under the direct supervision of a certified electrician. A log must be kept at the job site describing the work which was performed. The log must be dated and signed by both the apprentice electrician and the certified electrician observing the work performed.

7.3. After completing the approved (12) month electrical training program the apprentice may file an application and challenge the electrical certification test and become a certified electrician, or become a qualified person-electrician if enrolled in an approved alternative apprentice electrical training program as set forth in Section 8.1.

7.4. After becoming a certified electrician if he or she seeks employment in a job that requires a miners' certificate by the Office of Miners' Health, Safety & Training, all electrical work performed must be under the direct supervision of a certified electrician who is also qualified as a certified miner. A written record shall be kept at the mine site reflecting the work which was performed. After the employee has obtained a valid miner's certificate and has worked at least (6) months and one hundred eight (108) shifts, he or she would be qualified to perform duties as an unsupervised certified electrician.

§48-8-8. Qualified Person-Electrician

8.1. When an apprentice electrician enrolled in an approved alternative electrical training program meets the requirements of the approved program he or she may take the electrical certification test and be issued a qualified person-electrician certification card. A qualified person-electrician would be limited to the following duties without working under the direct supervision of a certified electrician:

- (a) Testing, troubleshooting and repairing low and medium voltage circuits, and;
- (b) Required weekly examinations of Low and Medium voltage electrical equipment and required permissibility test of low and medium voltage equipment.

8.2. Duties which shall **not** be permitted by a qualified person-electrician without the direct supervision of a certified electrician includes:

- (a) Troubleshooting of high voltage circuits, repairs of high voltage sub-stations, energizing or de-energizing open mounted type high voltage disconnects, splicing high voltage cables, testing and troubleshooting of high voltage transformers, high voltage vacuum breakers and high voltage line splitters, and;
- (b) The required monthly tests of high voltage circuit protective devices.

8.3. Twelve (12) months from the original issue date of the qualified person- apprentice electrician's card, the qualified person-electrician can apply for an electrical certification card. The application shall be submitted on a document provided by the Office of Miners' Health, Safety and Training at which time an electrician's card shall be issued.

