



## *State of West Virginia*

WV Office of Miners' Health, Safety & Training  
Frank Foster, Director  
#7 Players Club Rd., Suite 2 • Charleston, West Virginia • 25311-1626

Telephone 304-558-1425 • Fax 304-558-1282

[minesafety.wv.gov](http://minesafety.wv.gov)

### **INTRODUCTION – FILLING OUT ELECTRICAL BOOKS**

Electrical books play a critical role in the safe mining of coal. Coal miners and companies rely on the “boots on the ground” information supplied by these reports. Electrical book records are some of the most vital pieces of evidence used in recreating and understanding what happened when an accident or incident does occur. Identifying, recording, and communicating are three factors involved in posting to electrical books. This memo addresses some of the most common issues and mistakes (specifically regarding filling out electrical books) we have identified in our permitted mining operations in the State of West Virginia.

1. **Entries are not legible.** Entries in the electrical books need to be legible. If your entries in the electrical books are not legible, it is the same as if you did not fill the books out at all.
2. **Entries are not dated or only a date range written on the page.** An example: “Week of July 1<sup>st</sup>” or “7-1-2023 to 7-7-2023.” The **exact date** of the day you examined the equipment must be recorded in the electrical books with your entry. The date range is acceptable in aiding electricians in keeping up with the dates of the current week, previous weeks, and upcoming weeks, but they do not satisfy the requirement to accurately date all entries made in the electrical books.
3. **Waiting to fill out the electrical books on the last day of the week or the first day of the following week even though the examinations were made on a previous day: NO BACKDATING OR POSTDATING.** You must record the results of any examinations you make of electrical equipment on the same day you do the examination; record your results in the electrical books **BEFORE** you leave the mine site at the end of your workday. **The Bottom Line: All entries into the electrical books must be created and dated the day the examination or tests occurred.**
4. **Not signing and recording your West Virginia State electrical certification number on all entries made in the electrical books.** All entries made in the electrical books must

be signed by the qualified person that performed the examination of said piece or pieces of electrical equipment. If an entry is not signed, it is as if it was never recorded in the electrical books. By signing the entry, you are certifying that you competently completed the examination of said equipment and the entry recorded in the electrical book is true and accurate to the best of your knowledge. Many people have signatures that are practically unreadable to others, and in some cases unreadable to the person signing the electrical books, so you must record your permanent state electrical certification number with your name.

5. **The company name designated and/or placed on a piece of electrical equipment is not identical to the company name for the piece of electrical equipment recorded in the electrical books.** A piece of electrical equipment must be assigned a company name and it is at the discretion of the operator to decide the company name for each piece of equipment. However, to satisfy the law the company name recorded in the electrical books must be identical to the company name placed on the piece of equipment. For example, if you have a pump called “#10 Pump” in the electrical books and called “1 Belt Break 10 Pump” on the piece of equipment, this is a violation of state mining law.
6. **Electrical equipment must be examined by a qualified person and the results of those examinations recorded in the electrical books if it is being placed in service for the first time or being placed back into service after being out of service for a period of time.**
7. **Electrical equipment does not have to be in use to be considered in service.** Electrical equipment is considered in service and subject to inspection by mine inspectors when equipment is accessible and available for use by the employees at the mine.
8. **Assuming the status of a piece of electrical equipment does not change (taken out of service and/or placed back into service) regardless of the location, all electrical equipment must be examined by a qualified person and the results of those examinations recorded in the electrical books a minimum of one time per week.** A minimum of one time per week means once per week, not every seven days. Per the current interpretation of state mining law, all electrical equipment energized and in service on the surface area of an underground mine must be examined and a record of said examination recorded in the electrical books every **WEEK** (not monthly). This includes the high voltage mine substation, but the weekly examination of the station is only a visual examination and does not include the examination and testing of the circuit breaker and its auxiliary devices; This examination is still only legally required monthly.

## **PLACING ELECTRICAL EQUIPMENT OUT OF SERVICE**

1. Equipment must be de-energized, visually disconnected from the power source where possible, locked out where possible, tagged out, tested to confirm no voltage or any other source of energy is present, and recorded in the electrical books as being out of service. All the steps above must be completed before a piece of electrical equipment is legally considered to be taken out of service. Although a piece of electrical equipment is, for all practical purposes, out of service if it is de-energized, locked out and properly tagged out it is a violation of mining laws if the equipment is not recorded in the electrical books as being out of service by the qualified person that locked and tagged the equipment out of service.
2. The tag must be filled out in its entirety showing the person's name, state electrical certification number, date, brief description of why equipment is being taken out of service, and any other relevant sections present on the tag. The tag must be weather resistant and able to withstand the environment and location. You cannot use a piece of writing paper.
3. The company name and/or number of the equipment being taken out of service that is entered in the electrical books must match the company name and/or number on the piece of electrical equipment.
4. Just because a piece of electrical equipment is not in use, de-energized, or unplugged does not mean the equipment is out of service and not subject to examination by mine inspectors. To be considered out of service it must be disconnected, locked & tagged and entered into the examination book as out of service.

## **MONTHLY EXAMINATION OF LOW/MEDIUM VOLTAGE BREAKERS AND THE RECORDS OF THE EXAMINATION**

There appears to be a lot of confusion about the monthly examination, testing and recording the results of those examinations, and tests in the electrical books of low/medium voltage circuits by certified electricians in this area. Many electricians incorrectly think that performing ground fault tests on all low/medium voltage circuits is the only step that must be taken.

State mining law states that all low/medium voltage circuit breakers and all auxiliary devices connected to the breaker will be tested and examined by a qualified person each month and a record of said examinations and tests will be recorded in the electrical books.

## **State Mining Law Book**

### **Title 36; Series 12**

4.1.71.a.1. Circuit breakers protecting low- and medium-voltage alternating current circuits servicing three-phase alternating current equipment and their auxiliary devices shall be tested and examined at least once each month by a qualified person.

4.1.71.a.2. In performing such tests, actuating all of the circuit breaker auxiliaries or control circuits in any manner which causes the circuit breaker to open shall be considered a proper test.

4.1.71.a.3. All components of the circuit breaker and its auxiliary devices shall be visually examined and such repairs or adjustments as are indicated by such tests and examinations shall be carried out immediately.

4.1.71.b. Testing, examination, and maintenance of low- and medium-voltage circuit breakers; records.

4.1.71.b.1. Recordkeeping. The operator of any coal mine shall make a written record of each test, examination, repair, or adjustment of all circuit breakers protecting low- and medium-voltage circuits service three-phase alternating current equipment used in the mine.

4.1.71.b.2. Such record shall be kept in a book prescribed by the Director and made available for authorized representatives of the Office of Miners' Health, Safety and Training upon request.

The tests required every month include the following:

1. A visual examination of the breaker and all circuit components.
2. Performing the ground fault test (live ground fault test or ground fault test button). If using ground fault test buttons, the ohm reading of the grounding resistor should be recorded in the electrical books every month.
3. Performing the ground monitor test. Includes testing of the monitor test button on both impedance and continuity type circuits.
4. Visual examination of the instantaneous or short circuit setting on the circuit breaker. In most, but not all cases, this setting is adjustable and should be set to the proper amperage for the equipment and/or cable that it is protecting.
5. Making sure the UVR in the circuit breaker is working properly.

Entries in the electrical books need to show that all required tests were performed.

All problems, issues, and malfunctions found should be corrected immediately if possible and recorded in the electrical books with a description of how all the problems, issues or malfunctions were resolved.

Any circuits with damaged or defective equipment that can't be corrected immediately should be de-energized, disabled, locked out where possible, tagged out, tested to confirm no voltage is present, and removed from service, along with recording in the electrical books that the circuit was removed from service and why, until repairs can be made and details about the repairs recorded in the electrical books.

The results of the examination must be recorded in the electrical books by the qualified person that performed the tests **BEFORE** they leave the mine that day at the end of their workday. **NO BACKDATING OR POSTDATING.**

Remember, for any piece of electrical equipment to be legally considered out of service it must also be taken out of service in the electrical books. This includes circuit breakers and their auxiliary protective devices.