

36CSR4

TITLE 36
LEGISLATIVE RULE
BOARD OF COAL MINE HEALTH AND SAFETY

SERIES 4
RULES AND REGULATIONS GOVERNING THE MOVEMENT
OF MINING EQUIPMENT WITHIN COAL MINES
IN THE STATE OF WEST VIRGINIA

§36-4-1. General.

1.1. Scope. -- These rules and regulations are in response to Senate Concurrent Resolution 63 of the 2015 West Virginia Legislature and are applicable to govern the movement of mining equipment in underground coal mines, with the exception of ordinary sectional movements, as defined in Section 2.3.

1.2. Authority. -- W. Va. Code §22A-6-4.

1.3. Filing Date. -- June 1, 2015

1.4. Effective Date. -- June 2, 2015

1.5. Repeal and Replace. -- This rule repeals and replaces 36 CSR 4, filed and effective May 4, 2010.

§36-4-2. Definitions.

2.1. The term "transport" shall mean (a) equipment that is pulled by either a self-propelled battery powered, track mounted vehicle, or diesel powered equipment or (b) equipment that has been loaded on a flat car, skid or other similar equipment and is pulled or carried from one location to another.

2.2. The term "trammed" shall mean equipment energized with A.C. or D.C. Electrical Power or diesel powered equipment which is moved from one location to another by a person manually operating such equipment.

2.3. The term "Ordinary Sectional Movement" shall mean the movement of self-propelled face equipment or diesel powered equipment freely across and in the immediate area of a section. This includes the movement of battery powered equipment to and from the established section supply station and the movement of equipment powered by a trailing cable to the entire length of the trailing cable while attached to a distribution box or fuse nip. The movement of such equipment within twenty-four (24) inches of adequately guarded energized trolley or feeder wires at the established section supply station and access roadways to the section supply station are included. All other movements of equipment in entries where energized trolley or feeder wires are present or within twelve (12) inches of energized high voltage cables located out by the section transformer are excluded.

2.4. The term "top of the locomotive" shall mean the flat surface which covers the entire length of the locomotives; with the exception of locomotives equipped with cable reels, whereas the top of the cable reel will be designated as the top of the locomotive.

2.5. The term "mining equipment" is a defined as a major item of complete or reasonably complete mining equipment, built on its own individual frame, consisting of its own components, performing its own unique function, and not designed to operate on mine track. "Mining equipment" includes all self-propelled equipment including cat-mounted rubber-tired or skid-

mounted equipment. "Mining equipment" includes major items of complete or reasonably complete mobile or stationary mining equipment that is used in the production of coal

2.6 For this regulation, the terms "inby," "outby," "upwind," and "downwind" shall mean the location of the person in relation to the ventilating current after it has passed over the equipment being moved or transported.

§36-4-3. Track Mounted Equipment That May Continue To Operate Normally.

3.1. Track mounted equipment such as locomotive, mine cars, rock dust tank cars, compressors and other equipment designed to operate on track haulageways that create no greater than ordinary risk of fire while being operated may continue operating normally and is not considered a move.

§36.4.4 Prohibitions against moving of equipment

4.1. Mining equipment (e.g., continuous miners, loading machines, cutting machines, shuttle cars, self-propelled coal drills, crusher feeders and equipment that exceeds the height, width or length of the locomotive or mine car normally used) being transported or trammed underground, other than ordinary sectional movements, shall be transported or trammed by qualified personnel. When equipment is being transported or trammed where trolley wire is energized on the split of air in which said equipment is being transported or trammed, no person shall be permitted to be inby the equipment in the ventilating split that is passing over such equipment, except those directly involved with transporting or trampling the equipment, and shall be under the direct supervision of a certified foreman. To avoid accidental contact with power lines, face equipment shall be insulated and assemblies removed, if necessary, so as to provide clearance.

§36-4-5. General Safety Precautions for All Types of Equipment Moves

5.1. Mining equipment may be transported in track entries with track mounted battery or diesel powered locomotives while persons are inby the ventilating current of such equipment where trolley and feeder wire does not exist or has been de-energized, provided:

5.1.a When trolley and feeder wires are present, a certified electrician shall be designated to de-energize such trolley and feeder wire in the area where such equipment is to be moved. De-energizing devices in the trolley and feeder wire system shall be open, locked out with an approved device and suitably tagged by a designated certified electrician. A designated certified electrician shall be the person who removes the danger tags, locking devices, and restores the electrical power to the trolley and feeder wires after the equipment move has passed through that specific area.

5.2. The equipment move and the move crew shall be under the direct supervision of a certified foreman. Prior to starting and during the transporting or trampling of such aforementioned equipment the following listed procedures shall apply and necessary equipment shall be provided:

5.2.a. Equipment being transported or trammed on flat cars, skids, or other similar equipment shall be cleaned of accumulated combustible materials, properly secured to transporting vehicle and effectively insulated on the top side next to the trolley or feeder wire.

5.2.b. Prior to any equipment being transported on rail, a positive ground shall be established and continuously maintained between such machine and ground system.

5.2.c. Heads and/or booms of all equipment being transported shall have all hydraulic pressure released and heads and/or booms shall be secured.

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5.2.d. When necessary, all equipment assemblies shall be removed to provide required clearance.

5.2.e. Adequate size equipment shall be used while transporting mining equipment.

5.2.f. Pre and Post- move Examinations;

5.2.f.1. Within eight (8) hours prior to such equipment being transported the entire length of the travel route, where such equipment is to be transported, shall be examined by a certified foreman or fireboss.

5.2.f.2. Within three (3) hours after such equipment has been transported the entire length of the travel route, where such equipment has been transported shall be examined by a certified foreman or fireboss.

5.2.f.3. Such examinations in paragraph 1 and 2 above shall be recorded by such foreman in a book kept for that purpose.

5.2.g. Prior to an equipment move, a visual examination shall be made by a certified electrician of all circuit breakers that will be utilized along the route of travel. Necessary settings of all such circuit breakers to be utilized, shall be made by a certified electrician.

5.2.h. A minimum of twelve (12) inches of radius clearance shall be maintained between the equipment being moved and the energized high voltage cable and energized, insulated D.C. feeder wire paralleling the entry along the route of travel. In areas where the aforementioned twelve (12) inches of radius clearance cannot be maintained the high voltage cable and D.C. feeder cable shall be adequately guarded, however, if six (6) inches of clearance cannot be maintained between the equipment being moved and the high voltage cables and D.C. insulated feeder wire and the high voltage cables or D.C. insulated wire shall be de-energized, and suitably tagged and locked out with an approved device by a certified electrician: Provided, however, where it becomes necessary for equipment to pass under high voltage cables and/or insulated D.C. feeder wire, where the required clearance cannot be maintained, the aforementioned high voltage cables and/or insulated D.C. feeder wire shall either be channeled above the level of the roof line or de-energized. When energized trolley and feeder wires are present, a certified electrician shall be designated to de-energize such trolley and feeder wire in the area where such equipment is to be moved. De-energizing devices in the trolley and feeder wire system shall be opened, locked out with an approved device and suitably tagged by a designated certified electrician. A designated certified electrician shall be the person who removes the danger tags, locking devices, and restores the electrical power to the trolley and feeder wires after the equipment move has passed through that specific area. Prior to energizing trolley and/or feeder wires in the area where such equipment has been moved, an examination of the area shall be made by a certified foreman and all hazardous conditions found during his examination shall be corrected.

5.2.i. An operative means of communications shall be maintained between the move crew transporting such equipment, the dispatcher or a designated qualified person on the surface and the affected section.

5.2.j. An experienced machine operator of the type of equipment being moved shall be provided with all moves.

5.2.k. Except as provided in paragraph L below, a qualified person shall be located where electrical power can be immediately de-energized while the equipment is being transported.

5.2.l. Should it be necessary for any person to be located downwind of the equipment being

moved to control the electrical power, such person shall be provided with a one hour self-contained self-rescuer or equivalent and has been trained in its use, also the above mentioned person shall have a readily available vehicle, operative communications, and immediate access to an isolated intake air escapeway before such person goes downwind such equipment to control the power, he shall have been familiarized as to the escapeways in the area he may be located in at the time. If an isolated intake air escapeway is not provided in the area where a person must be downwind the equipment being transported, then the person shall be given ample time to establish the power and return to the upwind side of the equipment being moved, before such equipment proceeds any further.

5.2.m. When a locomotive is operating on the boom end of the equipment being transported or where there are other conditions that may present a hazard to the locomotive operator because of being in close proximity to the equipment being moved, a flat car, mine car, or similar equipment shall be provided between the locomotive and moving equipment. When possible, place the boom end of the equipment being moved at the opposite end of the locomotive operator's compartment.

5.2.n. No person shall be assigned to an equipment move crew that does not possess a West Virginia miners certificate as an underground miner.

5.2.o. A light and equipment move notification instructions shall be located at all portals where men enter the mine. At the beginning of the shift when such equipment is to be moved the date, time, route of travel, and destination of equipment moves shall be posted on the mine bulletin board and a representative of the miners at that mine shall be notified at the time of posting. Such aforementioned written instructions shall be signed by a certified foreman. Immediately prior to the equipment move the conspicuous light shall be turned on by a certified foreman and such light shall remain on for the duration of the equipment move. In the event the need for an unplanned move arises, all underground persons shall be notified prior to the move.

5.2.p A readily available vehicle, capable of transporting injured persons shall be provided on the outby side of the equipment being moved

5.2.q All locomotives used to transport such equipment shall be cleaned of accumulated combustibile material

5.2.r Battery tops shall be cleaned prior to equipment moves. Battery terminals shall be insulated between the top of the battery and the battery cover to prevent accidental short-circuiting.

5.2.s. All locomotives, except diesel powered, shall be examined for proper voltage prior to equipment moves.

5.2.t Each piece of equipment involved in equipment moves shall have a pre-operational check performed

5.2.u. The following fire protection equipment and tools shall be provided with each equipment move, provided items 4 and 7 do not apply, if trolley or feeder wire is not present in the entry where equipment is being moved:

5.2.u.1. 4-20 lb. ABC fire extinguishers (such extinguishers shall be placed where they are readily accessible and on the outby side of the equipment being moved).

5.2.u.2. 1 hammer.

5.2.u.3. 1 mine axe.

5.2.u.4. 1 wire bell wrench.

5.2.u.5. 1 set of come-a-longs.

5.2.u.6. 2-12 inch adjustable wrenches.

5.2.u.7. Adequate supply of trolley wire splices and bells.

5.2.u.8. A lifting jack and/or lifting jacks sufficient and an appropriate jack bar in size to lift such equipment being moved or transported.

5.2.u.9. One hack saw.

5.2.u.10. Assortment of wood blocks.

5.2.u.11. One pair insulated wire cutters.

5.2.u.12. One pair of high-voltage gloves.

5.2.u.13. One sledge hammer.

5.2.u.14. One 10 unit first aid kit.

§36-4-6. Track Equipment, Such As Track Cleaners, And Requirements.

6.1. Track equipment, such as track cleaners, track drills and cutting machines, and track-mounted roof bolters that do not create any greater than ordinary risk of fire may operate normally, provided:

6.1.a. No less than twelve (12) inches of radius clearance is maintained between trolley or feeder wires while such aforementioned equipment is being transported or trammed. If less than 12 inches of clearance cannot be met then the provisions under 6.1.b.1 would apply.

6.1.b. Within eight (8) hours prior to such equipment move trolley wire crossovers and switches located on the equipment travel route shall be examined for proper clearance by a certified foreman or fireboss and the following necessary safety precautions implemented.

6.1.b.1. Required Clearance

6.1.b.1.A. When such aforementioned equipment passes under energized trolley, feeder wires, or high voltage cables at crossovers and switches and 12 inches of radius clearance cannot be provided such trolley or feeder wires, or high voltage cables shall be adequately guarded to prevent accidental contact.

6.1.b.1.B. However, where it becomes necessary for the equipment to pass under bare trolley, feeder wire or high voltage cable and six (6) inches of clearance cannot be maintained the wire may be either de-energized and locked out with an approved device and tagged out by a certified electrician or remain energized and all people inby on the same ventilating current of air brought outby the move area.

6.1.b.2. Where it becomes necessary for the equipment to pass under high voltage cables and/or insulated D.C. feeder wires and the six (6) inches of required clearance cannot be maintained, the aforementioned high voltage cables and/or insulated D.C. feeder wires shall either be channeled above the

level of the roof line, or de-energizing by locking out and tagging out by a certified electrician.

6.1.c. Booms on the track cleaners shall be insulated on the trolley and feeder wire side and a means installed on the track cleaner to prevent the boom from moving from side to side.

6.1.d. An operative means of communications shall be maintained between such equipment operator and the dispatcher or a designated qualified person on the surface and the affected section.

6.1.3. While roof bolting operations are being performed and energized trolley and/or feeder wires are present, such trolley and/or feeder wires shall be adequately guarded to prevent accidental contact.

When any of the above criteria cannot be complied with, no person except such persons directly involved with the above moving equipment shall be permitted to be inby such equipment while on the same ventilating split of air.

6.2. The following fire protection equipment and tools shall be provided, except items 'd' and 'g' do not apply if trolley or feeder wire is not present in the entry where equipment is being moved:

6.2.a. 4-20 lb. ABC fire extinguishers (such extinguishers shall be placed where they are readily accessible and on the outby side of the equipment being moved).

6.2.b. 1 hammer.

6.2.c. 1 mine axe.

6.2.d. 1 wire bell wrench.

6.2.e. 1 set of come-a-longs.

6.2.f. 2-12 inch adjustable wrenches.

6.2.g. Adequate supply of trolley wire splices and bells.

6.2.h. A lifting jack and/or lifting jacks sufficient in size and an appropriate jack bar to lift such equipment being moved.

6.2.i. One hack saw.

6.2.j. Assortment of wood blocks.

6.2.k. One pair insulated wire cutters.

6.2.l. One pair of high-voltage gloves.

6.2.m. One sledge hammer.

6.2.n. One 10 unit first aid kit.

§36-4-7. Trimming of Electrical Equipment Powered by Trailing Cable.

7.1. Electrical equipment powered by trailing cable may be trammed in entries with persons inby on the same ventilating split of air provided:

7.1.a. The trailing cable shall be protected by a combination dual element fuse and circuit breaker. The size of the fuse and instantaneous trip setting of the circuit breaker shall be determined from Tables 36-4A, 36-4B, and 36-4C found at the end of this regulation.

7.1.b. Prior to the movement of equipment the following examinations if applicable shall be made and recorded in a book, for that purpose, by a certified electrician. Any defects found during the examinations shall be corrected prior to moving the equipment. The results of the above required examinations shall be recorded in a book provided for that purpose.

7.1.b.1. Ground system and monitoring system.

7.1.b.2. Examine the instantaneous trip setting on circuit breakers

7.1.b.3. Undervoltage protection.

7.1.b.4. Ground phase relay.

7.1.b.5. All Equipment electrical switches.

7.1.b.6. Fuses

7.1.b.7 Prior to moving the equipment, all trailing cables shall be examined in their entirety. All temporary splices in the cable shall be eliminated, and restraining clamps and mounting brackets shall be checked for proper installation.

§36-4-8. Mining Equipment And Disassembled Mining Machine Parts That May Be Transported With Certain Requirements.

8.1. Mining equipment or disassembled parts of mining equipment may be transported at any time in mine cars, provided such equipment or disassembled parts of mining equipment does not protrude above the height of such mine car.

8.2. Mining equipment or disassembled parts of mining equipment may be transported at any time on flat cars, supply cars, or skids provided:

8.2.a. Such equipment is tightly secured.

8.2.b. Such equipment being transported does not exceed the height, width and length of the mine car or top of the locomotive normally used in the specific area of such mine. If it is necessary for such equipment to pass under the trolley wire, feeder wire or high voltage cables in the specific location on the haulage road, such D.C. power and high voltage cables shall be de-energized or adequately protected to prevent accidental contact with trolley wire, feeder wire and high voltage cables.

8.3 Disassembled parts of mining equipment and mining equipment may be transported by battery or diesel powered equipment in off track entries while persons are inby such equipment on the same ventilating air current, provided twelve (12) inches of radius clearance is provided from insulated energized D.C. trolley feeder wires or energized high voltage cables. If exposed uninsulated energized power wires are present in the immediate area where the battery equipment is moving the equipment or

disassembled parts, no person, except those involved in the move, shall be permitted inby in the same ventilating air current.

§36-4-9. Transporting Mining Supplies.

9.1. Mining supplies may be transported in mine cars, provided: such supplies being transported do not protrude above the height of the mine car being used to transport supplies.

9.2. Mining supplies may be transported on flat cars, supply cars, or skids provided:

9.2.a. Such supplies being transported are tightly secured.

9.2.b. Such supplies do not exceed the height, width, or length of the mine car or top of the locomotive used in the specific area of such coal mine or twelve (12) inches of radius clearance is continuously provided between such supplies being transported and the trolley wire, feeder wire and all high voltage cables.

9.3. Pipe, mine haulage rails, structural steel and other similarly related equipment shall be excluded from the length requirements while being transported.

§36-4-10. Construction and Rehabilitation Work And Requirements.

10.1. Where construction or rehabilitation work is being performed with person inby on the same ventilating split of air such as, cleaning of haulage roads, roof bolting, the cleaning of falls, the installation of structural materials and other related assignments similar to the aforementioned, and the use of face equipment is necessary to perform such work, the following procedures shall be followed:

10.1.a. Such mining equipment shall not operate where any bare exposed energized trolley or feeder wires are present.

10.1.b. When trolley and feeder wires are present, a certified electrician shall be designated to deenergize such trolley and feeder wire in the area where such equipment is operating. De-energizing devices in the D.C. trolley and feeder wire system shall be opened, locked out with an approved device and suitably tagged by a designated certified electrician. A designated certified electrician shall be the person who removes the danger tags, locking devices and restores the electrical power to the trolley and feeder wires in a specific area when the work has ceased or been completed.

10.1.c. A distance of twelve (12) inches minimum clearance shall be maintained between the machine being operated and any energized high voltage cables and insulated D.C. feeder cable.

10.1.d. Operative communications shall be provided at the site while persons are working in the construction and rehabilitation areas.

10.1.e 4-20 lb. ABC fire extinguishers and 1 10-unit first-aid kits shall be provided at the worksite. Such extinguishers shall be placed where they are readily accessible on the upwind side of the equipment being moved,

TABLE 36-4A

Short circuit protection; ratings and settings of circuit breakers.

Conductor size AWG or MGM	Maximum allowable circuit breaker instantaneous setting (amperes)
14	50
12	75
10	150
8	200
6	300
4	500
3	600
2	800
1	1000
1/0	1250
2/0	1500
3/0	2000
4/0	2500
250	2500
300	2500
350	2500
400	2500
450	2500
500	2500

TABLE 36-4B

**SHORT CIRCUIT PROTECTION; DUAL ELEMENT FUSES;
CURRENT RATINGS; MAXIMUM VALUES**

Conductor Size (AWG or MGM)	Single Conductor Cable		Two Conductor Cable	
	Ampacity	Max. Fuse Rating	Ampacity	Max. Fuse Rating
14			15	15
12			20	20
10			25	25
8	60	60	50	50
6	85	90	65	70
4	110	110	90	90
3	130	150	105	110
2	150	150	120	125
1	170	175	140	150
1/0	200	200	170	175
2/0	235	250	195	200
3/0	275	300	225	225
4/0	315	350	260	300
250	350	350	285	300
300	395	400	310	350
350	445	450	335	350
400	480	500	360	400
450	515	600	385	400
500	545	600	415	450

TABLE 36-4C

CABLE SIZE	MAX. BRK. SETTING	MAX. CABLE LENGTH	AMPACITY	MAX. FUSE RATING DE
14	50	---	15	15
12	75	---	20	20
10	150	---	25	25
8	200	---	50	50
6	300	550	65	70
4	500	600	90	90
3	600	650	105	110
2	800	700	120	125
1	1000	750	140	150
1/0	1250	800	170	175
2/0	1500	850	195	200
3/0	2000	900	225	225
4/0	2500	1000	260	300