**Section 220.160 Loading and Haulage**

a) Loading and haulage; general.

1) Only authorized persons shall be permitted on haulage roads and at loading or dumping locations.

2) Traffic rules, signals, and warning signs shall be standardized at each mine and posted.

3) Where side or overhead clearances on any haulage road or at any loading or dumping location at the mine are hazardous to mine workers, such areas shall be conspicuously marked and warning devices shall be installed when necessary to insure the safety of the workers.

4) All active access and haulage roads will be kept in safe condition, reasonably free of holes, mud, snow, ice, and other dangerous conditions.

5) All two (2)-way haulage roads will be constructed so they will have a running surface a minimum of three (3) times the width of the widest piece of haulage equipment traveling the road, including all ramps and inclines into the pit.

6) When haulage roads cross a road used by the public, two hundred (200) feet of unobstructed vision from the intersection must be maintained for mobile equipment and all other vehicles used by mine personnel. Traffic controls shall be established at the intersection.

7) Where adequate visibility is not provided, and where deemed necessary by a representative of the Department, a signal light shall be installed where a haulage road crosses railroad tracks.

b) Transportation of persons; restrictions.

 No person shall be permitted to ride or be otherwise transported on or in the following equipment whether loaded or empty:

1) Dippers, shovels, buckets, forks, and clamshells;

2) The cargo space of dump trucks or haulage equipment used to transport coal or other material;

3) Outside the cabs and beds of mobile equipment;

4) Chain, belt, or bucket conveyors, except where such conveyors are specifically designed to transport persons; and

5) Loaded buckets on aerial tramways.

c) Use of aerial tramways to transport persons.

 Persons other than maintenance men shall not ride empty buckets on aerial tramways unless the following features are provided:

1) Two (2) independent brakes, each capable of holding the maximum load;

2) Direct communication between terminals;

3) Power drives with emergency power available in case of primary power failure; and

4) Buckets equipped with positive locks to prevent accidental tripping or dumping.

d) Trains and locomotives; authorized persons.

1) Only authorized persons shall be permitted to ride on trains or locomotives and they shall ride in a safe position.

2) Men shall not get on or off moving equipment, except that trainmen may get on or off of slowly moving trains.

e) Transportation of persons; overcrowding.

1) No man-trip vehicle or other conveyance used to transport persons to and from work areas at surface coal mines shall be overcrowded and all persons shall ride in a safe position.

2) Supplies, materials, and tools other than small handtools shall not be transported with men in man-trip vehicles unless such vehicles are specifically designed to make such transportation safe.

3) Man-trip vehicles shall be provided with adequate heat, ventilation, and maintained so as to provide the best possible protection of the riders.

4) At no time will man-trip vehicles hauling riders exceed forty (40) miles per hour.

5) Each man-trip compartment shall have two (2) separate means of escape.

f) Loading and haulage equipment; installations.

1) Cab windows shall be of safety glass or equivalent, in good condition and shall be kept clean.

2) Mobile equipment shall be equipped with adequate brakes, and all trucks and front-end loaders shall also be equipped with parking brakes.

3) Positive-action type brakes shall be provided on aerial tramways.

4) Mobile equipment shall be provided with audible warning devices. Lights shall be provided on both ends when required.

5) Guard nets or other suitable protection shall be provided where tramways pass over roadways, walkways, or buildings.

6) Guards shall be installed to prevent swaying buckets from hitting towers.

7) Aerial tramway cable connections shall be designed to offer minimum obstruction to the passage of wheels.

8) Rocker-bottom or bottom-dump cars shall be equipped with positive locking devices, or other suitable devices.

9) Ramps and dumps shall be of solid construction, of ample width, have ample clearance and headroom, and be kept reasonably free of spillage.

10) Chute-loading installations shall be designed so that the men pulling chutes are not required to be in a hazardous position during loading operations.

11) Berms or guards shall be provided on the outer bank of elevated roadways.

12) Berms, bumper blocks, safety hooks, or similar means shall be provided to prevent overtravel and overturning at dumping locations.

13) Roadbeds, rails, joints, switches, frogs, and other elements on railroads shall be designed, installed, and maintained in a safe manner consistent with the speed and type of haulage.

14) Where practicable, a minimum of thirty (30) inches continuous clearance from the farthest projection of moving railroad equipment shall be provided on at least one (1) side of the tracks; all places where it is impossible to provide thirty (30) inch clearance shall be marked conspicuously.

15) Track guardrails, lead rails, and frogs shall be protected or blocked so as to prevent a person's foot from becoming wedged.

16) Positive-acting stop-blocks, derail devices, track skates, or other adequate means shall be installed wherever necessary to protect persons from run-a-way or moving railroad equipment.

17) Switch throws shall be installed so as to provide adequate clearance for switchmen.

18) Where necessary, bumper blocks or the equivalent shall be provided at all track dead ends.

19) All coal cars will be inspected for broken steps, platforms, brake wheels and adequate brakes before handled by car droppers or load riders.

20) All railroad beds, rails, ties, joints, switches, frogs, and other elements on a railroad shall be kept clean of spilled coal, mud, weeds, and be provided with good drainage so ties can be visually inspected for decay and visual inspection can be made for loose joints, spikes, and proper gauge.

21) Whenever practical rail cars will be positioned so the brakes are on the back of the cars when men are required to operate hand brakes.

g) Loading and haulage equipment; inspection and maintenance.

1) Mobile loading and haulage equipment shall be inspected by a person competent to conduct such inspections before such equipment is placed in operation. Equipment defects affecting safety shall be recorded and reported to the operator, and such defects shall be repaired. Such records shall be available for inspection by State Mine Inspectors and the authorized representative of the miners.

2) Carriers on aerial tramways, including loading and unloading mechanisms, shall be inspected each shift; brakes shall be inspected daily; ropes and supports shall be inspected as recommended by the manufacturer or as physical conditions warrant. Equipment defects affecting safety shall be reported to the mine operator, and such defects shall be repaired.

3) Equipment defects affecting safety shall be corrected before the equipment is used.

h) Loading and haulage equipment; operation.

1) Vehicles shall follow at a safe distance; passing is prohibited on hills, curves, at intersections, at railroads, in conjested areas, and other areas where clearance and visibility is inadequate.

2) Mobile equipment operators shall have full control of the equipment while it is in motion.

3) Equipment operating speeds shall be prudent and consistent with conditions of roadway, grades, clearance, visibility, traffic, and the type of equipment used.

4) Cabs of mobile equipment shall be kept free of extraneous materials.

5) Operators shall sit facing the direction of travel while operating equipment with dual controls.

6) When an equipment operator is present, men shall notify him before getting on or off equipment.

7) Equipment operators shall be certain, by signal or other means, that all persons are clear before starting or moving equipment.

8) Where possible, aerial tramways shall not be started until the tramway operator has ascertained that everyone is in the clear.

9) Dust control measures shall be taken where dust significantly reduces visibility of equipment operators.

10) Dippers, buckets, loading booms, or heavy suspended loads shall not be swung over the cabs of haulage vehicles until the drivers are out of the cabs and in safe locations, unless the trucks are designed specifically to protect the drivers from falling material.

11) Men shall not work or pass under the buckets or booms of loaders in operation.

12) Electrically powered mobile equipment shall not be left unattended unless the master switch is in the off position, all operating controls are in the neutral position, and the brakes are set or other equivalent precautions are taken against rolling.

13) Mobile equipment shall not be left unattended unless the brakes are set. The wheels shall be turned into a bank or berm, or shall be blocked, when such equipment is parked on a grade.

14) Lights, flares, or other warning devices shall be posted when parked equipment creates a hazard to vehicular traffic.

15) Dippers, buckets, scraper blades, and similar movable parts shall be secured or lowered to the ground when not in use.

16) Shovel trailing cables shall not be moved with the shovel dipper unless cable slings or sleds are used.

17) Equipment which is to be hauled shall be loaded and protected so as to prevent sliding or spillage.

18) When moving between work areas, the equipment shall be secured in the travel position.

19) Any load extending more than four (4) feet beyond the rear of the vehicle body should be marked clearly with a red flag by day and a red light at night.

20) Tow bars shall be used to tow heavy equipment and a safety chain shall be used in conjuction with each tow bar. When heavy equipment is to be towed, the towing vehicle shall be of suitable weight and strength to maintain safe control of the load.

21) Railroad cars shall be kept under control at all times by the car dropper. Cars shall be dropped at a safe rate and in a manner that will insure that the car dropper maintains a safe position while working and traveling around the cars.

22) Railroad cars shall not be coupled or uncoupled manually unless the railroad and cars are so designed to eliminate any hazard from coupling or uncoupling cars. All persons manually applying brakes on moving rail cars shall step to the side ladder of the car before coupling.

23) Persons shall wear safety belts when dropping railroad cars.

24) Railcars shall not be left on sidetracks unless ample clearance is provided for traffic on adjacent tracks.

25) Parked railcars, unless held effectively by brakes, shall be blocked securely.

26) Railroad cars and all trucks shall be trimmed properly when they have been loaded higher than the confines of their cargo space.

27) When the entire length of a conveyor is visible from the starting switch, the operator shall visually check to make certain that all persons are in the clear before starting the conveyor. When the entire length of the conveyor is not visible from the starting switch, a positive audible or visible warning system shall be installed and operated to warn persons that the conveyor will be started. Conveyors shall be locked out or otherwise rendered inoperable and tagged with a "Do Not Operate" tag prior to repairs.

28) Unguarded conveyors with walkways shall be equipped with emergency stop devices or cords along their full length. Conveyor emergency stop switches shall be designed so that a conveyor cannot be started until the activating stop switch has been reset to the running or "on" position. All conveyor controls, including emergency stop devices, shall be distinctly identified.

29) Adequate backstops or brakes shall be installed on inclined conveyor drive units to prevent conveyors from running in reverse if a hazard to personnel would be caused.

30) Aerial tram conveyor buckets shall not be overloaded, and feed shall be regulated to prevent spillage.

31) Cabs of mobile equipment shall be provided with a properly secured extra seat where possible when training people to operate such equipment.

i) Handling, storage and repair of large pneumatic tires 1) Before performing any work on a vehicle requiring removal of the tire and wheel assembly from the axle shaft or removal of any rim components, such as rim clamps or lug nuts, from a wheel equipped with split rims or locking rings, a visual inspection of the tire and rim assembly must be conducted. If any defect, damage or improper seating of the tire or rim components is noted, or if the tire or rim assembly is to be removed from service, the tire must be completely deflated before any removal work is begun.

2) If no defect, damage or improper seating of the tire or rim component is noted and the tire and rim assembly are intended to be kept in service, the following requirements apply depending on the work to be done:

A) if the work to be performed requires the removal of rim components, such as rim clamps or lug nuts, the tire must be deflated to the lowest pressure which will maintain the seal and locking of the tire to the rim in accordance with the manufacturer's specifications before any removal work is begun.

B) if the work to be performed (e.g. brake repair, wheel bearing repair) requires the removal of the tire and wheel assembly, but does not entail removal of rim components such as rim clamps or lug nuts, the tire and wheel assembly is not required to be deflated but must be secured to the conveyance with which it is removed from the vehicle.

3) On any dual tire and wheel assembly, the inspection and deflation requirements must be performed on both wheels before the removal of any rim components from either wheel, but a separately locked inside wheel, unless required to be deflated as a result of the inspection, need not be deflated if only the outside wheel is to be removed.

4) Tires installed on split rims or rims equipped with locking rings that have been removed from vehicles and repaired or replaced shall be protected by a safety tire rack, cage, or equivalent protection while being inflated if inflation is performed off the vehicle. No person shall position himself in front of a tire being inflated on or off the equipment.

5) No tire greater than twenty (20) inches inside diameter and more than twelve (12) ply shall be removed from or remounted on a rim in or about a central mine shop, surface or underground, without the use of mechanical equipment designed to remove tires from rims or to remount tires on the rims.

6) A specific safe isolated area for the operator of tire changing equipment shall be supplied in or about any central mine shop of any surface or underground mine.

7) If tires are dismounted or mounted at central mine shops, surface or underground, the area in which this work is performed shall be isolated from all other work areas in the shop.

8) All persons engaged in inflating tires in central mine shops, surface or underground, shall do so in an area isolated from other workmen, except those workmen performing work on tires.

9) For the purpose of subsections (7) and (8), "isolated" means that the area is situated or barricaded such that persons other than workers performing work on tires are not permitted to enter or be within the potential area of trajectory of any explosive forces which might be released during any work on tires and rim assemblies.

10) When a tire has been removed from a rim assembly and before the tire or rim is returned to service, an inspection of all components must be conducted. Rim flanges, rim gutters, rings, bead seating surfaces and bead areas must be thoroughly cleaned and visually inspected for cracks, bends, and pitting. If any conditions are found that affect the safe use of the rim or rim components, the rim or rim components shall be removed from service. The operator shall make a record of the inspection of each tire and rim assembly which is to be returned to service in a book kept for that purpose. The record shall be signed and include the date of inspection, and an identifying number or other marking which shall also be affixed to and remain on the tire and rim assembly from the time of inspection until installation on a vehicle. If the operator uses an independent contractor for servicing tires and rim assemblies, the operator must verify that the provisions of this Subsection (10) have been complied with prior to entering and signing the record, unless the record is entered and signed by an authorized agent or employee of the independent contractor.

11) Cutting, welding, brazing or heating of any multi-piece rim assembly is prohibited except for the repair or replacement of wheel stops or lugs, and then only with the tire removed from the rim. Cutting, welding, brazing or heating on single-piece rims is permissible subject to the following conditions:

A) the tire must be removed from the rim;

B) the crack or other defect to be welded must not exceed six (6) inches in length;

C) the crack or other defect to be welded must not extend closer than six (6) inches to either of the outersides of the rim;

D) welding must be performed by a person qualified in accordance with the Structural Welding Code - Steel (ANSI/AWS D1.1-90) published by the American Welding Society, 550 N.W. LeJeune Road, P.O. Box 351040, Miami, Florida 33135 (the reference is to the Twelfth edition, effective January 1, 1990 and does not include any later editions or references); and

E) the welded area must be sounded with an ultrasonic testing instrument to determine the adequacy of the weld before the rim is returned to service.

12) There shall be supplied at all tire airing stations a clip-on air chuck with no less than ten (10) feet of air hose from the valve stem to the inflator gauge.

13) No person shall be allowed to inflate tires at any mines from oxygen or acetylene supply tanks.

14) Tires greater than twenty (20) inches inside diameter, if stored lying flat shall be stored to a depth no greater than two tires or five feet. Tires greater than twenty (20) inches inside diameter, if stored upright, must be secured to prevent falling.

j) Dumping facilities.

1) Dumping locations and haulage roads shall be kept reasonably free of water, debris, and spillage.

2) Where the ground at a dumping place may fail to support the weight of a loaded dump truck, trucks shall be dumped a safe distance back from the edge of the bank.

3) Adequate protection shall be provided at dumping locations where persons may be endangered by falling material.

4) Grizzlies, grates, and other sizing devices at dump and transfer points shall be anchored securely in place.

5) Where trucks are backing into dumping or loading position and the operator cannot see openings or edges of coal rib or bench, another person shall be assigned to direct trucks. Lights shall be used at night to help direct the truck operator. A person used to spot trucks shall be well in the clear.

6) When hopper is not being used, proper barricades will be installed to protect anyone from falling or driving into opening.

(Source: Amended at 15 Ill. Reg. 1006, effective January 14, 1991)