

PART 214—RAILROAD WORKPLACE SAFETY

Subpart A—General

Sec.

- 214.1 Purpose and scope.
- 214.3 Application.
- 214.5 Responsibility for compliance.
- 214.7 Definitions.

Subpart B—Bridge Worker Safety Standards

- 214.101 Purpose and scope.
- 214.103 Fall protection, generally.
- 214.105 Fall protection systems standards and practices.
- 214.107 Working over or adjacent to water.
- 214.109 Scaffolding.
- 214.111 Personal protective equipment, generally.
- 214.113 Head protection.
- 214.115 Foot protection.
- 214.117 Eye and face protection.

Subpart C—Roadway Worker Protection

- 214.301 Purpose and scope.
- 214.302 [Reserved]
- 214.303 Railroad on-track safety programs, generally.
- 214.305 [Reserved]
- 214.307 On-track safety programs.
- 214.309 On-track safety manual.
- 214.311 Responsibility of employers.
- 214.313 Responsibility of individual roadway workers.
- 214.315 Supervision and communication.
- 214.317 On-track safety procedures, generally.
- 214.318 Locomotive servicing and car shop repair track areas.
- 214.319 Working limits, generally.
- 214.320 Roadway maintenance machine movements over signalized non-controlled track.
- 214.321 Exclusive track occupancy.
- 214.322 Exclusive track occupancy, electronic display.
- 214.323 Foul time.
- 214.325 Train coordination.
- 214.327 Inaccessible track.
- 214.329 Train approach warning provided by watchmen/lookouts.
- 214.331 Definite train location.
- 214.333 Informational line-ups of trains.
- 214.335 On-track safety procedures for roadway work groups, general.
- 214.336 On-track safety procedures for certain roadway work groups and adjacent tracks.
- 214.337 On-track safety procedures for lone workers.
- 214.339 Audible warning from trains.
- 214.341 Roadway maintenance machines.
- 214.343 Training and qualification, general.
- 214.345 Training for all roadway workers.

- 214.347 Training and qualification for lone workers.
- 214.349 Training and qualification of watchmen/lookouts.
- 214.351 Training and qualification of flagmen.
- 214.353 Training and qualification of each roadway worker in charge.
- 214.355 Training and qualification of each roadway worker in on-track safety for operators of roadway maintenance machines.
- 214.357 Training and qualification for operators of roadway maintenance machines equipped with a crane.

Subpart D—On-Track Roadway Maintenance Machines and Hi-Rail Vehicles

- 214.501 Purpose and scope.
- 214.503 Good-faith challenges; procedures for notification and resolution.
- 214.505 Required environmental control and protection systems for new on-track roadway maintenance machines with enclosed cabs.
- 214.507 Required safety equipment for new on-track roadway maintenance machines.
- 214.509 Required visual illumination and reflective devices for new on-track roadway maintenance machines.
- 214.511 Required audible warning devices for new on-track roadway maintenance machines.
- 214.513 Retrofitting of existing on-track roadway maintenance machines; general.
- 214.515 Overhead covers for existing on-track roadway maintenance machines.
- 214.517 Retrofitting of existing on-track roadway maintenance machines manufactured on or after January 1, 1991.
- 214.518 Safe and secure positions for riders.
- 214.519 Floors, decks, stairs, and ladders of on-track roadway maintenance machines.
- 214.521 Flagging equipment for on-track roadway maintenance machines and hi-rail vehicles.
- 214.523 Hi-rail vehicles.
- 214.525 Towing with on-track roadway maintenance machines or hi-rail vehicles.
- 214.527 On-track roadway maintenance machines; inspection for compliance and schedule for repairs.
- 214.529 In-service failure of primary braking system.
- 214.531 Schedule of repairs; general.
- 214.533 Schedule of repairs subject to availability of parts.

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Subpart A—General

§ 214.1 Purpose and scope.

(a) The purpose of this part is to prevent accidents and casualties to employees involved in certain railroad inspection, maintenance and construction activities.

(b) This part prescribes minimum Federal safety standards for the railroad workplace safety subjects addressed herein. This part does not restrict a railroad or railroad contractor from adopting and enforcing additional or more stringent requirements not inconsistent with this part.

§ 214.3 Application.

This part applies to railroads that operate rolling equipment on track that is part of the general railroad system of transportation.

§ 214.5 Responsibility for compliance.

Any person (an entity of any type covered under 1 U.S.C. 1, including but not limited to the following: a railroad; a manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any independent contractor providing goods or services to a railroad; and any employee of such owner, manufacturer, lessor, lessee, or independent contractor) who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of at least \$892 and not more than \$29,192 per violation, except that penalties may be assessed against individuals only for willful violations, and where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury, or has caused death or injury, a penalty not to exceed \$116,766 per violation may be assessed. See FRA's website at www.fra.dot.gov for a statement of agency civil penalty policy.

[57 FR 28127, June 24, 1992, as amended at 63 FR 11620, Mar. 10, 1998; 69 FR 30593, May 28, 2004; 72 FR 51196, Sept. 6, 2007; 73 FR 79701, Dec. 30, 2008; 77 FR 24419, Apr. 24, 2012; 81 FR 43109, July 1, 2016; 82 FR 16132, Apr. 3, 2017; 83 FR 60746, Nov. 27, 2018; 84 FR 23734, May 23, 2019; 84 FR 37072, July 31, 2019]

§ 214.7 Definitions.

Unless otherwise provided, as used in this part—

Adjacent tracks mean two or more tracks with track centers spaced less than 25 feet apart.

Anchorage means a secure point of attachment for lifelines, lanyards or deceleration devices that is independent of the means of supporting or suspending the employee.

Body belt means a strap that can be secured around the waist or body and attached to a lanyard, lifeline, or deceleration device.

Body harness means a device with straps that is secured about the person in a manner so as to distribute the fall arrest forces over (at least) the thighs, shoulders, pelvis, waist, and chest and that can be attached to a lanyard, lifeline, or deceleration device.

Class I, Class II, and Class III have the meaning assigned by, Title 49 Code of Federal Regulations part 1201, General Instructions 1–1.

Competent person means one who is capable of identifying existing and predictable hazards in the workplace and who is authorized to take prompt corrective measures to eliminate them.

Control operator means the railroad employee in charge of a remotely controlled switch or derail, an interlocking, or a controlled point, or a segment of controlled track.

Controlled point means a location where signals and/or other functions of a traffic control system are controlled from the control machine.

Controlled track means track upon which the railroad's operating rules require that all movements of trains must be authorized by a train dispatcher or a control operator.

Deceleration device means any mechanism, including, but not limited to, rope grabs, ripstitch lanyards, specially woven lanyards, tearing or deforming lanyards, and automatic self-retracting lifelines/lanyards that serve to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy on a person during fall arrest.

Definite train location means a system for establishing on-track safety by providing roadway workers with information about the earliest possible time

that approaching trains may pass specific locations as prescribed in §214.331 of this part.

Designated official means any person(s) designated by the employer to receive notification of non-complying conditions on on-track roadway maintenance machines and hi-rail vehicles.

Effective securing device means a vandal and tamper resistant lock, keyed for application and removal only by the roadway worker(s) for whom the protection is provided. In the absence of a lock, it is acceptable to use a spike driven firmly into a switch tie or a switch point clamp to prevent the use of a manually operated switch. It is also acceptable to use portable derails secured with specifically designed metal wedges. Securing devices without a specially keyed lock shall be designed in such a manner that they require railroad track tools for installation and removal and the operating rules of the railroad must prohibit removal by employees other than the class, craft, or group of employees for whom the protection is being provided. Regardless of the type of securing device, the throwing handle or hasp of the switch or derail shall be uniquely tagged. If there is no throwing handle, the securing device shall be tagged.

Employee means an individual who is engaged or compensated by a railroad or by a contractor to a railroad to perform any of the duties defined in this part.

Employer means a railroad, or a contractor to a railroad, that directly engages or compensates individuals to perform any of the duties defined in this part.

Equivalent means alternative designs, materials, or methods that the railroad or railroad contractor can demonstrate will provide equal or greater safety for employees than the means specified in this part.

Exclusive track occupancy means a method of establishing working limits on controlled track in which movement authority of trains and other equipment is withheld by the train dispatcher or control operator, or restricted by flagmen, as prescribed in §214.321 of this part.

Flagman when used in relation to roadway worker safety means an em-

ployee designated by the railroad to direct or restrict the movement of trains past a point on a track to provide on-track safety for roadway workers, while engaged solely in performing that function.

Foul time is a method of establishing working limits on controlled track in which a roadway worker is notified by the train dispatcher or control operator that no trains will operate within a specific segment of controlled track until the roadway worker reports clear of the track, as prescribed in §214.323 of this part.

Fouling a track means the placement of an individual or an item of equipment in such proximity to a track that the individual or equipment could be struck by a moving train or on-track equipment, or in any case is within four feet of the field side of the near running rail.

Free fall means the act of falling before the personal fall arrest system begins to apply force to arrest the fall.

Free fall distance means the vertical displacement of the fall arrest attachment point on a person's body harness between onset of the fall and the point at which the system begins to apply force to arrest the fall. This distance excludes deceleration distance and lifeline and lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Hi-rail vehicle means a roadway maintenance machine that is manufactured to meet Federal Motor Vehicle Safety Standards and is equipped with retractable flanged wheels so that the vehicle may travel over the highway or on railroad tracks.

Hi-rail vehicle, new means a hi-rail vehicle that is ordered after December 26, 2003 or completed after September 27, 2004.

Inaccessible track means a method of establishing working limits on non-controlled track by physically preventing entry and movement of trains and equipment.

Individual train detection means a procedure by which a lone worker acquires on-track safety by seeing approaching trains and leaving the track before they arrive and which may be used

only under circumstances strictly defined in this part.

Informational line-up of trains means information provided in a prescribed format to a roadway worker by the train dispatcher regarding movements of trains authorized or expected on a specific segment of track during a specific period of time.

Interlocking, manual means an arrangement of signals and signal appliances operated from an interlocking machine and so interconnected by means of mechanical and/or electric locking that their movements must succeed each other in proper sequence, train movements over all routes being governed by signal indication.

Lanyard means a flexible line of rope, wire rope, or strap that is used to secure a body harness to a deceleration device, lifeline, or anchorage.

Lifeline means a component of a fall arrest system consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline) or to an anchorage at both ends to stretch horizontally (horizontal lifeline), and that serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Lone worker means an individual roadway worker who is not being afforded on-track safety by another roadway worker, who is not a member of a roadway work group, and who is not engaged in a common task with another roadway worker.

Maximum authorized speed means the highest speed permitted for the movement of trains permanently established by timetable/special instructions, general order, or track bulletin.

Non-controlled track means track upon which trains are permitted by railroad rule or special instruction to move without receiving authorization from a train dispatcher or control operator.

On-track roadway maintenance machine means a self-propelled, rail-mounted, non-highway, maintenance machine whose light weight is in excess of 7,500 pounds, and whose purpose is not for the inspection of railroad track.

On-track roadway maintenance machine, existing means any on-track

roadway maintenance machine that does not meet the definition of a “new on-track roadway maintenance machine.”

On-track roadway maintenance machine, new means an on-track roadway maintenance machine that is ordered after December 26, 2003, and completed after September 27, 2004.

On-track safety means a state of freedom from the danger of being struck by a moving railroad train or other railroad equipment, provided by operating and safety rules that govern track occupancy by personnel, trains and on-track equipment.

On-track safety manual means the entire set of on-track safety rules and instructions maintained together in one manual designed to prevent roadway workers from being struck by trains or other on-track equipment. These instructions include operating rules and other procedures concerning on-track safety protection and on-track safety measures.

Personal fall arrest system means a system used to arrest the fall of a person from a working level. It consists of an anchorage, connectors, body harness, lanyard, deceleration device, lifeline, or combination of these.

Qualified means a status attained by an employee who has successfully completed any required training for, has demonstrated proficiency in, and has been authorized by the employer to perform the duties of a particular position or function.

Railroad means all forms of non-highway ground transportation that run on rails or electro-magnetic guideways, including (1) commuter or other short-haul rail passenger service in a metropolitan or suburban area, and (2) high-speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

Railroad bridge means a structure supporting one or more railroad tracks above land or water with a span length of 12 feet or more measured along the track centerline. This term applies to

the entire structure between the faces of the backwalls of abutments or equivalent components, regardless of the number of spans, and includes all such structures, whether of timber, stone, concrete, metal, or any combination thereof.

Railroad bridge worker or bridge worker means any employee of, or employee of a contractor of, a railroad owning or responsible for the construction, inspection, testing, or maintenance of a bridge whose assigned duties, if performed on the bridge, include inspection, testing, maintenance, repair, construction, or reconstruction of the track, bridge structural members, operating mechanisms and water traffic control systems, or signal, communication, or train control systems integral to that bridge.

Restricted speed means a speed that will permit a train or other equipment to stop within one-half the range of vision of the person operating the train or other equipment, but not exceeding 20 miles per hour, unless further restricted by the operating rules of the railroad.

Roadway maintenance machine means a device powered by any means of energy other than hand power which is being used on or near railroad track for maintenance, repair, construction or inspection of track, bridges, roadway, signal, communications, or electric traction systems. Roadway maintenance machines may have road or rail wheels or may be stationary.

Roadway maintenance machines equipped with a crane means any roadway maintenance machine equipped with a crane or boom that can hoist, lower, and horizontally move a suspended load.

Roadway work group means two or more roadway workers organized to work together on a common task.

Roadway worker means any employee of a railroad, or of a contractor to a railroad, whose duties include inspection, construction, maintenance or repair of railroad track, bridges, roadway, signal and communication systems, electric traction systems, roadway facilities or roadway maintenance machinery on or near track or with the potential of fouling a track, and

flagmen and watchmen/lookouts as defined in this section.

Roadway worker in charge means a roadway worker who is qualified under §214.353 to establish on-track safety for roadway work groups, and lone workers qualified under §214.347 to establish on-track safety for themselves.

Self-retracting lifeline/lanyard means a deceleration device that contains a drum-wound line that may be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snap-hook means a connector comprised of a hook-shaped member with a normally closed keeper, that may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object.

Train approach warning means a method of establishing on-track safety by warning roadway workers of the approach of trains in ample time for them to move to or remain in a place of safety in accordance with the requirements of this part.

Train coordination means a method of establishing working limits on track upon which a train holds exclusive authority to move whereby the crew of that train yields that authority to a roadway worker.

Train dispatcher means the railroad employee assigned to control and issue orders governing the movement of trains on a specific segment of railroad track in accordance with the operating rules of the railroad that apply to that segment of track.

Watchman/lookout means an employee who has been trained and qualified to provide warning to roadway workers of approaching trains or on-track equipment. Watchmen/lookouts shall be properly equipped to provide visual and auditory warning such as whistle, air horn, white disk, red flag, lantern, fuse. A watchman/lookout's sole duty is to look out for approaching trains/on-track equipment and provide at least fifteen seconds advanced warning to employees before arrival of trains/on-track equipment.

Working limits means a segment of track with definite boundaries established in accordance with this part

§ 214.101

49 CFR Ch. II (10–1–20 Edition)

upon which trains and engines may move only as authorized by the roadway worker having control over that defined segment of track. Working limits may be established through “exclusive track occupancy,” “inaccessible track,” “foul time” or “train coordination” as defined herein.

[57 FR 28127, June 24, 1992, as amended at 61 FR 65975, Dec. 16, 1996; 67 FR 1906, Jan. 15, 2002; 68 FR 44407, July 28, 2003; 76 FR 74614, Nov. 30, 2011; 79 FR 66500, Nov. 7, 2014; 81 FR 37884, June 10, 2016]

Subpart B—Bridge Worker Safety Standards

§ 214.101 Purpose and scope.

(a) The purpose of this subpart is to prevent accidents and casualties arising from the performance of work on railroad bridges.

(b) This subpart prescribes minimum railroad safety rules for railroad employees performing work on bridges. Each railroad and railroad contractor may prescribe additional or more stringent operating rules, safety rules, and other special instructions not inconsistent with this subpart.

(c) These provisions apply to all railroad employees, railroads, and railroad contractors performing work on railroad bridges.

(d) Any working conditions involving the protection of railroad employees working on railroad bridges not within the subject matter addressed by this chapter, including respiratory protection, hazard communication, hearing protection, welding and lead exposure standards, shall be governed by the regulations of the U.S. Department of Labor, Occupational Safety and Health Administration.

§ 214.103 Fall protection, generally.

(a) Except as provided in paragraphs (b) through (d) of this section, when bridge workers work twelve feet or more above the ground or water surface, they shall be provided and shall use a personal fall arrest system or safety net system. All fall protection systems required by this section shall conform to the standards set forth in § 214.105 of this subpart.

(b)(1) This section shall not apply if the installation of the fall arrest sys-

tem poses a greater risk than the work to be performed. In any action brought by FRA to enforce the fall protection requirements, the railroad or railroad contractor shall have the burden of proving that the installation of such device poses greater exposure to risk than performance of the work itself.

(2) This section shall not apply to bridge workers engaged in inspection of railroad bridges conducted in full compliance with the following conditions:

(i) The railroad or railroad contractor has a written program in place that requires training in, adherence to, and use of safe procedures associated with climbing techniques and procedures to be used;

(ii) The bridge worker to whom this exception applies has been trained and qualified according to that program to perform bridge inspections, has been previously and voluntarily designated to perform inspections under the provision of that program, and has accepted the designation;

(iii) The bridge worker to whom this exception applies is familiar with the appropriate climbing techniques associated with all bridge structures the bridge worker is responsible for inspecting;

(iv) The bridge worker to whom this exception applies is engaged solely in moving on or about the bridge or observing, measuring and recording the dimensions and condition of the bridge and its components; and

(v) The bridge worker to whom this section applies is provided all equipment necessary to meet the needs of safety, including any specialized alternative systems required.

(c) This section shall not apply where bridge workers are working on a railroad bridge equipped with walkways and railings of sufficient height, width, and strength to prevent a fall, so long as bridge workers do not work beyond the railings, over the side of the bridge, on ladders or other elevation devices, or where gaps or holes exist through which a body could fall. Where used in place of fall protection as provided for in § 214.105, this paragraph (c) is satisfied by:

(1) Walkways and railings meeting standards set forth in the American

Railway Engineering Association's Manual for Railway Engineering; and

(2) Roadways attached to railroad bridges, provided that bridge workers on the roadway deck work or move at a distance six feet or more from the edge of the roadway deck, or from an opening through which a person could fall.

(d) This section shall not apply where bridge workers are performing repairs or inspections of a minor nature that are completed by working exclusively between the outside rails, including but not limited to, routine welding, spiking, anchoring, spot surfacing, and joint bolt replacement.

[67 FR 1906, Jan. 15, 2002]

§ 214.105 Fall protection systems standards and practices.

(a) *General requirements.* All fall protection systems required by this subpart shall conform to the following:

(1) Fall protection systems shall be used only for personal fall protection.

(2) Any fall protection system subjected to impact loading shall be immediately and permanently removed from service unless fully inspected and determined by a competent person to be undamaged and suitable for reuse.

(3) All fall protection system components shall be protected from abrasions, corrosion, or any other form of deterioration.

(4) All fall protection system components shall be inspected prior to each use for wear, damage, corrosion, mildew, and other deterioration. Defective components shall be permanently removed from service.

(5) Prior to use and after any component or system is changed, bridge workers shall be trained in the application limits of the equipment, proper hook-up, anchoring and tie-off techniques, methods of use, and proper methods of equipment inspection and storage.

(6) The railroad or railroad contractor shall provide for prompt rescue of bridge workers in the event of a fall.

(7) Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

(8) Connectors shall be drop forged, pressed or formed steel, or made of equivalent-strength materials.

(9) Anchorages, including single- and double-head anchors, shall be capable of supporting at least 5,000 pounds per bridge worker attached, or shall be designed, installed, and used under supervision of a qualified person as part of a complete personal fall protection system that maintains a safety factor of at least two.

(b) *Personal fall arrest systems.* All components of a personal fall arrest system shall conform to the following standards:

(1) Lanyards and vertical lifelines that tie off one bridge worker shall have a minimum breaking strength of 5,000 pounds.

(2) Self-retracting lifelines and lanyards that automatically limit free fall distance to two feet or less shall have components capable of sustaining a minimum static tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

(3) Self-retracting lifelines and lanyards that do not limit free fall distance to two feet or less, ripstitch, and tearing and deformed lanyards shall be capable of withstanding 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

(4) Horizontal lifelines shall be designed, installed, and used under the supervision of a competent person, as part of a complete personal fall arrest system that maintains a safety factor of at least two.

(5) Lifelines shall not be made of natural fiber rope.

(6) Body belts shall not be used as components of personal fall arrest systems.

(7) The personal fall arrest system shall limit the maximum arresting force on a bridge worker to 1,800 pounds when used with a body harness.

(8) The personal fall arrest system shall bring a bridge worker to a complete stop and limit maximum deceleration distance a bridge worker travels to 3.5 feet.

§214.105

49 CFR Ch. II (10–1–20 Edition)

(9) The personal fall arrest system shall have sufficient strength to withstand twice the potential impact energy of a bridge worker free falling a distance of six feet, or the free fall distance permitted by the system, whichever is less.

(10) The personal fall arrest system shall be arranged so that a bridge worker cannot free fall more than six feet and cannot contact the ground or any lower horizontal surface of the bridge.

(11) Personal fall arrest systems shall be worn with the attachment point of the body harness located in the center of the wearer's back near shoulder level, or above the wearer's head.

(12) When vertical lifelines are used, each bridge worker shall be provided with a separate lifeline.

(13) Devices used to connect to a horizontal lifeline that may become a vertical lifeline shall be capable of locking in either direction.

(14) Dee-rings and snap-hooks shall be capable of sustaining a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation.

(15) Dee-rings and snap-hooks shall be capable of sustaining a minimum tensile load of 5,000 pounds.

(16) Snap-hooks shall not be connected to each other.

(17) Snap-hooks shall be dimensionally compatible with the member to which they are connected to prevent unintentional disengagement, or shall be a locking snap-hook designed to prevent unintentional disengagement.

(18) Unless of a locking type, snap-hooks shall not be engaged:

(i) Directly, next to a webbing, rope, or wire rope;

(ii) To each other;

(iii) To a dee-ring to which another snap-hook or other connector is attached;

(iv) To a horizontal lifeline; or

(v) To any object that is incompatibly shaped or dimensioned in relation to the snap-hook so that unintentional disengagement could occur.

(c) *Safety net systems.* Use of safety net systems shall conform to the following standards and practices:

(1) Safety nets shall be installed as close as practicable under the walking/

working surface on which bridge workers are working, but shall not be installed more than 30 feet below such surface.

(2) If the distance from the working surface to the net exceeds 30 feet, bridge workers shall be protected by personal fall arrest systems.

(3) The safety net shall be installed such that any fall from the working surface to the net is unobstructed.

(4) Except as provided in this section, safety nets and net installations shall be drop-tested at the jobsite after initial installation and before being used as a fall protection system, whenever relocated, after major repair, and at six-month intervals if left in one place. The drop-test shall consist of a 400-pound bag of sand 30 inches, plus or minus two inches, in diameter dropped into the net from the highest (but not less than 3½ feet) working surface on which bridge workers are to be protected.

(i) When the railroad or railroad contractor demonstrates that a drop-test is not feasible and, as a result, the test is not performed, the railroad or railroad contractor, or designated competent person, shall certify that the net and its installation are in compliance with the provisions of this section by preparing a certification record prior to use of the net.

(ii) The certification shall include an identification of the net, the date it was determined that the net was in compliance with this section, and the signature of the person making this determination. Such person's signature shall certify that the net and its installation are in compliance with this section. The most recent certification for each net installation shall be available at the jobsite where the subject net is located.

(5) Safety nets and their installations shall be capable of absorbing an impact force equal to that produced by the drop test specified in this section.

(6) The safety net shall be installed such that there is no contact with surfaces or structures below the net when subjected to an impact force equal to the drop test specified in this section.

(7) Safety nets shall extend outward from the outermost projection of the work surface as follows:

(i) When the vertical distance from the working level to the horizontal plane of the net is 5 feet or less, the minimum required horizontal distance of the outer edge of the net beyond the edge of the working surface is 8 feet.

(ii) When the vertical distance from the working level to the horizontal plane of the net is 5 feet, but less than 10 feet, the minimum required horizontal distance of the outer edge of the net beyond the edge of the working surface is 10 feet.

(iii) When the vertical distance from the working level to the horizontal plane of the net is more than 10 feet, the minimum required horizontal distance of the outer edge of the net beyond the edge of the working surface is 13 feet.

(8) Defective nets shall not be used. Safety nets shall be inspected at least once a week for mildew, wear, damage, and other deterioration. Defective components shall be removed permanently from service.

(9) Safety nets shall be inspected after any occurrence that could affect the integrity of the safety net system.

(10) Tools, scraps, or other materials that have fallen into the safety net shall be removed as soon as possible, and at least before the next work shift.

(11) Each safety net shall have a border rope for webbing with a minimum breaking strength of 5,000 pounds.

(12) The maximum size of each safety net mesh opening shall not exceed 36 square inches and shall not be longer than 6 inches on any side measured center-to-center of mesh ropes or webbing. All mesh crossing shall be secured to prevent enlargement of the mesh opening.

(13) Connections between safety net panels shall be as strong as integral net components and shall be spaced not more than 6 inches apart.

[67 FR 1906, Jan. 15, 2002; 67 FR 11055, Mar. 12, 2002]

§214.107 Working over or adjacent to water.

(a) Bridge workers working over or adjacent to water with a depth of four feet or more, or where the danger of drowning exists, shall be provided and shall use life vests or buoyant work vests in compliance with U.S. Coast

Guard requirements in 46 CFR 160.047, 160.052, and 160.053. Life preservers in compliance with U.S. Coast Guard requirements in 46 CFR 160.055 shall also be within ready access. This section shall not apply to bridge workers using personal fall arrest systems or safety nets that comply with this subpart or to bridge workers who are working under the provisions of §214.103(b)(2), (c) or (d) of this subpart.

(b) Prior to each use, all flotation devices shall be inspected for defects that reduce their strength or buoyancy by designated individuals trained by the railroad or railroad contractor. Defective units shall not be used.

(c) Where life vests are required by paragraph (a) of this section, ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

(d) Where life vests are required, at least one lifesaving skiff, inflatable boat, or equivalent device shall be immediately available. If it is determined by a competent person that environmental conditions, including weather, water speed, and terrain, merit additional protection, the skiff or boat shall be manned.

[70 FR 7050, Feb. 10, 2005]

§214.109 Scaffolding.

(a) Scaffolding used in connection with railroad bridge maintenance, inspection, testing, and construction shall be constructed and maintained in a safe condition and meet the following minimum requirements:

(1) Each scaffold and scaffold component, except suspension ropes and guardrail systems, but including footings and anchorage, shall be capable of supporting, without failure, its own weight and at least four times the maximum intended load applied or transmitted to that scaffold or scaffold component.

(2) Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within two inches of the top edge, in any outward or downward direction, at any point along the top edge.

(3) Top edge height of top rails, or equivalent guardrail system member,

§214.111

shall be 42 inches, plus or minus three inches. Supports shall be at intervals not to exceed eight feet. Toeboards shall be a minimum of four inches in height.

(4) Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail or other member.

(5) Midrails shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.

(b) Scaffolds shall not be altered or moved while they are occupied. This paragraph does not apply to vertical movements of mobile scaffolds that are designed to move vertically while occupied.

(c) An access ladder or equivalent safe access shall be provided.

(d) All exposed surfaces shall be prepared and cleared to prevent injury due to laceration, puncture, tripping, or falling hazard.

(e) All scaffold design, construction, and repair shall be completed by competent individuals trained and knowledgeable about design criteria, intended use, structural limitations, and procedures for proper repair.

(f) Manually propelled mobile ladder stands and scaffolds shall conform to the following:

(1) All manually propelled mobile ladder stands and scaffolds shall be capable of carrying the design load.

(2) All ladder stands, scaffolds, and scaffold components shall be capable of supporting, without failure, displacement, or settlement, its own weight and at least four times the maximum intended load applied or transmitted to that ladder stand, scaffold, or scaffold component.

(3) All exposed surfaces shall be free from sharp edges or burrs.

(4) The maximum work level height shall not exceed four times the minimum or least base dimensions of any mobile ladder stand or scaffold. Where the basic mobile unit does not meet this requirement, suitable outrigger frames shall be employed to achieve this least base dimension, or equivalent

49 CFR Ch. II (10–1–20 Edition)

provisions shall be made to guy or brace the unit against tipping.

(5) The minimum platform width for any work level shall not be less than 20 inches for mobile scaffolds (towers). Ladder stands shall have a minimum step width of 16 inches. The steps of ladder stands shall be fabricated from slip resistant treads.

(6) Guardrails and midrails shall conform to the requirements listed in paragraph (a) of this section.

(7) A climbing ladder or stairway shall be provided for proper access and egress, and shall be affixed or built into the scaffold and so located that in its use it will not have a tendency to tip the scaffold.

(8) Wheels or casters shall be capable of supporting, without failure, at least four times the maximum intended load applied or transmitted to that component. All scaffold casters shall be provided with a positive wheel and/or swivel lock to prevent movement. Ladder stands shall have at least two of the four casters and shall be of the swivel type.

§214.111 Personal protective equipment, generally.

With the exception of foot protection, the railroad or railroad contractor shall provide and the bridge worker shall use appropriate personal protective equipment described in this subpart in all operations where there is exposure to hazardous conditions, or where this subpart indicates the need for using such equipment to reduce the hazards to railroad bridge workers. The railroad or railroad contractor shall require the use of foot protection when the potential for foot injury exists.

[67 FR 1908, Jan. 15, 2002]

§214.113 Head protection.

(a) Railroad bridge workers working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be provided and shall wear protective helmets.

(b) Helmets required by this section shall conform to the requirements of 29 CFR 1910.135(b), as established by the

Federal Railroad Administration, DOT

§ 214.303

U.S. Department of Labor, Occupational Safety and Health Administration.

[67 FR 1908, Jan. 15, 2002, as amended at 74 FR 25172, May 27, 2009; 81 FR 37884, June 10, 2016]

§ 214.115 Foot protection.

(a) The railroad or railroad contractor shall require railroad bridge workers to wear foot protection equipment when potential foot injury may result from impact, falling or flying objects, electrical shock or burns, or other hazardous condition.

(b) Helmets required by this section shall conform to the requirements of 29 CFR 1910.135(b), as established by the U.S. Department of Labor, Occupational Safety and Health Administration.

[67 FR 1908, Jan. 15, 2002, as amended at 74 FR 25172, May 27, 2009; 81 FR 37885, June 10, 2016]

§ 214.117 Eye and face protection.

(a) Railroad bridge workers shall be provided and shall wear eye and face protection equipment when potential eye or face injury may result from physical, chemical, or radiant agents.

(b) Foot protection equipment required by this section shall conform to the requirements of 29 CFR 1910.136(b), as established by the U.S. Department of Labor, Occupational Safety and Health Administration.

(c) Face and eye protection equipment required by this section shall be kept clean and in good repair. Use of equipment with structural or optical defects is prohibited.

(d) Railroad bridge workers whose vision requires the use of corrective lenses, when required by this section to wear eye protection, shall be protected by goggles or spectacles of one of the following types:

(i) Spectacles whose protective lenses provide optical correction the, frame of which includes shielding against objects reaching the wearer's eyes around the lenses;

(ii) Goggles that can be worn over corrective lenses without disturbing the adjustment of the lenses; or

(iii) Goggles that incorporate corrective lenses mounted behind the protective lenses.

[67 FR 1908, Jan. 15, 2002; 67 FR 11055, Mar. 12, 2002, as amended at 74 FR 25172, May 27, 2009; 81 FR 37885, June 10, 2016]

Subpart C—Roadway Worker Protection

SOURCE: 61 FR 65976, Dec. 16, 1996, unless otherwise noted.

§ 214.301 Purpose and scope.

(a) The purpose of this subpart is to prevent accidents and casualties caused by moving railroad cars, locomotives or roadway maintenance machines striking roadway workers or roadway maintenance machines.

(b) This subpart prescribes minimum safety standards for roadway workers. Each railroad and railroad contractor may prescribe additional or more stringent operating rules, safety rules, and other special instructions that are consistent with this subpart.

(c) This subpart prescribes safety standards related to the movement of roadway maintenance machines where such movements affect the safety of roadway workers. Except as provided for in § 214.320, this subpart does not otherwise affect movements of roadway maintenance machines that are conducted under the authority of a train dispatcher, a control operator, or the operating rules of the railroad.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37885, June 10, 2016]

§ 214.302 [Reserved]

§ 214.303 Railroad on-track safety programs, generally.

(a) Each railroad to which this part applies shall adopt and implement a program that will afford on-track safety to all roadway workers whose duties are performed on that railroad. Each such program shall provide for the levels of protection specified in this subpart.

(b) Each on-track safety program adopted to comply with this part shall include procedures to be used by each railroad for monitoring effectiveness of and compliance with the program.

§ 214.305

49 CFR Ch. II (10–1–20 Edition)

§ 214.305 [Reserved]

§ 214.307 On-track safety programs.

(a) Each railroad subject to this part shall maintain and have in effect an on-track safety program which complies with the requirements of this subpart. New railroads must have an on-track safety program in effect by the date on which operations commence. The on-track safety program shall be retained at a railroad's system headquarters and division headquarters, and shall be made available to representatives of the FRA for inspection and copying during normal business hours. Each railroad to which this part applies is authorized to retain its program by electronic recordkeeping in accordance with §§ 217.9(g) and 217.11(c) of this chapter.

(b) Each railroad shall notify, in writing, the Associate Administrator for Safety and Chief Safety Officer, Federal Railroad Administration, RRS-15, 1200 New Jersey Avenue SE., Washington, DC 20590, not less than one month before its on-track safety program becomes effective. The notification shall include the effective date of the program and the name, title, address and telephone number of the primary person to be contacted with regard to review of the program. This notification procedure shall also apply to subsequent changes to a railroad's on-track safety program.

(c) Upon review of a railroad's on-track safety program, the FRA Associate Administrator for Railroad Safety and Chief Safety Officer may, for cause stated, may disapprove the program. Notification of such disapproval shall be made in writing and specify the basis for the disapproval decision. If the Associate Administrator for Railroad Safety and Chief Safety Officer disapproves the program:

(1) The railroad has 35 days from the date of the written notification of such disapproval to:

(i) Amend its program and submit it to the Associate Administrator for Railroad Safety and Chief Safety Officer for approval; or

(ii) Provide a written response in support of its program to the Associate Administrator for Railroad Safety and Chief Safety Officer.

(2) FRA's Associate Administrator for Railroad Safety and Chief Safety Officer will subsequently issue a written decision either approving or disapproving the railroad's program.

(3) Failure to submit to FRA an amended program or provide a written response in accordance with this paragraph will be considered a failure to implement an on-track safety program under this subpart.

[81 FR 37885, June 10, 2016]

§ 214.309 On-track safety manual.

(a) The applicable on-track safety manual (as defined by § 214.7) shall be readily available to all roadway workers. Each roadway worker in charge responsible for the on-track safety of others, and each lone worker, shall be provided with and shall maintain a copy of the on-track safety manual.

(b) When it is impracticable for the on-track safety manual to be readily available to a lone worker, the employer shall establish provisions for such worker to have alternative access to the information in the manual.

(c) Changes to the on-track safety manual may be temporarily published in bulletins or notices. Such publications shall be retained along with the on-track safety manual until fully incorporated into the manual.

[81 FR 37885, June 10, 2016]

§ 214.311 Responsibility of employers.

(a) Each employer is responsible for the understanding and compliance by its employees with its rules and the requirements of this part.

(b) Each employer shall guarantee each employee the absolute right to challenge in good faith whether the on-track safety procedures to be applied at the job location comply with the rules of the operating railroad, and to remain clear of the track until the challenge is resolved.

(c) Each employer shall have in place a written procedure to achieve prompt and equitable resolution of challenges made in accordance with §§ 214.311(b) and 214.313(d).

§214.313 Responsibility of individual roadway workers.

(a) Each roadway worker is responsible for following the on-track safety rules of the railroad upon which the roadway worker is located.

(b) A roadway worker shall not foul a track except when necessary for the performance of duty.

(c) Each roadway worker is responsible to ascertain that on-track safety is being provided before fouling a track.

(d) Each roadway worker may refuse any directive to violate an on-track safety rule, and shall inform the employer in accordance with §214.311 whenever the roadway worker makes a good faith determination that on-track safety provisions to be applied at the job location do not comply with the rules of the operating railroad.

§214.315 Supervision and communication.

(a) When an employer assigns a duty to a roadway worker that calls for that employee to foul a track, the employer shall provide the employee with an on-track safety job briefing that, at a minimum, includes the following:

(1) Information on the means by which on-track safety is to be provided for each track identified to be fouled;

(2) Instruction on each on-track safety procedure to be followed;

(3) Information about any adjacent tracks, on-track safety for such tracks, if required by this subpart or deemed necessary by the roadway worker in charge, and identification of any roadway maintenance machines that will foul such tracks;

(4) A discussion of the nature of the work to be performed and the characteristics of the work location to ensure compliance with this subpart; and

(5) Information on the accessibility of the roadway worker in charge and alternative procedures in the event the roadway worker in charge is no longer accessible to the members of the roadway work group.

(b) A job briefing for on-track safety shall be deemed complete only after the roadway worker(s) has acknowledged understanding of the on-track safety procedures and instructions presented.

(c) Every roadway work group whose duties require fouling a track shall have one roadway worker in charge designated by the employer to provide on-track safety for all members of the group. The designated person shall be qualified under the rules of the railroad that conducts train operations on those tracks to provide the protection necessary for on-track safety of each individual in the group. The responsible person may be designated generally, or specifically for a particular work situation.

(d) Before any member of a roadway work group fouls a track, the roadway worker in charge designated under paragraph (c) of this section shall inform each roadway worker of the on-track safety procedures to be used and followed during the performance of the work at that time and location. Each roadway worker shall again be so informed at any time the on-track safety procedures change during the work period. Such information shall be given to all roadway workers affected before the change is effective, except in cases of emergency. Any roadway workers who, because of an emergency, cannot be notified in advance shall be immediately warned to leave the fouling space and shall not return to the fouling space until on-track safety is re-established.

(e) Each lone worker shall communicate at the beginning of each duty period with a supervisor or another designated employee to receive an on-track safety job briefing and to advise of his or her planned itinerary and the procedures that he or she intends to use for on-track safety. When communication channels are disabled, the job briefing shall be conducted as soon as possible after the beginning of the work period when communications are restored.

[61 FR 65976, Dec. 16, 1996, as amended at 76 FR 74614, Nov. 30, 2011; 81 FR 37885, June 10, 2016]

§214.317 On-track safety procedures, generally.

(a) Each employer subject to the provisions of this part shall provide on-track safety for roadway workers by adopting a program that contains specific rules for protecting roadway

§214.317

workers that comply with the provisions of §§214.319 through 214.337.

(b) Roadway workers may walk across any track provided that they can safely be across and clear of the track before a train or other on-track equipment would arrive at the crossing point under the following circumstances:

(1) Employers shall adopt, and roadway workers shall comply with, applicable railroad safety rules governing how to determine that it is safe to cross the track before starting across;

(2) Roadway workers shall move directly and promptly across the track; and

(3) On-track safety protection is in place for all roadway workers who are actually engaged in work, including inspection, construction, maintenance or repair, and extending to carrying tools or material that restricts motion, impairs sight or hearing, or prevents an employee from detecting and moving rapidly away from an approaching train or other on-track equipment.

(c) On non-controlled track, on-track roadway maintenance machines engaged in weed spraying or snow removal may proceed under the provisions of §214.301(c), under the following conditions:

(1) Each railroad shall establish and comply with an operating procedure for on-track snow removal and weed spray equipment to ensure that:

(i) All on-track movements in the affected area are informed of such operations;

(ii) All on-track movements shall operate at restricted speed as defined in §214.7, except on other than yard tracks and yard switching leads, where all on-track movements shall operate prepared to stop within one-half the range of vision but not exceeding 25 mph;

(iii) A means for communication between the on-track equipment and other on-track movements is provided; and

(iv) Remotely controlled hump yard facility operations are not in effect, and kicking of cars is prohibited unless agreed to by the roadway worker in charge.

(2) Roadway workers engaged in such snow removal or weed spraying oper-

49 CFR Ch. II (10–1–20 Edition)

ations subject to this section shall retain an absolute right to use the provisions of §214.327 (inaccessible track).

(3) Roadway workers assigned to work with this equipment may line switches (or derails operated via a switch stand) for the machine's movement but shall not engage in any roadway work activity unless protected by another form of on-track safety.

(4) Each roadway maintenance machine engaged in snow removal or weed spraying under this provision shall be equipped with and utilize:

(i) An operative 360-degree intermittent warning light or beacon;

(ii) Work lights, if the machine is operated during the period between one-half hour after sunset and one-half hour before sunrise or in dark areas such as tunnels, unless equivalent lighting is otherwise provided;

(iii) An illumination device, such as a headlight, capable of illuminating obstructions on the track ahead in the direction of travel for a distance of 300 feet under normal weather and atmospheric conditions;

(iv) A brake light activated by the application of the machine braking system, and designed to be visible for a distance of 300 feet under normal weather and atmospheric conditions; and

(v) A rearward viewing device, such as a rearview mirror.

(d) Tunnel niches or clearing bays in existence prior to April 1, 2017 that are designed to permit roadway workers to occupy a place of safety when trains or other on-track equipment pass the niche or clearing bay, but are less than four feet from the field side of the nearest rail, may continue to be used as a place of safety provided:

(1) Such niches or clearing bays are visually inspected by the roadway worker in charge or lone worker prior to making the determination that the niche or clearing bay is suitable for use as a place of safety;

(2) There is adequate sight distance to permit a roadway worker or lone worker to occupy the place of safety in the niche or clearing bay at least 15 seconds prior to the arrival of a train or other on-track equipment at the work location in accordance with §§214.329 and 214.337; and

(3) The roadway worker in charge or lone worker shall have the absolute right to designate a place of safety as a location other than that of a tunnel niche or clearing bay described by this paragraph (d), or to establish working limits.

[81 FR 37885, June 10, 2016]

§214.318 Locomotive servicing and car shop repair track areas.

(a) In lieu of the requirements of this subpart, workers (as defined by §218.5 of this chapter) within the limits of locomotive servicing and car shop repair track areas (as both are defined by §218.5 of this chapter) may utilize procedures established by a railroad in accordance with part 218, subpart B, of this chapter (Blue Signal Protection) to perform duties incidental to inspecting, testing, servicing, or repairing rolling equipment when those incidental duties involve fouling a track that is protected by Blue Signal Protection. A railroad utilizing Blue Signal Protection in lieu of the requirements of this subpart must have rules in effect governing the applicability of those protections to the incidental duties being performed.

(b) Paragraph (a) of this section applies to employees of a contractor to a railroad if such incidental duties are performed under the supervision of a railroad employee qualified (as defined by §217.4 of this chapter) on the railroad's rules and procedures implementing the Blue Signal Protection requirements.

(c) Any work performed within the limits of a locomotive servicing or car shop repair track area with the potential of fouling a track which requires a person qualified under §213.7 of this chapter to be present to inspect or supervise such work must be performed in accordance with the requirements of this subpart.

[81 FR 31886, June 10, 2016]

§214.319 Working limits, generally.

Working limits established on controlled track shall conform to the provisions of §214.321 Exclusive track occupancy, §214.323 Foul time, or §214.325 Train coordination. Working limits established on non-controlled track shall

conform to the provision of §214.327 Inaccessible track.

(a) Working limits established under any procedure shall, in addition, conform to the following provisions:

(1) Only a roadway worker in charge who is qualified in accordance with §214.353 shall establish or have control over working limits for the purpose of establishing on-track safety.

(2) Only one roadway worker in charge who is qualified in accordance with §214.353 shall have control over working limits on any one segment of track.

(3) All affected roadway workers shall be notified before working limits are released for the operation of trains. Working limits shall not be released until all affected roadway workers have either left the track or have been afforded on-track safety through train approach warning in accordance with §214.329.

(b) Each Class I or Class II railroad or each railroad providing regularly scheduled intercity or commuter rail passenger transportation that utilizes controlled track working limits as a form of on-track safety (under §§214.321 through 214.323) in signalized territory shall:

(1) By July 1, 2017, evaluate its on-track safety program and identify an appropriate method(s) of providing redundant signal protections for roadway work groups who depend on a train dispatcher or control operator to provide signal protection in establishing controlled track working limits. For purposes of this section, redundant signal protections means risk mitigation measures or safety redundancies adopted to ensure the proper establishment and maintenance of signal protections for controlled track working limits until such working limits are released by the roadway worker in charge. Appropriate redundant protections could include the use of various risk mitigation measures (or a combination of risk mitigation measures) such as technology, training, supervision, or operating-based procedures; or could include use of redundant signal protection, such as shunting, designed to prevent signal system-related incursions into established controlled track working limits; and

(2) By January 1, 2018, specifically identify, implement, and comply with the method(s) of providing redundant protections in its on-track safety program.

(c) Upon a railroad's request, FRA will consider an exemption from the requirements of paragraph (b) of this section for each segment of track(s) for which operations are governed by a positive train control system under part 236, subpart I, of this chapter. A request for approval to exempt a segment of track must be submitted in writing to the FRA Associate Administrator for Railroad Safety and Chief Safety Officer. The FRA Associate Administrator for Railroad Safety and Chief Safety Officer will review a railroad's submission and will notify a railroad of its approval or disapproval in writing within 90 days of FRA's receipt of a railroad's written request, and shall specify the basis for any disapproval decision.

[81 FR 37886, June 10, 2016]

§ 214.320 Roadway maintenance machine movements over signalized non-controlled track.

Working limits must be established for roadway maintenance machine movements on non-controlled track equipped with automatic block signal systems over which trains are permitted to exceed restricted speed (for purposes of this section, on-track movements prepared to stop within on-half the range of vision but not exceeding 25 mph). This section applies unless the railroad's operating rules protect the movements of roadway maintenance machines in a manner equivalent to that provided for by limiting all train and locomotive movements to restricted speed, and such equivalent level of protection is first approved in writing by FRA's Associate Administrator for Railroad Safety and Chief Safety Officer.

[81 FR 37887, June 10, 2016]

§ 214.321 Exclusive track occupancy.

Working limits established on controlled track through the use of exclusive track occupancy procedures shall comply with the following requirements:

(a) The track within working limits shall be placed under the control of one roadway worker in charge by either:

(1) Authority issued to the roadway worker in charge by the train dispatcher or control operator who controls train movements on that track,

(2) Flagmen stationed at each entrance to the track within working limits and instructed by the roadway worker in charge to permit the movement of trains and equipment into the working limits only as permitted by the roadway worker in charge, or

(3) The roadway worker in charge causing fixed signals at each entrance to the working limits to display an aspect indicating "Stop."

(b) An authority for exclusive track occupancy given to the roadway worker in charge of the working limits shall be transmitted on a written or printed document directly, by relay through a designated employee, in a data transmission, or by oral communication, to the roadway worker in charge by the train dispatcher or control operator in charge of the track.

(1) Where authority for exclusive track occupancy is transmitted orally, the authority shall be written as received by the roadway worker in charge and repeated to the issuing employee for verification.

(2) The roadway worker in charge of the working limits shall maintain possession of the written or printed authority for exclusive track occupancy while the authority for the working limits is in effect. A data transmission of an authority displayed on an electronic screen may be used as a substitute for a written or printed document required under this paragraph. Electronic displays of authority shall comply with the requirements of § 214.322.

(3) The train dispatcher or control operator in charge of the track shall make a written or electronic record of all authorities issued to establish exclusive track occupancy.

(4) An authority shall specify a unique roadway work group number, an employee name, or a unique identifier. A railroad shall adopt procedures that require precise communication between trains and other on-track equipment and the roadway worker in

charge or lone worker controlling the working limits in accordance with § 214.319. The procedures may permit communications to be made directly between a train or other on-track equipment and a roadway worker in charge or lone worker, or through a train dispatcher or control operator.

(c) The extent of working limits established through exclusive track occupancy shall be defined by one of the following physical features clearly identifiable to a locomotive engineer or other person operating a train or railroad equipment:

(1) A flagman with instructions and capability to hold all trains and equipment clear of the working limits;

(2) A fixed signal that displays an aspect indicating "Stop";

(3) A station shown in the time-table, and identified by name with a sign, beyond which train movement is prohibited by train movement authority or the provisions of a direct train control system.

(4) A clearly identifiable milepost sign beyond which train movement is prohibited by train movement authority or the provisions of a direct train control system; or

(5) A clearly identifiable physical location prescribed by the operating rules of the railroad that trains may not pass without proper authority.

(d) Movements of trains and roadway maintenance machines within working limits established through exclusive track occupancy shall be made only under the direction of the roadway worker in charge of the working limits. Such movements shall be at restricted speed unless a higher authorized speed has been specifically authorized by the roadway worker in charge of the working limits.

(e) Working limits established by exclusive track occupancy authority may occur behind designated trains moving through the same limits in accordance with the following provisions:

(1) The authority establishing working limits will only be considered to be in effect after it is confirmed by the roadway worker in charge or lone worker that the affected train(s) have passed the point to be occupied or fouled by:

(i) Visually identifying the affected trains(s); or

(ii) Direct radio contact with a crew member of the affected train(s); or

(iii) Receiving information about the affected train from the train dispatcher or control operator.

(2) When utilizing the provisions of paragraph (e)(1)(i) of this section, a railroad's operating rules shall include procedures prohibiting the affected train(s) from making a reverse movement into or within the limits being fouled or occupied.

(3) After the roadway worker in charge or lone worker has confirmed that the affected trains(s) have passed the point to be occupied or fouled, the roadway worker in charge shall record on the authority the time of passage and engine number(s) of the affected trains(s). If the confirmation is by direct communication with the train(s), or through confirmation by the train dispatcher or control operator, the roadway worker in charge shall record the time of such confirmation and the engine number(s) of the affected trains on the authority.

(4) A separate roadway work group afforded on-track safety by the roadway worker in charge of authority limits, and that is located away from the roadway worker in charge of authority limits, shall:

(i) Occupy or foul the track only after receiving permission from the roadway worker in charge to occupy the working limits after the roadway worker in charge has fulfilled the provisions of paragraph (e)(1) of this section; and

(ii) Be accompanied by an employee qualified to the level of a roadway worker in charge who shall also have a copy of the authority and who shall independently execute the required communication requirements of paragraphs (e)(1) and (3) of this section.

(5) Any subsequent train or on-track equipment movements within working limits after the passage of the affected train(s) shall be governed by paragraph (d) of this section.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37887 June 10, 2016]

§ 214.322 Exclusive track occupancy, electronic display.

(a) While it is in effect, all the contents of an authority electronically displayed shall be readily viewable by the roadway worker in charge that is using the authority to provide on-track safety for a roadway work group.

(b) If the electronic display device malfunctions, fails, or cannot display an authority while it is in effect, the roadway worker in charge shall either obtain a written or printed copy of the authority in accordance with § 214.321 (except that on-track roadway maintenance machine and hi-rail movements must stop) or establish another form of on-track safety without delay. In the event that a written or printed copy of the authority cannot be obtained or another form of on-track safety cannot be established after failure of an electronic display device, the roadway worker in charge shall instruct all roadway workers to stop work and occupy a place of safety and conduct an on-track safety job briefing to determine the safe course of action with the roadway work group.

(c) All authorized users of an electronic display system shall be uniquely identified to support individual accountability. A user may be a person, a process, or some other system that accesses or attempts to access an electronic display system to perform tasks or process an authority.

(d) All authorized users of an electronic display system must be authenticated prior to being granted access to such system. The system shall ensure the confidentiality and integrity of all internally stored authentication data and protect it from access by unauthorized users. The authentication scheme shall utilize algorithms approved by the National Institute of Standards and Technology (NIST), or any similarly recognized and FRA approved standards body.

(e) The integrity of all data must be ensured during transmission/reception, processing, and storage. All new electronic display systems implemented on or after July 1, 2017 shall utilize a Message Authentication Code (MAC) to ensure that all data is error free. The MAC shall utilize algorithms approved by NIST, or any similarly recognized

and FRA approved standards body. Systems implemented prior to July 1, 2017 may utilize a Cyclical Redundancy Code (CRC) to ensure that all data is error free provided:

(1) The collision rate for the CRC check utilized shall be less than or equal to 1 in 2^{32} . Systems implemented prior to July 1, 2017 that do not utilize a CRC with a collision rate less than or equal to 1 in 2^{32} must be retired or updated to utilize a MAC no later than July 1, 2018.

(2) MAC and CRC checks shall only be used to verify the accuracy of an electronic authority data message and shall not be used in an error correction reconstruction of the data. An authority must fail if the MAC or CRC checks do not match.

(f) Authorities transmitted to each electronic display device shall be retained in the device's non-volatile memory for not less than 72 hours.

(g) If any electronic display device used to obtain an authority is involved in an accident/incident that is required to be reported to FRA under part 225 of this chapter, the railroad or employer that was using the device at the time of the accident shall, to the extent possible, and to the extent consistent with the safety of life and property, preserve the data recorded by each such device for analysis by FRA. This preservation requirement permits the railroad or employer to extract and analyze such data, provided the original downloaded data file, or an unanalyzed exact copy of it, shall be retained in secure custody and shall not be utilized for analysis or any other purpose except by direction of FRA or the National Transportation Safety Board. This preservation requirement shall expire one (1) year after the date of the accident unless FRA or the National Transportation Safety Board notifies the railroad in writing that the data are desired for analysis.

(h) New electronic display systems implemented on or after July 1, 2017 shall provide Level 3 assurance as defined by NIST Special Publication 800-63-2, Electronic Authentication Guideline, "Computer Security," August 2013. Systems implemented prior to July 1, 2017 shall provide Level 2 assurance. Systems implemented prior to

Federal Railroad Administration, DOT

§ 214.327

July 1, 2017 that do not provide Level 2 or higher assurance must be retired, or updated to provide Level 2 assurance, no later than July 1, 2018. The incorporation by reference of this NIST Special Publication was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of the incorporated document from the National Institute of Standards and Technology, 100 Bureau Drive, Stop 8930, Gaithersburg, MD 20899-8930, <http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-63-2.pdf>. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue SE., Washington, DC, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

[81 FR 37888, June 10, 2016]

§ 214.323 Foul time.

Working limits established on controlled track through the use of foul time procedures shall comply with the following requirements:

(a) Foul time may be given orally or in writing by the train dispatcher or control operator only after that employee has withheld the authority of all trains or other on-track equipment to move into or within the working limits during the foul time period.

(b) Each roadway worker in charge to whom foul time is transmitted orally shall repeat the track number or identifier, track limits and time limits of the foul time to the issuing employee for verification before the foul time becomes effective.

(c) The train dispatcher or control operator shall not permit the movement of trains or other on-track equipment into working limits protected by foul time until the roadway worker in charge who obtained the foul time has reported clear of the track.

(d) The roadway worker in charge shall not permit the movement of trains or other on-track equipment

into or within working limits protected by foul time.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37888, June 10, 2016]

§ 214.325 Train coordination.

Working limits established on controlled track by a roadway worker in charge through the use of train coordination shall comply with the following requirements:

(a) Working limits established by train coordination shall be within the segments of track or tracks upon which only one train holds exclusive authority to move.

(b) The roadway worker who establishes working limits by train coordination shall communicate with a member of the crew of the train holding the exclusive authority to move, and shall determine that:

(1) The train is visible to the roadway worker who is establishing the working limits,

(2) The train is stopped,

(3) Further movements of the train will be made only as permitted by the roadway worker in charge of the working limits while the working limits remain in effect, and

(4) The crew of the train will not give up its exclusive authority to move until the working limits have been released to the train crew by the roadway worker in charge of the working limits.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37888, June 10, 2016]

§ 214.327 Inaccessible track.

(a) Working limits on non-controlled track shall be established by rendering the track within working limits physically inaccessible to trains at each possible point of entry by one of the following features:

(1) A flagman with instructions and capability to hold all trains and equipment clear of the working limits;

(2) A switch or derail aligned to prevent access to the working limits and secured with an effective securing device by the roadway worker in charge of the working limits;

(3) A discontinuity in the rail that precludes passage of trains or engines into the working limits;

§ 214.329

(4) Working limits on controlled track that connects directly with the inaccessible track, established by the roadway worker in charge of the working limits on the inaccessible track; or

(5) A remotely controlled switch aligned to prevent access to the working limits and secured by the control operator of such remotely controlled switch by application of a locking or blocking device to the control of that switch, when:

(i) The control operator has secured the remotely controlled switch by applying a locking or blocking device to the control of the switch, and

(ii) The control operator has notified the roadway worker who has established the working limits that the requested protection has been provided, and

(iii) The control operator is not permitted to remove the locking or blocking device from the control of the switch until receiving permission to do so from the roadway worker who established the working limits.

(6) A locomotive with or without cars placed to prevent access to the working limits at one or more points of entry to the working limits, provided the following conditions are met:

(i) The roadway worker in charge who is responsible for establishing working limits communicates with a member of the crew assigned to the locomotive and determines that:

(A) The locomotive is visible to the roadway worker in charge that is establishing the working limits; and

(B) The locomotive is stopped.

(ii) Further movements of the locomotive shall be made only as permitted by the roadway worker in charge controlling the working limits;

(iii) The crew of the locomotive shall not leave the locomotive unattended or go off duty unless communication occurs with the roadway worker in charge and an alternate means of on-track safety protection has been established by the roadway worker in charge; and

(iv) Cars coupled to the locomotive on the same end and on the same track as the roadway workers shall be connected to the train line air brake system and such system shall be charged with compressed air to initiate an

49 CFR Ch. II (10–1–20 Edition)

emergency brake application in case of unintended uncoupling. Cars coupled to the locomotive on the same track on the opposite end of the roadway workers shall have sufficient braking capability to control their movement.

(7) A railroad's procedure governing block register territory that prevents trains and other on-track equipment from occupying the track when the territory is under the control of a lone worker or roadway worker in charge. The roadway worker in charge or lone worker shall have the absolute right to render block register territory inaccessible under the other provisions of paragraph (a) of this section.

(8) Railroad operating rules that prohibit train or engine or other on-track equipment movements on a main track within yard limits or restricted limits until the train or engine or on-track equipment receives notification of any working limits in effect and prohibit the train or engine or on-track equipment from entering working limits until permission is received by the roadway worker in charge. Such working limits shall be delineated with stop signs (flags), and where speeds are in excess of restricted speed and physical characteristics permit, also with advance signs (flags).

(b) Trains and roadway maintenance machines within working limits established by means of inaccessible track shall move only under the direction of the roadway worker in charge of the working limits, and shall move at restricted speed.

(c) No operable locomotives or other items of on-track equipment, except those present or moving under the direction of the roadway worker in charge of the working limits, shall be located within working limits established by means of inaccessible track.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37888, June 10, 2016]

§ 214.329 Train approach warning provided by watchmen/lookouts.

Roadway workers in a roadway work group who foul any track outside of working limits shall be given warning of approaching trains by one or more watchmen/lookouts in accordance with the following provisions:

(a) Train approach warning shall be given in sufficient time to enable each roadway worker to move to and occupy a previously arranged place of safety not less than 15 seconds before a train moving at the maximum authorized speed on that track can pass the location of the roadway worker. The place of safety to be occupied upon the approach of a train may not be on a track, unless working limits are established on that track.

(b) Watchmen/lookouts assigned to provide train approach warning shall devote full attention to detecting the approach of trains and communicating a warning thereof, and shall not be assigned any other duties while functioning as watchmen/lookouts.

(c) The means used by a watchman/lookout to communicate a train approach warning shall be distinctive and shall clearly signify to all recipients of the warning that a train or other on-track equipment is approaching.

(d) Every roadway worker who depends upon train approach warning for on-track safety shall maintain a position that will enable him or her to receive a train approach warning communicated by a watchman/lookout at any time while on-track safety is provided by train approach warning.

(e) Watchmen/lookouts shall communicate train approach warnings by a means that does not require a warned employee to be looking in any particular direction at the time of the warning, and that can be detected by the warned employee regardless of noise or distraction of work.

(f) Every roadway worker who is assigned the duties of a watchman/lookout shall first be trained, qualified and designated in writing by the employer to do so in accordance with the provisions of §214.349.

(g) Every watchman/lookout shall be provided by the employer with the equipment necessary for compliance with the on-track safety duties which the watchman/lookout will perform.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37889, June 10, 2016]

§214.331 Definite train location.

A roadway worker may establish on-track safety by using definite train location only where permitted by and in

accordance with the following provisions:

(a) A Class I railroad or a commuter railroad may only use definite train location to establish on-track safety at points where such procedures were in use on January 15, 1997.

(b) Each Class I or commuter railroad shall include in its on-track safety program for approval by FRA in accordance with §214.307 of this part a schedule for phase-out of the use of definite train location to establish on-track safety.

(c) A railroad other than a Class I or commuter railroad may use definite train location to establish on-track safety on subdivisions only where:

(1) Such procedures were in use on January 15, 1997, or

(2) The number of trains operated on the subdivision does not exceed:

(i) Three during any nine-hour period in which roadway workers are on duty, and

(ii) Four during any twelve-hour period in which roadway workers are on duty.

(d) Definite train location shall only be used to establish on-track safety according to the following provisions:

(1) Definite train location information shall be issued only by the one train dispatcher who is designated to authorize train movements over the track for which the information is provided.

(2) A definite train location list shall indicate all trains to be operated on the track for which the list is provided, during the time for which the list is effective.

(3) Trains not shown on the definite train location list shall not be operated on the track for which the list is provided, during the time for which the list is effective, until each roadway worker to whom the list has been issued has been notified of the train movement, has acknowledged the notification to the train dispatcher, and has canceled the list. A list thus canceled shall then be invalid for on-track safety.

(4) Definite train location shall not be used to establish on-track safety within the limits of a manual interlocking, or on track over which train movements are governed by a Traffic

§ 214.333

Control System or by a Manual Block System.

(5) Roadway workers using definite train location for on-track safety shall not foul a track within ten minutes before the earliest time that a train is due to depart the last station at which time is shown in approach to the roadway worker's location nor until that train has passed the location of the roadway worker.

(6) A railroad shall not permit a train to depart a location designated in a definite train location list before the time shown therein.

(7) Each roadway worker who uses definite train location to establish on-track safety must be qualified on the relevant physical characteristics of the territory for which the train location information is provided.

(e) Each on-track safety program that provides for the use of definite train location shall discontinue such use by June 12, 2017.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37889, June 10, 2016]

§ 214.333 Informational line-ups of trains.

(a) A railroad is permitted to include informational line-ups of trains in its on-track safety program for use only on subdivisions of that railroad upon which such procedure was in effect on March 14, 1996.

(b) Each procedure for the use of informational line-ups of trains found in an on-track safety program shall include all provisions necessary to protect roadway workers using the procedure against being struck by trains or other on-track equipment.

(c) Each on-track safety program that provides for the use of informational line-ups shall discontinue such use by June 12, 2017.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37889, June 10, 2016]

§ 214.335 On-track safety procedures for roadway work groups, general.

(a) No employer subject to the provisions of this part shall require or permit a roadway worker who is a member of a roadway work group to foul a track unless on-track safety is provided by either working limits, train approach warning, or definite train lo-

49 CFR Ch. II (10–1–20 Edition)

cation in accordance with the applicable provisions of § 214.319, § 214.321, § 214.323, § 214.325, § 214.327, § 214.329, § 214.331, or § 214.336.

(b) No roadway worker who is a member of a roadway work group shall foul a track without having been informed by the roadway worker in charge of the roadway work group that on-track safety is provided.

[81 FR 37889, June 12, 2016]

§ 214.336 On-track safety procedures for certain roadway work groups and adjacent tracks.

(a) *Procedures; general.* (1) *General rule.* Except as provided in paragraph (e) of this section, on-track safety is required for each adjacent controlled track when a roadway work group with at least one of the roadway workers on the ground is engaged in a common task with on-track, self-propelled equipment or coupled equipment on an occupied track. The required on-track safety shall be established through § 214.319 (Working limits, generally) or § 214.329 (Train approach warning provided by watchmen/lookouts) and as more specifically described in this section.

(2) *Special circumstance arising in territories with at least three tracks, if an occupied track is between two adjacent controlled tracks.* If an occupied track has two adjacent controlled tracks, and one of these adjacent controlled tracks has one or more train or other on-track equipment movements authorized or permitted at a speed of 25 mph or less (or 40 mph or less for one or more passenger train or other passenger on-track equipment movements), and the other adjacent controlled track has one or more concurrent train or other on-track equipment movements authorized or permitted at a speed over 25 mph (or over 40 mph for one or more passenger train or other passenger on-track equipment movements), the more restrictive procedures in paragraph (b) of this section apply.

(3) *Definitions.* As used in this section—

Adjacent controlled track means a controlled track whose track center is spaced 19 feet or less from the track center of the occupied track.

Adjacent track means a controlled or non-controlled track whose track center is spaced less than 25 feet from the track center of the occupied track.

Inter-track barrier means a continuous barrier of a permanent or semi-permanent nature that spans the entire work area, that is at least four feet in height, and that is of sufficient strength to prevent a roadway worker from fouling the adjacent track.

Minor correction means one or more repairs of a minor nature, including, but not limited to, welding, spiking, anchoring, hand tamping, and joint bolt replacement, that are accomplished with hand tools or handheld, hand-supported, or hand-guided power tools. The term does not include machine spiking, machine tamping, or any similarly distracting repair.

Occupied track means a track on which on-track, self-propelled equipment or coupled equipment is authorized or permitted to be located while engaged in a common task with a roadway work group with at least one of the roadway workers on the ground.

(b) *Procedures for adjacent-controlled-track movements over 25 mph (or over 40 mph if passenger movements)*. If a train or other on-track equipment is authorized to move on an adjacent controlled track at a speed greater than 25 mph, or at a speed greater than 40 mph for a passenger train or other passenger on-track equipment movement, each roadway worker in the roadway work group that is affected by such movement must comply with the following procedures:

(1) *Ceasing work and occupying a predetermined place of safety*. Except for the work activities as described in paragraph (e) of this section, each affected roadway worker shall, as described in Table 1 of this section, cease all on-ground work and equipment movement that is being performed on or between the rails of the occupied track or on one or both sides of the occupied track, and occupy a predetermined place of safety upon receiving either a watchman/lookout warning or, alternatively, a notification that the roadway worker in charge intends to permit one or more train or other on-track equipment movements through

the working limits on the adjacent controlled track.

(2) *Resuming work*. (i) An affected roadway worker may resume on-ground work and equipment movement (on or between the rails of the occupied track or on one or both sides of the occupied track as described in Table 1 of this section) only after the trailing-end of all trains or other on-track equipment moving on the adjacent controlled track (for which a warning or notification has been received in accordance with paragraph (b)(1) of this section) has passed and remains ahead of that roadway worker.

(ii) If the train or other on-track equipment stops before its trailing-end has passed all of the affected roadway workers in the roadway work group, the work to be performed (on or between the rails of the occupied track or on one or both sides of the occupied track as described in Table 1 of this section) ahead of the trailing-end of the train or other on-track equipment on the adjacent controlled track may resume only—

(A) If on-track safety through train approach warning (§214.329) has been established on the adjacent controlled track; or

(B) After the roadway worker in charge has communicated with a member of the train crew or the on-track equipment operator and established that further movements of such train or other on-track equipment shall be made only as permitted by the roadway worker in charge.

(c) *Procedures for adjacent-controlled-track movements 25 mph or less (or 40 mph or less if passenger movements)*. If a train or other on-track equipment is authorized or permitted to move on an adjacent controlled track at a speed of 25 mph or less, or at a speed of 40 mph or less for a passenger train or other passenger on-track equipment movement, each roadway worker in the roadway work group that is affected by such movement must comply with the procedures listed in paragraph (b) of this section, except that equipment movement on the rails of the occupied track and on-ground work performed exclusively between the rails (*i.e.*, not breaking the plane of the rails) of the occupied track may continue, provided that

no on-ground work is performed within the areas 25 feet in front of and 25 feet behind any on-track, self-propelled equipment or coupled equipment permitted to move on the occupied track.

(d) *Discretion of roadway worker in charge.* Nothing in this subpart prohibits the roadway worker in charge from establishing on-track safety on one or more adjacent tracks as he or she deems necessary consistent with both the purpose and requirements of this subpart.

(e) *Exceptions to certain requirements for adjacent-controlled-track on-track safety.* No on-track safety (other than that required by paragraph (f) of this section or provided under paragraph (d) of this section) is required by paragraphs (a) through (c) of this section for an adjacent controlled track during the times that the roadway work group is exclusively performing one or more of the following work activities:

(1) *On-ground work performed on a side of the occupied track meeting specified condition(s).* A roadway work group with all of its on-ground roadway workers (other than those performing work in accordance with another exception in paragraph (e) of this section) performing work while exclusively positioned on a side of the occupied track as follows and as further specified in Table 1 of this section:

- (i) The side with no adjacent track;
- (ii) The side with one or more adjacent tracks, the closest of which has working limits on it and no movements permitted within such working limits by the roadway worker in charge; or
- (iii) The side with one or more adjacent tracks, provided that that it has an inter-track barrier between the occupied track and the closest adjacent track on that side.

(2) *Maintenance or repairs performed either alongside, or within the perimeter of, a roadway maintenance machine or coupled equipment on the occupied track.* (i) One or more roadway workers performing maintenance or repairs alongside a roadway maintenance machine or coupled equipment, provided that such machine or equipment would effectively prevent the worker from fouling the adjacent controlled track on the other side of such equipment, and that such maintenance or repairs are

performed while positioned on a side of the occupied track as described in paragraph (e)(1)(i), (ii), or (iii) and Table 1 of this section.

(ii) One or more roadway workers on or under a roadway maintenance machine or coupled equipment performing maintenance or repairs within the perimeter of the machine or equipment, provided that no part of their person breaks the plane of the rail of the occupied track except when toward one of the sides of the occupied track as described in paragraph (e)(1)(i), (ii), or (iii) and Table 1 of this section. A boom or other equipment extending beyond the body of a roadway maintenance machine or coupled equipment toward an adjacent controlled track is not considered to be within the perimeter of the machine or coupled equipment.

(3) *Work activities involving certain equipment and purposes.* One or more on-ground roadway workers engaged in a common task on an occupied track with on-track, self-propelled equipment or coupled equipment consisting exclusively of one or more of the types of equipment described in paragraphs (e)(3)(i) through (iii) of this section. If such a roadway work group (“excepted group”) is authorized or permitted to operate on the same occupied track and within the working limits of a separate roadway work group performing work that is subject to the requirements of this section (“non-excepted group”) or vice versa (*i.e.*, a non-excepted group is authorized or permitted to operate on the same occupied track and within the working limits of an excepted group), the groups must conduct an on-track safety job briefing to determine if adjacent-controlled-track on-track safety is necessary for the excepted group. Such determination shall be made by the roadway worker in charge of the working limits; however, if the groups are in such proximity where the ability of the roadway workers in the excepted group to hear or see approaching trains and other on-track equipment is impaired by background noise, lights, sight obstructions or any other physical conditions caused by the equipment, then this exception does not apply, and adjacent-controlled-track on-track safety must be provided

to both groups. This exception otherwise applies to work activities involving one or more of the following types of equipment:

(i) A hi-rail vehicle or other rail-bound vehicle (other than a catenary maintenance tower vehicle) being used for inspection or minor correction purposes, provided that such vehicle is not coupled to one or more railroad cars. In accordance with § 214.315(a), where multiple hi-rail or rail-bound vehicles being used for inspection or minor correction are engaged in a common task, the on-track safety job briefing shall include discussion of the nature of the work to be performed to determine if adjacent-controlled-track on-track safety is necessary.

(ii) An automated inspection car being used for inspection or minor correction purposes.

(iii) A catenary maintenance tower car or vehicle, provided that all of the on-ground workers engaged in the common task (other than those performing work in accordance with another exception in paragraph (e) of this section) are positioned within the gage of the occupied track for the sole purpose of applying or removing grounds.

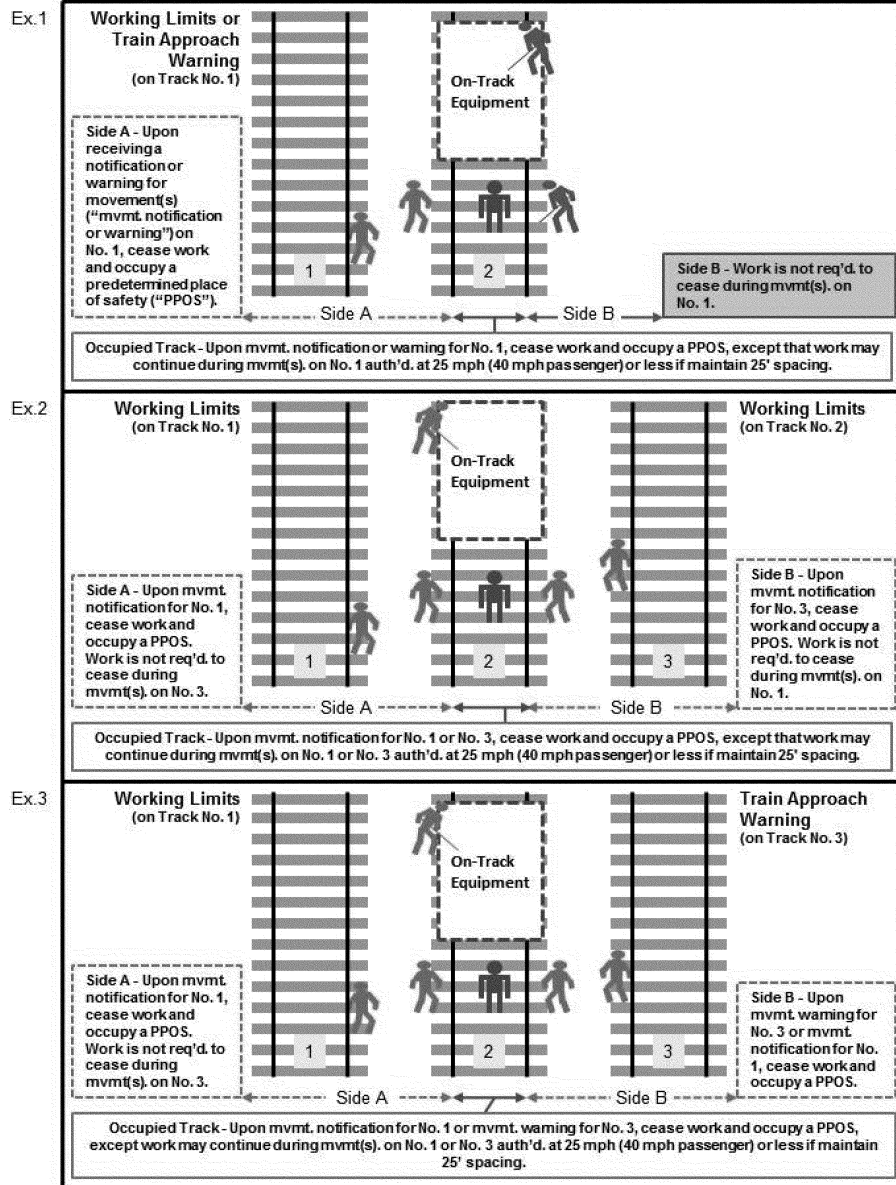
(f) *Procedures for components of roadway maintenance machines fouling an adjacent controlled track.* Except as provided for in § 214.341(c), a component of a roadway maintenance machine shall not foul an adjacent controlled track unless working limits have been established on the adjacent-controlled-track and there are no movements permitted within the working limits by the roadway worker in charge that would affect any of the roadway workers engaged in a common task with such machine.

TABLE 1—SUMMARY OF ON-TRACK SAFETY PROCEDURES FOR CERTAIN ROADWAY WORK GROUPS AND ADJACENT TRACKS

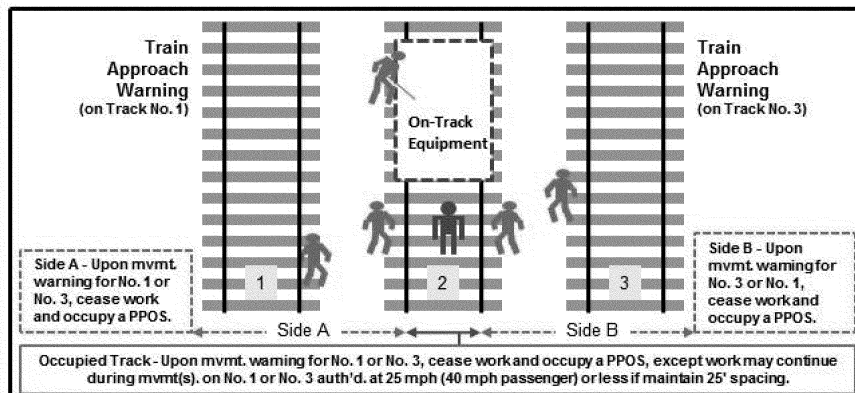
Example number/diagram number (see figure 1)	“Side A” of the occupied track—the side from the vertical plane of the near running rail of the occupied track extending outward through to the fouling space of the adjacent controlled track (“No. 1” Track” or “No. 1”)		Requirement	Requirements	Requirements	Method of on-track safety on side B
	Method of On-Track Safety on Side A	Requirement	Requirements	Requirements	Requirements	Method of on-track safety on side B
1	Working limits or train approach warning.	Upon receiving a notification or warning for movement(s) (“movement notification or warning”) for No. 1, cease work and occupy a predetermined place of safety (“PPOS”). ¹	Upon movement notification or warning for No. 1, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 auth’d. at 25 mph or less (or 40 mph or less for passenger train movements) if maintain 25’ spacing. ²	Upon movement notification or warning for No. 1, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 or No. 3 auth’d. at 25 mph or less (or at 40 mph or less for passenger train movements) if maintain 25’ spacing. ²	Work ³ is not required to cease during movement(s) on No. 1.	Not applicable (N/A), because there is no adjacent track.
2	Working limits	Upon movement notification for No. 1, cease work and occupy a PPOS. Work ³ is not required to cease during movement(s) on No. 3.	Upon movement notification for No. 1 or No. 3, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 or No. 3 auth’d. at 25 mph or less (or at 40 mph or less for passenger train movements) if maintain 25’ spacing. ²	Upon movement notification for No. 1 or No. 3, cease work and occupy a PPOS. Work ³ is not required to cease during movement(s) on No. 1.	Working limits.	
3	Working limits	Upon movement notification for No. 1, cease work and occupy a PPOS. Work ³ is not required to cease during movement(s) on No. 3.	Upon movement notification for No. 1 or warning for No. 3, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 or No. 3 auth’d. at 25 mph or less (or at 40 mph or less for passenger train movements) if maintain 25’ spacing. ²	Upon movement warning for No. 3 or notification for No. 1, cease work and occupy a PPOS.	Train approach warning.	
4	Train approach warning	Upon movement warning for No. 1 or No. 3, cease work and occupy a PPOS.	Upon movement warning for No. 1 or No. 3, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 or No. 3 auth’d. at 25 mph or less (or at 40 mph or less for passenger train movements) if maintain 25’ spacing. ²	Upon movement warning for No. 3 or No. 1, cease work and occupy safety PPOS.	Train approach warning.	
5	None, but with inter-track barrier.	Work is prohibited on No. 1 and up to barrier (“Side A1”). Work is not required to cease bwn. barrier and near running rail of occupied track (“Side A2”) during movement(s) on No. 1.	Work is not required to cease during movement(s) on No. 1.	Work is not required to cease during movement(s) on No. 1.	N/A, because there is no adjacent track.	

6 None, but with inter-track barrier.	Work is prohibited on Side A1. Work ³ is not required to cease on Side A2 during movement(s) on No. 1 or No. 3.	Work is not required to cease during movement(s) on No. 1. Upon movement notification or warning for No. 3, cease work and occupy a PPOS, except work may continue during movement(s) on No. 3 auth'd. at 25 mph or less (or at 40 mph or less for passenger trains) if maintain 25' spacing ² .	Upon movement notification or warning for No. 3, cease work and occupy a PPOS. Work ³ is not required to cease during movement(s) on No. 1.	Working limits or train approach warning.
		<p>¹ As used in the above table, a "predetermined place of safety" (or "PPOS") means a specific location that an affected roadway worker must occupy upon receiving a watchman/lookout's warning of approaching movement(s) ("warning") or a roadway worker in charge's ("RWIC's") notification of pending movement(s) on an adjacent track ("notification"), as designated during the on-track safety job briefing required by § 214.315. The PPOS may not be on a track unless the track has working limits on it and no movements permitted within such working limits by the RWIC. Thus, under these circumstances, the space between the rails of the occupied track (No. 2 in this table) may be designated as a place to remain in position or to otherwise occupy upon receiving a warning or notification. The RWIC must determine any change to a PPOS, and communicate such change to all affected roadway workers through an updated on-track safety job briefing.</p> <p>² On-ground work is prohibited in the areas 25' in front of and 25' behind equipment on the occupied track (No. 2), and must not break the plane of a rail on No. 2 towards a side of No. 2 unless work is permitted on that side. Note, however, that per § 214.336(e)(2), work would no longer be permitted to continue on or between the rails of the occupied track during movement(s) on an adjacent controlled track at 25 mph or less (or at 40 mph or less for passenger trains or other passenger on-track equipment movements) if there is a simultaneous movement on the other adjacent controlled track at more than 25 mph (or at more than 40 mph per hour for passenger train movements or other passenger on-track equipment movements).</p> <p>³ Work that does not break the plane of the near running rail of the occupied track (No. 2) is not required to cease during such movements, work that breaks the plane of the near running rail of the occupied track may also continue: 1) during the times that work is permitted on or between the rails of the occupied track in accordance with § 214.338(c) (Procedures for adjacent-controlled-track movements 25 mph or less, or 40 mph or less for passenger train movements or other passenger on-track equipment movements); or 2) if such work is performed alongside or within the perimeter of a roadway maintenance machine or coupled equipment in accordance with § 214.336(e)(2).</p>		

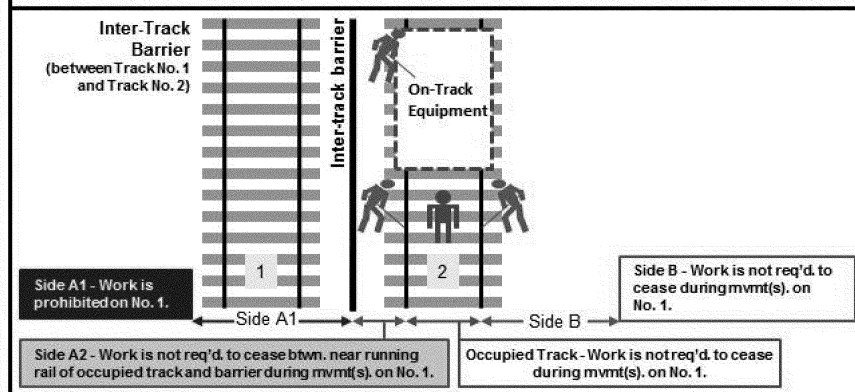
FIGURE 1 - EXAMPLES APPLYING § 214.336, ON-TRACK SAFETY PROCEDURES FOR CERTAIN ROADWAY WORK GROUPS AND ADJACENT TRACKS
(All tracks are controlled, with centerlines less than 19 feet apart.)



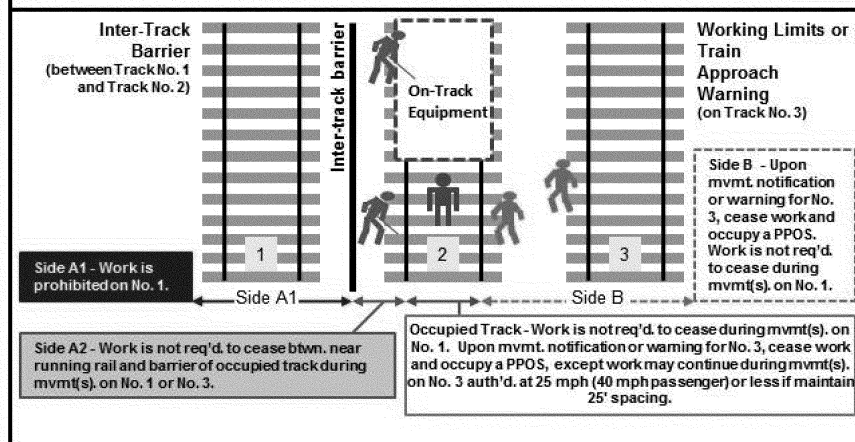
Ex.4

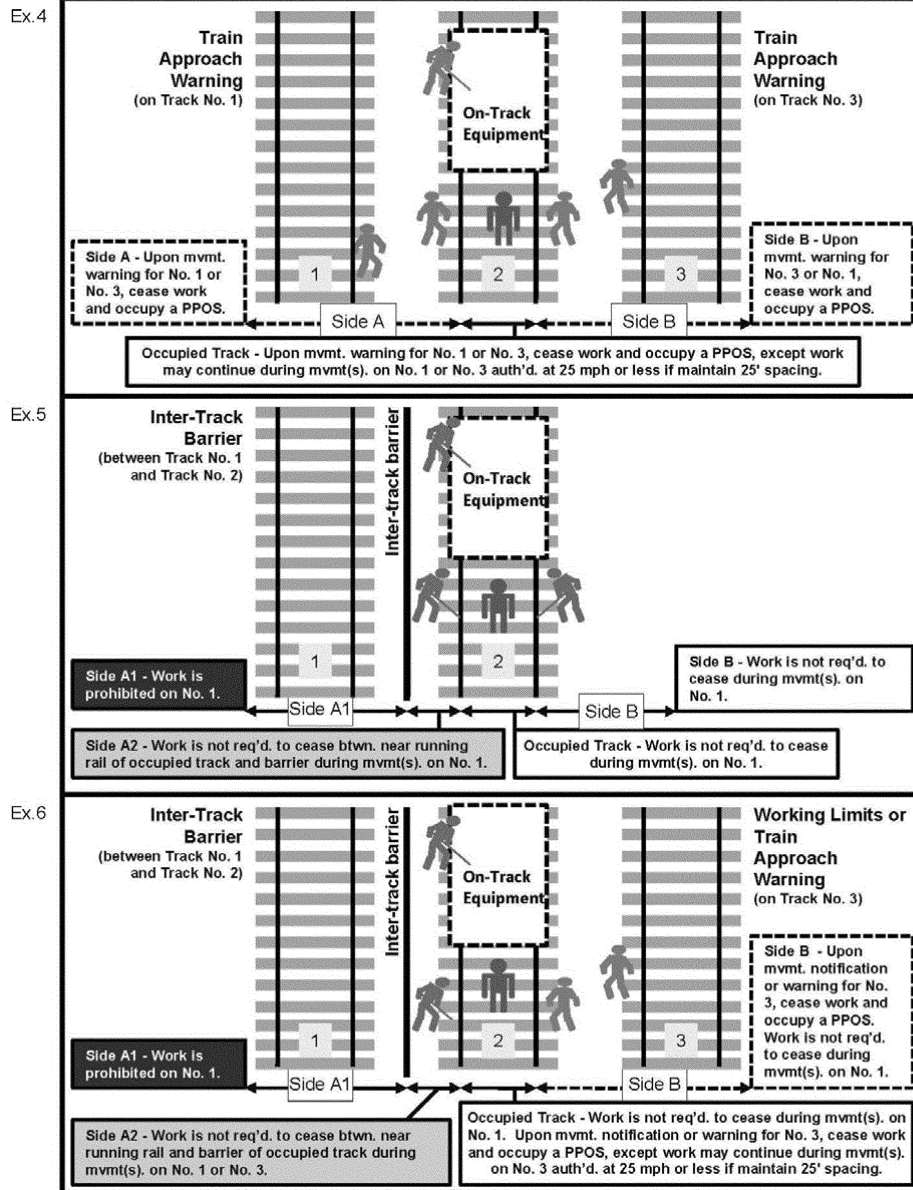


Ex.5



Ex.6





[76 FR 74615, Nov. 30, 2011, as amended at 79 FR 1766, Jan. 10, 2014]

§ 214.337 On-track safety procedures for lone workers.

(a) A lone worker who fouls a track while performing routine inspection or minor correction may use individual

train detection to establish on-track safety only where permitted by this section and the on-track safety program of the railroad.

(b) A lone worker retains an absolute right to use on-track safety procedures other than individual train detection if he or she deems it necessary, and to occupy a place of safety until such other form of on-track safety can be established.

(c) Individual train detection may be used to establish on-track safety only:

(1) By a lone worker who has been trained, qualified, and designated to do so by the employer in accordance with § 214.347 of this subpart;

(2) While performing routine inspection and minor correction work;

(3) On track outside the limits of a manual interlocking, a controlled point (except those consisting of signals only), or a remotely controlled hump yard facility;

(4) Where the lone worker is able to visually detect the approach of a train moving at the maximum speed authorized on that track, and move to a previously determined place of safety, not less than 15 seconds before the train would arrive at the location of the lone worker;

(5) Where no power-operated tools or roadway maintenance machines are in use within the hearing of the lone worker; and

(6) Where the ability of the lone worker to hear and see approaching trains and other on-track equipment is not impaired by background noise, lights, precipitation, fog, passing trains, or any other physical conditions.

(d) The place of safety to be occupied by a lone worker upon the approach of a train may not be on a track, unless working limits are established on that track.

(e) A lone worker using individual train detection for on-track safety while fouling a track may not occupy a position or engage in any activity that would interfere with that worker's ability to maintain a vigilant lookout for, and detect the approach of, a train moving in either direction as prescribed in this section.

(f) A lone worker who uses individual train detection to establish on-track

safety shall first complete a written Statement of On-track Safety. The Statement shall designate the limits of the track for which it is prepared and the date and time for which it is valid. The statement shall show the maximum authorized speed of trains within the limits for which it is prepared, and the sight distance that provides the required warning of approaching trains. The lone worker using individual train detection to establish on-track safety shall produce the Statement of On-track Safety when requested by a representative of the Federal Railroad Administrator.

(g) Individual train detection shall not be used to provide on-track safety for a lone worker using a roadway maintenance machine, equipment, or material that cannot be readily removed by hand.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37889, June 10, 2016]

§ 214.339 Audible warning from trains.

(a) Each railroad shall have in effect and comply with written procedures that prescribe effective requirements for audible warning by horn and/or bell for trains and locomotives approaching any roadway workers or roadway maintenance machines that are either on the track on which the movement is occurring, or about the track if the roadway workers or roadway maintenance machines are at risk of fouling the track. At a minimum, such written procedures shall address:

(1) Initial horn warning;

(2) Subsequent warning(s); and

(3) Alternative warnings in areas where sounding the horn adversely affects roadway workers (*e.g.*, in tunnels and terminals).

(b) Such audible warning shall not substitute for on-track safety procedures prescribed in this part.

[81 FR 37889, June 10, 2016]

§ 214.341 Roadway maintenance machines.

(a) Each employer shall include in its on-track safety program specific provisions for the safety of roadway workers who operate or work near roadway maintenance machines. Those provisions shall address:

§ 214.343

(1) Training and qualification of operators of roadway maintenance machines.

(2) Establishment and issuance of safety procedures both for general application and for specific types of machines.

(3) Communication between machine operators and roadway workers assigned to work near or on roadway maintenance machines.

(4) Spacing between machines to prevent collisions.

(5) Space between machines and roadway workers to prevent personal injury.

(6) Maximum working and travel speeds for machines dependent upon weather, visibility, and stopping capabilities.

(b) Instructions for the safe operation of each roadway machine shall be provided and maintained with each machine large enough to carry the instruction document.

(1) No roadway worker shall operate a roadway maintenance machine without having been trained in accordance with § 214.355.

(2) No roadway worker shall operate a roadway maintenance machine without having knowledge of the safety instructions applicable to that machine. For purposes of this paragraph, the safety instructions applicable to that machine means:

(i) The manufacturer's instruction manual for that machine; or

(ii) The safety instructions developed to replace the manufacturer's safety instructions when the machine has been adapted for a specific railroad use. Such instructions shall address all aspects of the safe operation of the crane and shall be as comprehensive as the manufacturer's safety instructions they replace.

(3) No employer shall assign roadway workers to work near roadway machines unless the roadway worker has been informed of the safety procedures applicable to persons working near the roadway machines and has acknowledged full understanding.

(c) Components of roadway maintenance machines shall be kept clear of trains passing on adjacent tracks. Where operating conditions permit roadway maintenance machines to be

49 CFR Ch. II (10–1–20 Edition)

less than four feet from the rail of an adjacent track, the on-track safety program of the railroad shall include the procedural instructions necessary to provide adequate clearance between the machine and passing trains.

[61 FR 65976, Dec. 16, 1996, as amended at 79 FR 66501, Nov. 7, 2014]

§ 214.343 Training and qualification, general.

(a) No employer shall assign an employee to perform the duties of a roadway worker, and no employee shall accept such assignment, unless that employee has received training in the on-track safety procedures associated with the assignment to be performed, and that employee has demonstrated the ability to fulfill the responsibilities for on-track safety that are required of an individual roadway worker performing that assignment.

(b) Each employer shall provide to all roadway workers in its employ initial or recurrent training once every calendar year on the on-track safety rules and procedures that they are required to follow.

(c) Except as provided for in § 214.353, railroad employees other than roadway workers, who are associated with on-track safety procedures, and whose primary duties are concerned with the movement and protection of trains, shall be trained to perform their functions related to on-track safety through the training and qualification procedures prescribed by the operating railroad for the primary position of the employee, including maintenance of records and frequency of training.

(d) Each employer of roadway workers shall maintain written or electronic records of each roadway worker qualification in effect. Each record shall include the name of the employee, the type of qualification made, and the most recent date of qualification. These records shall be kept available for inspection and photocopying by the Federal Railroad Administrator during regular business hours.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37889, June 10, 2016]

§214.345 Training for all roadway workers.

Consistent with §214.343(b), the training of all roadway workers shall include, as a minimum, the following:

- (a) Recognition of railroad tracks and understanding of the space around them within which on-track safety is required.
- (b) The functions and responsibilities of various persons involved with on-track safety procedures.
- (c) Proper compliance with on-track safety instructions given by persons performing or responsible for on-track safety functions.
- (d) Signals given by watchmen/lookouts, and the proper procedures upon receiving a train approach warning from a lookout.
- (e) The hazards associated with working on or near railroad tracks, including review of on-track safety rules and procedures.
- (f) Instruction on railroad safety rules adopted to comply with §214.317(b).

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37889, June 10, 2016]

§214.347 Training and qualification for lone workers.

Each lone worker shall be trained and qualified by the employer to establish on-track safety in accordance with the requirements of this section, and must be authorized to do so by the railroad that conducts train operations on those tracks.

(a) The training and qualification for lone workers shall include, as a minimum, consideration of the following factors:

- (1) Detection of approaching trains and prompt movement to a place of safety upon their approach.
- (2) Determination of the distance along the track at which trains must be visible in order to provide the prescribed warning time.
- (3) Rules and procedures prescribed by the railroad for individual train detection, establishment of working limits, and definite train location.
- (4) On-track safety procedures to be used in the territory on which the employee is to be qualified and permitted to work alone.

(5) Alternative means to access the information in a railroad's on-track safety manual when a lone worker's duties make it impracticable for the on-track safety manual to be readily available.

(b) Initial and periodic (as specified by §243.201 of this chapter) qualification of a lone worker shall be evidenced by demonstrated proficiency.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37889, June 10, 2016]

§214.349 Training and qualification of watchmen/lookouts.

(a) The training and qualification for roadway workers assigned the duties of watchmen/lookouts shall include, as a minimum, consideration of the following factors:

- (1) Detection and recognition of approaching trains.
- (2) Effective warning of roadway workers of the approach of trains.
- (3) Determination of the distance along the track at which trains must be visible in order to provide the prescribed warning time.
- (4) Rules and procedures of the railroad to be used for train approach warning.

(b) Initial and periodic (as specified by §243.201 of this chapter) qualification of a watchman/lookout shall be evidenced by demonstrated proficiency.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37890, June 10, 2016]

§214.351 Training and qualification of flagmen.

(a) The training and qualification for roadway workers assigned the duties of flagmen shall include, as a minimum, the content and application of the operating rules of the railroad pertaining to giving proper stop signals to trains and holding trains clear of working limits.

(b) Initial and periodic (as specified by §243.201 of this chapter) qualification of a flagman shall be evidenced by demonstrated proficiency.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37890, June 10, 2016]

§ 214.353

§ 214.353 Training and qualification of each roadway worker in charge.

(a) The training and qualification of each roadway worker in charge, or any other employee acting as a roadway worker in charge (*e.g.*, a conductor or a brakeman), who provides for the on-track safety of roadway workers through establishment of working limits or the assignment and supervision of watchmen/lookouts or flagmen shall include, at a minimum:

(1) All the on-track safety training and qualification required of the roadway workers to be supervised and protected, including the railroad's procedures governing good faith challenges in §§ 214.311(b) and (c) and 214.313(d).

(2) The content and application of the operating rules of the railroad pertaining to the establishment of working limits.

(3) The content and application of the rules of the railroad pertaining to the establishment or train approach warning.

(4) The relevant physical characteristics of the territory of the railroad upon which the roadway worker is qualified.

(5) The procedures required to ensure that the roadway worker in charge of the on-track safety of group(s) of roadway workers remains immediately accessible and available to all roadway workers being protected under the working limits or other provisions of on-track safety established by the roadway worker in charge.

(b) Initial and periodic (as specified by § 243.201 of this chapter) qualification of a roadway worker in charge shall be evidenced by demonstrated proficiency.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37890, June 10, 2016]

§ 214.355 Training and qualification of each roadway worker in on-track safety for operators of roadway maintenance machines.

(a) The training and qualification of roadway workers who operate roadway maintenance machines shall include, as a minimum:

(1) Procedures to prevent a person from being struck by the machine when the machine is in motion or operation.

49 CFR Ch. II (10–1–20 Edition)

(2) Procedures to prevent any part of the machine from being struck by a train or other equipment on another track.

(3) Procedures to provide for stopping the machine short of other machines or obstructions on the track.

(4) Methods to determine safe operating procedures for each machine that the operator is expected to operate.

(b) Initial and periodic (as specified by § 243.201 of this chapter) qualification of a roadway worker to operate roadway maintenance machines shall be evidenced by demonstrated proficiency.

[61 FR 65976, Dec. 16, 1996, as amended at 81 FR 37890, June 10, 2016]

§ 214.357 Training and qualification for operators of roadway maintenance machines equipped with a crane.

(a) In addition to the general training and qualification requirements for operators of roadway maintenance machines set forth in §§ 214.341 and 214.355 of this subpart, each employer shall adopt and comply with a training and qualification program for operators of roadway maintenance machines equipped with a crane to ensure the safe operation of such machines.

(b) Each employer's training and qualification program for operators of roadway maintenance machines equipped with a crane shall require initial and periodic qualification of each operator of a roadway maintenance machine equipped with a crane and shall include:

(1) Procedures for determining that the operator has the skills to safely operate each machine the person is authorized to operate; and

(2) Procedures for determining that the operator has the knowledge to safely operate each machine the person is authorized to operate. Such procedures shall determine that either:

(i) The operator has knowledge of the safety instructions (*i.e.*, the manufacturer's instruction manual) applicable to that machine; or

(ii) The operator has knowledge of the safety instructions developed to replace the manufacturer's safety instructions when the machine has been adapted for a specific railroad use.

Such instructions shall address all aspects of the safe operation of the crane and shall be as comprehensive as the manufacturer's safety instructions they replace.

(c) Each employer shall maintain records that form the basis of the training and qualification determinations of each operator of roadway maintenance machines equipped with a crane that it employs.

(d) Availability of records: Each employer required to maintain records under this part shall make all records available for inspection and copying/photocopying to representatives of FRA, upon request during normal business hours.

(e) Training conducted by an employer in accordance with operator qualification and certification required by the Department of Labor (29 CFR 1926.1427) may be used to satisfy the training and qualification requirements of this section.

[79 FR 66501, Nov. 7, 2014]

Subpart D—On-Track Roadway Maintenance Machines and Hi-Rail Vehicles

SOURCE: 68 FR 44407, July 28, 2003, unless otherwise noted.

§ 214.501 Purpose and scope.

(a) The purpose of this subpart is to prevent accidents and casualties caused by the lawful operation of on-track roadway maintenance machines and hi-rail vehicles.

(b) This subpart prescribes minimum safety standards for on-track roadway maintenance machines and hi-rail vehicles. An employer may prescribe additional or more stringent standards that are consistent with this subpart.

(c) Any working condition that involves the protection of employees engaged in roadway maintenance duties covered by this subpart but is not within the subject matter addressed by this subpart, including employee exposure to noise, shall be governed by the regulations of the U.S. Department of Labor, Occupational Safety and Health Administration.

§ 214.503 Good-faith challenges; procedures for notification and resolution.

(a) An employee operating an on-track roadway maintenance machine or hi-rail vehicle shall inform the employer whenever the employee makes a good-faith determination that the machine or vehicle does not comply with FRA regulations or has a condition that inhibits its safe operation.

(b) Any employee charged with operating an on-track roadway maintenance machine or hi-rail vehicle covered by this subpart may refuse to operate the machine or vehicle if the employee makes a good-faith determination that it does not comply with the requirements of this subpart or has a condition that inhibits its safe operation. The employer shall not require the employee to operate the machine or vehicle until the challenge resulting from the good-faith determination is resolved.

(c) Each employer shall have in place and follow written procedures to assure prompt and equitable resolution of challenges resulting from good-faith determinations made in accordance with this section. The procedures shall include specific steps to be taken by the employer to investigate each good-faith challenge, as well as procedures to follow once the employer finds a challenged machine or vehicle does not comply with this subpart or is otherwise unsafe to operate. The procedures shall also include the title and location of the employer's designated official.

§ 214.505 Required environmental control and protection systems for new on-track roadway maintenance machines with enclosed cabs.

(a) The following new on-track roadway maintenance machines shall be equipped with enclosed cabs with operative heating systems, operative air conditioning systems, and operative positive pressurized ventilation systems:

- (1) Ballast regulators;
- (2) Tampers;
- (3) Mechanical brooms;
- (4) Rotary scarifiers;
- (5) Undercutters; and

§ 214.507

(6) Functional equivalents of any of the machines identified in paragraphs (a)(1) through (a)(5) of this section.

(b) New on-track roadway maintenance machines, and existing on-track roadway maintenance machines specifically designated by the employer, of the types identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto, shall be capable of protecting employees in the cabs of the machines from exposure to air contaminants, in accordance with 29 CFR 1910.1000.

(c) An employer shall maintain a list of new and designated existing on-track roadway maintenance machines of the types identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto. The list shall be kept current and made available to the Federal Railroad Administration and other Federal and State agencies upon request.

(d) An existing roadway maintenance machine of the type identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto, becomes "designated" when the employer adds the machine to the list required in paragraph (c) of this section. The designation is irrevocable, and the designated existing roadway maintenance machine remains subject to paragraph (b) of this section until it is retired or sold.

(e) If the ventilation system on a new on-track roadway maintenance machine or a designated existing on-track roadway maintenance machine of the type identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto, becomes incapable of protecting an employee in the cab of the machine from exposure to air contaminants in accordance with 29 CFR 1910.1000, personal respiratory protective equipment shall be provided for each such employee until the machine is repaired in accordance with § 214.531.

(f) Personal respiratory protective equipment provided under paragraph (e) of this section shall comply with 29 CFR 1910.134.

(g) New on-track roadway maintenance machines with enclosed cabs, other than the types identified in paragraphs (a)(1) through (a)(5) of this sec-

49 CFR Ch. II (10–1–20 Edition)

tion or functionally equivalent thereto, shall be equipped with operative heating and ventilation systems.

(h) When new on-track roadway maintenance machines require operation from non-enclosed stations outside of the main cab, the non-enclosed stations shall be equipped, where feasible from an engineering standpoint, with a permanent or temporary roof, canopy, or umbrella designed to provide cover from normal rainfall and midday sun.

§ 214.507 Required safety equipment for new on-track roadway maintenance machines.

(a) Each new on-track roadway maintenance machine shall be equipped with:

(1) A seat for each operator, except as provided in paragraph (b) of this section;

(2) A safe and secure position with handholds, handrails, or a secure seat for each roadway worker transported on the machine. Each position shall be protected from moving parts of the machine;

(3) A positive method of securement for turntables, on machines equipped with a turntable, through engagement of pins and hooks that block the descent of turntable devices below the rail head when not in use;

(4) A windshield with safety glass, or other material with similar properties, if the machine is designed with a windshield. Each new on-track roadway maintenance machine designed with a windshield shall also have power windshield wipers or suitable alternatives that provide the machine operator an equivalent level of vision if windshield wipers are incompatible with the windshield material;

(5) A machine braking system capable of effectively controlling the movement of the machine under normal operating conditions;

(6) A first-aid kit that is readily accessible and complies with 29 CFR 1926.50(d)(2); and

(7) An operative and properly charged fire extinguisher of 5 BC rating or higher which is securely mounted and readily accessible to the operator from the operator's work station.

(b) Each new on-track roadway maintenance machine designed to be operated and transported by the operator in a standing position shall be equipped with handholds and handrails to provide the operator with a safe and secure position.

(c) Each new on-track roadway maintenance machine that weighs more than 32,500 pounds light weight and is operated in excess of 20 mph shall be equipped with a speed indicator that is accurate within ± 5 mph of the actual speed at speeds of 10 mph and above.

(d) Each new on-track roadway maintenance machine shall have its as-built light weight displayed in a conspicuous location on the machine.

[68 FR 44407, July 28, 2003, as amended at 69 FR 8839, Feb. 26, 2004]

§214.509 Required visual illumination and reflective devices for new on-track roadway maintenance machines.

Each new on-track roadway maintenance machine shall be equipped with the following visual illumination and reflective devices:

(a) An illumination device, such as a headlight, capable of illuminating obstructions on the track ahead in the direction of travel for a distance of 300 feet under normal weather and atmospheric conditions;

(b) Work lights, if the machine is operated during the period between one-half hour after sunset and one-half hour before sunrise or in dark areas such as tunnels, unless equivalent lighting is otherwise provided;

(c) An operative 360-degree intermittent warning light or beacon mounted on the roof of the machine. New roadway maintenance machines that are not equipped with fixed roofs and have a light weight less than 17,500 pounds are exempt from this requirement;

(d) A brake light activated by the application of the machine braking system, and designed to be visible for a distance of 300 feet under normal weather and atmospheric conditions; and

(e) Rearward viewing devices, such as rearview mirrors.

§214.511 Required audible warning devices for new on-track roadway maintenance machines.

Each new on-track roadway maintenance machine shall be equipped with:

(a) A horn or other audible warning device that produces a sound loud enough to be heard by roadway workers and other machine operators within the immediate work area. The triggering mechanism for the device shall be clearly identifiable and within easy reach of the machine operator; and

(b) An automatic change-of-direction alarm which provides an audible signal that is at least three seconds long and is distinguishable from the surrounding noise. Change of direction alarms may be interrupted by the machine operator when operating the machine in the work mode if the function of the machine would result in a constant, or almost constant, sounding of the device. In any action brought by FRA to enforce the change-of-direction alarm requirement, the employer shall have the burden of proving that use of the change-of-direction alarm in a particular work function would cause a constant, or almost constant, sounding of the device.

§214.513 Retrofitting of existing on-track roadway maintenance machines; general.

(a) Each existing on-track roadway maintenance machine shall have a safe and secure position with handholds, handrails, or a secure seat or bench position for each roadway worker transported on the machine. Each position shall be protected from moving parts of the machine.

(b) By March 28, 2005, each existing on-track roadway maintenance machine shall be equipped with a permanent or portable horn or other audible warning device that produces a sound loud enough to be heard by roadway workers and other machine operators within the immediate work area. The triggering mechanism for the device shall be clearly identifiable and within easy reach of the machine operator.

(c) By March 28, 2005, each existing on-track roadway maintenance machine shall be equipped with a permanent illumination device or a portable light that is securely placed and not

§214.515

49 CFR Ch. II (10–1–20 Edition)

hand-held. The illumination device or portable light shall be capable of illuminating obstructions on the track ahead for a distance of 300 feet under normal weather and atmospheric conditions when the machine is operated during the period between one-half hour after sunset and one-half hour before sunrise or in dark areas such as tunnels.

[68 FR 44407, July 28, 2003, as amended at 69 FR 8839, Feb. 26, 2004]

§214.515 Overhead covers for existing on-track roadway maintenance machines.

(a) For those existing on-track roadway maintenance machines either currently or previously equipped with overhead covers for the operator's position, defective covers shall be repaired, and missing covers shall be reinstalled, by March 28, 2005 and thereafter maintained in accordance with the provisions of §214.531.

(b) For those existing on-track roadway maintenance machines that are not already equipped with overhead covers for the operator's position, the employer shall evaluate the feasibility of providing an overhead cover on such a machine if requested in writing by the operator assigned to operate the machine or by the operator's designated representative. The employer shall provide the operator a written response to each request within 60 days. When the employer finds the addition of an overhead cover is not feasible, the response shall include an explanation of the reasoning used by the employer to reach that conclusion.

(c) For purposes of this section, overhead covers shall provide the operator's position with cover from normal rainfall and midday sun.

§214.517 Retrofitting of existing on-track roadway maintenance machines manufactured on or after January 1, 1991.

In addition to meeting the requirements of §214.513, after March 28, 2005 each existing on-track roadway maintenance machine manufactured on or after January 1, 1991, shall have the following:

(a) A change-of-direction alarm or rearview mirror or other rearward

viewing device, if either device is feasible, given the machine's design, and if either device adds operational safety value, given the machine's function. In any action brought by FRA to enforce this requirement, the employer shall have the burden of proving that neither device is feasible or adds operational safety value, or both, given the machine's design or work function.

(b) An operative heater, when the machine is operated at an ambient temperature less than 50 degrees Fahrenheit and is equipped with, or has been equipped with, a heater installed by the manufacturer or the railroad.

(c) The light weight of the machine stenciled or otherwise clearly displayed on the machine, if the light weight is known.

(d) Reflective material, or a reflective device, or operable brake lights.

(e) Safety glass when its glass is normally replaced, except that replacement glass that is specifically intended for on-track roadway maintenance machines and is in the employer's inventory as of September 26, 2003 may be utilized until exhausted.

(f) A turntable restraint device, on machines equipped with a turntable, to prevent undesired lowering, or a warning light indicating that the turntable is not in the normal travel position.

[68 FR 44407, July 28, 2003, as amended at 69 FR 8839, Feb. 26, 2004]

§214.518 Safe and secure positions for riders.

On or after March 1, 2004, a roadway worker, other than the machine operator, is prohibited from riding on any on-track roadway maintenance machine unless a safe and secure position for each roadway worker on the machine is clearly identified by stenciling, marking, or other written notice.

[69 FR 8839, Feb. 26, 2004]

§214.519 Floors, decks, stairs, and ladders of on-track roadway maintenance machines.

Floors, decks, stairs, and ladders of on-track roadway maintenance machines shall be of appropriate design and maintained to provide secure access and footing, and shall be free of oil, grease, or any obstruction which

Federal Railroad Administration, DOT

§ 214.527

creates a slipping, falling, or fire hazard.

§ 214.521 Flagging equipment for on-track roadway maintenance machines and hi-rail vehicles.

Each on-track roadway maintenance machine and hi-rail vehicle shall have on board a flagging kit that complies with the operating rules of the railroad if:

(a) The equipment is operated over trackage subject to a railroad operating rule requiring flagging; and

(b)(1) The equipment is not part of a roadway work group; or

(2) The equipment is the lead or trailing piece of equipment in a roadway work group operating under the same occupancy authority.

[69 FR 8839, Feb. 26, 2004]

§ 214.523 Hi-rail vehicles.

(a) The hi-rail gear of all hi-rail vehicles shall be inspected for safety at least annually and with no more than 14 months between inspections. Tram, wheel wear, and gage shall be measured and, if necessary, adjusted to allow the vehicle to be safely operated.

(b) Each employer shall keep records pertaining to compliance with paragraph (a) of this section. Records may be kept on forms provided by the employer or by electronic means. The employer shall retain the record of each inspection until the next required inspection is performed. The records shall be made available for inspection and copying during normal business hours by representatives of FRA and States participating under part 212 of this chapter. The records may be kept on the hi-rail vehicle or at a location designated by the employer.

(c) A new hi-rail vehicle shall be equipped with:

(1) An automatic change-of-direction alarm or backup alarm that provides an audible signal at least three seconds long and distinguishable from the surrounding noise; and

(2) An operable 360-degree intermittent warning light or beacon mounted on the outside of the vehicle.

(d)(1) The operator of a hi-rail vehicle shall check the vehicle for compliance with this subpart, prior to using the ve-

hicle at the start of the operator's work shift.

(2) A non-complying condition that cannot be repaired immediately shall be tagged and dated in a manner prescribed by the employer and reported to the designated official.

(3) Non-complying automatic change-of-direction alarms, backup alarms, and 360-degree intermittent warning lights or beacons shall be repaired or replaced as soon as practicable within seven calendar days.

§ 214.525 Towing with on-track roadway maintenance machines or hi-rail vehicles.

(a) When used to tow pushcars or other maintenance-of-way equipment, each on-track roadway maintenance machine or hi-rail vehicle shall be equipped with a towing bar or other coupling device that provides a safe and secure attachment.

(b) An on-track roadway maintenance machine or hi-rail vehicle shall not be used to tow pushcars or other maintenance-of-way equipment if the towing would cause the machine or hi-rail vehicle to exceed the capabilities of its braking system. In determining the limit of the braking system, the employer must consider the track grade (slope), as well as the number and weight of pushcars or other equipment to be towed.

§ 214.527 On-track roadway maintenance machines; inspection for compliance and schedule for repairs.

(a) The operator of an on-track roadway maintenance machine shall check the machine components for compliance with this subpart, prior to using the machine at the start of the operator's work shift.

(b) Any non-complying condition that cannot be repaired immediately shall be tagged and dated in a manner prescribed by the employer and reported to the designated official.

(c) The operation of an on-track roadway maintenance machine with a non-complying condition shall be governed by the following requirements:

(1) An on-track roadway maintenance machine with headlights or work lights

§ 214.529

that are not in compliance may be operated for a period not exceeding 7 calendar days and only during the period between one-half hour before sunrise and one-half hour after sunset;

(2) A portable horn may be substituted for a non-complying or missing horn for a period not exceeding seven calendar days;

(3) A fire extinguisher readily available for use may temporarily replace a missing, defective or discharged fire extinguisher on a new on-track roadway maintenance machine for a period not exceeding 7 calendar days, pending the permanent replacement or repair of the missing, defective or used fire extinguisher;

(4) Non-complying automatic change-of-direction alarms, backup alarms, and 360-degree intermittent warning lights or beacons shall be repaired or replaced as soon as practicable within 7 calendar days; and

(5) A structurally defective or missing operator's seat shall be replaced or repaired within 24 hours or by the start of the machine's next tour of duty, whichever is later. The machine may be operated for the remainder of the operator's tour of duty if the defective or missing operator's seat does not prevent its safe operation.

§ 214.529 In-service failure of primary braking system.

(a) In the event of a total in-service failure of its primary braking system, an on-track roadway maintenance machine may be operated for the remainder of its tour of duty with the use of a secondary braking system or by coupling to another machine, if such operations may be done safely.

(b) If the total in-service failure of an on-track roadway maintenance machine's primary braking system occurs where other equipment is not available for coupling, the machine may, if it is safe to do so, travel to a clearance or repair point where it shall be placed out of service until repaired.

§ 214.531 Schedule of repairs; general.

Except as provided in §§ 214.527(c)(5), 214.529, and 214.533, an on-track roadway maintenance machine or hi-rail vehicle that does not meet all the requirements of this subpart shall be

49 CFR Ch. II (10–1–20 Edition)

brought into compliance as soon as practicable within seven calendar days. If repairs are not made within seven calendar days, the on-track roadway maintenance machine or hi-rail vehicle shall be placed out of on-track service.

§ 214.533 Schedule of repairs subject to availability of parts.

(a) The employer shall order a part necessary to repair a non-complying condition on an on-track roadway maintenance machine or a hi-rail vehicle by the end of the next business day following the report of the defect.

(b) When the employer cannot repair a non-complying condition as required by § 214.531 because of the temporary unavailability of a necessary part, the employer shall repair the on-track roadway maintenance machine or hi-rail vehicle within seven calendar days after receiving the necessary part. The employer may continue to use the on-track roadway maintenance machine or hi-rail vehicle with a non-complying condition until receiving the necessary part(s) for repair, subject to the requirements of § 214.503. However, if a non-complying condition is not repaired within 30 days following the report of the defect, the employer shall remove the on-track roadway maintenance machine or hi-rail vehicle from on-track service until it is brought into compliance with this subpart.

(c) If the employer fails to order a part necessary to repair the reported non-complying condition, or if it fails to install an available part within the required seven calendar days, the on-track roadway maintenance machine or hi-rail vehicle shall be removed from on-track service until brought into compliance with this subpart.

(d) Each employer shall maintain records pertaining to compliance with this section. Records may be kept on forms provided by the employer or by electronic means. The employer shall retain each record for at least one year, and the records shall be made available for inspection and copying during normal business hours by representatives of FRA and States participating under part 212 of this chapter. The records may be kept on the on-track roadway maintenance machine

Federal Railroad Administration, DOT

§ 215.5

or hi-rail vehicle or at a location designated by the employer.

PART 215—RAILROAD FREIGHT CAR SAFETY STANDARDS

Subpart A—General

Sec.

- 215.1 Scope of part.
- 215.3 Application.
- 215.5 Definitions.
- 215.7 Prohibited acts.
- 215.9 Movement of defective cars for repair.
- 215.11 Designated inspectors.
- 215.13 Pre-departure inspection.
- 215.15 Periodic inspection.

Subpart B—Freight Car Components

- 215.101 Scope.

SUSPENSION SYSTEM

- 215.103 Defective wheel.
- 215.105 Defective axle.
- 215.107 Defective plain bearing box: General.
- 215.109 Defective plain bearing box: Journal lubrication system.
- 215.111 Defective plain bearing.
- 215.113 Defective plain bearing wedge.
- 215.115 Defective roller bearing.
- 215.117 Defective roller bearing adapter.
- 215.119 Defective freight car truck.

CAR BODIES

- 215.121 Defective car body.

DRAFT SYSTEM

- 215.123 Defective couplers.
- 215.125 Defective uncoupling device.
- 215.127 Defective draft arrangement.
- 215.129 Defective cushioning device.

Subpart C—Restricted Equipment

- 215.201 Scope.
- 215.203 Restricted cars.

Subpart D—Stenciling

- 215.301 General.
- 215.303 Stenciling of restricted cars.
- 215.305 Stenciling of maintenance-of-way equipment.

APPENDIX A TO PART 215—RAILROAD FREIGHT CAR COMPONENTS

APPENDIX B TO PART 215 [RESERVED]

APPENDIX C TO PART 215—FRA FREIGHT CAR STANDARDS DEFECT CODE

APPENDIX D TO PART 215—PRE-DEPARTURE INSPECTION PROCEDURE

AUTHORITY: 49 U.S.C. 20103, 20107; 28 U.S.C. 2461, note; and 49 CFR 1.89.

SOURCE: 44 FR 77340, Dec. 31, 1979, unless otherwise noted.

Subpart A—General

§ 215.1 Scope of part.

This part prescribes minimum Federal safety standards for railroad freight cars.

§ 215.3 Application.

(a) Except as provided in paragraphs (b) and (c) of this section, this part applies to each railroad freight car in service on:

(1) Standard gage track of a railroad; or

(2) Any other standard gage track while the car is being operated by, or is otherwise under the control of, a railroad.

(b) Sections 215.15 and 215.303 of this part do not apply to any car:

(1) Owned by a Canadian or Mexican Railroad; and

(2) Having a Canadian or Mexican reporting mark and car number.

(c) This part does not apply to a railroad freight car that is:

(1) Operated solely on track inside an industrial or other non-railroad installation; or

(2) Used exclusively in dedicated service as defined in § 215.5(d) of this part; or

(3) Maintenance-of-way equipment (including self-propelled maintenance-of-way equipment) if that equipment is not used in revenue service and is stenciled in accordance with § 215.305 of this part.

(4) Operated in a passenger train and that is inspected, tested, maintained, and operated pursuant to the requirements contained in part 238 of this chapter.

[44 FR 77340, Dec. 31, 1979, as amended at 65 FR 41305, July 3, 2000]

§ 215.5 Definitions.

As used in this part:

(a) *Break* means a fracture resulting in complete separation into parts;

(b) *Cracked* means fractured without complete separation into parts, except that castings with shrinkage cracks or hot tears that do not significantly diminish the strength of the member are not considered to be “cracked”;