4910-06-P

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Part 214

[Docket No. FRA-2008-0059, Notice No. 8]

RIN 2130-AC37

Railroad Workplace Safety; Adjacent-Track On-Track Safety for Roadway Workers

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Final rule; response to petitions for reconsideration.

SUMMARY: This final rule responds to two petitions for reconsideration of FRA's final rule published November 30, 2011, which would have amended the existing regulations governing the on-track safety protections of roadway workers from the movement of trains or other on-track equipment on an adjacent controlled track, but which has not taken effect. In response to the petitions for reconsideration, FRA delayed the effective date of the November 30, 2011, final rule until July 1, 2013 (subsequently delayed until July 1, 2014), and requested comments on the petitions. This document further responds to the petitions, addresses the comments on the petitions, and amends and clarifies certain sections of the November 30, 2011, final rule.

DATES: The amendments in this final rule are effective on July 1, 2014.

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SUPPLEMENTARY INFORMATION:

I. Executive Summary

On November 30, 2011, FRA published a final rule (Final Rule) governing the on-track safety protections of roadway workers from train movements on adjacent controlled tracks. 76 FR 74586. The Final Rule requires that railroads adopt specified on-track safety procedures to protect certain roadway work groups from the movement of trains or other on-track equipment on an adjacent controlled track. These on-track safety procedures are 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. An adjacent controlled track is a controlled track whose track center is spaced 19 feet or less from the track center of an occupied track.

After publication of the Final Rule, FRA received two petitions for reconsideration (Petitions) of certain of the Final Rule's requirements. The requests made in the Petitions are described in detail below. In response to the Petitions, FRA is modifying the Final Rule (Final Rule Amendments; Amendments) to do the following: (1) expand the definition of "minor correction" to include welding and certain uses of any handheld power tools; (2) increase the maximum authorized speed at which passenger trains may move on an adjacent controlled track to 40 mph while roadway workers

continue their on-ground work on the occupied track; (3) delete the requirement that a non-controlled track whose track center is spaced 19 feet or less from the occupied track be treated as an adjacent controlled track; (4) exempt rail-bound vehicles (on-track vehicles not equipped with highway wheels) used for conducting inspections or performing minor correction work (including welding) while applying the same limitations that apply to hi-rail vehicles; (5) and expand the exception pertaining to repairs performed alongside the roadway work machine or equipment to include work within the perimeter of the machine or equipment. FRA previously delayed the effective date of the Final Rule until July 1, 2014 (78 FR 33754). FRA is denying the request to permit roadway workers to resume work after the leading-end of a train or other on-track equipment traveling over 25 mph (40 mph passenger) has passed a roadway work group on an adjacent controlled track, and has retained the Final Rule's requirement that the entire train must pass the work zone.

The Amendments and the other issues raised by the Petitions are described in further detail below, and the discussions of the items being modified should be read in conjunction with the specific discussion in the Section-by-Section Analysis that identifies the modifications being made to the text of the Final Rule. For a full discussion of those aspects of the rulemaking and the Final Rule that remain unchanged, FRA respectfully refers interested parties to the agency's preamble discussions and Section-by-Section Analysis of the Final Rule and the NPRM. See 76 FR 74586 and 74 FR 61633, respectively.

FRA estimated the costs associated with the additional flexibilities provided by the Amendments being made in response to the Petitions in terms of increased risk and

the benefits in terms of cost savings relative to the burdens imposed by the Final Rule. The table below presents the present value of these estimates for the first 20 years of this rule discounted at 3 percent and 7 percent.

Amendments to the Final Rule	**Potential Cost Implications**	**Benefits: Estimated Cost Savings (PV, 7%)**	**Benefits: Estimated Cost Savings (PV, 3%)**
Expanding the definition of "minor correction" to include welding and certain uses of any handheld power tools.	Negligible. Very small increase in risk. No quantifiable increases in casualties.	$158.9 Million[1]	$223.2 Million
Increasing the maximum authorized speed at which passenger trains may move on an adjacent controlled track to 40 mph while roadway workers continue their on-ground work on the occupied track.	Negligible.	$33.4 Million[2] This estimated benefit only considers cost savings for LIRR and Metro-North.	$46.9 Million This estimated benefit only considers cost savings for LIRR and Metro-North.
Deleting the requirement that a non-controlled track whose track center is spaced 19 feet or less from the occupied track be treated as an adjacent controlled track.	None: FRA has no record of past casualties covered by this provision.	$8,000[3]	$11,200
Exempting rail-bound vehicles (on-track vehicles not equipped with highway wheels) used for conducting inspections, performing minor correction work (including welding), while applying the same limitations that apply to hi-rail vehicles.	N/A	N/A	N/A
Expanding the exception pertaining to repairs performed alongside the roadway work machine or equipment to include work within	Negligible. Minor reduction in the safety benefit of workers extricating	$149.2 Million[4] Non-quantified benefits include	$208.3 Million Non-quantified

[1] From FRA staff estimate.
[2] See discussion in section IV.A.2 below. Extrapolated from Long Island Rail Road (LIRR) estimate to include the Metro-North Commuter Railroad Company, in proportion to passenger miles.
[3] From FRA staff estimate.
[4] The cost savings estimate is based on an annual $14 million in costs from AAR's comment on the Petitions. FRA believes that the amendments to the Final Rule will avoid these costs that AAR's comment raised.

the perimeter of the machine or equipment.	themselves from under machinery so as to be safe in the event a collision with the machinery.	lowered injury risks due to fewer instances of workers having to extract themselves from a machine each time a train passes.	benefits include lowered injury risks due to fewer instances of workers having to extract themselves from a machine each time a train passes.
Total		$341.6 Million	$478.4 Million

All values are discounted (PV, 7 and 3 %) for a 20-year period.

II. Background

On January 26, 2005, the Railroad Safety Advisory Committee (RSAC) formed the roadway worker protection (RWP) Working Group to consider specific actions to advance the on-track safety of employees of covered railroads and their contractors who are engaged in maintenance-of-way activities throughout the general system of railroad transportation, including clarification of existing requirements in 49 CFR part 214. The Working Group's assigned task was to review the existing RWP regulation, technical bulletins, and a safety advisory dealing with on-track safety for roadway workers, and, as appropriate, consider enhancements to the existing rule that would further reduce the risk of serious injury or death to roadway workers. The Working Group was directed to report specific actions identified as appropriate, including planned milestones for completion of projects and progress towards completion, to the full RSAC at each scheduled RSAC meeting.

The Working Group was comprised of members from the following organizations:

- American Public Transportation Association (APTA);

- American Short Line and Regional Railroad Association (ASLRRA);
- American Train Dispatchers Association;
- Association of American Railroads (AAR), including members from BNSF Railway Company (BNSF), Canadian National Railway Company (CN), Canadian Pacific Railway, Limited (CP), Consolidated Rail Corporation (Conrail), CSX Transportation, Inc. (CSXT), The Kansas City Southern Railway Company (KCS), Norfolk Southern Corporation railroads (NS), and Union Pacific Railroad Company (UP);
- Belt Railroad of Chicago;
- Brotherhood of Locomotive Engineers and Trainmen;
- Brotherhood of Maintenance of Way Employes Division (BMWED);
- Brotherhood of Railroad Signalmen (BRS);
- FRA;
- Indiana Harbor Belt Railroad;
- Long Island Rail Road (LIRR);
- Metro-North Commuter Railroad Company (Metro-North);
- Montana Rail Link;
- National Railroad Construction and Maintenance Association;
- National Railroad Passenger Corporation;
- Northeast Illinois Regional Commuter Railroad Corporation;
- RailAmerica, Inc.;
- Southeastern Pennsylvania Transportation Authority;
- United Transportation Union; and

- Western New York and Pennsylvania Railroad.

The Working Group held 12 multi-day meetings and was able to reach consensus on 32 separate items related to how to amend existing part 214's roadway worker protection requirements. On June 26, 2007, the full RSAC voted to accept the recommendations presented by the Working Group.

One of the issues on which the Working Group was able to reach consensus dealt specifically with adjacent-track on-track safety issues. In light of roadway worker fatality trends involving adjacent track protections, and to expedite the lowering of the safety risk associated with roadway workers fouling adjacent tracks, FRA decided to undertake this rulemaking proceeding separately, and in advance of a rulemaking addressing all of the consensus items, to specifically address adjacent-track safety issues contemplated by the Working Group. Accordingly, FRA published an NPRM addressing adjacent-track on-track safety on July 17, 2008 (73 FR 41214), but formally withdrew the NPRM on August 13, 2008 (73 FR 47124). FRA then issued a revised NPRM, which was published on November 25, 2009 (74 FR 61633), and the Final Rule, which was published on November 30, 2011 (76 FR 74586), and which was to become effective on May 1, 2012.[5] The Final Rule, upon its effective date, will replace FRA's existing provision governing adjacent-track on-track safety procedures for roadway workers at 49 CFR 214.335(c). That existing provision only requires that train approach warning be provided on adjacent tracks that are not included within working limits for roadway work groups engaged in large-scale maintenance or construction projects. The Final Rule specifies more comprehensive on-track safety procedures that must be adopted and

[5] The Final Rule is now scheduled to take effect July 1, 2014. 78 FR 33754.

followed to protect roadway workers from the movement of trains or other on-track equipment on an “adjacent controlled track”. An “adjacent controlled track” is a track whose track center is spaced 19 feet or less from the track center of the occupied track on which a roadway work group is conducting work with at least one of the roadway workers on the ground engaged in a common task with on-track, self-propelled equipment or coupled equipment. The Final Rule requires that a non-controlled track whose track center is spaced 19 feet or less from the track center of the occupied track be treated as an adjacent controlled track for purposes of establishing on-track safety when there is an adjacent controlled track on the opposite side of the occupied track. When train or other on-track equipment movements on an adjacent controlled track are permitted to be made at speeds greater than 25 mph, roadway workers on the occupied track must cease work and occupy a predetermined place of safety. When movements on the adjacent controlled tracks are permitted to be made at speeds of 25 mph or less, the Final Rule permits roadway workers on the occupied track to continue work, provided that the work is performed exclusively between the rails of the occupied track, and 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. The Final Rule also establishes three categories of exceptions: (1) on-ground work performed on a side of the occupied track meeting specified condition(s); (2) maintenance or repairs performed alongside machines or equipment on the occupied track; and, (3) work activities involving certain equipment and purposes. If the equipment specified in one of the exceptions is being used for inspection or minor correction purposes, and otherwise meet the criteria for the

exception, the work group would not be required to establish adjacent-track on-track safety. In the Final Rule, FRA added a definition for the term "minor correction" that did not include welding activities or work involving power hand tools other than handheld pneumatic power tools.

In response to the Final Rule, FRA received two petitions for reconsideration that raised substantive issues. AAR and ASLRRA filed a joint Petition (AAR/ASLRRA Joint Petition), and APTA also filed a Petition (APTA's Petition). The AAR/ASLRRA Joint Petition included a request for a delay in the effective date of the Final Rule until July 1, 2013. The Petitions raised issues relating to the cost-benefit analysis of the Final Rule, and also requested relief from several specific provisions of the Final Rule, principally related to the following subjects: the definition of "minor correction"; the requirement that a roadway work group cease working until the trailing end of a train authorized to travel more than 25 mph has passed the roadway work group; the treatment of an adjacent non-controlled track as a controlled track; an additional exception for maintenance or repairs being performed within the perimeter of a roadway maintenance machine; an additional exception for manual inspections being conducted by rail bound vehicles; the release of working limits when the roadway work group is in the clear; the application of the Final Rule to repair and maintenance of roadway maintenance machines; the effective date of the Final Rule; and the maximum speed at which passenger trains may pass a roadway work group on an adjacent occupied track while the roadway work group continues its on-ground work on the occupied track.

On March 8, 2012, FRA published a final rule delaying the effective date of the Final Rule until July 1, 2013, and establishing a 60-day comment period in order to

permit interested parties an opportunity to respond to the Petitions. 77 FR 13978. FRA received five comments on the Petitions from the following parties: AAR; BMWED and BRS (BMWED/BRS joint comment); APTA; LIRR; and Metro-North. Some of the comments raised additional substantive issues or provided further detailed information on the issues already raised in the Petitions. The Petitions and the comments on the Petitions are available for review in the docket for this rulemaking.[6] On August 31, 2012, FRA published a Federal Register document which explained that, due to the complex issues raised and extensive estimates provided in the Petitions and public comments received, FRA was continuing to formulate an appropriate response. 77 FR 53164. FRA noted that the response to the Petitions would be published as soon as practicable. On June 5, 2013, FRA published another final rule delaying the effective date of the Final Rule until July 1, 2014, explaining that FRA's response to the Petitions was still being reviewed, and that this effective date would allow railroads appropriate time to implement the requirements of, and train their employees on, the requirements of the Amended Final Rule prior to its effective date. 78 FR 33754. Below, this document addresses all of the issues raised in the Petitions and also in the public comments received in response to the Petitions.

III. Issues Raised by the Petitions

A. Cost-Benefit Analysis

Both Petitions raised concern with FRA's cost-benefit analysis of the Final Rule requirements, such as by saying that the Final Rule did not accurately account for the

[6] See Docket No. FRA-2008-0059; available online at http://www.regulations.gov/#!docketDetail;D=FRA-2008-0059.

costs of the Final Rule and that the Final Rule overstated its potential benefits (AAR/ASLRRA). AAR, APTA, LIRR, and Metro-North also raised concerns related to the cost of the Final Rule's requirements in their comments on the Petitions. FRA has chosen to grant many of the requests for relief raised in the Petitions. Thus, many of the concerns related to cost have been alleviated, as is explained further below. Further, FRA has calculated the costs and benefits of the Amended Final Rule based on information conveyed in the Petitions and in the comments. The chart below reflects a comparison of (1) the costs and benefits of the Final Rule as originally estimated by FRA, (2) the costs and benefits of the Final Rule as asserted by AAR, and (3) the costs and benefits of the Amended Final Rule as currently estimated by FRA[7]:

Estimated Cost-Benefit Comparison*	**Costs**	**Benefits**
FRA's Original Estimate of 20-Year Costs and Benefits of the Final Rule	$151 Million	$151 Million
AAR's Asserted 20-Year Costs and Benefits of the Final Rule as Asserted in Comments on Petition for Reconsideration	$2.1 Billion	$64 Million
FRA's Current Estimate of the 20-Year Costs and Benefits of the	$22 Million	$108 Million

[7] The difference between FRA's estimate on the costs and benefits of the Amended Final rule relative to AAR's estimate as stated in its comment on the Petitions is due to both regulatory changes being made in the Final Rule Amendments and differences in how FRA and AAR formulated the estimates. AAR's estimate in its comment on the Petitions is not broken down by specific provision of the Final Rule, so within a given cost category FRA's analysis may differ for multiple reasons. AAR's estimate does break costs into five categories: additional watchmen needed to comply with the Final Rule; train delay; lost productivity; training of maintenance of way employees; and job briefings. The largest cost category AAR estimates involves the need for additional watchmen/lookouts, which AAR estimates will cost approximately $1.4 billion over 20 years at a 7 percent discount rate. Under the Amended Final Rule, FRA does not believe new watchmen/lookouts will need to be hired (see below discussion). FRA's conclusion is based on an analysis of the combination of relief granted in the Final Rule Amendments and differences between how FRA and AAR understand that railroads will comply with the Amended Final Rule's requirements.

Amended Final Rule		

*PV 7-Percent for all figures listed.

While not required to complete a Regulatory Impact Analysis (RIA) in responding to petitions for reconsideration, FRA has done so here, in section V.A. of the preamble below. The RIA below addresses the five modifications being made to the Final Rule, and the resultant cost-savings impacts and qualitative benefits of those modifications. The RIA for the Final Rule Amendments also takes into account the new value of a statistical life (VSL) to be used for DOT analyses assessing the benefits of rulemakings.[8]

Further, FRA has also completed a sensitivity analysis (Special Sensitivity Analysis) of the Amended Final Rule that will be posted in the public docket for this rulemaking. While also not required to complete such a supplementary analysis in responding to petitions for reconsideration, FRA has done so here in order to fully inform all interested parties of the costs and benefits associated with the this rulemaking in its entirety (to include the modifications being made by the Amendments) after considering all of the information provided in the Petitions related to the Final Rule's RIA. The Special Sensitivity Analysis addresses the specific cost-benefit related items raised in the Petitions and in the comments that are not otherwise addressed by the modifications of the Final Rule and the interpretations explained below. (See the Special Sensitivity Analysis, the RIA below, and the discussion in section III.C. of the preamble below for

[8] Since publication of the Final Rule, the value of a statistical life (VSL) to be used for DOT analyses assessing the benefits of preventing fatalities has increased to $9.1 million, allowing for 1.07 percent annual growth in median real wages in future years before discounting to present value. The revised benefit analyses for the Amendments and the Amended Final Rule utilized this updated VSL. See "Guidance on Treatment of the Economic Value of a Statistical Life in U.S. Department of Transportation Analyses"; available online at http://www.dot.gov/regulations/economic-values-used-in-analysis.

further discussion related to the costs of the "trailing end" provision at § 214.336(b)(2) and any resultant train delays.)

1. Training Costs

For purposes of the Special Sensitivity Analysis, FRA has adjusted its estimate for the amount of time that it would take to train roadway workers on the requirements of this rulemaking. FRA had originally estimated that it would take five minutes of additional training for roadway workers in year 1, and two minutes of additional training per year in subsequent years. AAR's comment asserts that four hours of additional training time will be required in year 1, and one hour of additional training time per year thereafter. Based on AAR's assertion, along with FRA staff experience in teaching the subject matter contained in the Final Rule internally, FRA has adjusted its training estimate in the Special Sensitivity Analysis to four hours for year 1, and to one hour for each year thereafter. This adjustment raised the training cost estimate in the Special Sensitivity Analysis from $182,271 (when discounted at 7 percent over 20 years) to $12.17 million (when discounted at 7 percent over 20 years). The details of this calculation may be found in section 2.1 the Special Sensitivity Analysis. These costs are not affected by the Amendments, in which FRA is removing burdens that it had not included in training cost estimates previously.

2. Casualty Estimates and Injury Data

The AAR/ASLRRA Joint Petition stated that "the record just does not support a finding that there will be benefits in the areas addressed by this petition for reconsideration." The AAR/ASLRRA Joint Petition did not allege that the number of injuries that FRA estimated would be prevented by the Final Rule (93.6) over 10 years

was too high, but AAR's later comment on the Petitions directly challenged the number of such injuries. Specifically, AAR estimated that only 13 of 90 total injuries that AAR identified in an analysis of non-fatal injuries from 1999-2008 should be included, resulting in AAR's adjustment of FRA's estimate from 9.36 injuries prevented per year to 1.35. AAR claimed that reports of the other 77 injuries specified involvement of maintenance-of-way equipment or construction equipment, or no equipment at all, and that the equipment was probably working in the same gangs and probably on the occupied track in most cases.

AAR apparently did not consider an incident in which a roadway worker was struck by maintenance-of-way equipment as relevant to this rule,[9] and that view could account for some of the difference between the FRA and AAR estimates. However, upon further review of the narratives providing more details as to the circumstances and extent of the injuries, FRA has determined that its original estimate was too high. For purposes of the revised economic analysis in the Special Sensitivity Analysis, FRA has used AAR's injury estimate as stated in its comment on the Petitions by adjusting it to 1.35 injuries per year. However, FRA believes the number of injuries per year could likely be increased to 1.62, at a minimum, because 1.62 is the AAR estimate of 1.35 per year, plus 20 percent. The 20-percent increase is based on findings from the original RWP rulemaking in 1996, where FRA found that roughly 20 percent of RWP injuries had been incorrectly assigned to other cause codes. The reduction in estimated number of injuries

[9] It appears AAR failed to consider a roadway worker's being struck by maintenance-of-way equipment as relevant despite that the Final Rule addresses movements of "other on-track equipment" on adjacent controlled tracks and establishes a 25-foot buffer zone between roadway workers and such equipment as a condition for permitting certain work to continue on the occupied track during low-speed movements on the adjacent-controlled track.

would reduce the estimated benefit over 20 years by $58,571,993 using a 7-percent discount factor or $42,717,512 using a 3-percent discount factor. This represents a roughly 28-percent decrease in total benefits estimated by FRA.

In addition, the AAR/ASLRRA Joint Petition and the AAR comment challenged the number of fatalities that FRA estimated would have been prevented by the Final Rule. Metro-North, in its comment, offered to partner with FRA to perform a safety analysis of the adjacent-track scenarios for which it requested relief to demonstrate that the Final Rule would not save .6 fatalities annually. (Metro-North's comment did not provide a suggested fatality estimate.) AAR's comment argued that in four of the seven fatalities discussed in Appendix E to the Final Rule's RIA (Appendix E), that a significant level of roadway worker protection was already being provided on the adjacent track and that the incidents could just as well have occurred under the Final Rule. As a result, AAR explained, FRA's estimate of .6 fatalities per year should be reduced by 4/7 to .34. Note, however, that AAR apparently intended to reduce FRA's estimate by 3/6 to .3, as the first incident listed in Appendix E that AAR challenged was not included in FRA's estimate of the benefits because it occurred in 1998, and was outside of the 10-year data period of 1999-2008. Appendix E included all of the relevant adjacent-track fatalities since the original RWP rule went into effect in 1997. Since publication of the Final Rule, a roadway worker fatality occurred on July 5, 2013, in Chicago, Illinois, when a railroad employee was struck by a train passing on an adjacent controlled track. That incident remains under investigation by FRA and the National Transportation Safety Board.

Further, FRA stands by including in the estimate of benefits incidents number 3 and 5 as listed in Appendix E that AAR's comment challenged. Incident number 3 as

listed in Appendix E involved a surfacing gang with several roadway workers on the ground working in common with the on-track self-propelled equipment on the occupied track. The fatally injured employee did not have adjacent controlled track protection in place at the time of the incident. He was struck while fouling the adjacent track. The Final Rule would have required, at a minimum, that train approach warning have been provided when the train approached on the adjacent track. If the Final Rule's requirements had been in effect, the roadway worker in charge would have been required to ensure that all roadway workers (including himself) were clear of the adjacent controlled track prior to releasing foul time authority for a train movement on the adjacent track, and then, would also have had to employ train approach warning as the form of on-track safety on the adjacent track. When this incident occurred, the train was traveling at 45 mph at impact. The Final Rule would have required that that the freight train's speed be reduced to 25 mph when passing the roadway work group on the occupied track if their work was to continue while the train passed. Further, the Final Rule would have prohibited any roadway worker from being in the foul of the adjacent track or beyond the plane of the rail of the occupied track closest to the adjacent controlled track once the train was authorized through the working limits or when a warning was provided by a watchman/lookout utilizing train approach warning. Observance of the Final Rule's requirements would have prevented this fatality.

Incident number 5 as listed in Appendix E also involved a roadway work group (surfacing gang) performing work on the ground on an occupied track in common with on-track, self-propelled equipment (tamper and regulator). Under the Final Rule, the adjacent controlled track (13'6" track centers) would have required the establishment of

working limits any time the regulator wing was deployed toward the adjacent controlled track, and, at a minimum, that train approach warning be used as the method of on-track safety for the adjacent track at all other times. Adjacent track protection was not in place at the time of the accident. The Final Rule would require that freight train speeds be reduced to 25 mph for adjacent track movements where work continues on the occupied track. The train in this incident was moving on the adjacent track at 50 mph. The roadway worker in charge was fouling the adjacent controlled track when struck. Under the Final Rule the nearest he or she would have been allowed to be to the occupied track was in the gage of the occupied track without breaking the plane of the rail closest to the adjacent track that the train was moving on, but only then if the freight train's speed had been limited to 25 mph (otherwise he or she would have had to cease work and occupy a place of safety if the train was authorized to pass at its actual speed of 50 mph).

Finally, AAR argued that the fatality in incident number 6 listed in Appendix E would not have been prevented by compliance with the Final Rule's requirements. FRA disagrees. Again, under the Final Rule's requirements, the struck employee would have had to receive train approach warning as the train moved toward the struck employee's location on the adjacent controlled track after foul time (which had been previously been established on the adjacent controlled track) was released. Even though FRA disagrees with AAR regarding this fatality that occurred on a commuter railroad, in the accompanying Special Sensitivity Analysis FRA has not counted this fatality as a benefit of the Amended Final Rule. Instead, FRA has only calculated benefits for five fatalities that occurred during the 1999-2008 analysis period, as FRA focused its analysis on

impacts affecting freight operations in light of AAR's submissions after publication of the Final Rule.

AAR's comment argued that some of the requirements of the Final Rule are similar to existing requirements that were not followed in some of the incidents. As mentioned above, however, given the respective speeds of 45 and 50 mph at which the trains were passing the roadway work groups at the time incident numbers 3 and 5 occurred under the requirements of the Amended Final Rule all roadway workers would have had to have previously occupied a predetermined place of safety upon notification that a train was being permitted through the working limits at a speed of greater than 25 mph.[10] As AAR's comment also mentioned, for both incident numbers 3 and 5, it does not appear there was any form of on-track safety was being provided on the adjacent controlled tracks at the time those incidents occurred. Further, the procedures for adjacent-track on-track safety set forth in the Final Rule are more comprehensive and specific (e.g., with regard to where the roadway workers are permitted to be located during the time that a train or other on-track equipment is authorized to pass the roadway workers' location), and FRA's inclusion of these fatalities is supported. In addition, the heightened job briefing requirements of the Final Rule will raise awareness of adjacent-track movements and the required roadway worker protections from such movements.

3. Miscellaneous Costs

This section discusses assorted cost items that are not otherwise explained below and that the AAR/ASLRRA Joint Petition and AAR's comment asserted were missing

[10] Incident number 1 that AAR's comment challenged occurred in 1998 and was not included in the Final Rule RIA's benefit analysis,

from the RIA or estimated inaccurately. First, the AAR/ASLRRA Joint Petition and the AAR comment discussed the potential need for railroads to purchase more trucks in which to transport additional roadway workers to work sites. This concern appeared to be particularly related to the Final Rule's definition of "minor correction" as that definition excluded welding activities and also inadvertently described hand-operated power tools more narrowly than FRA had intended. In the Amendments FRA has expanded that definition to both include welding and account for additional hand operated power tools as explained below; therefore, AAR's cost concern has been alleviated. Further, FRA's decision to include rail-bound vehicles in the "hi-rail" exception per AAR's request further addresses this cost concern.

Second, AAR's comment addressed the number of workdays per year (195) that FRA had assumed in the Final Rule for purposes of estimating costs, stating that it was a somewhat low, but still reasonable, estimate for large productions gangs rather than the smaller gangs that the Final Rule would most affect. AAR instead recommended that FRA estimate costs using the assumption of 250 workdays per year.

The number of workdays per year was calculated at the time that FRA published the first NPRM in this rulemaking. In the first NPRM, the proposed rule text excluded hi-rails without condition. As the "hi-rail" exception was later narrowed during this rule's development, FRA's assumption of 195 workdays per year was not adjusted to take into account that roadway work groups work more continuously throughout the year utilizing hi-rail vehicles only. However, as FRA has made the below-described modifications to the Final Rule (e.g., expanding the "hi-rail" exception by modifying the definition of "minor correction" and including other rail-bound vehicles), FRA believes

that AAR's concern regarding the number of shifts being used has been addressed. After reviewing timetables and tonnage data from two of the four largest Class I railroads in light of the different schedules of large production gangs and smaller maintenance gangs, FRA believes that its original estimate (combined with the modifications made to the Final Rule) of 195 workdays per year was actually conservative, and that the number of workdays could be adjusted down to 185 days. However, for purposes of the Special Sensitivity Analysis, in order to be very conservative, FRA has accepted the AAR estimate of 250 workdays per year for section gangs and bridge gangs, but has used 180 days per year for surfacing gangs. Based on FRA experience, these gangs tend to work during a more limited season, and FRA also used actual production gang data from a large Class I railroad to help estimate actual shifts.

Next, the AAR/ASLRRA Joint Petition and AAR's comment both stated that the Final Rule would require the hiring of additional watchmen/lookouts, and that FRA did not account for the costs of hiring those new employees. Metro-North's comments expressed concern that four of the Final Rule's requirements would necessitate hiring additional watchmen/lookouts, and that those costs would outweigh the benefits. FRA has largely alleviated those stated cost concerns with the modifications made in the Amendments. FRA's modifications to the definition of "minor correction" and the addition of rail-bound vehicles to the "hi-rail" exception specifically address three of Metro-North's four stated concerns.[11] FRA does not believe that railroads will have to hire additional watchmen/lookouts to comply with the Amended Final Rule, as the

[11] Metro-North's fourth concern regarding the need for watchmen/lookouts for roadway workers performing maintenance or repair is addressed further below.

modifications being made here eliminate the need to hire additional watchmen/lookouts for the welding and section gangs that the AAR/ASLRRA Joint Petition specifically discussed.

Further, the Joint Petition and the AAR comment discussed the need to hire additional watchmen/lookouts for small division surfacing gangs, and generally to hire more roadway workers to make up for lost productivity as a result of the need to stop work and clear the occupied track when trains pass the work zone under the Final Rule. However, as is further discussed below and in the Special Sensitivity Analysis, FRA conducted an analysis of the Amended Final Rule's requirements, and has found that stopping work would be more costly than slowing freight trains for any likely roadway work groups on an adjacent occupied track once the volume of train traffic reaches a certain level, especially since stopping work increases the time of track occupancy required to perform the maintenance, and the track occupancy itself by the roadway work group is the most costly factor involved in the analysis.

With regard to the concern in AAR's comment regarding the need to hire additional watchmen/lookouts for small division surfacing gangs, FRA notes that in such small division surfacing gangs oftentimes an existing member of the roadway work group, such as the roadway worker in charge or another roadway maintenance machine operator, is available to act as a watchman/lookout when necessary. Further, existing § 214.335(c) has long required that train approach warning for movements on adjacent tracks not included within working limits be provided to roadway work groups engaged in large-scale maintenance or construction. In addition, on-track safety on an adjacent track is already required to be provided if roadway workers have the potential to foul that

adjacent track. In the instances where watchmen/lookouts are deployed under the Final Rule, those watchmen/lookouts are roadway workers who will already be performing roadway work along the railroad right of way, and FRA is unable to quantify whether there are increased risks while performing duties as a watchman/lookout versus performing other roadway work duties as part of the same roadway work group. Last, the concerns regarding train delay and lost productivity that were raised by the AAR/ASLRRA Joint Petition and in several comments are addressed by the modifications being made to the Final Rule that are addressed in the discussions below, and in the Special Sensitivity Analysis.

B. Definition of "Minor Correction" (Section 214.336(a)(3) of the Final Rule)

One of the exceptions to the Final Rule's requirement for adjacent-track on-track safety permits work of a roadway work group to continue during times that the roadway work group is exclusively performing work activity involving a hi-rail vehicle being used "for inspection or minor correction purposes." The Final Rule defined "minor correction" as "one or more repairs of a minor nature, including, but not limited to, spiking, anchoring, hand tamping, and joint bolt replacement that is accomplished with hand tools or handheld pneumatic tools only. The term does not include welding, machine spiking, machine tamping, or any similarly distracting repair."

Both the AAR/ASLRRA Joint Petition and AAR's comment argued that the definition of "minor correction" should (i) include, not exclude, welding (because the welders typically confine their movements to the track on which they are working), and (ii) should not be limited to handheld pneumatic tools but rather expanded to encompass all hand tools, such as gas- and diesel-powered, hydraulic, electric, pneumatic, and

perhaps others. Metro-North raised similar concerns in its comment. AAR's comment asserted that, without these two changes to the Final Rule, the industry would incur a year 1 cost of $93 million and in subsequent years an annual cost of $82 million. The AAR/ASLRRA Joint Petition argued that excluding welding from "minor correction" would effectively require an extra watchman for (1) welding gangs (because railroads never know when an emergency will occur where a thermite weld will be necessary) and (2) section gangs using hydraulic tools and other powered (i.e., non-pneumatic) hand tools. Further, AAR indicated that FRA failed to consider the costs for the additional watchmen/lookouts required (namely, wage and fringe benefits, the need to purchase larger trucks to accommodate an additional person, and new-hire training to replace employees who become watchmen/lookouts). Metro-North and APTA raised similar concerns regarding the added cost of additional watchmen/lookouts for welding gangs and section gangs using hand tools (Metro-North), and for small maintenance gangs (APTA). APTA's comment also mentioned the cost of transporting the additional employees to job sites and other associated costs, such as for additional training and equipment.

The BMWED/BRS joint comment did not oppose the recommendation that FRA clarify which handheld power tools are permissible for "minor correction" work, and suggested that FRA expand that term's definition to include "handheld power tools only" instead of "handheld pneumatic tools only." However, the BMWED/BRS joint comment did oppose an expansion of the definition of "minor correction" to include welding, indicating that small and large welding crews very often divide up any necessary watchman/lookout duties amongst themselves and that where circumstances prevent the

use of watchmen/lookouts, another form of on-track safety is available for use. The BMWED/BRS joint comment also noted that thermite field welding operations are particularly dangerous due to the intricacy and complexity of the work, noise from the roadway maintenance machines, reduced visibility, and the necessity of thermite welders to position themselves both within the gage and to the outside rail of an occupied track when performing certain steps.

In response to the Petitions, FRA is modifying the definition of "minor correction" to include both welding and certain uses of all handheld, hand-supported or hand-guided power tools (such as hydraulic, pneumatic, gas powered, and others). FRA did not intend to limit the exception for handheld power tools so narrowly; therefore, FRA has removed the word "pneumatic" from the definition. With respect to welding operations, FRA is classifying welding as a "minor correction" activity.

FRA weighed several factors in making the latter decision. First, the RSAC consensus language did not include hi-rail related welding activities, and in the Final Rule FRA did not specifically assess costs for the inclusion of such welding operations. Further, there have been no fatalities related to activities that would have been implicated by the Final Rule's welding-related requirement. Next, welders often need to verify that no trains will be passing on the adjacent controlled track before igniting the charge for the weld because the weld could fail if a train were to pass by it before it has solidified. This verification element that is inherent in the welding process lessens the risk that the roadway workers would be struck by a train on an adjacent track. Welding is also often performed on the occupied track or immediately adjacent to the occupied track with little distraction, and, therefore, is not the type of activity intended to be covered by this

rulemaking. Further, existing part 214 already requires that on-track safety be established on an adjacent track (typically by the welder's helper serving as a watchman/lookout) during the portions of the welding task that create a potential to foul the adjacent track. See 49 CFR 214.315, 214.335.

The BMWED/BRS joint comment failed to consider that the Final Rule, if unmodified, would have required that on-track safety be established on the adjacent controlled track for the duration of the welding task (as opposed to the occasional establishment of on-track safety only when the potential to foul the adjacent controlled track exists under the existing RWP regulation). Again, FRA notes that for any welding activities that foul or have the potential to foul an adjacent track, that existing part 214 still requires that on-track safety be established on that adjacent track.

AAR estimated that the additional costs of applying the adjacent-track provisions to welding operations would be $48 million in the first year and $37 million annually in subsequent years. FRA had not anticipated that the Final Rule would have such an impact on welding, and, thus, these costs had not been included in FRA's original economic analysis. AAR stated that railroads would have to buy a number of trucks (i.e., motor vehicles not capable of moving on railroad track, rather than hi-rail vehicles) at $40,000 each to accommodate the additional watchmen/lookouts because existing on-track welding trucks do not usually include sufficient cab space for one or more additional workers. AAR's estimated cost of $40,000 per truck was too low to provide hi-rail vehicles for the additional workers. This fact implies that the additional roadway workers would gain access to the work area by riding in the additional truck and then by walking to the track requiring the weld from the nearest available point at which they can

park the truck. This situation presents additional risks and the possibility of additional worker casualties from slipping and tripping hazards, limited visibility conditions, exposure to injury from traversing an other-than-public access way en route to the place on the track requiring welding, and from other hazards along the right-of-way.

In some cases, the watchmen/lookouts would not walk to the work area, but rather ride in an on-track welding truck would drop some workers near the work area, return to an access point, and pick up the remaining workers. The additional time of track occupancy needed to pick up, transport, and drop off roadway workers in these scenarios would be very costly, because FRA's analysis of the Final Rule provisions shows that the greatest cost of occupying track comes from the occupancy itself, not from slowing trains on an adjacent track. FRA believes that AAR has potentially overstated these cost totals with regard to welding activities because in a high percentage of situations involving welding, the Final Rule's requirements would not have applied. However, FRA does acknowledge that in order to be prepared for situations in which the Final Rule's requirements would have applied to welding, that significant costs would have been incurred by the industry to purchase new hi-rails or trucks to accommodate a third roadway worker in certain situations.

Last, it is not clear from the evidence that FRA currently has that the general inclusion of welding operations as within the scope of the term "minor correction" would reduce injuries from operation on adjacent tracks. However, if welding operations were not a "minor correction," the evidence is clear that costs could increase substantially, and it is likely that new risks could be imposed by the fact that additional workers will have to travel to the welding worksites.

FRA's decision to modify the definition of "minor correction" to include welding operations and to expand the hand tools allowable under the definition to include "hand tools or handheld, hand-supported, or hand-guided power tools" eliminates the concern raised in the AAR/ASLRRA Joint Petition with regard to the cost of the activities excluded from the definition of "minor correction" in the Final Rule. This modification also addresses the concerns raised by Metro-North and APTA regarding the added cost of additional watchmen/lookouts for welding gangs and section gangs using hand tools (Metro-North), and for small maintenance gangs (APTA). This modification also eliminates APTA's concern regarding the cost of transporting the additional employees to job sites and regarding other associated costs, such as for additional training and equipment.

C. Speed Increase for Passenger Trains and Other Passenger On-Track Equipment Passing Roadway Workers on an Adjacent Controlled Track (Paragraphs (b) and (c) of Section 214.336 of the Final Rule)

Under the Final Rule, each roadway worker in a roadway work group that is affected by the movement of a train or other on-track equipment on an adjacent controlled track at an authorized speed of 25 mph or less is permitted to continue his or her on-ground work performed exclusively between the rails of the occupied track and outside the 25-foot zone to the front or rear of any on-track, self-propelled equipment or coupled equipment permitted to move on the occupied track. However, if the movement on the adjacent controlled track is authorized to exceed 25 mph, then the roadway workers on the occupied track must cease all on-ground work and occupy a

predetermined place of safety, and equipment movement on the occupied track must also cease.

APTA's comments on the NPRM, Petition, and comment on the Petitions all requested that FRA raise the Final Rule's 25-mph maximum authorized speed for adjacent-controlled-track passenger train movements during which roadway workers are allowed to continue to work. APTA noted that FRA did not adopt that request in the Final Rule. APTA's comment indicated that, while quantifying the cost impacts of the Final Rule, to include this 25-mph maximum, is difficult, there is an indirect cost related to disruption of scheduled revenue service and loss of passenger business due to lack of service reliability. (E.g., TriRail experienced an almost 10-percent dip in passenger ridership during a construction project in which on-time performance averaged 68 percent.) APTA's comment also speculated regarding the impacts on large-scale passenger operations, such as at New York City's Penn Station.

Similarly, LIRR alleged that implementation of the 25-mph maximum would lead to train delays, cancellations, and missed connections, due to the requirement to reduce to such speed on the adjacent track when work is being performed on the occupied track. LIRR indicated that if a 25-mph maximum speed restriction is put in place in the block between the Nassau and Divide towers during the hours between 10 a.m. and 3 p.m., when work is typically performed, that five eastbound trains and six westbound trains (affecting 5,000 to 10,000 riders) would need to be canceled. Other customers transferring from those trains would also be affected. While no quantified costs have been provided related to the above scenarios, LIRR estimated increased yearly costs of $1.4 million as a result of the Final Rule's requirements, because jobs would take longer

to complete and might need to be performed on weekends and nights, when employee wage rates are higher. Also, although not directly alleging that the maximum speed was too low, AAR also noted that FRA failed to account for either passenger-train delay or freight-train delay for situations where the use of watchmen/lookouts is not feasible or desirable, indicating that such situations shut down both the occupied track and the adjacent track on what are usually busy rail lines, and that delays range from ten minutes to an hour or more.

The BMWED/BRS joint comment stated that the 25-mph maximum was a consensus agreement and should not be increased. The joint comment also stated that the 25-mph maximum speed for both passenger and freight trains when passing a roadway work group while work continues on an adjacent controlled track provides for uniformity within the Final Rule, and does not introduce additional hazards associated with conducting/ceasing work on an occupied track based upon different types of trains operating under different speed thresholds on the adjacent controlled track. The comment also noted that roadway workers in charge have the authority to permit the passenger trains through working limits at speeds higher than 25 mph (provided roadway workers on the occupied track would have to cease work and occupy a place of safety) and that it is not at all uncommon for passenger trains to be authorized through at speeds substantially over 40 mph.

After considering the above-listed arguments, FRA is modifying the Final Rule by raising to 40 mph the maximum allowable speed for adjacent-controlled-track movements by passenger rail traffic while roadway workers are permitted to continue their on-ground work on the occupied track. FRA considered the following factors when

determining that granting the petition request regarding the 25-mph maximum speed is the appropriate course of action from a safety perspective. First, passenger trains are shorter than freight trains and do not present the dangers of shifted loads and swinging doors that exist for freight trains. Second, unlike much longer freight trains, commuter trains are only typically 6 to 8 cars in length, and whether traveling at 40 mph or 25 mph, pass within a matter of seconds. Because there is less danger of swinging doors and shifted loads, risk exposure is much more minimal than when compared to a much longer passing freight train. Third, passenger equipment is typically narrower than comparable freight train equipment, meaning it is physically farther from roadway workers who continue work in the gage of the occupied adjacent track while a passenger train passes. Fourth, the type of shelf couplers utilized on passenger equipment is designed to keep equipment upright and in-line in the event of derailment. Fifth, the superior braking capabilities and shorter stopping distances of passenger equipment reduce risks while approaching and passing adjacent track roadway work zones. Sixth, track-caused train derailments are a leading cause of accidents reported to FRA, and if a train were to derail on an adjacent controlled track while passing a roadway work group work on the occupied track, there are obvious casualty risks to the roadway work group. FRA's Track Safety Standards, at 49 CFR part 213, have long differentiated between the speeds passenger trains and freight trains are permitted to travel on the same class of railroad track. For example, § 213.9(a) permits freight trains to travel only 40 mph over Class 3 track, while allowing passenger trains to travel 60 mph. This longstanding distinction permitting increased speeds for passenger trains was justified, with no loss in safety,

generally because suspension systems on passenger trains are designed to provide a safer dynamic response than freight trains to the same track conditions.[12]

Last, FRA does not have data or analyses to show that the higher speed at which commuter trains currently pass work zones on an adjacent track is unsafe.

Further, if the assertions in LIRR's comment are correct and in some instances several thousand of LIRR's passengers could be affected daily by the Final Rule's 25-mph limitation, FRA believes unintended passenger safety issues could occur if the Final Rule's speed restriction is not increased for passenger trains. Crowding, on both passenger platforms and on passenger trains that results from commuter train cancellations and delays, presents the potential for platform falls and other obvious risks to passenger safety. These cancellations and delays could occur because commuter train "meet" times can be critical in passenger operations when a missed meet for one train often compounds and affects later-scheduled trains. Further, a 25-mph limitation for commuter trains could have the unintended impact of encouraging passengers to take other modes of transportation, namely automobiles. Automobile travel is statistically less safe than passenger train travel and is also less fuel efficient. As media coverage of the recent May 2013, Metro-North train accident in Bridgeport, Connecticut, illustrates, passenger train cancellations can raise concerns regarding highway congestion and parking complications for commuters who instead choose to travel by automobile. FRA's statistics indicate that the average commuter train trip is 24 miles long. Last, in granting this request to raise the speed at which passenger trains may pass work zones to

[12] FRA proposed different speed limits for passenger and freight operations in 1972, largely relying on the differences in suspension systems used. 37 FR 18398. The rule was adopted as proposed in 1973. 38 FR 873.

40 mph, FRA also avoids giving railroads perverse incentive to defer track or signal maintenance rather than delay or cancel scheduled passenger trains in complying with the Final Rule's requirements. Of course, such deferred maintenance can potentially lead to track- or signal-caused train derailments and other accidents, thereby endangering railroad operating crews and other railroad employees, rail passengers, and the general public.

Finally, the potential cost implications related to passenger-train delay/cancellation issues resulting from this provision of the Final Rule had not previously been raised with FRA until it was posed by APTA's petition for reconsideration. Thus, in figuring the costs of the Final Rule, FRA did not consider the train-cancellation issue. The train delay implications for commuter operations that LIRR and APTA raise were also not fully considered in the analysis. LIRR was the only entity to put forth an actual cost figure with regard to the 25 mph speed restriction for passenger operations, and FRA does not have information to refute LIRR's assertions. FRA estimates that this response's amendment to the Final Rule will create cost savings for the commuter rail industry to at least the extent estimated by LIRR ($1.4 million annually). As discussed further in the RIA below, FRA cannot simply extrapolate the LIRR case to all other commuter railroads. FRA believes that the only other commuter railroad likely to have had impacts similar to those on the LIRR was Metro-North. Extrapolated to the combination of Metro-North and LIRR based on passenger miles, the total cost for the industry would have been $3,152,297 per year. The total cost savings resulting from this amendment to the Final Rule is $33.4 million (PV, 7) and $46.9 million (PV, 3), when discounted over a twenty-year period.

FRA is, however, retaining the existing maximum of 25 mph for adjacent-controlled-track movements of freight trains and other freight on-track equipment movements. The AAR/ASLRRA Joint Petition did not make a request for the Final Rule's 25 mph speed restriction to be increased with respect to freight operations. As mentioned above, when freight trains pass works zones on an adjacent track, the safety risk of shifted loads is present, as well as the safety risk of swinging doors, loose banding, and dragging equipment, and the hazards associated with debris, dust, stone, and construction/maintenance materials being strewn by freight trains, which tend to be longer and much heavier than passenger trains. The discussion in Section III.D. directly below also contains a more extensive discussion of some of FRA's rationale for retaining the 25-mph speed limit for freight trains with regard to any potential cost concerns.

D. The Requirement that Roadway Workers May Resume Work Only After the Trailing-End of All Trains or Other On-Track Equipment Movement Authorized to Travel Greater Than 25 MPH Has Passed (Paragraph (b) of Section 214.336 of the Final Rule)

The Final Rule provided that roadway workers may resume work only after the trailing end of a train or other on-track equipment (authorized to travel past the roadway work gang at a speed greater than 25 mph) has passed the roadway work group ("trailing end" provision). The original RSAC consensus language did not specify whether the trailing end or the leading end of the movement had to pass before work could resume, but rather only stated that "on-ground work and equipment movement on the occupied track may resume only after all such movements on adjacent track have passed each component of the Roadway Work Group(s)." FRA specified that the trailing end of the

train must have passed before work resumes because we believed that this consensus language meant, and plain language indicated, that the entire train movement must have passed before the resumption of work. See 73 FR 74598. The "trailing end" provision was also adopted, in part, due to the concerns raised by BMWED and BRS on this issue, namely that there are hazards presented to roadway workers by abnormal consist conditions (e.g., "shifted loads/shifted ladings, loose banding, dragging chains/binders, loose brake piping, loose/swinging boxcar doors, [and] fragmented brake shoes") and by "dust, rust, debris, stone, and track construction/maintenance materials[,]" which may become airborne while trains on an adjacent track pass in close proximity to a roadway work group.

The AAR/ASLRRA Joint Petition requested that the Final Rule be modified to permit roadway workers to resume work after the leading end of a train has passed. They cited the following points as support for their request: (1) there are no fatalities from shifted loads and no widespread problem of employees injured by shifted loads; (2) there are many railroad employees working near passing trains, not just roadway workers; (3) there is a heightened awareness of the roadway workers after the leading end of a train passes; and (4) prohibiting the resumption of work until the entire train or equipment has passed would adversely affect productivity and require the hiring of additional roadway workers. AAR, in its supplemental comments, estimated that this amendment to the Final Rule would save the railroads approximately $56 million annually (based on an estimate for four Class I railroads alone). APTA's comment expressed support for the AAR/ASLRRA Joint Petition's position with regard to the "trailing end" provision. The BMWED/BRS joint comment stated that the AAR/ASLRRA Joint Petition ignored the

risks associated with shifted loads/shifted ladings and the hazards associated with materials being kicked up by trains operating at track speed.

FRA is denying the request made in the AAR/ASLRRA Joint Petition. FRA notes that when trains pass a roadway work group on an adjacent track that injury risks are present, and that this provision also serves railroad safety where roadway workers are observing the passing of the train for any dragging equipment or any other condition that may compromise the safe movement of a train An additional safety rationale for FRA retaining the requirements of the "trailing end" provision relates to increased derailment risks when trains accelerate. As is generally understood in the railroad industry from voluminous research, there are in-line forces ("buff and draft" forces) that push and pull on the individual railroad cars in a train, resulting in increasing or decreasing slack.[13] Slack is the free movement in each railroad car via its coupling equipment and draft gear. Locomotive tractive effort applied to accelerate a train's speed is one of these forces acting within a train that cause slack action to occur.[14] Excessive slack action forces can result in train separation, cause a rail to turn over, or cause a rail car to climb a rail, leading to derailments. Thus, while roadway workers continue to work on the occupied track while a freight train passes at 25 mph or less (40 mph or less for passenger) on an adjacent-controlled track, FRA believes that to permit the train to accelerate as soon as the head end of the train has passed increases the risk of derailment at the work location, even if the risk is normally well managed.

[13] See, e.g., FRA, REPORT TO THE SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION AND THE HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE; SAFE PLACEMENT OF TRAIN CARS (June 2005).

[14] Id.

Further, FRA believes that AAR has overestimated the costs of complying with the "trailing end" provision by approximately $55,741,196.[15] FRA's analysis has not found cases above a certain train traffic volume where stopping work while trains pass at greater than 25 mph (or, as amended, greater than 40 mph for passenger trains) would be less costly than slowing trains to 25 mph (or 40 mph for passenger) for any likely roadway worker work groups on an adjacent occupied track. Stopping work increases the time of track occupancy required to perform the maintenance. The track occupancy itself by a roadway work group is the most costly factor involved in the analysis.

To formulate a revised cost-benefit analysis to account for the modifications that FRA is making to the Final Rule, and also to study thoroughly AAR's assertions regarding the costs associated with the Final Rule generally and the "trailing end" provision specifically, FRA staff conducted a modeling analysis. FRA calculated the delay associated with implementing the Amended Final Rule, and also the "trailing end" provision specifically, by simulating train movements. Simulated train movements were modeled in accordance with DOT's train performance simulator (TPS).[16] The models that FRA developed were detailed and were correlated with actual rail traffic. FRA

[15] The costs of the "trailing end" provision were estimated by subtracting the costs that would exist if trains were permitted to accelerate to maximum authorized speed after only the head end of the train had passed the work zone, from the costs of the Final Rule, as analyzed (where the entire length of a train may only travel 25 mph by a work zone such that work on the occupied track could continue). This is equivalent to the costs of passing a length of track equal to the length of the work zone at 25 mph compared to the costs of passing the work zone at maximum authorized track speed, from actual speed limits on track segments. This may actually overstate costs, because in the absence of the Final Rule, not all trains would accelerate to maximum authorized speed (freight train tonnage, crossovers, and other common factors often inhibit a train's ability to accelerate to maximum authorized speed until a train is well past a work zone). The model assumes that trains decelerate from maximum authorized speed to 25 mph, and after passing the work zone, accelerate back to maximum authorized speed, except where congestion would affect the trains' initial or final speeds.

[16] Train Performance Simulator Version 5c, revised March 1988 by DOT.

developed 27 simulation runs in total (or nine simulations each for low, medium, and heavy traffic volumes) over 270 miles of simulated double-track railroad. FRA believes that the simulated track used in this modeling provided a representative sample of terrain, track geometry, and track speed limits, as the infrastructure data was developed from publicly available track charts and included changes in elevation, direction, and curvature.

The results of the modeling showed that congestion-induced costs did not increase when trains slowed to 25 mph to pass a work zone when freight train volumes were at or above threshold. FRA found that rail lines operating above capacity, with more than 20 minutes of delay per train before the trains even reached the roadway work zone, would incur minor additional congestion-related costs as a result of this rulemaking. At most, these additional congestion-related costs would be the result of an additional 1 minute of headway required to traverse the roadway work zone occupying the adjacent track. FRA modeling found that, on average, the level of congestion needed to incur these minor congestion-related costs occurred when freight train volumes exceeded 34 trains per 24-hour period, or approximately 10 trains per 7-hour shift for a roadway work group occupying an adjacent track. FRA believes that its assumption of 10 trains per shift as a threshold for congestion for purposes of calculating the cost-benefit analysis is very conservative. The modeling documents and accompanying results are located in the public docket for this rulemaking and are also discussed more extensively in the Special Sensitivity Analysis.

In order to evaluate more fully the costs of the Amended Final Rule (along with the “trailing end” provision, specifically), FRA then applied the results of the modeling

analysis to the railroad industry as a whole by utilizing the assumptions described more completely in the Special Sensitivity Analysis (assumptions governing train speed, train length, train weight, work stoppage times, etc.). FRA then applied those assumptions to estimated roadway worker production gang efforts for a simulated large Class I railroad.

FRA first had to estimate the number of shifts that the Amended Final Rule would affect for each of the different types of roadway worker groups (section gangs, surfacing gangs, and bridge gangs). For this simulated large railroad, FRA estimated three section gangs per roadmaster, 138 roadmasters per railroad, 250 shifts per year per gang, with 20 percent of those shifts on occupied track with on-track equipment subject to the requirements of the Amended Final Rule. FRA estimated that the simulated railroad had 18 divisions, with 3 surfacing gangs per division and each gang working 180 shifts per year, with 100 percent of those shifts on occupied track with on-track equipment subject to the Amended Final Rule. FRA also estimated 7 bridge gangs per division, 250 shifts per year per gang, with 40 percent of those shifts on occupied track with on-track equipment subject to the Amended Final Rule.

FRA then allocated shifts for section gangs, surfacing gangs, and bridge gangs to each subdivision in proportion to the subdivision's share of total ton-miles. This allocation reflects an assumption that maintenance of rail infrastructure needs to be performed in proportion to wear and tear on rail infrastructure, which occurs as a direct result of train traffic and tonnage. FRA assigned train-delay costs to each gang shift based on the number of trains expected to be affected, multiplied by the cost of affecting a single train. For production gangs and surfacing gangs, FRA assumed that work zones

were one mile long, while for bridge and section gangs, operating in smaller groups, the work zones were estimated to be one-quarter mile long.

Delay costs[17] were estimated by subtracting the time it would have taken for the train to pass without slowing to pass a roadway work group from track speed (or 40 mph, whichever was lower) from the total time for a freight train to slow from 40 mph (or track speed, if track speed were lower) and pass a work zone, including waiting for the trailing end to pass, and the time to accelerate back up to 40 mph or track speed. Braking was estimated at 1/6 mph per second, with a total braking time from 40 mph to 25 mph of 90 seconds, based on field experience of FRA staff. The calculation for time and distance during acceleration from 25 mph to 40 mph (168.91 seconds over 8,194 feet) was based on an 8,000-ton train powered by motive power totaling 6,640 horsepower.[18]

For each category of work gang, for each subdivision, FRA estimated the annual cost of the "trailing end" provision by multiplying cost per affected train for that gang type by the affected trains per shift by total shifts per year. FRA totaled those costs for each subdivision and then totaled all subdivision costs. The total cost for the large simulated Class I railroad created for purposes of this modeling analysis was $674,801 for one year.

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[17] Delay costs were estimated at $350 per train hour. A recent study (Schafer, D. H., EFFECT OF TRAIN LENGTH ON RAILROAD ACCIDENTS AND A QUANTITATIVE ANALYSIS OF FACTORS AFFECTING BROKEN RAILS, M.S. THESIS, University of Illinois at Urbana-Champaign, Urbana, IL (2006)) found train delay cost to be $213 per hour for freight trains; however, FRA has heard that railroads offer higher costs at RSAC meetings, and FRA uses a higher figure for purposes of this analysis in order to be conservative.

[18] FRA assumed that the fuel costs were 20-horsepower per gallon per hour, with fuel cost of $3.50 per gallon. This assumption is based on locomotive performance data (Railroad Facts and Figures, A.A. Krug, available online at http://www.alkrug.vcn.com/rrfacts/fueluse.htm.) The fuel costs were attributed only to the 6,640 horsepower. In reality this assumption is conservative, because of the reduction in fuel usage during braking. FRA estimates the cost to slow a train to 25 mph, pass a one-mile-long work zone, including trailing end of the train, and then accelerate to 40 mph, would be $39.74.

FRA then attempted to estimate similar costs for three other simulated large Class I railroads by allocating affected gang shifts per year to each subdivision based on affected gang shifts per ton-mile per year from the first railroad, and otherwise continuing to use the same assumptions. This led to a much lower estimate of costs per ton-mile at the other railroads. The total annual cost estimate ranged from $90,758 for the next largest Class I by revenue-ton-miles down to $34,114 for the smallest of the four large Class I railroads. These values are lower than for the first railroad as the railroads simulated had less affected trackage where the Amended Final Rule's requirements would apply and were smaller than the largest Class I first simulated, which mirrors the state of actual existing Class I railroad hierarchy. FRA decided to extrapolate to all Class I freight railroads using the proportionate share of revenue-ton-miles. The total annual cost of slowing trains as they pass work zones was estimated at $2,192,720. This total estimated cost represents the entire cost of slowing trains to pass work zones on the occupied track, to include the estimated $258,803 cost of the "trailing" end provision.

In the Special Sensitivity Analysis FRA follows an assumption employed in the Final Rule's RIA that 70 percent of affected railroad operations were in compliance with the requirements of this rulemaking, and would continue to be in compliance even in the absence of the rulemaking. Thus, after accounting for pre-existing compliance the real annual costs will be 30 percent of $2,192,720, or $673,840. After accounting for pre-existing compliance, the real annual cost of complying with the "trailing end" provision will be $77,641, or 30 percent of $258,803. The costs of the "trailing end" provision were estimated by comparing the difference between the costs of the Amended Final

Rule and the costs of the Amended Final Rule were trains permitted to accelerate to maximum authorized speed after the head end of the train had passed the work zone.

FRA has no data to estimate costs to Class II or Class III railroads; however, FRA believes that the unit costs for those railroads are likely to be no greater than those for the lower-cost Class I railroads (some smaller railroads have no adjacent controlled tracks that are subject to the requirements of the Amended Final Rule). FRA has chosen the most conservative assumption, extrapolating the costs on a revenue-ton-mile basis from the first Class I railroad analyzed. FRA believes this course of action more than makes up for the absence of any data from Class II or Class III railroads. Had FRA used the methodology that derived lower unit costs, the estimated total cost of the Amended Final Rule would have been 67-percent lower than the estimate presented in the Special Sensitivity Analysis.

In sum, FRA believes that the costs of the "trailing end" provision as asserted by AAR were overestimated. FRA's analysis shows that by far the largest cost involved in the analysis is the occupancy of the track itself by a roadway work group. Slowing trains to pass a roadway work group is a less costly alternative than a roadway work group ceasing work to permit a train to pass at a higher speed, as that extends the length of time the track is occupied by the roadway work group and correspondingly slows all subsequent train traffic. FRA believes that the results of the modeling and resultant costs as extrapolated on a revenue-ton mile basis show that the Amended Final Rule, including its "trailing end" provision, is cost-beneficial.

E. Elimination of Requirement That a Non-Controlled Track Be Treated as an Adjacent Controlled Track (Section 214.336(a)(2) of the Final Rule)

In the Final Rule FRA adopted a requirement that a non-controlled track whose track center is spaced 19 feet or less from the occupied track be treated as an adjacent controlled track if the occupied track has an adjacent controlled track on the other side. This requirement was adopted due to concern that confusion could arise by requiring that roadway work groups make a determination regarding whether adjacent-track on-track safety was necessary on a closely-spaced adjacent track based only on whether that adjacent track was controlled or not. FRA had concern that such confusion could result in incidents involving train movements on adjacent non-controlled tracks. FRA also noted this approach was consistent with its rationale for adopting the language in § 214.336(e)(1)(ii), which imposes conditions on the exception for work performed on a side with one or more adjacent tracks only if the danger posed by the closest adjacent track (controlled or non-controlled) on that side had been essentially eliminated.

The AAR/ASLRRA Joint Petition argued that no accident/incident data supports this provision and that the provision itself could cause confusion as to why the roadway workers have to treat the non-controlled track as an adjacent controlled track. APTA's Petition expressed the separate concern that the provision would disrupt scheduled passenger train operations and, thus, also affect the cost of scheduled train operations in a manner that was not contemplated by FRA in the Final Rule.

The BMWED/BRS comment stated that they shared FRA's concern regarding the risk of additional confusion and also believed that the provision added a level of clarity and uniformity to the Final Rule, applied only in very limited circumstances, and ensured that roadway workers would not clear into or foul the adjacent non-controlled track without protection.

FRA is deleting this provision from the Final Rule, in part because there is no accident data to support it, which was the basis for the original RSAC decision not to adopt this provision in its recommendation to FRA. FRA has also made this decision because the on-track safety job briefing required by the Final Rule is intended to make clear to roadway workers that no on-track safety is being provided on that track, as the job briefing requires a discussion of all adjacent tracks regardless of whether they are controlled or non-controlled. Further, on a non-controlled track, roadway work groups have the authority to establish working limits by making a track inaccessible on their own, and are not reliant on a control operator or dispatcher to do so as they are with controlled tracks. And finally, given the limited circumstances under which this provision would apply, there is little risk to the roadway workers, especially since Note 1 of Table 1 of § 214.336 specifically states that a "predetermined place of safety" "may not be on a track, unless the track has working limits on it and no movements permitted within such working limits by the [roadway worker in charge]." This same requirement was also expressly proposed in FRA's RWP Miscellaneous Revisions NPRM, which was published last year. 77 FR 50324. For these reasons, FRA has determined that this provision is unnecessary. This decision also makes moot APTA's concern stated in its Petition that this provision would have adversely affected passenger train schedules.

F. Additional Exception for "Rail-Bound Vehicles" Used for Conducting Inspections, Minor Corrections, or Welding (Section 214.336(e)(3)(i) of the Final Rule)

The Final Rule, at § 214.336(e)(3)(i), exempted inspections and minor correction work involving a hi-rail vehicle from the adjacent-track on-track safety requirements, but did not similarly expressly exempt rail-bound vehicles (not equipped with highway

wheels) conducting the same inspection or minor correction work. The AAR/ASLRRA Joint Petition, along with Metro-North in its comment, requested that there be an exception for rail-bound vehicles where manual inspections are being conducted. They requested such because they involve the same activities as those performed during an inspection conducted by a hi-rail vehicle, but differentiate between the two based only on whether the vehicle from which the inspections are being conducted has highway wheels in addition to rail wheels. The Joint Petition also argued that the duties clearly would not produce dust or noise.

The BMWED/BRS joint comment did not oppose extending the exception for hi-rail vehicles to rail-bound equipment being used exclusively for inspection or minor correction purposes, provided that all of the limitations that apply to hi-rail vehicles in § 214.336(e)(3)(i) (i.e., limiting the exception to those hi-rails not coupled to one or more railroad cars and requiring that the on-track safety job briefing include discussion of the nature of the work to determine if on-track safety is necessary where multiple hi-rails are engaged in a common task) would apply to the rail-bound vehicles.

FRA is granting the request to create an additional exception for rail-bound vehicles being used for inspection or minor correction purposes by broadening the "hi-rail vehicle" exception to apply to on-track, self-propelled equipment (other than an automated inspection car or catenary maintenance tower vehicle) being used for inspection or minor correction (including welding). FRA already permits visual track inspections to be conducted with such equipment under 49 CFR 213.233(b), and there should be no additional safety risks when the equipment is being used for inspection or minor correction purposes, especially if the same limitations for hi-rails are applied to

this exception, as suggested by the BMWED/BRS joint comment. FRA concurs with the labor organizations' suggestion and has adopted the same limitations as are applied to hi-rails.

G. Expansion of an Exception to Include Roadway Workers Performing Maintenance or Repairs Who Are Positioned Within the Perimeter of a Machine or Coupled Equipment on the Occupied Track (Section 214.336(e)(2) of the Final Rule)

The Final Rule contained an exception to the requirement that on-track safety be established on an adjacent controlled track when maintenance or repairs are being performed while the worker is positioned on a side of the occupied track as described in paragraph (e)(1)(i), (ii), or (iii) of § 214.336[19] alongside a roadway maintenance machine or coupled equipment that would prevent a roadway worker from fouling the adjacent track on the other side of the equipment. FRA adopted that provision in response to BMWED's and BRS' concern that work should not be permitted in the foul of the occupied track (even if mostly positioned on the side opposite from the train movement) unless the machine acted as a physical barrier between the roadway worker and the adjacent controlled track on which the movement was occurring. FRA believed that this exception would permit the changing out of a grinding stone on the side of the equipment opposite of that where an adjacent track movement was occurring and, in some cases, depending on the location of the fuel tank, the fueling of a machine. Under the Final

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

Rule such activities would not require that adjacent-controlled- track protections be established.

The AAR/ASLRRA Joint Petition argued that the exception as put forth in the Final Rule was too narrow and that it should also apply to a worker positioned within the perimeter of the equipment on the occupied track, without regard to whether the maintenance or repairs are performed while positioned on a side of the occupied track as described in paragraph (e)(1)(i), (ii), or (iii) of § 214.336. AAR/ASLRRA argued that a repairman who is working beneath a machine should not be forced to extract him or herself each time a train passed on the adjacent track in order to go to the predetermined place of safety. They argue that this requirement could increase the risk of injury to the worker and that a roadway worker working performing repairs under the machine is not at risk of being struck by a train on the adjacent track. The BMWED/BRS joint comment stated that the term "perimeter" is too broad and would include those sides of the occupied track that do not provide a barrier as contemplated by this section, and that such an amendment was undesirable from a safety standpoint.

After considering the above arguments, FRA is expanding the exception to include a roadway worker performing maintenance while positioned "within the perimeter of the machine or equipment" (meaning, while either on or under the body of the machine or coupled equipment). To ensure that the term is not too broad in its application, the amended rule text explains that any part of the roadway worker's person not wholly positioned within the perimeter must not break the plane of a rail of the occupied track, unless the part of the roadway worker's person is towards one of the above-referenced sides of the occupied track. A boom or other equipment extending

beyond the body of the machine toward the adjacent controlled track is not considered to be "within the perimeter of the machine or coupled equipment." FRA decided to expand this exception for the following three reasons: (1) there have been no adjacent-track-related fatalities involving a roadway worker positioned within the perimeter of the machine; (2) there is no danger of a roadway worker's fouling an adjacent controlled track while he or she is positioned between the rails of the occupied track where the equipment would effectively prevent the worker from fouling the adjacent controlled track; and (3) there would be a risk of injury to the worker from having to extract himself or herself from underneath or on top of a machine. FRA had not considered the latter risk when formulating the Final Rule.

H. Application of the Final Rule to Repair or Maintenance of Roadway Maintenance Machines

The AAR/ASLRRA Joint Petition and AAR's and Metro-North's comments all questioned whether the Final Rule addressed mechanics performing maintenance and repair work on roadway maintenance machines. Existing § 214.7 defines the term "roadway worker." That term, since its inception with the promulgation of the original RWP regulation in 1996, has always included employees of a railroad or a contractor to a railroad "whose duties include inspection, construction, maintenance or repair of . . . roadway maintenance machinery on or near track or with the potential of fouling a track . . . ." Clearly, such maintenance or repair is, and always has been, a roadway worker duty covered by the RWP regulation and the on-track safety requirements of part 214. This adjacent track provision, from its RSAC consensus conception, would have applied to roadway workers on the ground engaged in a common task with on-track, self-propelled

equipment or coupled equipment on an occupied track, and the term would have included such employees within such groups performing maintenance or repairs on machinery who foul, or have the potential to foul, track. Thus, the activities of those roadway workers were clearly intended to be subject to the requirements of the RSAC consensus agreement if adopted.

However, even in light of that point, much of the work performed on roadway maintenance machines may be accomplished without the requirements of the Amended Final Rule applying to such work. By utilizing the exceptions in § 214.336(e), particularly the expansion of the exception pertaining to repairs performed alongside the machine or equipment to include work performed within the perimeter of the machine or equipment (on or under such machine or equipment), most maintenance or repair work may be performed without triggering the requirements for adjacent-controlled-track protections. The Amended Final Rule requires adjacent-controlled-track protection when maintenance work is being performed on the side of the equipment nearest that adjacent track or if any part of a roadway worker's body not wholly positioned within the perimeter of the machine breaks the plane of the rail of the occupied track toward the adjacent controlled track, unless the part of the roadway worker's person is towards one of the above-referenced sides of the occupied track. Further, a lone worker mechanic who is not part of a roadway work group, and therefore not subject to the requirements of § 214.336, may also be utilized to perform work on roadway maintenance machines. During the limited circumstances that the maintenance or repair work on a roadway maintenance machine falls within the scope of § 214.336, a mechanic's helper is permitted to serve as a watchman/lookout, or obviously another member of the roadway

work gang who is not presently performing other duties may serve as a watchman/lookout. (Note that if machines are stopped in order to be repaired, there may be several members of the roadway work gang available to act as watchmen/lookouts.)

I. Clarification Regarding Release of Working Limits

The AAR/ASLRRA Joint Petition stated that the Final Rule was ambiguous with regard to whether a roadway worker in charge is permitted to release working limits on an adjacent controlled track after all members of the roadway work group have acknowledged that they are in the clear. The Joint Petition then also suggested that FRA adopt rule text expressly stating that working limits may be released on an adjacent controlled track to allow for train or on-track equipment movements.

FRA believes that such additional rule text is unnecessary. The Final Rule permits working limits to be released on an adjacent controlled track in accordance with existing § 214.319(c). That provision permits working limits to be released for the operation of trains once all roadway workers have occupied a place of safety or have been afforded on-track safety through train approach warning; the provision applies with regard to releasing working limits on an adjacent controlled track in § 214.336. For example, under § 214.336(b) as promulgated in the Final Rule and the Amended Final Rule, if a roadway worker in charge wishes to release working limits on an adjacent controlled track in order to permit a train movement on that adjacent controlled track, he or she may do so after notifying all roadway workers in the group and after all workers having occupied a place of safety, or, after notifying the roadway work gang that working limits are being released, that train approach warning will now be the method of on-track safety on the adjacent controlled track. A train may then travel past the roadway work

group on the adjacent controlled track, with the train's authorized speed dictating whether work is permitted to continue within the rails of the occupied track (maximum authorized speed of 25 mph or less for trains or on-track equipment, or 40 mph or less for passenger trains), or whether the roadway workers must cease work and occupy a place of safety after having received train approach warning (maximum authorized speed of greater than 25 mph for trains or other on-track equipment or greater than 40 mph for passenger trains).

IV. Section-by-Section Analysis

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

For the reasons described in Section III above, FRA is making several changes to § 214.336 of the Final Rule. First, FRA is amending the heading of § 214.336(a)(2) to address only a single circumstance arising in territories with at least three tracks to account for situations if the occupied track is between two adjacent controlled tracks. This change is being made because, as discussed above, FRA is removing the requirement that a non-controlled track spaced 19 feet or less from an occupied track be treated as an adjacent controlled track. Accordingly, FRA is also deleting § 214.336(a)(2)(ii), which contained the requirement to treat a non-controlled track as a controlled track in certain circumstances. FRA is also amending § 214.336(a)(2) to reference that FRA has raised the maximum authorized speed at which passenger trains or other passenger on-track equipment may pass a roadway work group while roadway work continues within the gage of the occupied track from 25 mph to 40 mph.

Third, FRA is deleting the second sentence of the definition of "adjacent controlled track" in § 214.336(a)(3). This amendment is also to implement FRA's decision to delete the Final Rule's requirement in § 214.336(a)(2) that if an occupied track has an adjacent controlled track on one side and a non-controlled track spaced 19 feet or less from an occupied track on the other side that both tracks must be treated as adjacent controlled tracks.

Fourth, FRA is amending the first sentence of the definition of "minor correction" in § 214.336(a)(3) by adding the word "welding" and replacing the words "handheld pneumatic tools only" with "handheld, hand-supported, or hand-guided power tools[,]" because FRA is including both welding and additional types of power tools within this definition. FRA is also amending the second sentence of that definition by deleting the word "welding[,]" because the second sentence lists exclusions from the term "minor correction" and FRA has decided to include welding explicitly as an example of "minor correction."

Fifth, FRA is adding the words "or at a speed greater than 40 mph for a passenger train or other passenger on-track equipment movement" to paragraph (b). As explained above, this amendment is to reflect that FRA has decided to raise to 40 mph the maximum speed at which passenger trains may pass a roadway work group without the roadway work group's having to cease work and occupy a place of safety. FRA has also amended the heading of paragraph (b) to implement this decision to raise the maximum allowable speed for passenger trains to 40 mph for purposes of the requirements of this paragraph.

Sixth, FRA is adding the words "or at a speed of 40 mph or less for a passenger train or other passenger on-track equipment movement" to paragraph (c). As explained above, this amendment is to reflect that FRA has decided to raise to 40 mph the maximum speed at which passenger trains may pass a roadway work group without the roadway work group's having to cease work and occupy a place of safety, but rather while the group continues on-ground work and equipment movement within the gage of the occupied track. To reflect this change to the text of paragraph (c), FRA has also amended the heading of the paragraph.

Next, FRA is amending the heading of § 214.336(e)(2) to implement the decision to include maintenance or repairs performed within the perimeter of a roadway maintenance machine or coupled equipment on the occupied track within an exception to the adjacent-controlled-track on-track safety requirements. FRA has redesignated what was existing paragraph (e)(2) as (e)(2)(i). This redesignation is to carry out FRA's decision discussed above to add a new provision (§ 214.336(e)(2)(ii)) to this paragraph regarding the additional exception for maintenance or repair performed within the perimeter of a roadway maintenance machine or coupled equipment. This new provision states that a roadway worker performing maintenance or repairs under § 214.336(e)(2)(ii) is not considered to be within the perimeter of the roadway maintenance machine or coupled equipment if any part of his or her person breaks the plane of the rail of the occupied track, except toward one of the sides referenced in § 214.336(e)(1)(i)-(iii). Booms or other equipment extending beyond the body of a roadway maintenance machine or coupled equipment toward an adjacent controlled track are not considered to be with the perimeter of the machine or coupled equipment.

Last, FRA is amending the first and second sentences of § 214.336(e)(3)(i) to reference rail-bound vehicles. This change is to follow through on FRA's decision to add rail-bound vehicles to the "hi-rail" exception of this section.

Table 1 in Section 214.336 of the Final Rule

FRA is amending the multiple references to the 25-mph maximum authorized speed for adjacent-controlled-track movements above which roadway workers on the occupied track must cease work and occupy a place of safety to add references to the higher maximum authorized speed for passenger trains of 40 mph. These changes are to reflect FRA's decision to raise the maximum authorized speed at which passenger trains may pass the roadway work on an adjacent controlled track to 40 mph such that the roadway work group may continue to work on the occupied track, as is discussed above.

FRA has also amended the second sentence of footnote 2 of the table to reference § 214.336(a)(2) rather than § 214.336(a)(2)(i). Due to the decision to delete § 214.336(a)(2)(ii) from the Final Rule, the former § 214.336(a)(2)(i) now forms paragraph (a)(2) in its entirety. FRA has also amended footnote 3 of the table in order to reflect that another exception has been included in the Amended Final Rule for maintenance or repair work performed within the perimeter of a roadway maintenance machine or coupled equipment on the occupied track.

Figure 1 in Section 214.336

FRA is amending Examples 1, 2, 3, 4, and 6 of Figure 1 to reflect that the Amended Final Rule raises the maximum authorized speed at which passenger trains and other passenger on-track equipment may are authorized to pass a roadway work group on

an adjacent controlled track to 40 mph such that the roadway work group may continue to work on the occupied track, as is discussed in detail above.

Appendix A to Part 214

FRA is revising appendix A to assure that the existing entries for § 214.315(b)-(e) remain in the table, as they would have been inadvertently deleted because of incorrect Federal Register publication signals if the Final Rule had gone into effect.

FRA is also deleting the reference in appendix A to the guideline civil penalty for § 214.336(a)(2)(ii), and is redesignating the reference to § 214.336(a)(2)(i) in the civil penalty to § 214.336(a)(2). This change is necessary because, as discussed above, FRA is deleting § 214.336(a)(2)(ii) from the regulatory text after deciding to eliminate the requirement that a non-controlled track spaced 19 feet or less from an occupied track be treated as an adjacent controlled track. FRA is also amending the guideline civil penalty entries for § 214.336(a) and (c) to implement FRA's decision to raise to 40 mph the speed at which a distinction is made for passenger train movements and other passenger on-track equipment movements on adjacent controlled tracks.

FRA is also amending a reference in footnote 1 to the appendix A, Schedule of Civil Penalties, to account for the inflation adjustment to the aggravated maximum civil penalty for a violation of an FRA safety regulation or order, or of a Federal railroad safety law. In a final rule published April 24, 2012 (77 FR 24415), FRA raised upward the maximum aggravated civil penalty from $100,000 to $105,000. FRA is amending footnote 1 to reflect that final rule's adjustment, which would be reversed if the Final Rule went into effect without this additional amendment. FRA is also amending the

second sentence of footnote 1 to refer to the particular regulatory "provision(s)" rather than the "section(s)".

V. Regulatory Impact and Notices

A. Executive Order 12866, Executive Order 13563, and DOT Regulatory Policies and Procedures

The Final Rule Amendments have been evaluated in accordance with Executive Orders 12866 and 13563, and in accordance with existing DOT policies and procedures. See 44 FR 11034 (Feb. 26, 1979); 76 FR 3821 (Jan. 21, 2011); DOT Order 2100.5 (May 22, 1980). This regulatory action has been determined to be significant under Executive Orders 12866 and DOT policies and procedures. What follows is FRA's Regulatory Impact Analysis (RIA) addressing the economic impacts of the Amendments. The analysis presented here includes quantitative measurements and qualitative discussions of reductions in implementation costs and safety impacts resulting from amendments to the Final Rule made by FRA in response to the Petitions.

The modifications being made in the Amendments all reduce burdens, or potential burdens, of the Final Rule. Thus, the benefits result from reduced regulatory costs. In the same way, the costs associated with each amendment, if any, would result from foregone risk reduction. FRA is granting requests contained in the petitions for reconsideration by:

- Expanding the definition of "minor correction" to include welding and certain uses of any handheld power tools;

- Increasing the maximum authorized speed at which passenger trains may move on an adjacent controlled track to 40 mph while roadway workers continue their on-ground work on the occupied track;

- Deleting the requirement that a non-controlled track whose track center is spaced 19 feet or less from the occupied track be treated as an adjacent controlled track;

- Exempting rail-bound vehicles (on-track vehicles not equipped with highway wheels) used for conducting inspections or performing minor correction work (including welding), while applying the same limitations that apply to hi-rail vehicles;

- Expanding the exception pertaining to repairs performed alongside the roadway work machine or equipment to include work within the perimeter of the machine or equipment.

In analyzing the modifications listed above that are being made to the Final Rule, FRA has applied updated DOT guidance on the economic value of a statistical life (VSL) that was issued in March 2013.[20] This updated guidance increased the VSL from $6.2 million to $9.1 million, and revised the guidance used to compute benefits based on injury and fatality avoidance in each year of the analysis based on forecasts from the Congressional Budget Office of a 1.07 percent annual growth rate in median real wages over the next 30 years (2013-2043). FRA also adjusted wage-based labor costs in each year of the analysis accordingly. Real wages represent the purchasing power of nominal wages. Non-wage inputs are not impacted. All monetary references are in 2012 dollars,

[20] See "Guidance on Treatment of the Economic Value of a Statistical Life in U.S. Department of Transportation Analyses", available online at http://www.dot.gov/regulations/economic-values-used-in-analysis.

unless noted otherwise. The Final Rule's prior analyses had used 2009 dollars. However, in order to incorporate this latest guidance, FRA has evaluated the Amendments in 2012 constant dollars. This analysis, with different wage levels and VSL depending on year, uses 2014 as the first year that the requirements of the Amendments will be effective.

The table below summarizes the potential cost savings that will result from FRA's above-listed Amendments in response to the Petitions, as well as potential cost implications resulting from forgone risk reduction. The costs and benefits have been evaluated over a 20-year period using discount rates of 7 percent and 3 percent. For the 20-year period analyzed, the estimated costs that will be imposed on the industry are negligible. For the same 20-year period, the estimated quantified benefits total $643 million, with a PV (7 percent) of approximately $341.6 million and a PV (3 percent) of approximately $478.4 million:

Amendments to the Final Rule	**Potential Cost Implications**	**Benefits: Estimated Cost Savings (PV, 7%)**	**Benefits: Estimated Cost Savings (PV, 3%)**
Expanding the definition of "minor correction" to include welding and certain uses of any handheld power tools.	Negligible. Very small increase in risk. No quantifiable increases in casualties.	$158.9 Million[21]	$223.2Million
Increasing the maximum authorized speed at which passenger trains may move on an adjacent controlled track to 40 mph while roadway workers continue their on-ground work on the occupied track.	Negligible.	$33.4 Million[22] This estimated benefit only considers cost savings for LIRR and	$46.9 Million This estimated benefit only considers cost savings for

[21] From FRA staff estimate.

		Metro-North.	LIRR and Metro-North.
Deleting the requirement that a non-controlled track whose track center is spaced 19 feet or less from the occupied track be treated as an adjacent controlled track.	None: FRA has no record of past casualties covered by this provision.	$8,000[23]	$11,200
Exempting rail-bound vehicles (on-track vehicles not equipped with highway wheels) used for conducting inspections, performing minor correction work (including welding), while applying the same limitations that apply to hi-rail vehicles.	N/A	N/A	N/A
Expanding the exception pertaining to repairs performed alongside the roadway work machine or equipment to include work within the perimeter of the machine or equipment.	Negligible. Minor reduction in the safety benefit of workers extricating themselves from under machinery so as to be safe in the event a collision with the machinery.	$149.2 Million[24] Non-quantified benefits include lowered injury risks due to less instances of workers having to extract themselves from a machine each time a train passes.	$208.3 Million Non-quantified benefits include lowered injury risks due to less instances of workers having to extract themselves from a machine each time a train passes.
Total		$341.6 Million	$478.4 Million

All values are discounted (PV, 7 and 3 %) for a 20-year period.

Petition Requests Granted and Associated Cost Savings Estimates

1. Definition of "Minor Correction

FRA's response expands the definition of "minor correction" work to avoid the Final Rule's requirements applying to roadway work gangs using handheld power tools or engaged in welding activities. The Railroad Safety Advisory Committee's (RSAC)

[22] Extrapolated from LIRR estimate in proportion to passenger miles.
[23] From FRA staff estimate.
[24] The cost savings estimate is based on an annual $14 million in costs from AAR's comment on the Petitions. FRA believes that the Amendments will avoid these costs that AAR's comment raised.

Roadway Worker Protection (RWP) Working Group's consensus agreement did not include a definition of "minor correction", as the consensus language excluded hi-rail vehicle activities from the adjacent track on-track safety requirements (except if coupled to railroad cars). FRA added the "minor correction" definition to the Final Rule to expand the consensus language and include specific hi-rail activities within the final rule's on-track safety requirements. FRA's response expands the definition of "minor correction" because in the Final Rule: (a) FRA inadvertently excluded certain handheld power tools from the minor correction work exception; and (b) FRA did not realize that the inclusion of welding activities could impose such substantial potential cost burdens. Thus, the Final Rule did not specifically assess costs for either of these items. However, in its comment on the Petitions, AAR's cost estimate for the additional watchmen/lookouts, new employees, and trucks (for three-person welding crews) related to these two items were $144 million in the first year and $127 million per year in subsequent years. APTA also estimated that the Final Rule generally would cost commuter railroads $22 million per year. AAR stated that it arrived at its estimated costs by drawing on track maintenance costs data from the four largest Class I freight railroads and from a large commuter railroad, but did not break those costs down by individual railroad. Instead, AAR provided overall cost estimates for each item that FRA's Regulatory Impact Analysis (RIA) analyzing the Final Rule addressed, while adding in additional cost estimates that it stated FRA did not consider (costs related to the hiring and training of additional roadway workers, new trucks, and train delays). FRA's modification of the definition will remove these potential costs estimated by AAR that were created by the Final Rule.

FRA inadvertently described the type of hand tool use that would have been exempted from the Final Rule's requirement, which would have had the unintended effect of narrowing the type of work that was excluded from the Final Rule's requirements. FRA's response amending the description of hand tools will clarify the agency's intent and resolve that issue. With regard to the decision to grant AAR's request to also exclude hi-rail related welding activities from the Final Rule's requirements, FRA weighed several factors in making its decision. As stated above, the RSAC consensus language did not include hi-rail related welding activities. Other factors include that there have been no fatalities related to activities that would have been implicated by the Final Rule's welding requirement and also because FRA did not realize certain of the additional welding-related costs that would have to be incurred by railroads (the purchase of new hi-rail trucks, the number of additional situations in which the final rule could apply, etc.).

However, FRA also believes that APTA's and AAR's cost estimates with regard to welding were overstated. No watchmen/lookouts would have been required for any welding activities involving the occupancy of a controlled track in single-track territory. Further, the Final Rule would not have applied to welding operations where no on-track equipment occupied a controlled track, or where no welding operations were being performed in connection with another roadway work group's work. Further, any welding operations taking place where the roadway work group would have the potential to foul an adjacent track for any reason are already required to establish on-track safety on that adjacent track under the existing RWP regulations, even in the absence of the Final Rule's requirements. FRA believes that many existing railroad hi-rail trucks could have

accommodated (or could have been modified to accommodate) an additional roadway worker for purposes of traveling to a welding worksite. Finally, a significant percentage of welding worksites are accessible via railroad right-of-way, which negates the need for newly purchased or modified hi-rail trucks to accommodate an additional roadway worker. FRA believes that these factors could have eliminated a high percentage of the welding costs claimed by AAR prior to FRA granting this request. FRA does acknowledge, however, that in order to be prepared for situations in which the Final Rule's requirements would have applied to welding operations, that significant costs likely would have been incurred by the industry to purchase larger new hi-rail trucks to accommodate a third roadway worker in certain situations.

The foregone benefits that would have resulted from the previous, narrower, definition of minor corrective work appear to be small. FRA is not aware of any accidental injuries in the ten year statistical period reviewed for the Final Rule in which the expanded definition of minor corrective work would have applied to the work performed, but the previous definition would not have applied to the work. This does not mean that there is no risk from such work. It only means that if reporting is accurate and past experience is a good basis from which to estimate risk, then the risk is small, with an expected value less than the cost of one injury every ten years.

It appears to FRA that expanding the definition of minor corrective work will produce benefits by reducing costs, although it is unlikely that the benefits will be within an order of magnitude of the cost reductions that AAR claims would occur, $93 million in the first year and $82 million in subsequent years. FRA has roughly estimated those costs to be between $15-30 million per year. For purposes of calculating the total cost

savings for this amendment, FRA used the low end of the range, i.e., $15 million per year. The total cost savings over 20 years is $300 million. The discounted value of this cost is $158.9 million (PV, 7) and $223.2 million (PV, 3).

On the other hand, it does not appear to FRA, based on reported injuries and fatalities, that the benefits foregone, which are the costs of expanding the definition of minor corrective work, would be within an order of magnitude of the benefits of expanding the definition of minor corrective work. Overall, FRA concludes that the cost burden reduction benefit would exceed the very small increase in risk resulting from this particular amendment.

2. Speed Limit Increase to 40 MPH for Passenger Trains

The Final Rule Amendments increase the maximum authorized speed at which passenger trains may move on an adjacent track to 40 mph while roadway workers continue their on-ground work on the occupied adjacent track. This change is being made due to unanticipated costs that the Final Rule's 25-mph limitation could have potentially imposed on the commuter railroads. Further, FRA's information indicates that 40 mph is already largely the speed at which commuter trains pass roadway work zones on adjacent controlled tracks, and FRA has no data or analyses to show that this current 40 mph speed is unsafe.

APTA's petition for reconsideration requested this speed increase to 40 mph. A review of the public record for the RWP Working Group meeting where the 25-mph speed was agreed upon indicates that that no APTA representative was present at that meeting, though APTA apparently did have a representative present at the full RSAC meeting where the consensus language was approved after the conclusion of the RWP

Working Group's work. However, APTA's comment on the NPRM, its Petition, and its comment on the Petitions all requested that FRA increase the speed to 40 mph for passenger trains. FRA notes that APTA did not provide data or economic analysis regarding those requests to raise the speed limit for passenger trains. APTA member LIRR also stated in its comment on the Petitions that the imposition of a 25-mph work zone speed limit (versus a 40-mph work zone speed limit that would permit work on an adjacent track to continue) would cost them $1.4 million dollars per year, and would lead to train delays and cancellations potentially impacting thousands of passengers per day when roadway work projects were being performed. APTA's comment on the Petitions raised the general concern of costs related to disruption of scheduled passenger service and loss of passenger train business, specifically citing the example of a dip in ridership during a South Florida Regional Transportation Authority (TriRail) construction project. APTA's comment also speculated regarding the final rule's impacts on large passenger operations, such as at New York City's Penn Station.

From a safety perspective in choosing to grant this request, passenger trains are shorter than freight trains and also do not present the dangers of shifted loads and swinging doors that freight trains do. In addition, the superior braking capabilities and shorter stopping distances of passenger equipment could reduce risk while approaching and passing adjacent track roadway work zones. Next, shelf couplers on passenger equipment are designed to keep equipment upright and in-line in the event of derailment. Passenger equipment is also typically narrower than comparable freight train equipment, meaning it is physically farther from roadway workers who continue work in the gage of the occupied adjacent track while a passenger train passes. Further, unlike much longer

freight trains, passenger trains are only typically 6 to 8 cars in length, and whether traveling at 40 mph or 25 mph, pass within a matter of seconds. Because there is less danger of swinging doors and shifted loads, risk exposure is much more minimal than when compared to a much longer passing freight train. As also stated above, FRA does not have data or analyses to show that the 40-mph speed at which commuter trains largely pass work zones on an adjacent track presently is unsafe.

Next, if the assertions in LIRR's comment are correct and in some instances on LIRR several thousand passengers could be affected daily by the Final Rule's 25-mph limitation, FRA believes unintended passenger safety issues could occur if the Final Rule's speed restriction is not increased for passenger trains. Crowding on both passenger platforms and on passenger trains that results from commuter train cancellations and delays present platform fall and other obvious risks to passenger safety. These cancellations and delays could occur because commuter train "meet" times, particularly when tracks merge from different subdivisions of a railroad, can be critical in passenger operations when a missed meet for one train compounds and affects later-scheduled trains. Further, a 25-mph limitation for commuter trains could have the unintended impact of driving passengers to other modes of transportation, namely automobiles. Automobile travel is statistically less safe than passenger train travel and is also less fuel efficient, which is undesirable from both a safety and emissions standpoint. Last, in granting this request to raise the speed at which passenger trains may pass work zones to 40 mph, FRA avoids giving railroads perverse incentives to defer track or signal maintenance rather than delay or cancel scheduled passenger trains in complying with the Amended Final Rule's requirements. Of course, such deferred maintenance can

potentially lead to track- or signal-caused train derailments and other accidents, thereby endangering railroad operating crews and other railroad employees, rail passengers, and the general public.

The potential cost implications related to passenger train delay/cancellation issues resulting from this provision of the Final Rule had not previously been raised with FRA until APTA's Petition discussed such. Thus, in estimating the costs of the Final Rule, FRA did not consider the train cancellation issue. The train delay implications for commuter operations that LIRR and APTA raise were also not fully considered in the analysis. LIRR was the only entity to put forth an actual cost figure with regard to the 25-mph speed restriction for passenger operations, and FRA does not have information to verify or refute LIRR's assertions.

LIRR stated that the imposition of a 25-mph work zone speed limit (versus a 40-mph work zone speed limit that would permit work on an adjacent track to continue) would cost them $1.4 million dollars per year. FRA cannot simply extrapolate the LIRR case to all other commuter railroads. The LIRR runs a busy schedule, even on weekends, and unlike many other railroads the LIRR has one main line carrying the bulk of its traffic, which then branches out. Most other large commuter operations branch out relatively close to their downtown terminals. Further, most commuter operations have few, if any, trains operating between rush hours. FRA believes that the only other commuter railroad likely to have had impacts similar to those on the LIRR was Metro-North. Extrapolated to the combination of Metro-North and LIRR based on passenger miles, as reported by APTA in its 2013 yearbook (which contains 2011 data) the total

cost for the industry would have been $3,152,297 per year.[25] The total cost savings resulting from this amendment to the Final Rule over 20 years is $63 million. The discounted value of this cost is $33.4 million (PV, 7) and $46.9 million (PV, 3).

There would be additional costs avoided by the displaced riders who would have had to find alternate transportation or forego the benefits of their intended trips. As mentioned above, alternate transportation may expose passengers to additional safety costs, as well.

FRA analyzed whether there might be foregone safety benefits as a result of the amendment. There was one relevant fatality analyzed for the Final Rule on a commuter railroad. The train in that case was traveling at 45 mph, in excess of 40 mph, but FRA does not believe that the reduction in speed to 25 mph by itself would have been sufficient to prevent the fatality. Had the Final Rule or the Amended Final Rule been in effect at the time of that accident, the roadway worker would have benefited from, at a minimum, train approach warning being the method of on-track safety on the adjacent controlled track. The speed of the train was not what would have prevented the accident; rather it would have been the combination of the Final Rule's job briefing requirements and train approach warning. Thus, FRA believes that the potential safety costs of this modification are negligible.

3. Deletion of Requirement that Non-Controlled Track Be Treated as an Adjacent Controlled Track

[25] According to APTA's 2013 fact book, in 2011 LIRR had 2,087,848,900 passenger miles, and Metro-North had 2,613,236,500 passenger miles, for a total of 4,701,085,400 passenger miles. Dividing 4,701,085,400 by 2,087,848,900 yields 2.251640624. Multiplying $1.4 million by 2.251640624 yields $3,152,297.

FRA's response deletes the requirement that a non-controlled track whose track center is spaced 19 feet or less from the occupied track be treated as an adjacent controlled track. This requirement in the Final Rule was not an RSAC consensus agreement, but rather was added into the Final Rule by FRA in response to a comment on the NPRM. The AAR/ASLRR Petition noted that the Final Rule's provision requiring that roadway work groups treat a non-controlled track as an adjacent-controlled track could cause confusion. APTA's Petition expressed the separate concern that the provision would disrupt scheduled passenger train operations and, thus, also affect the cost of scheduled train operations in a manner which was not contemplated by FRA in the Final Rule. FRA believes that non-controlled tracks may have accounted for equivalent to 1-2 percent of the total siding track mileage that would have been affected by the Final Rule. Based on this small percentage of total track mileage affected, FRA roughly estimates that removing non-controlled track from the coverage of this rule would reduce the delay costs of slowing trains by a minimum of roughly $750 per year. The total discounted cost savings over a 20-year period is $8,000 (PV, 7) and $11,200 (PV, 3).[26] FRA has no record of injuries or fatalities involving roadway workers on an occupied track that also involved train operations on an adjacent non-controlled track. Given the limited circumstances under which this requirement would have applied, there is little risk to the roadway workers by excluding it. FRA no longer has any reason,

[26] FRA estimated this cost savings based on the figure of 1-2 percent of all siding track mileage affected and applying 1 percent of the total estimated on-track safety (§ 214.336) costs of this rulemaking. The APTA Petition asserted this provision (if not amended by FRA) would cause passenger train operation disruptions. However, FRA does not have data to be able to quantify APTA's assertion regarding resultant large cost savings as a result of this amendment.

quantifiable or otherwise, to believe that the benefits of this Final Rule provision exceed its costs.

4. Exemption for Rail-Bound Vehicles Used for Conducting Inspections or Performing Minor Correction Work

The Final Rule Amendments provide an exemption for rail-bound vehicles used for conducting inspections, performing minor correction work or welding while applying the same limitations that apply to hi-rail vehicles. The AAR/ASLRRA Joint Petition requested this exception for rail-bound vehicles where manual inspections or minor correction work are being conducted, because they involve the same activities as those performed during an inspection conducted by a hi-rail vehicle (which are excepted from the Final Rule's requirements). Neither the RSAC consensus agreement nor the Final Rule addressed rail-bound vehicles performing inspection or minor correction work. The BMWED/BRS joint comment submitted in response to the Petitions stated that they did not oppose expanding this exception to rail-bound equipment per the AAR/ASLRRA Joint Petition's suggestion. FRA agrees, and does not believe that excepting rail-bound vehicles from the final rule's requirements will present any additional risk beyond those risks faced by hi-rail vehicles and the roadway workers working near them. In the process of reviewing the AAR/ASLRRA Joint Petition, FRA recognized that there were a substantial number of other rail-bound vehicles used for these functions. Rail bound vehicles often have the capability to perform automated track inspections for geometry, gage restraint or internal flaws. FRA believes that limiting the productivity of such vehicles might reduce their ability to assist in identifying track related hazards and therefore limit their ability to prevent track-caused accidents. It is difficult to estimate

the foregone benefit of avoiding those track-caused accidents, but FRA believes the accident costs avoided far exceed any risks induced by modifying the Final Rule.

FRA does not have sufficient information available to reliably estimate how frequently this exception would be applicable. Further, FRA does not have any record of accidents having occurred that would be prevented by subjecting the newly excluded work to the provisions of the Final Rule. Nonetheless, because there is no reason to distinguish minor corrective work being performed from rail bound vehicles from identical work being performed from hi-rail vehicles, FRA is adopting the exception, but does not analyze the exception further.

5. Expansion of the Exception Pertaining to Repairs Performed on Roadway Maintenance Machines or Equipment

The Final Rule Amendments expand the exception pertaining to repairs performed alongside roadway maintenance machines or equipment contained in the Final Rule to also include work performed within the perimeter of the machine or equipment. The AAR/ASLRRA Joint Petition noted that the exception as stated in the Final Rule was too narrow and should also apply to a worker positioned within the perimeter of the equipment, without regard to whether the maintenance or repairs are performed while positioned on a side of the occupied track. They also noted that that a repair person who is working beneath a machine should not be forced to extract himself or herself each time a train passed on an adjacent controlled track as this could increase the risk of injury to the worker, and that a roadway worker working performing repairs under the machine is not at risk of being struck by a train on the adjacent track. FRA did not consider these potential risks in its analysis of the Final Rule but agrees with AAR's assertions. Consequently, FRA's response adds an alternate condition that would expand the existing

exception to include a roadway worker performing maintenance while positioned within the perimeter of the machine or equipment (either on or under it). This amendment to the Final Rule will reduce the risk of injury to employees extracting themselves from a machine or equipment in these circumstances, and, thus, will eliminate any potential costs associated with those potential injuries. This exception from the requirements of the Final Rule will also alleviate virtually all of the estimated $14 million annual cost that AAR's comment on the Petitions stated would result if the Final Rule applied to repairs performed on roadway maintenance machines standing on an adjacent controlled track .[27] The total cost savings of this amendment over 20 years is $280 million. The discounted value of this cost is $149.2 million (PV, 7) and $208.3 million (PV, 3).

The benefits of this change come both from reduced burden on productivity and from enhanced safety of workers who will not have to extricate themselves from under machinery, with a risk of injury each time they extricate themselves. FRA has no data on which to base an estimate of the reduced burden on productivity. Of course, since this provision had not yet taken effect, FRA had not seen any injuries caused by employees extricating themselves from under machinery in order to comply with the provision. FRA has no data on which to base an estimate of that risk. On the other hand, workers remaining under machinery may face a very small risk from potential train accidents that could injure the workers if the machines they are working on get hit in a collision

[27] The cost of repairing roadway maintenance machines was not specifically figured in the Final Rule's RIA. Instead, the RIA generally assessed the cost of complying, as such repair activity on an occupied track is "roadway work" and, thus, it was not contemplated by FRA that such work was not covered by the Final Rule. However, because the Final Rule Amendments further expand the exception that would accommodate such repair work, FRA believes that AAR's estimated cost is overstated and such repair work will, in all but rare circumstances, be able to be performed without these costs being incurred because the Amended Final Rule's requirements will not apply.

between the train and roadway maintenance machines. The cost of this change, if any, would be a reduction in the safety benefit of having workers extricate themselves from under the machinery so as to be safe in the event of such a collision. FRA has no data on which to base that estimate, either.

Special Sensitivity Analysis of the Amended 2011 Final Rule

As discussed above, in response to the Petitions FRA has also prepared a Special Sensitivity Analysis, which analyzes the Amended Final Rule, comprising the requirements of the 2011 Final Rule as revised by the Final Rule Amendments described above. The Special Sensitivity Analysis addresses the concerns raised in the Petitions regarding the cost-benefit analysis of the 2011 Final Rule. FRA notes that that this Special Sensitivity Analysis is not an evaluation of the 2011 Final Rule, and that it uses updated VSL and wage rate estimates.

Requests Denied (Alternatives to the Final Rule)

FRA is denying two of the requests made in joint AAR/ASLRRA Joint Petition. Those requests were to: (1) clarify that the Final Rule did not address repair and maintenance of roadway maintenance machines, and (2) amend the Final Rule to permit work to resume when the leading end, rather than the trailing end, of a train traveling over 25 mph has passed a roadway work group on an adjacent occupied track (trailing end provision). Since FRA is not making any regulatory modifications based on these requests, FRA is not accounting for any changes in costs or benefits in analyzing the denied requests in this response to the Petitions.

1. Application of the Final Rule to Roadway Maintenance Machine Repair

FRA is denying the first request because most of the work performed on roadway maintenance machines may be accomplished without the requirements of the Amended Final Rule applying to such work, particularly in light of FRA's decision to grant the request to expand the exception mentioned above pertaining to work performed within the perimeter of (to include on or under) roadway maintenance machines. Further, FRA does not believe that AAR's assertion that the repair of roadway maintenance machines on an adjacent track was not intended to be covered by the final rule has merit. Since the 1996 promulgation of the RWP regulations at 49 CFR part 214, such repair work to roadway maintenance machines or equipment has always required that on-track safety be established when roadway workers have the potential to foul track.

2. Trailing End Provision

FRA is denying the second request regarding the trailing end provision. AAR's comment on the Petitions significantly overestimated the costs of complying with this provision ($56 million annually). Stopping work rather than slowing trains increases the time of track occupancy required to perform the maintenance, and the track occupancy itself by a roadway work group is the most costly factor involved in the analysis. FRA staff conducted a modeling analysis to calculate the delay associated with implementing this provision in the Amended Final Rule, and the results showed that congestion-induced costs were limited when freight train volumes were at or above a ten train per shift (7 hours per shift affected by the Amended Final Rule) threshold. Moreover, once the leading end of a freight train is slowed to 25 mph (a requirement agreed to by AAR) then the ability of a freight train to increase speed while passing a work gang is extremely limited. Thus, in FRA's view, the overall impact of this requirement is far less than the

impact claimed by AAR in its petition. Further, when trains pass a roadway work group on an adjacent controlled track, injury risks are present (risk of shifted loads/shifted ladings, loose banding, dragging chains/binders, loose brake piping, loose/swinging boxcar doors, and fragmented brake shoes).

The 2011 Final Rule provided that roadway workers may resume work only after the trailing end of a train or other on-track equipment (authorized to travel past the roadway work gang at a speed greater than 25 mph) has passed the roadway work group ("trailing end" provision). The AAR/ASLRRA Joint Petition requested that the Final Rule be modified to permit roadway workers to resume work after the leading end of a train has passed. They cited the following points as support for their request: (1) there are no fatalities from shifted loads and no widespread problem of employees injured by shifted loads; (2) there are many railroad employees working near passing trains, not just roadway workers; (3) there is a heightened awareness of the roadway workers after the leading end of a train passes; and (4) prohibiting the resumption of work until the entire train or equipment has passed would adversely affect productivity and require the hiring of additional roadway workers, costing the railroads approximately $56 million annually (based on an estimate for four Class I railroads alone). APTA's comment expressed support for the AAR/ASLRRA Joint Petition's position with regard to the "trailing end" provision. The BMWED/BRS joint comment stated that the AAR/ASLRRA Joint Petition ignored the risks associated with shifted loads/shifted ladings and the hazards associated with materials being kicked up by trains operating at track speed.

FRA's analysis has not found cases above a certain train traffic volume (ten trains per shift) where stopping work while trains pass at greater than 25 mph (or, as amended,

greater than 40 mph for passenger trains) would be less costly than slowing trains to 25 mph (or 40 mph for passenger) for any likely roadway worker work groups on an adjacent occupied track. Stopping work increases the time of track occupancy required to perform the maintenance. The track occupancy itself by a roadway work group is the most costly factor involved in the analysis.

FRA performed modeling, described in more detail in the Special Sensitivity Analysis, that analyzes the impacts of the Amended Final Rule and which addresses petitioners' concerns with the previous analysis. The 20-year discounted costs of the trailing end provision of the 2011 Final Rule are estimated to total $841,300, discounted at 7 percent or $1,185,447, discounted at 3 percent. These costs are far below AAR's estimates of $56 million per year. This point is discussed in further detail in the Special Sensitivity Analysis.

Also, in rejecting AAR's petition, FRA is retaining the existing maximum speed of 25 mph for adjacent-controlled-track movements of freight trains and other freight on-track equipment movements which permits roadway work to continue on the occupied adjacent track. As mentioned above, when freight trains pass works zones on an adjacent track, the safety risk of shifted loads is present, as well as the safety risk of swinging doors, loose banding, and dragging equipment, and the hazards associated with debris, dust, stone, and construction/maintenance materials being strewn by freight trains, which tend to be longer and much heavier than passenger trains. FRA's revised analysis of the impact of the combined final rules shows that congestion impacts that slow traffic when a track is occupied also limit the costs of slowing trains to 25 mph when they pass an adjacent occupied track. The costs, while not negligible, are much lower than the safety

benefits provided. The 20-year discounted costs of slowing trains to 25 mph for adjacent-controlled-track movements of freight trains and other freight on-track equipment movements, exclusive of trailing end costs, will be $7.3 million, discounted at 7 percent or $10.2 million, discounted at 3 percent.

Clarification

In response to AAR's request in its Petition, FRA also clarified how railroads may release working limits. A clarification neither removes nor imposes a requirement and therefore creates neither benefits nor costs.

Conclusion

FRA believes the cost-saving benefits of the Final Rule Amendments exceed their costs.

B. Regulatory Flexibility Act and Executive Order 13272; Final Regulatory Flexibility Assessment

The Regulatory Flexibility Act (5 U.S.C. 601 et seq.) and Executive Order 13272 require a review of proposed and final rules to assess their impacts on small entities. FRA certifies that the Final Rule Amendments will not have a significant economic impact on a substantial number of small entities.

"Small entity" is defined in 5 U.S.C. 601 (Section 601). Section 601(3) defines a small entity as having the same meaning as "small business concern" under Section 3 of the Small Business Act. This includes any small business concern that is independently owned and operated, and is not dominant in its field of operation. Section 601(4) includes within the definition of small entities not-for-profit enterprises that are independently owned and operated, and are not dominant in their fields of operation.

Additionally, Section 601(5) defines small entities as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations less than 50,000. The U.S. Small Business Administration (SBA) stipulates in its size standards that the largest a railroad business firm that is for-profit may be, and still be classified as a small entity, is 1,500 employees for "line haul operating railroads" and 500 employees for "switching and terminal establishments."

Federal agencies may adopt their own size standards for small entities in consultation with SBA and in conjunction with public comment. Pursuant to that authority, FRA has published a final policy that formally establishes small entities as railroads that meet the line haulage revenue requirements of a Class III railroad.[28] The revenue requirements are currently $20 million or less in annual operating revenue. The $20 million limit (which is adjusted by applying the railroad revenue deflator adjustment)[29] is based on the Surface Transportation Board's (STB) threshold for a Class III railroad carrier. FRA is using the STB's threshold in its definition of small entities for railroads affected by this rule. FRA has also adopted the STB threshold for Class III railroad carriers as the size standard for railroad contractors.[30] FRA estimates that 703 railroads will be affected by the Amendments. This number equals the number of railroads that reported to FRA in 2011, minus those railroads that are tourist, scenic, excursion, or historic railroads and are not part of the general system (these railroads are exempt from the rule). Of those railroads, 44 are Class I, Class II, commuter, and

[28] See 68 FR 24891 (May 9, 2003); 49 CFR part 209, Appendix C.

[29] For further information on the calculation of the specific dollar limit, please see 49 CFR part 1201.

[30] See 68 FR 24891 (May 9, 2003).

intercity passenger railroads. By FRA's definition of a small entity, two commuter railroads would be considered to be small entities. The remaining 659 railroads are also assumed to be small railroads for the purpose of this assessment, for a total of 661 small entities subject to this rule. However, because of certain characteristics that these railroads typically have (most small railroads do not have territories with adjacent controlled tracks, but rather only single-track operations), there should not be any impact on the majority of them. Some small railroads, such as the tourist and historic railroads, which operate across the lines of other railroads, are not subject to the applicability of the final rule because they do not own the track over which they operate. They might be affected by the impact, although beneficial, of the requirements of the Amendments. The impacts on entities not directly subject to the regulation are not considered in this Regulatory Flexibility Analysis. Finally, other small railroads, if they do have more than a single track, typically have operations that are light enough such that the railroads have generally always performed the pertinent trackside work with the track and right-of-way taken out of service, or conducted the work during hours that the track is not used. Thus, although 661 small railroads will be subject to this rule, very few actually have operations that will be affected by this rulemaking. FRA does not believe that a substantial number of small entities will be affected.

FRA is uncertain as to the number of contractors that will be affected by the Amendments. FRA is aware that some railroads hire contractors to conduct some of the functions of roadway workers on their railroads. However, most of the cost savings associated with the burdens from the Amendments will ultimately get passed on to the pertinent railroad. In addition, at the proposed rule stage, FRA requested information

related to contractors and the burdens that might impact them as a result of the proposed rule and received none. Hence, FRA is confident that the Amended Final Rule's requirements, which have not changed significantly from those proposed in the NPRM or the Final Rule published in November 2011, other than to reduce burdens, will not have an impact on any contractors that will perform track work on a small railroad. To the extent that any provisions of this rule do affect small entities, the effects are likely to be beneficial, as the Amendments only provides regulatory relief from the requirements originally imposed by the Final Rule. FRA does not believe the impact on any small entity will be significant.

No other small businesses (non-railroads) are expected to be impacted by the Amendments.

FRA certified that the Final Rule (76 FR 74586) was not expected to have a significant economic impact on a substantial number of small entities under 5 U.S.C. 605(b). Having made the determinations noted above, FRA certifies that the Final Rule Amendments will not have a significant economic impact on a substantial number of small entities under 5 U.S.C. 605(b).

C. Paperwork Reduction Act

The information collection requirements in this final rule associated with FRA's response to petitions for reconsideration remain unchanged from the previous publication of this final rule and are being submitted upon publication in the Federal Register for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.* The sections that contain the current information collection requirements and the estimated time to fulfill each requirement are

as follows, and also remain unchanged:

CFR Section	Respondent Universe	Total Annual Responses	Average Time per Response	Total Annual Burden Hours
Form FRA F 6180.119 - Part 214 Railroad Workplace Safety Violation Report	350 Safety Inspectors	150 forms	4 hours	600 hours
214.303 - Railroad On-Track Safety Programs. - Amendments to Programs - Subsequent Years: New Programs	60 Railroads 5 New Railroads	20 amend. + 584 amend. 5 new prog.	20 hours; 4 hrs. 250 hours	2,736 hours 1,250 hours
214.313 - Good Faith Challenges to On-Track Safety Rules	20 Railroads	80 challenges	4 hours per challenge	320 hours
214.315/335 - Supervision +communication - Regular Job Briefings - Adjacent-Track Safety Briefings (**New**)	50,000 Rdwy Workers 24,500 Rdwy Workers	16,350,000 brf 2,403,450 brf.	2 minutes 30 seconds	545,000 hours 20,029 hours
214.321-Exclusive Track Occupancy: Working Limits – Written authority to roadway worker in charge	8,583 Roadway Workers	700,739 authorities	1 minute	11,679 hours
214.325 - Train Coordination - Establishing Working Limits through Communication	50,00 Roadway Workers	36,500 comm.	15 seconds	152 hours
214.327 - Inaccessible Track - Working Limits on Non-controlled Track: Notifications	718 Railroads	50,000 notifications	10 minutes	8,333 hours
214.336 - Procedures for Adjacent-Track Movements Over 25 mph - Notifications/Watchmen/ Lookout Warnings - Roadway Worker Communication with Train Engineers or Equipment Operators - Procedures for Adjacent-Track Movements 25 mph or less - Notifications/Watchmen/ Lookout Warnings - Roadway Worker Communication with Train Engineers or Equipment Operators -Exceptions to the requirements in paragraphs (a), (b), and (c) for adjacent - controlled-track on-track safety: Work activities involving certain equipment and purposes – On-Track Job Safety Briefings	100 Railroads 100 Railroads 100 Railroads 100 Railroads 100 Railroads	10,000 notific. 3,000 comm. 3,000 notific. 1,500 comm 1,030,050 briefings	15 seconds 1 minute 15 seconds 1 minute 15 seconds	42 hours 50 hours 13 hours 25 hours 4,292 hours

214.337 - On-Track Safety Procedures for Lone Workers: Statements by Lone Workers	718 Railroads	2,080,000 statements	30 seconds	17,333 hours
214.343/345/347/349/351/353/355 - training -Additional on-track safety training (**New**) - Records of Training	50,000 Rdwy Workers 35,000 Rdwy Workers 50,000 Roadway Workers	50,000 tr. RW 35,000 tr. RW 50,000 records	4.5 hours 5 min. 2 min.	225,000 hours 2,917 hours 1,667 hours
214.503 - Good Faith Challenges; Procedures for Notification and Resolution – Notifications for Non-Compliant Roadway Maintenance Machines or Unsafe Condition - Resolution Procedures	50,000 Rdwy Workers 644 Railroads	125 notific. 10 procedures	10 minutes 2 hours	21 hours 20 hours
214.505 - Required Environmental Control and Protection Systems For New On-Track Roadway Maintenance Machines with Enclosed Cabs - Designations/Additions to List	644 Railroads/ 200 contractors 644 Railroads/ 200 contractors	500 lists 150 additions/ designations	1 hour 5 minutes	500 hours 13 hours
214.507 - A-Built Light Weight on New Roadway Maintenance Machines	644 Railroads	1,000 stickers	5 minutes	83 hours
214.511 - Required Audible Warning Devices For New On-Track Roadway Maintenance Machines	644 Railroads	3,700 identified mechanisms	5 minutes	308 hours
214.513 - Retrofitting of Existing On-Track Roadway Maintenance Machines -Identification of Triggering Mechanism - Horns	703 Railroads	200 mechanisms	5 minutes	17 hours
214.515 - Overhead Covers For Existing On-Track Roadway Maintenance Machines	644 Railroads	500 requests + 500 responses	10 minutes; 20 minutes	250 hours
214.517 - Retrofitting of Existing On-Track Roadway Maintenance Machines Manufactured On or After Jan. 1, 1991	644 Railroads	500 stencils	5 minutes	42 hours
214.518 - Safe and Secure Position for riders - Positions identified by stencilings/markings/notices	644 Railroads	1,000 stencils	5 minutes	83 hours
214.523 -Hi-Rail Vehicles – Inspections/ Records - Non-Complying Conditions	644 Railroads 644 Railroads	2,000 records 500 tags + 500 reports	60 minutes 10 min.; 15 min.	2,000 hours 208 hours
214.527 – On-Track Roadway Maintenance Machine; Inspection for Compliance and Repair Schedules	644 Railroads	550 tags + 550 reports	5 min.; 15 min.	184 hours
214.533 - Schedule of Repairs Subject to Availability of Parts – Records of Compliance with this Section	644 Railroads	250 records	15 minutes	63 hours

All estimates include the time for reviewing instructions; searching existing data sources; gathering or maintaining the needed data; and reviewing the information. For information or a copy of the unchanged paperwork package submitted to OMB, contact Mr. Robert Brogan at 202-493-6292 or Ms. Kimberly Toone at 202-493-6132 or via e-mail at the following addresses: Robert.Brogan@dot.gov; Kimberly.Toone@dot.gov. Organizations and individuals desiring to submit comments on the collection of information requirements should direct them to the Office of Management and Budget, Office of Information and Regulatory Affairs, Washington, D. C. 20503, Attention: FRA Desk Officer. Comments may also be sent via e-mail to the Office of Management and Budget at the following address: oira_submissions@omb.eop.gov.

mailto:victor.angelo@fra.dot.gov

OMB is required to make a decision concerning the collection of information requirements contained in this final rule between 30 and 60 days after publication of this document in the Federal Register. Therefore, a comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication.

FRA cannot impose a penalty on persons for violating information collection requirements which do not display a current OMB control number, if required. The current OMB control number for this collection of information is **OMB No. 2130-0539**.

D. Federalism Implications

Executive Order 13132, "Federalism" (64 FR 43255, Aug. 10, 1999), requires FRA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" are defined in the Executive

Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under Executive Order 13132, the agency may not issue a regulation with federalism implications that imposes substantial direct compliance costs and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or the agency consults with State and local government officials early in the process of developing the regulation. Where a regulation has federalism implications and preempts State law, the agency seeks to consult with State and local officials in the process of developing the regulation.

This final rule has been analyzed in accordance with the principles and criteria contained in Executive Order 13132. This final rule would not have a substantial effect on the States or their political subdivisions; it would not impose any compliance costs; and it would not affect the relationships between the Federal government and the States or their political subdivisions, or the distribution of power and responsibilities among the various levels of government. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

However, this final rule could have preemptive effect by operation of law under certain provisions of the Federal railroad safety statutes, specifically the former Federal Railroad Safety Act of 1970, repealed and recodified at 49 U.S.C. 20106 (Section 20106). Section 20106 provides that States may not adopt or continue in effect any law, regulation, or order related to railroad safety or security that covers the subject matter of a regulation prescribed or order issued by the Secretary of Transportation (with respect to

railroad safety matters) or the Secretary of Homeland Security (with respect to railroad security matters), except when the State law, regulation, or order qualifies under the "essentially local safety or security hazard" exception to Section 20106.

In sum, FRA has analyzed this final rule in accordance with the principles and criteria contained in Executive Order 13132. As explained above, FRA has determined that this final rule has no federalism implications, other than the possible preemption of State laws under Federal railroad safety statutes, specifically Section 20106. Accordingly, FRA has determined that preparation of a federalism summary impact statement for this final rule is not required.

E. Environmental Impact

FRA has evaluated this final rule in accordance with its "Procedures for Considering Environmental Impacts" (FRA's Procedures) (64 FR 28545, May 26, 1999) as required by the National Environmental Policy Act (42 U.S.C. 4321 et seq.), other environmental statutes, Executive Orders, and related regulatory requirements. FRA has determined that this final rule is not a major FRA action (requiring the preparation of an environmental impact statement or environmental assessment) because it is categorically excluded from detailed environmental review pursuant to section 4(c)(20) of FRA's Procedures. See 64 FR 28547 (May 26, 1999).

In accordance with section 4(c) and (e) of FRA's Procedures, the agency has further concluded that no extraordinary circumstances exist with respect to this regulation that might trigger the need for a more detailed environmental review. As a result, FRA finds that this final rule is not a major Federal action significantly affecting the quality of the human environment.

F. Unfunded Mandates Reform Act of 1995

Pursuant to Section 201 of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4, 2 U.S.C. 1531), each Federal agency "shall, unless otherwise prohibited by law, assess the effects of Federal regulatory actions on State, local, and tribal governments, and the private sector (other than to the extent that such regulations incorporate requirements specifically set forth in law)." Section 202 of the Act (2 U.S.C. 1532) further requires that "before promulgating any general notice of proposed rulemaking that is likely to result in the promulgation of any rule that includes any Federal mandate that may result in expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any 1 year, and before promulgating any final rule for which a general notice of proposed rulemaking was published, the agency shall prepare a written statement" detailing the effect on State, local, and tribal governments and the private sector. The final rule will not result in the expenditure, in the aggregate, of $140,800,000 or more (as adjusted annually for inflation) in any one year, and thus preparation of such a statement is not required.

G. Energy Impact

Executive Order 13211 requires Federal agencies to prepare a Statement of Energy Effects for any "significant energy action." 66 FR 28355 (May 22, 2001). Under the Executive Order, a "significant energy action" is defined as any action by an agency (normally published in the Federal Register) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking: (1)(i) That is a significant

regulatory action under Executive Order 12866 or any successor order, and (ii) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. FRA has evaluated this final rule in accordance with Executive Order 13211. FRA has determined that this final rule is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Consequently, FRA has determined that this final rule is not a "significant energy action" within the meaning of Executive Order 13211.

H. Trade Impact

The Trade Agreements Act of 1979 (Pub. L. 96–39, 19 U.S.C. 2501 et seq.) prohibits Federal agencies from engaging in any standards setting or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. FRA has assessed the potential effect of this final rule on foreign commerce and believes that its requirements are consistent with the Trade Agreements Act of 1979. The requirements imposed are safety standards, which, as noted, are not considered unnecessary obstacles to trade.

I. Privacy Act

Interested parties should be aware that anyone is able to search the electronic form of all written comments received into any agency docket by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). Please see the privacy notice at

http://www.regulations.gov/#!privacyNotice. You may review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78) or you may visit http://www.dot.gov/privacy.html.

List of Subjects in 49 CFR Part 214

Occupational safety and health, Penalties, Railroad safety.

The Rule

For the reasons discussed in the preamble, FRA amends part 214 of title 49 of the Code of Federal Regulations as follows:

PART 214—[AMENDED]

1. The authority citation for part 214 is revised to read as follows:

Authority: 49 U.S.C. 20102-20103, 20107, 21301-21302, 21304; 28 U.S.C. 2461, note; and 49 CFR 1.89.

Subpart C—Roadway Worker Protection

2. Amend § 214.336 by:

a. Revising paragraph (a)(2),

b. Revising paragraph (a)(3) definitions of "Adjacent controlled track" and "Minor correction,"

c. Revising the heading and introductory text of paragraph (b),

d. Revising paragraph (c),

e. Revising paragraph (e)(2),

f. Revising paragraph (e)(3)(i),

h. Revising Table 1, and

i. Revising Figure 1 to read as follows:

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

(a) * * *

(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) * * *

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

* * * * *

(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:

* * * * *

(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.

* * * * *

(e) * * *

(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) * * *

(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.

* * * * *

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

Example No./ Diagram No. (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")		On or Between the Rails of the Occupied Track ("'No. 2' Track" or "No. 2"), where On-Track Safety Is Established through Working Limits	"Side B" of the Occupied Track—either (1) the side with no adjacent track or (2) 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. 3' Track" or "No. 3")	
	Method of On-Track Safety on Side A	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]	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. 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 btwn. 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

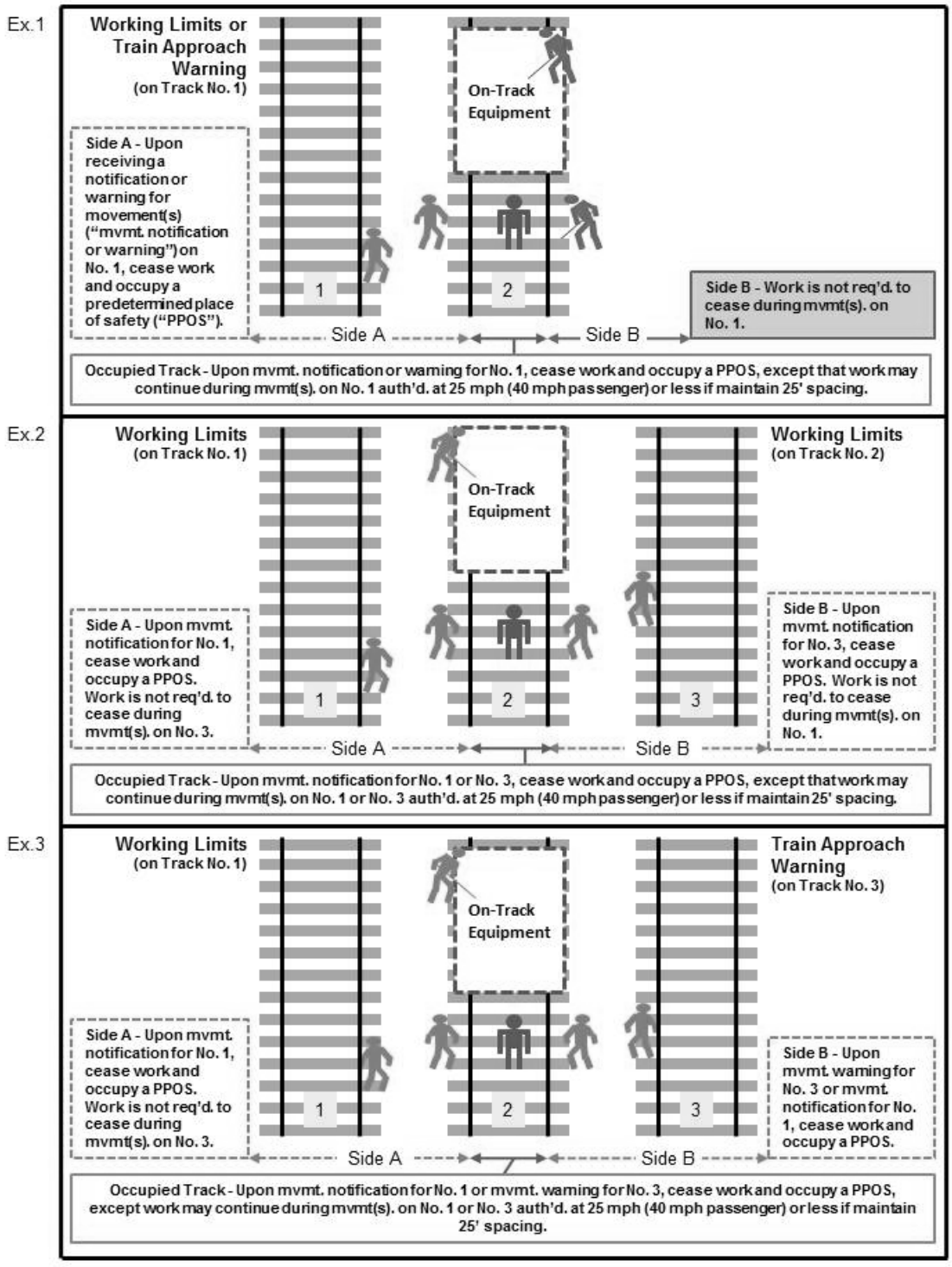
[1] As used in the above table, a "predetermined place of safety" (or "PPOS") means a specific location that an affected roadway worker must occupy upon receiving a watchman/lookout's warning of approaching movement(s) ("warning") or a roadway worker in charge's ("RWIC's") notification of pending movement(s) 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.

[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

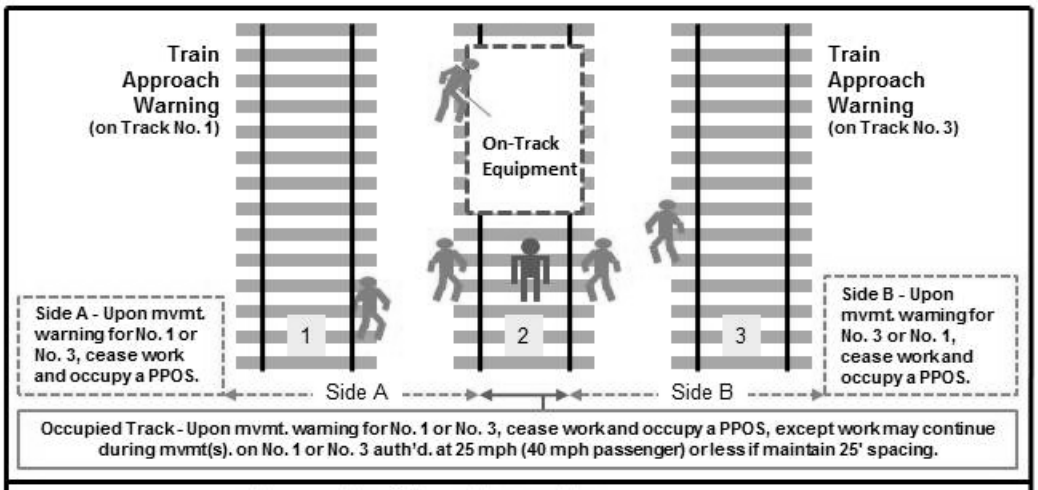
permitted on that side. Note, however, that per § 214.336(a)(2), work would no longer be permitted to continue on or between the rails of the occupied track during movement(s) on an adjacent controlled track at 25 mph or less (or at 40 mph or less for passenger trains or other passenger on-track equipment 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).

[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 § 214.336(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).

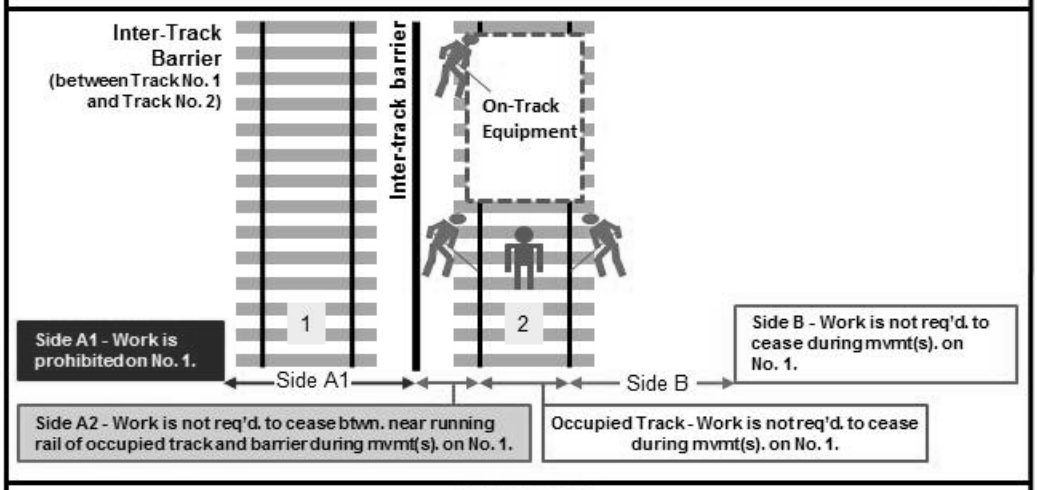
FIGURE 1 - EXAMPLES APPLYING § 214.336, ON-TRACK SAFETY PROCEDURES FOR CERTAIN ROADWAY WORK GROUPS AND ADJACENT TRACKS
(All tracks are controlled, with centerlines less than 19 feet apart.)



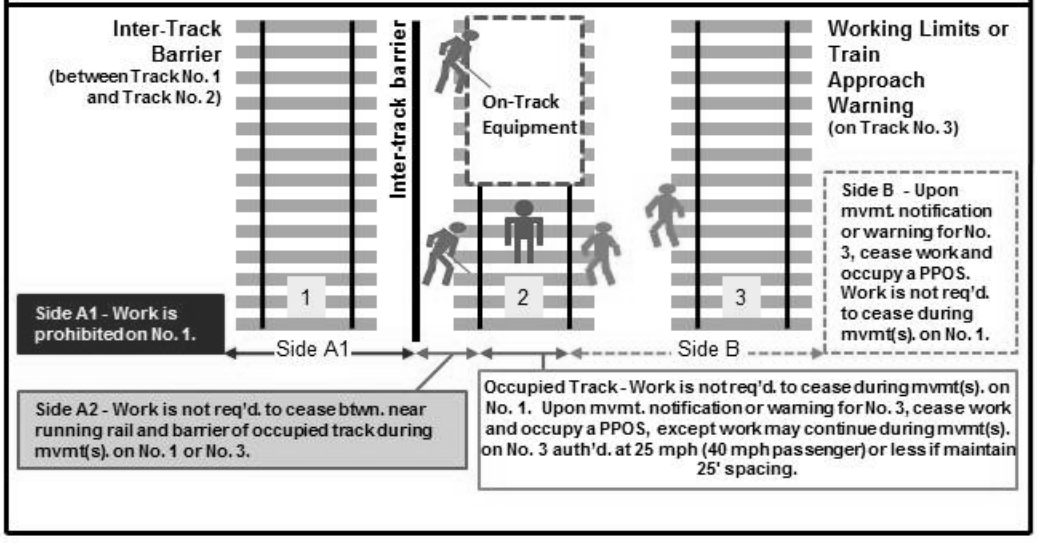
Ex.4


Train Approach Warning (on Track No. 1)
On-Track Equipment
Train Approach Warning (on Track No. 3)
Side A - Upon mvmt. warning for No. 1 or No. 3, cease work and occupy a PPOS.
Side B - Upon mvmt. warning for No. 3 or No. 1, cease work and occupy a PPOS.
1
2
3
Side A
Side B
Occupied Track - Upon mvmt. warning for No. 1 or No. 3, cease work and occupy a PPOS, except work may continue during mvmt(s). on No. 1 or No. 3 auth'd. at 25 mph (40 mph passenger) or less if maintain 25' spacing.

Ex.5


Inter-Track Barrier (between Track No. 1 and Track No. 2)
Inter-track barrier
On-Track Equipment
Side A1 - Work is prohibited on No. 1.
Side B - Work is not req'd. to cease during mvmt(s). on No. 1.
1
2
Side A1
Side B
Side A2 - Work is not req'd. to cease btwn. near running rail of occupied track and barrier during mvmt(s). on No. 1.
Occupied Track - Work is not req'd. to cease during mvmt(s). on No. 1.

Ex.6


Inter-Track Barrier (between Track No. 1 and Track No. 2)
Inter-track barrier
On-Track Equipment
Working Limits or Train Approach Warning (on Track No. 3)
Side A1 - Work is prohibited on No. 1.
Side B - Upon mvmt. notification or warning for No. 3, cease work and occupy a PPOS. Work is not req'd. to cease during mvmt(s). on No. 1.
1
2
3
Side A1
Side B
Side A2 - Work is not req'd. to cease btwn. near running rail and barrier of occupied track during mvmt(s). on No. 1 or No. 3.
Occupied Track - Work is not req'd. to cease during mvmt(s). on No. 1. Upon mvmt. notification or warning for No. 3, cease work and occupy a PPOS, except work may continue during mvmt(s). on No. 3 auth'd. at 25 mph (40 mph passenger) or less if maintain 25' spacing.

3. Appendix A to part 214 is amended by removing the space before the superscripts for footnotes 1 and 2, revising the entry under Subpart C for § 214.315, revising the entry under Subpart C for § 214.336, and revising footnote 1 to read as follows:

APPENDIX A TO PART 214—SCHEDULE OF CIVIL PENALTIES[1]

Section[2]	Violation	Willful Violation
* * * * * * *		
Subpart C—Roadway Worker Protection Rule		
* * * * * * *		
214.315 Supervision and communication:		
(a) * * *		
(2)-(4) Partial failure of employer to provide on-track safety job briefing…….	2,000	4,000
(b) Incomplete job briefing……...	2,000	5,000
(c)(i) Failure to designate roadway worker in charge of roadway work group…….	2,000	5,000
(ii) Designation of more than one roadway worker in charge of a roadway work group……..	1,000	2,000
(iii) Designation of non-qualified roadway worker in charge of roadway work group…….	3,000	6,000
(d)(i) Failure to notify roadway workers of on-track safety procedures in effect……..	3,000	6,000
(ii) Incorrect information provided to roadway workers regarding on-track safety procedures in effect…….	3,000	6,000
(iii) Failure to notify roadway workers of change in on-track safety procedures…….	3,000	6,000
(e)(i) Failure of lone worker to communicate with designated employee for daily job briefing……..	……..	1,500
(ii) Failure of employer to provide means for lone worker to receive daily job briefing…….	3,000	6,000
* * * * * * *		
214.336 On-track safety procedures for certain roadway work groups and adjacent tracks:		

Section[2]	Violation	Willful Violation
(a) * * *		
(2) Failure to implement the more restrictive procedure required by paragraph (b) during special circumstance of concurrent movement(s) on two adjacent controlled tracks where one movement is authorized or permitted at a speed over 25 mph (or over 40 mph for a passenger movement)…….....	1,500	3,000
* * * * * * *		
(c) Failure to maintain 25-foot spacing between on-track, self-propelled equipment or coupled equipment and roadway workers(s) on the occupied track during an adjacent-controlled track movement at 25 mph or less (or at 40 mph or less for a passenger movement)…….	2,000	4,000
* * * * * * *		

[1] A penalty may be assessed against an individual only for a willful violation. The Administrator reserves the right to assess a penalty of up to $105,000 for any violation where circumstances warrant. See 49 CFR part 209, appendix A. Failure to observe any condition(s) of an exception set forth in paragraph (e) of § 214.336 deprives the railroad or contractor of the benefit of the exception and makes the railroad or contractor, and any responsible individuals, liable for penalty under the particular regulatory provision(s) from which the exception would otherwise have granted relief.

[2] The penalty schedule uses section numbers from 49 CFR part 214. If more than one item is listed as a type of violation of a given section, each item is also designated by a ‘‘penalty code,’’ which is used to facilitate assessment of civil penalties, and which may or may not correspond to any subsection designation(s). For convenience, penalty citations will cite the CFR section and the penalty code, if any. FRA reserves the right, should litigation become necessary, to substitute in its complaint the CFR citation in place of the combined CFR and penalty code citation, should they differ.

Issued in Washington, DC, on December 27, 2013.

Stacy Cummings,
Executive Director.

[FR Doc. 2013-31417 Filed 01/09/2014 at 8:45 am; Publication Date: 01/10/2014]