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Federal Railroad Administration

49 CFR Part 213
Track Safety Standards; Improving Rail Integrity; Final Rule

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Part 213

[Docket No. FRA–2011–0058, Notice No. 2]

RIN 2130–AC28

Track Safety Standards; Improving Rail Integrity

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

ACTION: Final rule.

SUMMARY: FRA is amending the Federal Track Safety Standards to promote the safety of railroad operations by enhancing rail flaw detection processes. In particular, FRA is establishing minimum qualification requirements for rail flaw detection equipment operators, as well as revising requirements for effective rail inspection frequencies, rail flaw remedial actions, and rail inspection records. In addition, FRA is removing regulatory requirements concerning joint bar fracture reporting. This final rule is intended to implement section 403 of the Rail Safety Improvement Act of 2008 (RSIA).

DATES: This final rule is effective March 25, 2014. Petitions for reconsideration must be received on or before March 25, 2014. Comments in response to petitions for reconsideration must be received on or before May 9, 2014.

ADDRESSES: *Petitions for reconsideration and comments on petitions for reconsideration:* Any petitions for reconsideration or comments on petitions for reconsideration related to this Docket No. FRA–2011–0058, Notice No. 2, may be submitted by any of the following methods:

- *Federal eRulemaking Portal:* Go to *www.Regulations.gov*. Follow the online instructions for submitting comments.
- *Mail:* Docket Management Facility, U.S. Department of Transportation, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001.
- *Hand Delivery:* Docket Management Facility, U.S. Department of Transportation, West Building, Ground floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.
- *Fax:* 202–493–2251.

Instructions: All submissions must include the agency name and docket number or Regulatory Identification Number (RIN) for this rulemaking. Please note that any petitions for reconsideration or comments received will be posted without change to *www.Regulations.gov*, including any personal information provided. Please see the discussion under the Privacy Act heading in the **SUPPLEMENTARY INFORMATION** section of this document.

Docket: For access to the docket to read background documents, or any petitions for reconsideration or comments received, go to *www.Regulations.gov* at any time or visit the Docket Management Facility, U.S. Department of Transportation, West Building, Ground floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Carlo Patrick, Staff Director, Office of Railroad Safety, FRA, 1200 New Jersey Avenue SE., Washington, DC 20590 (telephone: 202–493–6399); or Elisabeth Galotto, Trial Attorney, Office of Chief Counsel, FRA, 1200 New Jersey Avenue SE., Washington, DC 20950 (telephone: 202–493–0270).

SUPPLEMENTARY INFORMATION:

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I. Executive Summary

Having considered the public comments in response to FRA's October 19, 2012, proposed rule on Track Safety Standards, Improving Rail Integrity, *see* 77 FR 64249, FRA issues this rule amending the Track Safety Standards, 49 CFR Part 213. This final rule contains requirements related to the following subject areas: defective rails, the inspection of rail, qualified operators, and inspection records. The final rule also addresses the mandate of section 403 of the RSIA, and removes the joint bar fracture reporting requirement. The following is a brief overview of the final rule organized by the subject area:

- *Defective Rails*

The final rule provides track owners with a four-hour period in which to verify that certain, suspected defects exists in a rail section. The primary purpose of the four-hour, deferred-verification option is to assist track owners in improving detector car utilization and production, increase the opportunity to detect more serious defects, and help ensure that all rail that the detector car is intended to travel over while in service is inspected. Additionally, the rule revises the remedial action table in areas such as transverse defects, longitudinal weld defects, and crushed head defects.

- *Inspection of Rail*

Formerly, Class 4 and 5 track, as well as Class 3 track over which passenger trains operate, were required to be tested for internal rail defects at least once every accumulation of 40 million gross tons (mgt) or once a year (whichever time was shorter). Class 3 track over which passenger trains do not operate was required to be tested at least once every accumulation of 30 mgt or once per year (whichever time was longer). When these inspection requirements were drafted, track owners were already initiating and implementing the development of a performance-based risk management concept for determination of rail inspection frequency, which is often referred to as the ‘‘self-adaptive scheduling method.’’ Under this method, inspection frequency is established annually based on several factors, including the total detected defect rate per test, the rate of service failures between tests, and the accumulated tonnage between tests. Track owners then utilize this information to generate and maintain a service failure performance target.

This final rule codifies standard industry good practices. The final rule requires track owners to maintain service failure rates of no more than 0.1 service failure per year per mile of track for all Class 4 and 5 track; no more than 0.09 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains or is a hazardous materials route; and no more than 0.08 service failure per year per mile of track for all Class

3, 4, and 5 track that carries regularly-scheduled passenger trains and is a hazardous materials route.

The final rule also requires that internal rail inspections on Class 4 and 5 track, and Class 3 track with regularly-scheduled passenger trains or that is a hazardous materials route, not exceed a time interval of 370 days between inspections or a tonnage interval of 30 mgt between inspections, whichever is shorter. Internal rail inspections on Class 3 track without regularly-scheduled passenger trains and that is not a hazardous materials route must be inspected at least once each calendar year, with no more than 18 months between inspections, or at least once every 30 mgt, whichever interval is longer, but in no case may inspections be more than 5 years apart.

• *Qualified Operators*

The final rule adds a new provision requiring that each provider of rail flaw detection have a documented training program to ensure that a flaw detection equipment operator is qualified to operate each of the various types of equipment utilized in the industry for which he or she is assigned to operate. For a rail flaw detection test to be valid, the test must be performed by a qualified operator. Qualified operators are in turn subject to minimum training, evaluation, and documentation requirements to help ensure the validity of a rail flaw detection test. It is the responsibility of the track owner to reasonably ensure that any provider of rail flaw detection is in compliance with these training and qualification requirements.

• *Removing the Requirement of a Joint Bar Fracture Report*

The final rule removes the requirement that track owners generate a Joint Bar Fracture Report (Fracture Report) for every cracked or broken continuous welded rail (CWR) joint bar that the track owner discovers during the course of an inspection. The reports were providing little, useful research data to prevent future failures of CWR joint bars. Instead, a new study will be conducted to determine what conditions lead to CWR joint bar failures and include a description of the overall condition of the track in the vicinity of the failed joint(s), track geometry (gage, alignment, profile, cross-level) at the joint location, and the maintenance history at the joint location, along with photographic evidence of the failed joint.

• *Inspection Records*

The final rule ensures that a railroad's rail inspection records include the date of inspection, track identification and milepost for each location tested, type of defect found and size if not removed prior to traffic, and initial remedial action as required by § 213.113. The final rule also requires that when tracks do not receive a valid inspection they are documented in the railroad's rail inspection records.

• *Section 403 of the RSIA*

On October 16, 2008, the RSIA (Pub. L. 110–432, Division A) was enacted. Section 403(a) of the RSIA required the Secretary of Transportation (Secretary) to conduct a study of track issues, known as the Track Inspection Time Study (Study), to determine whether track inspection intervals needed to be amended; whether track remedial action requirements needed to be amended; whether different track inspection and repair priorities and methods were required; and whether the speed of track inspection vehicles should be regulated. As part of the Study, section 403(b) of the RSIA instructed the Secretary to consider ''the most current rail flaw, rail defect growth, rail fatigue, and other relevant track- or rail-related research and studies,'' as well as new inspection technologies, and National Transportation Safety Board (NTSB) and FRA accident information. The Study was completed and presented to Congress on May 2, 2011. Section 403(c) of the RSIA further provided that FRA prescribe regulations based on the results of the Study two years after its completion.

FRA tasked the Railroad Safety Advisory Committee (RSAC) to address the recommendations of the Study. After several meetings, the Association of American Railroads (AAR) together with the Brotherhood of Maintenance of Way Employes Division (BMWED) proposed that FRA had met its obligations under section 403(c) of the RSIA, specifically through its rulemakings on vehicle/track interaction, concrete crossties, and the proposals contained in the NPRM related to rail integrity. They also stated that no additional action on the RSAC task was necessary and recommended that the task be closed. FRA took AAR's and BMWED's proposal under advisement and conducted its own analysis as to the fulfillment of the mandates under section 403. FRA concluded that these statutory obligations were being fulfilled. Subsequently, the full RSAC concurred that FRA's rulemakings were sufficiently addressing the statutorily-mandated topics and that no additional work by the RSAC was necessary.

• *Economic Impact*

The bulk of the final rule revises FRA's Track Safety Standards by codifying current industry good practices. In analyzing the economic impacts of the final rule, FRA does not believe that any existing operation will be adversely affected by these changes, nor does FRA believe that the changes will induce any material costs.

Through its regulatory evaluation, FRA explains what the likely benefits for this final rule are and provides a cost-benefit analysis. FRA anticipates that the final rule will enhance the Track Safety Standards by allocating more time to rail inspections, increasing the opportunity to detect more serious defects sooner, providing assurance that qualified operators are inspecting the rail, and causing inspection records to be updated with more useful information. The main benefit associated with this final rule is derived from granting track owners a four-hour window to verify certain defects found in a rail inspection. Without the additional time to verify these defects, track owners must stop their inspections anytime a suspect defect is identified, to avoid civil penalty liability, and then resume their inspections after the defect is verified. The defects subject to the deferred verification allowance are usually considered less likely to cause immediate rail failure, and require less restrictive remedial action. The additional time permits track owners to avoid the cost of paying their internal inspection crews or renting a rail flaw detector car an additional half day, saving the industry $8,400 per day. FRA believes the value of the anticipated benefits easily justifies the cost of implementing the final rule.

The final rule's total net benefits are estimated to be about $62.9 million over a 20-year period. The benefits are approximately $48.1 million, discounted at a 3-percent rate, or about $35.5 million, discounted at a 7-percent rate. In the final rule, the estimated benefit showed an overall increase of 2.6% compared to the estimates provided in the NPRM. Part of this increase is due to the application of the Congressional Budget Office (CBO) real wage forecast which adjusts the annual growth rate by 1.07 percent annually. FRA also determined that the implementation year would be 2014; therefore, all wages were adjusted accordingly. The change in the implementation year accounts for the remainder of the increased benefits.

FRA believes that such improvements will more than likely result from the implementation of the final rule by the railroad industry.

II. Rail Integrity Overview

A. Derailment in 2001 Near Nodaway, Iowa

On March 17, 2001, the *California Zephyr,* a National Railroad Passenger Corporation (Amtrak) passenger train carrying 257 passengers and crew members, derailed near Nodaway, Iowa. According to the NTSB, the train's sixteen cars decoupled from its two locomotives and eleven cars went off the rails. Seventy-eight people were injured and one person died from the accident. *See* NTSB/RAB–02–01.

The NTSB discovered a broken rail at the point of derailment. The broken pieces of rail were reassembled at the scene, and it was determined that they came from a 15½-foot section of rail that had been installed as replacement rail, or ''plug rail,'' at this location in February 2001. The replacement had been made because, during a routine scan of the existing rail on February 13, 2001, the Burlington Northern and Santa Fe Railway (now BNSF Railway Company or BNSF) discovered internal defects that could possibly hinder the rail's effectiveness. A short section of the continuous welded rail that contained the defects was removed, and a piece of replacement rail was inserted. However, the plug rail did not receive an ultrasonic inspection before or after installation.

During the course of the accident investigation, the NTSB could not reliably determine the source of the plug rail. While differing accounts were given concerning the origin of the rail prior to its installation in the track, the replacement rail would most likely have been rail which was removed from another track location for reuse. Analysis of the rail found that the rail failed due to fatigue initiating from cracks associated with the precipitation of internal hydrogen. If the rail had been ultrasonically inspected prior to its reuse, it is likely that the defects could have been identified and that section of rail might not have been used as plug rail.

As a result of its investigation of the Nodaway, Iowa, railroad accident, the NTSB recommended that FRA require railroads to conduct ultrasonic or other appropriate inspections to ensure that rail used to replace defective segments of existing rail is free from internal defects. *See* NTSB Recommendation R–02–5.

B. Derailment in 2006 Near New Brighton, Pennsylvania

On October 20, 2006, Norfolk Southern Railway Company (NS) train 68QB119 derailed while crossing the Beaver River railroad bridge in New Brighton, Pennsylvania. The train was pulling eighty-three tank cars loaded with denatured ethanol, a flammable liquid. Twenty-three of the tank cars derailed near the east end of the bridge, causing several of the cars to fall into the Beaver River. Twenty of the derailed cars released their loads of ethanol, which subsequently ignited and burned for forty-eight hours. Some of the unburned ethanol liquid was released into the river and the surrounding soil. Homes and businesses within a seven-block area of New Brighton and in an area adjacent to the accident had to be evacuated for days. While no injuries or fatalities resulted from the accident, NS estimated economic and environmental damages to be $5.8 million. *See* NTSB/RAB–08–9 through –12. The NTSB determined that the probable cause of the derailment was an undetected internal rail defect identified to be a detail fracture. The NTSB also noted that insufficient regulation regarding internal rail inspection may have contributed to the accident.

This accident demonstrated the potential for rail failure with subsequent derailment if a railroad's internal rail defect detection process fails to detect an internal rail flaw. This accident also indicated a need for adequate requirements that will ensure rail inspection and maintenance programs identify and remove rail with internal defects before they reach critical size and result in catastrophic rail failures.

C. Office of Inspector General Report: Enhancing the Federal Railroad Administration's Oversight of Track Safety Inspections

On February 24, 2009, the DOT's Office of Inspector General (OIG) issued a report presenting the results of its audit of FRA's oversight of track-related safety issues, and making two findings. First, the OIG found that FRA's safety regulations for internal rail flaw testing did not require the railroads to report the specific track locations, such as milepost numbers or track miles that were tested during these types of inspections. Second, the OIG found that FRA's inspection data systems did not provide adequate information for determining the extent to which FRA's track inspectors have reviewed the railroads' records for internal rail flaw testing and visual track inspections to assess compliance with safety regulations. The OIG recommended that FRA revise its track safety regulations for internal rail flaw testing to require railroads to report track locations covered during internal rail flaw testing, and that FRA develop specific inspection activity codes for FRA inspectors to use to report on whether the record reviews FRA inspectors conduct were for internal rail flaw testing or visual track inspections. *Enhancing the Federal Railroad Administration's Oversight of Track Safety Inspections,* Department of Transportation, Office of Inspector General, CR–2009–038, February 24, 2009. This report is available on the OIG's public Web site at: *http://www.oig.dot.gov/sites/dot/files/pdfdocs/Signed_Final_Track_Safety_Report_02-24-09.pdf.*

D. General Factual Background on Rail Integrity [1]

The single most important material asset to the railroad industry is its rail infrastructure, and historically the primary concern of railroad companies has been the probability of rail flaw development, broken rails, and subsequent derailments. This has resulted in railroads improving their rail maintenance practices, purchasing more wear-resistant rail, improving flaw-detection technologies, and increasing rail inspection frequencies in an effort to prevent rail defect development. The direct cost of an undetected rail failure is the difference between the cost of replacing the rail failure on an emergency basis, and the cost of the organized replacement of detected defects. However, a rail defect that goes undetected and results in a train derailment can cause considerable, additional costs such as excessive service interruption, extensive traffic rerouting, environmental damage, and even potential injury and death.

To maximize the service life of rail, railroads must accept a certain rate of defect development. This results in railroads relying on regular rail inspection cycles, and strategically renewing rail that is showing obvious evidence of fatigue. The development of internal rail defects is an inevitable consequence of the accumulation and effects of fatigue under repeated loading. The challenge for the railroad

[1] This section is primarily based on information from two sources: *Progress in Rail Integrity Research,* DOT/FRA/ORD-01/18, D.Y. Jeong, 2001; and *I. H. H. A. Guidelines to Best Practices for Heavy Haul Railway Operations; Infrastructure Construction and Maintenance Issues, Section 4.3.1 Rail Defect Detection and Technologies,* Carlo M. Patrick, R. Mark Havira, Gregory A. Garcia, Library of Congress Control No. 2009926418, 2009.

industry is to avoid the occurrence of rail service failure due to the presence of an undetected defect. Rail service failures are expensive to repair and can lead to costly service disruptions and possibly derailments.

The effectiveness of a rail inspection program depends on the test equipment being properly designed and capable of reliably detecting rail defects of a certain size and orientation, while also ensuring that the test frequencies correspond to the growth rate of critical defects. The objective of a rail inspection program is to reduce the annual costs and consequences resulting from broken rails, which involve several variables.

The predominant factor that determines the risk of rail failure is the rate of development of internal flaws. Internal rail flaws have a period of origin and a period often referred to as slow crack growth life. The risk is introduced when internal flaws remain undetected during their growth to a critical size. This occurs when the period in which the crack develops to a detectable size is significantly shorter than the required test interval.

In practice, the growth rate of rail defects is considered highly inconsistent and unpredictable. Rail flaw detection in conjunction with railroad operations often presents some specific problems. This is a result of high traffic volumes that load the rail and accelerate defect growth, while at the same time decreasing the time available for rail inspection. Excessive wheel loading can result in stresses to the rail that can increase defect growth rates. Consequently, heavy axle loading can lead to rail surface fatigue that may prevent detection of an underlying rail flaw by the test equipment. Most railroads attempt to control risk by monitoring test reliability through an evaluation process of fatigue service failures that occur soon after testing, and by comparing the ratio of service failures or broken rails to detected rail defects.

The tonnage required to influence defect development is also considered difficult to predict; however, once initiated, transverse defect development is influenced by tonnage. Rapid defect growth rates can also be associated with rail where high-tensile residual stresses are present in the railhead and in CWR in lower temperature ranges where the rail is in high longitudinal tension.

It is common for railroads to control risk by monitoring the occurrence of both detected and service defects. For railroads in the U.S., risk is typically evaluated to warrant adjustment of test frequencies. The railroads attempt to control the potential of service failure by testing more frequently.

In conducting rail integrity research, the general approach is to focus on confirming whether rail defects can be detected by periodic inspection before they grow large enough to cause a rail failure. In the context of rails, damage tolerance is the capability of the rail to resist failure and continue to perform safely with damage (i.e., rail defects). This implies that a rail containing a crack or defect is weaker than a normal rail, and that the rail's strength decreases as the defect grows. As growth continues, the applied stresses will eventually exceed the rail's strength and cause a failure. Such information can be used to establish guidelines for determining the appropriate frequency of rail inspections to mitigate the risk of rail failure from undetected defects.

Current detection methods that are performed in the railroad industry utilize various types of processes with human involvement in the interpretation of the test data. These include the:

• Portable test process, which consists of an operator pushing a test device over the rail at a walking pace while visually interpreting the test data;

• Start/stop process, where a vehicle-based, rail flaw detection system tests at a slow speed (normally not exceeding 20 mph) gathering data that is presented to the operator on a test monitor for interpretation;

• Chase car process, which consists of a lead test vehicle performing the flaw detection process in advance of a verification chase car; and

• Continuous test process, which consists of operating a high-speed, vehicle-based test system non-stop along a designated route, analyzing the test data at a centralized location, and subsequently verifying suspect defect locations.

The main technologies utilized for non-destructive testing on U.S. railroads are the ultrasonic and induction methods. Ultrasonic technology is the primary technology used, and induction technology is currently used as a complementary system. As with any non-destructive test method, these technologies are susceptible to physical limitations that allow poor rail head surface conditions to negatively influence the detection of rail flaws. The predominant types of these poor, rail head surface conditions are shells, engine driver burns, spalling, flaking, corrugation, and head checking. Other conditions that are encountered include heavy lubrication or debris on the rail head.

Induction testing requires the introduction of a high-level, direct current into the top of the rail and establishing a magnetic field around the rail head. An induction sensor unit is then passed through the magnetic field. The presence of a rail flaw will result in a distortion of the current flow, and it is this distortion of the magnetic field that is detected by the search unit.

Ultrasonics can be briefly described as sound waves, or vibrations, that propagate at a frequency that is above the range of human hearing, normally above a range of 20,000 Hz or cycles per second. The range normally utilized during current flaw detection operations is 2.25 MHz (million cycles per second) to 5.0 MHz. Ultrasonic waves are generated into the rail by piezo-electric transducers that can be placed at various angles with respect to the rail surface. The ultrasonic waves produced by these transducers normally scan the entire rail head and web, as well as the portion of the base directly beneath the web. Internal rail defects represent a discontinuity in the steel material that constitutes the rail. This discontinuity acts as a reflector to the ultrasonic waves, resulting in a portion of the wave being reflected back to the respective transducer. These conditions include rail head surface conditions, internal or visible rail flaws, weld upset/finish, and known reflectors within the rail geometry such as drillings or rail ends. The information is then processed by the test system and recorded in the permanent test data record. Interpretation of the reflected signal is the responsibility of the test system operator.

Railroads have always inspected track visually to detect rail failures, and have been using crack-detection devices in rail-test vehicles since the 1930s. Meanwhile, the railroad industry has trended towards increased traffic density and average axle loads. Current rail integrity research recognizes and addresses the need to review and update rail inspection strategies and preventive measures. This includes the frequency interval of rail inspection, remedial action for identified rail defects, and improvements to the performance of the detection process.

FRA has sponsored railroad safety research for several decades. One part of this research program is focused on rail integrity. The general objectives of FRA rail integrity research have been to improve railroad safety by reducing rail failures and the associated risks of train derailment, and to do so more efficiently through new maintenance practices that increase rail service life. The studies sponsored by FRA focus on analysis of rail defects; residual stresses in rail; strategies for rail testing; and other areas related to rail integrity, which include advances in nondestructive inspection techniques and feasibility of advanced materials for rail, rail lubrication, rail grinding, and wear. Moreover, rail integrity research is an ongoing effort, and will continue as annual tonnages and average axle loads increase on the nation's railroads.

Due to the limitations of current technology to detect internal rail flaws beneath surface conditions and in the base flange area, FRA's research has been focusing on other rail flaw detection technologies. One laser-based, ultrasonic rail defect detection prototype, which is being developed by the University of California-San Diego under an FRA Office of Research and Development grant, has produced encouraging results in ongoing field testing. The project goal is to develop a rail defect detection system that provides better defect detection reliability at a higher inspection speed than is currently achievable. The primary target is the detection of transverse defects in the rail head. The method is based on ultrasonic guided waves, which can travel below surface discontinuities, hence minimizing the masking effect of transverse cracks by surface shelling. The inspection speed can also be improved greatly because guided waves run long distances before attenuating.

Non-destructive test systems perform optimally on perfect test specimens. However, rail in track is affected by repeated wheel loading that results in the plastic deformation of the rail running surface, which can create undesirable surface conditions as described previously. These conditions can influence the development of rail flaws. These conditions can also affect the technologies currently utilized for flaw detection by limiting their detection capabilities. Therefore, it is important that emerging technology development continue, in an effort to alleviate the impact of adverse rail surface conditions.

E. Statutory Mandate To Conduct This Rulemaking

The first Federal Track Safety Standards (Standards) were published on October 20, 1971, following the enactment of the Federal Railroad Safety Act of 1970, Public Law 91–458, 84 Stat. 971 (October 16, 1970), in which Congress granted to the Secretary comprehensive authority over ''all areas of railroad safety.'' *See* 36 FR 20336. FRA envisioned the new Standards to be an evolving set of safety requirements subject to continuous revision allowing the regulations to keep pace with industry innovations and agency research and development. The most comprehensive revision of the Standards resulted from the Rail Safety Enforcement and Review Act of 1992, Public Law 102–365, 106 Stat. 972 (Sept. 3, 1992), later amended by the Federal Railroad Safety Authorization Act of 1994, Public Law 103–440, 108 Stat. 4615 (Nov. 2, 1994). The amended statute is codified at 49 U.S.C. 20142 and required the Secretary to review and then revise the Standards, which are contained in 49 CFR part 213. The Secretary has delegated such statutory responsibilities to the Administrator of FRA. *See* 49 CFR 1.89. FRA carried out this review on behalf of the Secretary, which resulted in FRA issuing a final rule amending the Standards in 1998. *See* 63 FR 34029, June 22, 1998; 63 FR 54078, Oct. 8, 1998.

Pursuant to 49 U.S.C. 20103, the Secretary may prescribe regulations as necessary in any area of railroad safety. As described in the next section, FRA began its examination of rail integrity issues through RSAC on October 27, 2007. Then, on October 16, 2008, the RSIA was enacted. As previously noted, section 403(a) of the RSIA required the Secretary to conduct a study of track issues. In doing so, section 403(b) of the RSIA required the Secretary to consider ''the most current rail flaw, rail defect growth, rail fatigue, and other relevant track- or rail-related research and studies.'' The Study was completed and submitted to Congress on May 2, 2011. Section 403(c) of the RSIA also required the Secretary to promulgate regulations based on the results of the Study. As delegated by the Secretary, *see* 49 CFR 1.89, FRA utilized its advisory committee, RSAC, to help develop the information necessary to fulfill the RSIA's mandates in this area.

FRA notes that section 403 of the RSIA contains one additional mandate, which FRA has already fulfilled, promulgating regulations for concrete crossties. On April 1, 2011, FRA published a final rule on concrete crosstie regulations per this mandate in section 403(d). That final rule specifies requirements for effective concrete crossties, for rail fastening systems connected to concrete crossties, and for automated inspections of track constructed with concrete crossties. *See* 76 FR 18073. FRA received two petitions for reconsideration in response to that final rule, and responded to them by final rule published on September 9, 2011. *See* 76 FR 55819.

III. Overview of FRA's Railroad Safety Advisory Committee (RSAC)

In March 1996, FRA established RSAC, which provides a forum for developing consensus recommendations to the Administrator of FRA on rulemakings and other safety program issues. RSAC includes representation from all of the agency's major stakeholders, including railroads, labor organizations, suppliers and manufacturers, and other interested parties. An alphabetical list of RSAC members follows:

AAR;
American Association of Private Railroad Car Owners;
American Association of State Highway and Transportation Officials (AASHTO);
American Chemistry Council;
American Petrochemical Institute;
American Public Transportation Association (APTA);
American Short Line and Regional Railroad Association (ASLRRA);
American Train Dispatchers Association;
Amtrak;
Association of Railway Museums (ARM);
Association of State Rail Safety Managers (ASRSM);
BMWED;
Brotherhood of Locomotive Engineers and Trainmen (BLET);
Brotherhood of Railroad Signalmen (BRS);
Chlorine Institute;
Federal Transit Administration;*
Fertilizer Institute;
High Speed Ground Transportation Association;
Institute of Makers of Explosives;
International Association of Machinists and Aerospace Workers;
International Brotherhood of Electrical Workers;
Labor Council for Latin American Advancement;*
League of Railway Industry Women;*
National Association of Railroad Passengers;
National Association of Railway Business Women;*
National Conference of Firemen & Oilers;
National Railroad Construction and Maintenance Association;
NTSB;*
Railway Supply Institute;
Safe Travel America;
Secretaria de Comunicaciones y Transporte;*
Sheet Metal Workers International Association;
Tourist Railway Association Inc. (TRAIN);
Transport Canada;*
Transport Workers Union of America;
Transportation Communications International Union/BRC;
Transportation Security Administration; and
United Transportation Union (UTU).

**Indicates associate, non-voting membership.*

When appropriate, FRA assigns a task to RSAC, and after consideration and debate, RSAC may accept or reject the task. If the task is accepted, RSAC establishes a working group that possesses the appropriate expertise and representation of interests to develop recommendations to FRA for action on the task. These recommendations are developed by consensus. A working group may establish one or more task forces to develop facts and options on a particular aspect of a given task. The task force then provides that information to the working group for consideration.

If a working group comes to a unanimous consensus on recommendations for action, the package is presented to the full RSAC for a vote. If the proposal is accepted by a simple majority of RSAC, the proposal is formally recommended to the Administrator of FRA. FRA then determines what action to take on the recommendation. Because FRA staff members play an active role at the working group level in discussing the issues and options and in drafting the language of the consensus proposal, FRA is often favorably inclined toward the RSAC recommendation.

However, FRA is in no way bound to follow the recommendation, and the agency exercises its independent judgment on whether a recommended rule achieves the agency's regulatory goals, is soundly supported, and is in accordance with policy and legal requirements. Often, FRA varies in some respects from the RSAC recommendation in developing the actual regulatory proposal or final rule. Any such variations would be noted and explained in the rulemaking document issued by FRA. However, to the maximum extent practicable, FRA utilizes RSAC to provide consensus recommendations with respect to both proposed and final agency action. If RSAC is unable to reach consensus on a recommendation for action, the task is withdrawn and FRA determines the best course of action.

IV. RSAC Track Safety Standards Working Group

The Track Safety Standards Working Group (Working Group) was formed on February 22, 2006. On October 27, 2007, the Working Group formed two subcommittees: the Rail Integrity Task Force (RITF) and the Concrete Crosstie Task Force. Principally in response to NTSB recommendation R–02–05,[2] the RITF was tasked to review the controls applied to the reuse of plug rail and ensure a common understanding within the regulated community concerning requirements for internal rail flaw inspections.

However, after the New Brighton accident, and in response to NTSB recommendations R–08–9, R–08–10, and R–08–11,[3] the RITF was given a second task on September 10, 2008, which directed the group to do the following: (1) Evaluate factors that can and should be included in determining the frequency of internal rail flaw testing and develop a methodology for taking those factors into consideration with respect to mandatory testing intervals; (2) determine whether and how the quality and consistency of internal rail flaw testing can be improved; (3) determine whether adjustments to current remedial action criteria are warranted; and (4) evaluate the effect of rail head wear, surface conditions and other relevant factors on the acquisition and interpretation of internal rail flaw test results.

The RITF met on November 28–29, 2007; February 13–14, 2008; April 15–16, 2008; July 8–9, 2008; September 16–17, 2008; February 3–4, 2009; June 16–17, 2009; October 29–30, 2009; January 20–21, 2010; March 9–11, 2010; and April 20, 2010. The RITF's findings were reported to the Working Group for approval on July 28–30, 2010. The Working Group reached a consensus on the majority of the RITF's work and forwarded proposals to the full RSAC on September 23, 2010 and December 14, 2010. The RSAC voted to approve the Working Group's recommended text, which provided the basis for the NPRM in this proceeding and ultimately this final rule.

In addition to FRA staff, the members of the Working Group include the following:

- AAR, including the Transportation Technology Center, Inc., and members from BNSF, Canadian National Railway (CN), Canadian Pacific Railway (CP), CSX Transportation, Inc. (CSX), The Kansas City Southern Railway Company (KCS), NS, and Union Pacific Railroad Company (UP);
- Amtrak;
- APTA, including members from Northeast Illinois Regional Commuter Railroad Corporation (Metra), Long Island Rail Road (LIRR), and Southeastern Pennsylvania Transportation Authority (SEPTA);
- ASLRRA (representing short line and regional railroads);
- BLET;
- BMWED;
- BRS;
- John A. Volpe National Transportation Systems Center (Volpe Center)
- NTSB; and
- UTU.

V. Development of the NPRM and Final Rule

A. Development of the NPRM

Through RSAC discussions, the Working Group determined that it would focus its efforts on rail inspection processes. FRA regulations were reviewed during the meetings, and areas were identified that were potentially inconsistent or out of date with rail inspection practice that was considered standard in the industry. This included rail defect nomenclature, inspection frequencies, operator training, and rail inspection records. The group reached consensus on the necessary changes. These changes were presented to RSAC for approval, and these recommendations provided the basis for the NPRM.

FRA worked closely with RSAC in developing these recommendations. FRA believes that RSAC effectively addressed rail inspection safety issues regarding the frequency of inspection, rail defects, remedial action, and operator qualification. FRA greatly benefited from the open, informed exchange of information during the RITF meetings. The NPRM was developed based on a general consensus among railroads, rail labor organizations, State safety managers, and FRA concerning rail safety. FRA believes that the expertise possessed by RSAC representatives enhanced the value of the recommendations, and FRA made every effort to incorporate them into the NPRM, which was published on October 19, 2012. *See* 77 FR 64249.

Nevertheless, the Working Group was unable to reach consensus on one item that FRA elected to include in the NPRM, and subsequently in this final

[2] After the Nodaway accident, the NTSB recommended that FRA ''[r]equire railroads to conduct ultrasonic or other appropriate inspections to ensure that rail used to replace defective segments of existing rail is free from internal defects.'' NTSB Safety Recommendation R–02–5, dated March 5, 2002.

[3] After the New Brighton accident, the NTSB issued three additional safety recommendations dated May 22, 2008: (1) FRA should ''[r]eview all railroads' internal rail defect detection and require changes to those procedures as necessary to eliminate exception to the requirement for an uninterrupted, continuous search for rail defects.'' R–08–9; (2) FRA should ''[r]equire railroads to develop rail inspection and maintenance programs based on damage-tolerance principles, and approve those programs. Include in the requirement that railroads demonstrate how their programs will identify and remove internal defects before they reach critical size and result in catastrophic rail failures. Each program should take into account, at a minimum, accumulated tonnage, track geometry, rail surface conditions, rail head wear, rail steel specifications, track support, residual stresses in the rail, rail defect growth rates, and temperature differentials.'' R–08–10; and (3) FRA should ''[r]equire that railroads use methods that accurately measure rail head wear to ensure that deformation of the head does not affect the accuracy of the measurements.'' R–08–11.

rule. The Working Group could not reach consensus on the definition of ''rail inspection segment'' length, which is utilized in the new performance-based test frequency determination in § 213.237, ''Inspection of rail.'' A discussion of this issue is detailed below.

B. Development of the Final Rule

FRA notified the public of its options to submit written comments on the NPRM and to request an oral hearing on the NPRM as well. No request for a public hearing was received; however, some interested parties submitted written comments to the docket in this proceeding, and FRA considered all of these comments in preparing the final rule. FRA received a total of eleven comments on the NPRM, including comments from RSAC or Working Group members AAR, NTSB, BMWED, ARM, TRAIN, and UP, as well as comments from two private individuals.

On April 16, 2013, the RITF reconvened through a conference call to discuss all public comments received on the NPRM and help achieve consensus on the recommendations concerning their incorporation into this final rule. FRA had reviewed and analyzed each issue mentioned in the comments, and during the call, FRA presented the comments and any proposed changes to the NPRM. The RITF expressed few concerns about FRA's approach to address the comments received, and decided it did not need to take a formal vote on the proposed changes.

Having considered the public comments, and finding that the RSAC's recommendations help fulfill the agency's regulatory goals, are soundly supported, and are in accord with policy and legal requirements, FRA issues this final rule. Each of the comments FRA received is addressed below in the specific section of the final rule to which it applies.

FRA notes that throughout the preamble discussion of this final rule, FRA refers to comments, views, suggestions, or recommendations made by members of the RITF or full RSAC, or comments made by the public, as they are contained in meeting minutes or other materials in the public docket. FRA does so to show the origin of certain issues and the nature of discussions during the development of the final rule. FRA believes that this serves to illuminate factors it has considered in making its regulatory decisions, as well as the rationale for those decisions.

VI. Track Inspection Time Study

As noted previously, section 403(a) of the RSIA required the Secretary to conduct a study of track issues to determine whether track inspection intervals needed to be amended; whether track remedial action requirements needed to be amended; whether different track inspection and repair priorities and methods were required; and whether the speed of track inspection vehicles should be more specifically regulated. In conducting the Study, section 403(b) of the RSIA instructed the Secretary to consider ''the most current rail flaw, rail defect growth, rail fatigue, and other relevant track- or rail-related research and studies,'' as well as new inspection technologies, and NTSB and FRA accident information. The Study was completed and presented to Congress on May 2, 2011. Section 403(c) of the RSIA further provided that FRA prescribe regulations based on the results of the Study two years after its completion.

On August 16, 2011, RSAC accepted Task 11–02, which was generated in response to the RSIA and to address the recommendations of the Study. Specifically, the purpose of the task was ''[t]o consider specific improvements to the Track Safety Standards or other responsive actions to the Track Inspection Time Study required by [section] 403 (a) through (c) of the RSIA and other relevant studies and resources.'' The first meeting of the Working Group assigned to the task occurred on October 20, 2011, and a second meeting was held on December 20, 2011. At the third meeting on February 7–8, 2012, the AAR together with the BMWED stated that FRA had met its obligations under section 403(c) of the RSIA through its rulemakings on vehicle/track interaction, concrete crossties, and the proposals made in this rulemaking on rail integrity. They also suggested that additional action on RSAC Task 11–02 was unnecessary and recommended that the task should be closed. FRA took the proposal under advisement after the February meeting and conducted its own analysis as to the fulfillment of the mandates under section 403. FRA concluded that these statutory obligations were being fulfilled and on April 13, 2012, the Working Group approved a proposal to conclude RSAC Task 11–02. On April 26, 2012, the full RSAC approved the proposal and closed RSAC Task 11–02. The recommendation approved by the full RSAC is described below.

In determining whether regulations were necessary based on the results of the Study, RSAC examined the Study's four issues for improving the track inspection process:

- Expanding the use of automated inspections;
- Developing additional training requirements for track inspectors;
- Considering a maximum inspection speed for track inspection vehicles; and
- Influencing safety culture through a safety reporting system.

The Study's first recommendation was that FRA consider expanding the use of automated inspections to improve inspection effectiveness. Specifically, the Study cited two specific track defects that are more difficult to detect through visual track inspection and could benefit from the use of automated inspection: rail seat abrasion (RSA) and torch cut bolt holes. Through discussion among the affected parties, it was determined that these areas of concern already had been covered under previous rulemaking and regulations. The Concrete Crossties final rule published on April 1, 2011, contained a new § 213.234, ''Automated inspection of track constructed with concrete crossties,'' which specifically employs the use of automated inspection ''to measure for rail seat deterioration.'' In addition, torch cut bolt holes have been prohibited on track Classes 2 and above since 1999, as codified in §§ 213.121(g) and 213.351(f), and they are easily identifiable through the rail flaw detection technology currently in use. Thus, the RSAC concluded that additional regulations to find such defects would be unnecessary.

Outside of these two specific defects, the RSAC concluded that the instant rulemaking on rail integrity would also revise automated inspection standards in other areas, such as ultrasonic testing. For example, this rulemaking changes the ultrasonic testing of rail from a standard based on time and tonnage to one based on self-adaptive performance goals. Thus, the full RSAC concluded that the use of automated inspection has been sufficiently expanded in the areas that currently are most ideally suited for development. While FRA and RSAC noted that they may wish to make changes to the automated inspection standards in the future, FRA and RSAC nevertheless maintained that the changes stated above sufficiently satisfy the RSIA's mandate.

However, RSAC concurred with FRA, BMWED and AAR that it was important to ensure that any type of report generated from the automated inspection of track, regardless of whether it is mandated by regulation or voluntarily utilized by a railroad, be made available to track inspectors. Therefore, in this final rule, FRA is issuing policy guidance to encourage track owners and railroads to provide the information from their automated track inspections in a usable format to those persons designated as fully qualified under the Track Safety Standards and assigned to inspect or repair the track over which an automated inspection is made. This guidance is as follows:

When automated track inspection methods are used by the track owner, FRA recommends that the information from that inspection be provided or made readily available to those persons designated as fully qualified under 49 CFR 213.7 and assigned to inspect or repair the track over which the automated inspection was made.

Next, the Study addressed whether FRA should develop additional training requirements for track inspectors. RSAC found that it was unnecessary to generate additional training standards under RSAC Task 11–02 for two reasons. First, the instant rulemaking would create a new § 213.238 to address an area of training that requires new standards. Section 213.238 defines a qualified operator of rail flaw detection equipment and requires that each provider of rail flaw detection service have a documented training program to ensure that a rail flaw detection equipment operator is qualified to operate each of the various types of equipment for which he or she is assigned, and that proper training is provided in the use of newly-developed technologies. Second, the NPRM on Training, Qualification, and Oversight for Safety-Related Railroad Employees, 77 FR 6412 (proposed Feb. 7, 2012) (to be codified at 49 CFR parts 214, 232, and 243), would require that employers develop and submit for FRA review a program detailing how they will train their track inspectors, among other personnel. As proposed in the NPRM, employees charged with the inspection of track or railroad equipment are considered safety-related railroad employees that each employer must train and qualify. The proposed formal training for employees responsible for inspecting track and railroad equipment is expected to cover all aspects of their duties related to complying with the Federal standards. FRA would expect that the training programs and courses for such employees would include techniques for identifying defective conditions and would address what sort of immediate remedial actions need to be initiated to correct critical safety defects that are known to contribute to derailments, accidents, incidents, or injuries. *Id.,* at 6415. The RSAC found that new requirements for the training of track inspectors were being adequately addressed by this proposed rule on employee training standards, and thus did not believe additional action was currently necessary in this area.

Third, the Study addressed whether track hi-rail inspection speed should be specified. The Study concluded that specifying limits to hi-rail inspection speeds could be ‘‘counterproductive.’’ With the currently-available data in this area, the RSAC concurred with the Study's recommendation and determined that no further action needed to be taken in this area at this time. The RSAC found that the existing reliance on the ‘‘inspector's discretion’’ as noted in § 213.233, should generally govern track inspection speed. This point will be emphasized in the next publication of FRA's Track Safety Standards Compliance Manual. FRA also makes clear that, in accordance with § 213.233, if a vehicle is used for visual inspection, the speed of the vehicle may not be more than 5 m.p.h. when passing over track crossings and turnouts.

Finally, the Study addressed ways to enhance the track safety culture of railroads through programs such as a safety reporting system, like the Confidential Close Call Reporting System piloted by FRA. The RSAC was aware that the Risk Reduction Working Group was in the process of developing recommendations for railroads to develop risk reduction programs, which should incorporate many safety concerns in this area. Therefore, the RSAC concluded that additional, overlapping discussion was unnecessary given the specific, concurrent focus of the Risk Reduction Working Group.

FRA notes that, in addition to addressing the Study's recommendations, RSAC Task 11–02 also incorporated other goals Congress had for the Study, which are described in section 403(a) of the RSIA, such as reviewing track inspection intervals and remedial action requirements, as well as track inspection and repair priorities. The RSAC concluded that FRA's recent and ongoing rulemakings are sufficiently addressing these areas and that no additional work is currently necessary. Specifically, the instant rulemaking on rail integrity is intended to amend inspection intervals to reflect a new performance-based inspection program, revise the remedial action table for rail, and alter inspection and repair priorities involving internal rail testing and defects such as a crushed head and defective weld. The Concrete Crossties final rule also established new inspection methods and intervals requiring automated inspection, as well as new remedial actions for exceptions that can be field-verified within 48 hours. Finally, in addition to other requirements, the Vehicle/Track Interaction Safety Standards (VTI) rulemaking, Vehicle/Track Interaction Safety Standards; High-Speed and High Cant Deficiency Operations, 78 FR 16052 (March 13, 2013) (codified at 49 CFR parts 213 and 238), addresses track geometry, inspection, and VTI safety requirements for high speed operations and operations at high cant deficiency over any track class. Overall, FRA believes that the recent and ongoing work of the RSAC and FRA, including recent and ongoing rulemakings, sufficiently address the statutorily-mandated topics in section 403 of the RSIA.

Nonetheless, as part of its comments submitted to the docket on the NPRM, NTSB included comments on the Study and RSAC resolution of Task 11–02. NTSB voiced concern regarding the ability of track inspectors to detect hazards when they inspect multiple tracks from a hi-rail inspection vehicle. While this issue was not specifically addressed by the Study or RSAC, FRA's Office of Research and Development is formulating a study to look at the effectiveness of different inspection methodologies, including hi-rail inspection, for detecting various types of defects. Knowing the effectiveness of each system will allow for the development of optimal inspection methodologies and optimal inspection frequencies.

NTSB's comments also suggested ‘‘that a combination of visual and automated track inspections should be required for use not just in track with concrete ties but in all high-tonnage routes, passenger train routes, and hazardous materials routes.’’ While FRA recognizes the important role automated track inspections play in defect detection, FRA concurs with the recommendation of the full RSAC that the current level of required automated inspections is satisfactory at this time.

VII. Section-By-Section Analysis

Section 213.3 Application

FRA modifies paragraph (b) of this section to clarify the exclusion of track located inside a plant railroad's property from the application of this part. In this paragraph, ‘‘plant railroad’’ means a type of operation that has traditionally been excluded from the application of FRA regulations because it is not part of the general railroad system of transportation (general system). In the past, FRA has not defined the term ‘‘plant railroad’’ in other regulations that it has issued because FRA assumed that its jurisdictional Policy Statement under the *Statement of Agency Policy Concerning Enforcement of the Federal Railroad Safety Laws, The Extent and Exercise of FRA's Safety Jurisdiction,* 49 CFR part 209, Appendix A (FRA's Policy Statement or the Policy Statement), provided sufficient clarification as to the definition of that term. However, it has come to FRA's attention that certain rail operations believed that they met the characteristics of a plant railroad, as set forth in the Policy Statement, when, in fact, their rail operations were part of the general railroad system of transportation (general system) and therefore did not meet the definition of a plant railroad. FRA seeks to avoid any confusion as to what types of rail operations qualify as plant railroads and also to save interested persons the time and effort needed to cross-reference and review FRA's Policy Statement to determine whether a certain operation qualifies as a plant railroad. Consequently, FRA defines the term ''plant railroad'' in this final rule.

The definition clarifies that when an entity operates a locomotive to move rail cars in service for other entities, rather than solely for its own purposes or industrial processes, the services become public in nature. Such public services represent the interchange of goods, which characterizes operation on the general system. As a result, even if a plant railroad moves rail cars for entities other than itself solely on its property, the rail operations will likely be subject to FRA's safety jurisdiction because those rail operations bring plant track into the general system.

The definition of the term ''plant railroad'' is consistent with FRA's longstanding policy that it will exercise its safety jurisdiction over a rail operation that moves rail cars for entities other than itself because those movements bring the track over which the entity is operating into the general system. *See* 49 CFR part 209, Appendix A. FRA's Policy Statement provides that ''operations by the plant railroad indicating it [i]s moving cars on . . . trackage for other than its own purposes (*e.g.,* moving cars to neighboring industries for hire)'' brings plant track into the general system and thereby subjects it to FRA's safety jurisdiction. *Id.* Additionally, this interpretation of the term ''plant railroad'' has been upheld in litigation before the U.S. Court of Appeals for the Fifth Circuit. *See Port of Shreveport-Bossier* v. *Federal Railroad Administration,* No. 10–60324 (5th Cir. 2011) (unpublished per curiam opinion).

FRA also makes clear that FRA's Policy Statement addresses circumstances where railroads that are part of the general system may have occasion to enter a plant railroad's property (e.g., a major railroad goes into a chemical or auto plant to pick up or set out cars) and operate over its track. As explained in the Policy Statement, the plant railroad itself does not get swept into the general system by virtue of the other railroad's activity, except to the extent it is liable, as the track owner, for the condition of its track over which the other railroad operates during its incursion into the plant. Accordingly, the rule makes clear that the track over which a general system railroad operates is not excluded from the application of this part, even if the track is located within the confines of a plant railroad.

During the comment period on the NPRM, FRA received a joint comment from ARM and TRAIN that claimed that part 213 had not been applied to non-general system tourist railroads in the past, and that in past rulemakings, FRA had expressly explained that the exclusory language—''located inside an installation which is not part of the general railroad system of transportation''—included non-general system tourist railroads. By way of example, the joint comments referred to the conductor certification rulemaking (49 CFR part 242), which included a standard ''installation'' exclusion that expressly provided that part 242 does not apply to non-general system tourist railroads.

Additionally, the joint comments stated that proposed § 213.3(b)(2) focused on plant railroads, especially as that subsection specifically defined the term ''plant railroad.'' ARM and TRAIN concluded that the proposed revision to the applicability section effectively makes the ''installation'' exclusion applicable only to plant railroads and they sought clarification from FRA on that point. Moreover, if that exclusion were to be limited to ''plant railroads,'' they requested that a new exclusion be added for non-general system tourist railroads.

FRA did not intend to alter the current ''installation'' exclusion in part 213 regarding tourist, scenic, historic, or excursion operations that are not part of the general system. Thus, as stated above, in § 213.3(b)(2) of the final rule, FRA incorporates language similarly utilized in part 242 to explicitly exclude tourist, scenic, historic, or excursion operations that are not part of the general railroad system of transportation from part 213.

An anonymous commenter on the NPRM requested clarification as to whether plant railroads must comply with the requirements of part 213 for track over which general system railroads operate. The comment stated that if plant railroads must comply with part 213 for track within the plant over which general system railroads operate, it would be a large departure from past FRA practice and would burden the plant railroads. However, as stated above, FRA has always held that plant track over which general system railroads operate is subject to part 213, and FRA makes this clear in § 213.3(b)(1). The Policy Statement also specifically states that when a general system railroad enters a plant, its activities are covered by FRA's regulations during that period. The Policy Statement explains that, ''[t]he plant railroad itself, however, does not get swept into the general system by virtue of the other railroad's activity, *except to the extent it is liable, as the track owner, for the condition of its track over which the other railroad operates during its incursion into the plant* (emphasis added).'' In the Policy Statement, FRA reached the same conclusion for the leased track exception over which general system railroads operate: ''As explained above, however, the track itself would have to meet FRA's standards if a general system railroad operated over it . . . .'' *Id.* The plant railroad is only required to comply with part 213 for the track over which the general system railroad operates; other track in the plant is not subject to part 213.

In addition, an individual commenter recommended that specific language be included in § 213.3, requiring that certain subparts of part 213 (B, C, D, and E) apply to track within a plant over which a general system railroad operates. The commenter further suggested specifying that if the plant railroad designates such track as excepted track, the plant must comply with all provisions of part 213. FRA is not incorporating these suggestions into the regulation at this time. FRA has always held that plant track over which general system railroads operate is subject to part 213, as explained above, and FRA is making that clear in § 213.3(b)(1), as revised by this final rule.

Section 213.113 Defective Rails

Paragraph (a). In paragraph (a), FRA clarifies that only a person qualified under § 213.7 is qualified to determine that a track may continue to be utilized once a defective condition is identified in a rail. FRA accepts the RSAC recommendation to add ''or repaired'' to paragraph (a)(1) to allow railroads to use recently-developed processes to remove the defective portion of the rail section and replace that portion utilizing recently-developed weld technologies commonly referred to as ''slot weld'' or ''wide gap weld.'' These processes allow the remaining portion of non-defective rail to remain in the track.

Paragraph (b). FRA redesignates former paragraph (b) as paragraph (d) and adds a new paragraph (b). Paragraph (b) provides that track owners have up to a four-hour period in which to verify that certain suspected defects exist in a rail section, once they learn that the rail contains an indication of any of the defects identified in paragraph (c)'s remedial action table. This four-hour, deferred verification period applies only to suspected defects that may require remedial action notes ''C'' through ''I,'' found in the remedial action table. This four-hour period does not apply to suspected defects that may require remedial action notes ''A,'' ''A2,'' or ''B,'' which are more serious and must continue to be verified immediately.

The four-hour timeframe provides flexibility to allow the rail flaw detector car to continue testing in a non-stop mode, without requiring verification of less serious, suspected defects that may require remedial action under notes ''C'' through ''I.'' This flexibility also helps to avoid the need to operate the detector car in a non-test, ''run light'' mode over a possibly severe defective rail condition that could cause a derailment, when having to clear the track for traffic movement. However, any suspected defect encountered that may require remedial action notes ''A,'' ''A2, ''or ''B'' requires immediate verification. Overall, the four-hour, deferred-verification period will help to improve rail flaw detector car utilization, increase the opportunity to detect more serious defects, and ensure that all the rail a detector car is intended to travel over while in service is inspected.

FRA is in agreement with the railroad industry that most tracks are accessible by road or hi-rail, and supports a deferred-verification process where the operator can verify the suspect defect location with a portable type of test unit. FRA also agrees that it is more beneficial to continue the car's inspection past the location instead of leaving a possibly serious internal defect undetected in the track ahead.

Paragraph (c). FRA adds a new paragraph (c) to contain both the remedial action table and its notes, as revised, which formerly were included under paragraph (a). Specifically, FRA revises the remedial action table regarding transverse defects. FRA places the ''transverse fissure'' defect in the same category as detail fracture, engine burn fracture, and defective weld because they all normally fail in a transverse plane. The RITF discussed the possible addition of compound fissure to this category as well, to combine all transverse-oriented defects under the same remedial action. However, FRA ultimately determined that ''compound fissure'' should not be included in this category because a compound fissure may result in rail failure along an oblique or angular plane in relation to the cross section of the rail and should be considered a more severe defect requiring more restrictive remedial action. In addition, in order to take rail head wear into consideration, FRA changes the heading of the remedial action table for all transverse-type defects (i.e., compound fissures, transverse fissures, detail fractures, engine burn fractures, and defective welds) to refer to the ''percentage of existing rail head cross-sectional area weakened by defect,'' to indicate that all transverse defect sizes are related to the actual rail head cross-sectional area. This modification will preclude the possibility that the flaw detector car operator may size transverse defects without accounting for the amount of rail head loss on the specimen.

FRA's revisions to the remedial action table also reduce the current limit of eighty percent of the rail head cross-sectional area requiring remedial action notes ''A2'' or ''E and H'' to sixty percent of the rail head cross-sectional area. FRA reviewed the conclusions of the most recent study performed by the Transportation Technology Center, Inc., concerning the development of transverse-oriented detail fracture defects: *Improved Rail Defect Detection Technologies: Flaw Growth Monitoring and Service Failure Characterization,* AAR Report No. R–959, Davis, David D., Garcia, Gregory A., Snell, Michael E., September 2002. (A copy of this study has been placed in the public docket for this rulemaking.) The study concluded that detail fracture transverse development is considered to be inconsistent and unpredictable. Further, the average growth development of the detail fracture defects in the study exceeded five percent of the cross-sectional area of the rail head per every one mgt of train traffic. *Id.,* at Table 1. Recognizing the impact of these findings, FRA believes that detail fracture defects reported as greater than sixty percent of the cross-sectional area of the rail head necessitate the remedial actions required under this section, specifically that the track owner assign a person designated under § 213.7 to supervise each operation over the defect or apply and bolt joint bars to the defect in accordance with § 213.121(d) and (e), and limit operating speed over the defect to 50 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower.

FRA also adds a required remedial action for a longitudinal defect that is associated with a defective weld. This addition is based on current industry detection and classification experience for this type of defect. FRA adds this defect to the remedial action table and includes all longitudinal defects within one group subject to identical remedial actions based on their reported sizes. These types of longitudinal defects all share similar growth rates and the same remedial actions are considered appropriate for each type. FRA makes clear that defective weld also continues to be identified in the remedial action table for transverse-oriented defects.

The final rule expressly adds ''crushed head'' to the remedial action table. This type of defect may affect the structural integrity of the rail section and impact vehicle dynamic response in the higher speed ranges. AAR and NTSB pointed out in their comments on the NPRM that the remedial action table had several changes that were not included in the consensus language generated by the Task Force meetings. In particular, AAR mentioned that a flattened rail/crushed head defect has always been defined in the remedial action table as having a depth greater than or equal to 3⁄8 inch and a length greater than or equal to 8 inches. However, in the NPRM's remedial action table, a flattened rail/crushed head defect was defined as having a depth greater than 3⁄8 inch and a length greater than 8 inches.

FRA did not intend to change the consensus language in this area of the remedial action table. It appears that the changes were inadvertent, and FRA agrees with these commenters that the entries for flattened rail and crushed head defects should be defined in the remedial action table as having a depth greater than or equal to 3⁄8 inch and a length greater than or equal to 8 inches. A crushed head defect is identified in the table and defined in paragraph (d) of this section accordingly.

AAR and an individual commenter recommended in their comments on the NPRM that the proposed changes to this section should be also be made to subpart G of the Track Safety Standards to ensure consistency in the remedial action tables and rail defect definitions among all classes of track. However, the changes to the regulation as found in this final rule do not adequately address Class 6 through 9 track in areas such as rail remedial action and test frequency. Thus, FRA will consider taking action in a separate, future proceeding as necessary to address the safety of high-speed operations.

FRA notes that, during the RITF discussions, AAR expressed some concern regarding Footnote 1 to the remedial action table, which identifies conditions that could be considered a ''break out in rail head.'' AAR pointed out that there had been previous incidents where an FRA inspector would consider a chipped rail end as a rail defect under this section, and at times the railroad was issued a defect or violation regarding this condition. FRA makes clear that a chipped rail end is not a designated rail defect under this section and is not, in itself, an FRA-enforceable defective condition. FRA also intends to make clear in the Track Safety Standards Compliance Manual guidance for FRA inspectors that a chipped rail end is not to be considered as a ''break out in rail head.''

FRA adds a second footnote, Footnote 2, to the remedial action table. The footnote provides that remedial action ''D'' applies to a moon-shaped breakout, resulting from a derailment, with a length greater than 6 inches but not exceeding 12 inches and a width not exceeding one-third of the rail base width. FRA has made this change to allow relief because of the occurrence of multiple but less severe ''broken base'' defects that result from a dragging wheel derailment and may otherwise prevent traffic movement if subject to more restrictive remedial action. FRA also recommends that track owners conduct a special visual inspection of the rail pursuant to § 213.239, before the operation of any train over the affected track. A special visual inspection pursuant to § 213.239, which requires that an inspection be made of the track involved in a derailment incident, should be done to assess the condition of the track associated with these broken base conditions before the operation of any train over the affected track.

Revisions to the ''Notes'' to the Remedial Action Table

Notes A, A2, and B. Notes A, A2, and B are published in their entirety without substantive change.

Note C. FRA revises remedial action note C, which applies specifically to detail fractures, engine burn fractures, transverse fissures, and defective welds, and addresses defects that are discovered during an internal rail inspection required under § 213.237 and whose size is determined not to be in excess of twenty-five percent of the rail head cross-sectional area. For these specific defects, a track owner formerly had to apply joint bars bolted only through the outermost holes at the defect location within 20 days after it had determined to continue the track in use. However, evaluation of recent studies on transverse defect development shows that slow crack growth life is inconsistent and unpredictable. Therefore, FRA believes waiting 20 days to repair this type of defect is too long. Accordingly, as revised in this final rule, for these specific defects a track owner must apply joint bars bolted only through the outermost holes to the defect within 10 days after it is determined to continue the track in use. When joint bars have not been applied within 10 days, the track speed must be limited to 10 m.p.h. until joint bars are applied. The RITF recommended including this addition to allow the railroads alternative relief from remedial action for these types of defects in Class 1 and 2 track, and FRA agrees.

Note D. FRA revises remedial action note D, which applies specifically to detail fractures, engine burn fractures, transverse fissures, and defective welds, and addresses defects that are discovered during an internal rail inspection required under § 213.237 and whose size is determined not to be in excess of 60 percent of the rail head cross-sectional area. Formerly, for these specific defects, a track owner had to apply joint bars bolted only through the outermost holes at the defect location within 10 days after it is determined that the track should continue in use. However, evaluation of recent studies on transverse defect development shows that slow crack growth life is inconsistent and unpredictable. Therefore, FRA determined that allowing a 10-day period before repairing this type of defect is too long. Instead, as revised in this final rule, for these specific defects a track owner must apply joint bars bolted only through the outermost holes to the defect within 7 days after it is determined to continue the track in use. A timeframe of 7 days is sufficient to allow for replacement or repair of these defects, no matter when a defect is discovered. The rule also requires that when joint bars have not been applied within 7 days, the speed must be limited to 10 m.p.h. until joint bars are applied. The RITF recommended this addition to allow the railroads alternative relief from remedial action for these types of defects in Class 1 and 2 track, and FRA agrees.

Note E. Note E is published in its entirety without substantive change.

Note F. FRA revises note F so that if the rail remains in the track and is not replaced or repaired, the re-inspection cycle starts over with each successive re-inspection unless the re-inspection reveals the rail defect to have increased in size and therefore become subject to a more restrictive remedial action. This process continues indefinitely until the rail is removed from the track or repaired. If not inspected within 90 days, the speed is limited to that for Class 2 track or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower, until inspected. This change defines the re-inspection cycle and requires the railroad to continue the re-inspection or apply a reduction in speed.

Note G. Note G formerly required the track owner to inspect the defective rail within 30 days after determining that the track should continue to be used. FRA revises note G so that if the rail remains in the track and is not replaced or repaired, the re-inspection cycle starts over with each successive re-inspection unless the re-inspection reveals the rail defect to have increased in size and therefore become subject to a more restrictive remedial action. This process continues indefinitely until the rail is removed from the track or repaired. If not inspected within 30 days, the track owner is required to limit the speed to that for Class 2 track or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower, until inspected. This change defines the re-inspection cycle and requires the track owner to continue the re-inspection or apply a reduction in speed.

Notes H and I. Notes H and I are published in their entirety without substantive change.

Paragraph (d). FRA redesignates former paragraph (b) as paragraph (d) and revises it to define terms used in this section and in § 213.237, by reference. Definitions provided in former paragraphs (b)(1), (3) through (8), (10) through (13), and (15) are published in their entirety without substantive change. However, three terms are redefined (compound fissure, defective weld, and flattened rail), one is added (crushed head), and all terms are enumerated in alphabetical order.

(d)(3) Compound fissure. FRA revises this definition, which includes removing the last sentence of the former definition in paragraph (b)(2) providing that ''[c]ompound fissures require

examination of both faces of the fracture to locate the horizontal split head from which they originate.'' Rail failure analysis where a pre-existing fatigue condition is present normally exhibits an identical, identifiable defective condition on both rail fracture faces. Thus, analysis of one fracture face should be sufficient to determine the type of defect, the origin of the defect, and the size of the defect. Additionally, it is typical in the railroad industry that only one failure fracture face is retained during the subsequent repair phase of rail replacement. Therefore, FRA has determined that the examination of only one fracture face is necessary to identify the horizontal split head from which compound fissures originate, and modifies the definition accordingly.

(d)(4) Crushed head. As discussed earlier, FRA expressly adds crushed head to the remedial action table. FRA recognizes that rail flaw detection operators currently detect and classify this type of defect, and this addition provides a remedial action for the track owners to use. Crushed head is identified in the table and defined by the current industry standard as being a short length of rail, not at a joint, which has drooped or sagged across the width of the rail head to a depth of ⅜ inch or more below the rest of the rail head and 8 inches or more in length. FRA requires that measurements taken to classify the crushed head defect not include the presence of localized chips or pitting in the rail head. FRA notes that it will include this language in a section on ''Crushed head'' in the Track Safety Standards Compliance Manual.

(d)(6) Defective weld. In general, this definition continues to define defective weld for purposes of the transverse-oriented defects identified in the remedial action table. FRA modifies the definition of defective weld by adding that if the weld defect progresses longitudinally through the weld section, the defect is considered a split web for purposes of the remedial action required by this section. As discussed above, FRA includes defective weld in the remedial action table for a longitudinal defect that is associated with a defective weld. FRA has determined that the railroad industry currently detects and classifies this type of defect, and the inclusion codifies a specific remedial action for the railroads to utilize. FRA recognizes that these defects develop in an oblique or angular plane within the rail section and have growth rates comparable to other longitudinal-type defects; therefore, FRA believes that the same remedial action is appropriate.

(d)(9) Flattened Rail. FRA modifies the definition of flattened rail so that it is aligned with the current industry standard and the remedial action table's requirements as rail flattened out across the width of the rail head to a depth of ⅜ inch or more below the rest of the rail and 8 inches or more in length. Formerly, this definition described only the width of the rail, which remains unchanged. This definition now includes the length of the rail as well, which is specified in the remedial action table.

Section 213.119 Continuous Welded Rail (CWR); Plan Contents

FRA removes the former requirement under paragraph (h)(7)(ii) of this section to generate a Joint Bar Fracture Report (Fracture Report) for every cracked or broken CWR joint bar that the track owner discovers during the course of an inspection. Under former paragraph (h)(7)(ii)(C) of this section any track owner, after February 1, 2010, could petition FRA to conduct a technical conference to review fracture report data submitted through December 2009 and assess the necessity for continuing to collect this data. One Class I railroad submitted a petition to FRA, and on October, 26, 2010, a meeting of the RSAC Track Safety Standards Working Group served as a forum for a technical conference to evaluate whether there was a continued need for the collection of these reports. The Group ultimately determined that the reports were costly and burdensome to the railroads and their employees, while providing little useful research data to prevent future failures of CWR joint bars. The Group found that Fracture Reports were not successful in helping to determine the root cause of CWR joint bar failures because the reports gathered only a limited amount of information after the joint bar was already broken.

Instead, the Group recommended that a new study be conducted to determine what conditions lead to CWR joint bar failures and include a description of the overall condition of the track in the vicinity of the failed joint(s), track geometry (gage, alignment, profile, cross-level) at the joint location, and the maintenance history at the joint location, along with photographic evidence of the failed joint. Two Class I railroads volunteered to participate in a new joint bar study, which is expected to provide better data to pinpoint why CWR joint bars fail. In the meantime, given that FRA does not find it beneficial to retain the requirement for railroads to submit the Fracture Reports, FRA removes the requirement and reserves the paragraph.

Section 213.237 Inspection of Rail

Paragraph (a). Under former paragraph (a) of this section, Class 4 and 5 track, as well as Class 3 track over which passenger trains operate, was required to be tested for internal rail defects at least once every accumulation of 40 mgt or once a year (whichever time was shorter). Class 3 track over which passenger trains do not operate was required to be tested at least once every accumulation of 30 mgt or once per year (whichever time was longer). These maximum tonnage and time intervals for inspecting rail have been revised and moved to new paragraph (c). When these inspection requirements were drafted, track owners were already initiating and implementing the development of a performance-based, risk management concept for determining rail inspection frequency, which is often referred to as the ''self-adaptive scheduling method.'' Under this method, inspection frequency is established annually based on several factors, including the total detected defect rate per test, the rate of service failures between tests, and the accumulated tonnage between tests. The track owners then utilize this information to generate and maintain a service failure performance target.

This final rule revises paragraph (a) to require track owners to maintain service failure rates of no more than 0.1 service failure per year per mile of track for all Class 4 and 5 track; no more than 0.09 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains or is a hazardous materials route; and no more than 0.08 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains and is a hazardous materials route.

The changes to this section codify standard industry good practices. With the implementation of the self-adaptive scheduling method, track owners have generally tested more frequently than they have been required, and the test intervals align more closely with generally-accepted maintenance practices. The frequency of rail inspection cycles varies according to the total detected defect rate per test; the rate of service failures, as defined in paragraph (j) below, between tests; and the accumulated tonnage between tests—all of which are factors that the railroad industry's rail quality managers generally consider when determining test schedules.

In 1990, as a result of its ongoing rail integrity research, FRA released report DOT/FRA/ORD–90/05; *Control of Rail*

Integrity by Self-Adaptive Scheduling of Rail Tests; Volpe Transportation Systems Center; Oscar Orringer. The research objective was to provide the basis for a specification to adequately control the scheduling of rail tests, and the research provided quantitative guidelines for scheduling rail tests based on rail defect behavior. The purpose of this method for scheduling rail tests is to establish a performance goal that is optimized to control rail flaw development and subsequent rail failure in a designated track segment. If the performance goal is not met, a responsive adjustment is triggered in the rail test schedule to ensure that the goal is met.

The research determined that a minimum requirement for annual rail testing is a baseline figure of 0.1 service failure per mile for freight railroads. This baseline value can then be adjusted depending on the characteristics of the individual railroad's operation and internal risk control factors. For instance, a rail segment that handles high-tonnage unit trains and also supports both multiple passenger trains and trains carrying hazardous materials each day may require scheduling rail test frequencies adequate to maintain a performance goal of 0.03 service failure. The baseline value applied for determining rail test frequencies should also be adjusted based on specific conditions that may influence rail flaw development such as age of the rail, rail wear, climate, etc. As a result, the RITF reached consensus that 0.1 service failure per mile was established as an appropriate minimum performance requirement for use in the U.S. freight railroad system. The RITF also reached consensus that the minimum performance requirement should be adjusted to no more than 0.09 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains or is a hazardous materials route, and no more than 0.08 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains and is a hazardous materials route.

Paragraph (b). Former paragraph (b) is redesignated as paragraph (f) without substantive change. Under new paragraph (b), each rail inspection segment is designated by the track owner. While the RITF discussed at length how best to define the term ''segment'' as it relates to inspection of rail under this section, ultimately the RITF could not come to a consensus on a definition. Specifically, the BMWED, NTSB and AAR were split on how best to define this term, and so no recommendation was ever made to the full RSAC. The BMWED and NTSB were concerned that collecting service failure rates that were averaged over excessively large segments of track (such as segments longer than a subdivision length) would fail to identify discrete areas of weakness with chronically high concentrations of service failures. At the same time, the BMWED and NTSB also recognized that if a segment size was too small, one random failure could trigger a service failure rate in excess of the performance target under this section. Consequently, the BMWED and NTSB recommended that FRA impose a specific, uniform segment rate to be used by all railroads that is calculated to achieve the optimal length.

The AAR, on the other hand, maintained that each individual railroad is in the best position to determine its own segment lengths based on factors that are unique to the railroad's classification system. The AAR noted that each railroad has distinct segment configurations and challenges for which each railroad has developed specific approaches to identify and address them. The AAR believed that it was not possible to define a single methodology to appropriately address every railroad's specific configurations and factors, and that any approach established in a regulation would be extremely difficult and costly to implement. The AAR stated that the large amount of route miles, complex networks, and vast quantities of data being analyzed on Class I railroads requires an automated, electronic approach that integrates satisfactorily with each railroad's data system, which currently Class I railroads utilize. Arbitrary segmentation limitations developed through regulation would not be compatible with some of those systems and would create an onerous and costly burden of redesigning systems, with little overall improvement to safety, according to the AAR. The AAR maintained that each individual service failure represents a certain risk which is not affected by whether it is close to other service failures. The AAR asserted that the railroads want the service failure rate to be as low as possible and look for any patterns in service failures that suggest ways to reduce the service failure rate. Noting that these patterns can be affected by a myriad of different factors, the AAR stated that trying to create artificial boundaries on the length of a segment could lead to a less than optimal use of internal rail inspection capabilities, as well as decreased safety.

In the NPRM, FRA acknowledged the BMWED's and NTSB's concerns regarding identifying localized areas of failure. However, FRA also recognized that track owners have designed their current rail inspection segment lengths over a decade of researching their own internal rail testing requirements. FRA noted that this research takes into consideration pertinent criteria such as rail age, accumulated tonnage, rail wear, track geometry, and other conditions specific to these individually-defined segments. FRA stated that altering existing rail inspection segment lengths, such as by requiring a designated segment length without extensive data and research, could disrupt current engineering policies and result in problematic and costly adjustments to current maintenance programs without providing significant safety benefits.

FRA also concluded that track owners, as well as FRA, would be able to capture rail failure data, even in large segment areas, by simply looking at rail failure records and comparing milepost locations. Therefore, in the NPRM, FRA decided not to require a uniform segment length to be applied by all track owners. Instead, FRA proposed to require that track owners utilize their own designated segment lengths in place by the effective date of this final rule. However, in order to maintain consistency and uniformity, FRA proposed to require that if a track owner wished to change or deviate from its designated segment lengths, the track owner must receive FRA approval to make any such change. This would ensure that the track owner does not have the ability to freely alter a defined segment length in order to compensate for a sudden increase of detected defects and service failures that could require an adjustment to the test frequency as a result of accelerated defect development.

In its comments on the NPRM, BMWED acknowledged that the NPRM provisions in § 213.237(b) for rail inspection segment codify current industry practices, but stated that they thought that the proposal would do little to improve upon them. Rather, BMWED asserted that FRA's proposal would undermine the intent and effectiveness of the rule as it relates to service failure rates. BMWED proposed that FRA amend the rule to require each track owner to review rail service failure records annually per ''variable'' mile of track (i.e., a ''floating mile'' within an inspection segment) for compliance with § 213.237(a), and apply the provisions of § 213.237(d) to any variable mile of track exceeding the service failure rates identified in § 213.237(a). Additionally, BMWED proposed that FRA annually audit each track owner for compliance by comparing rail failure records utilizing the variable mile of track concept within inspection segments.

NTSB also asserted through its comments on the NPRM that there were problems with relating segment length to the ''milepost limits for the individual rail inspection frequency'' in this section. NTSB stated that track owners may need to adjust inspection frequency on portions of a segment and that could vary from year to year. According to NTSB, the track owner would have to inspect the entire segment at the same frequency or file with FRA to establish smaller segments with different inspection frequencies, which NTSB believed could provide a disincentive to conducting targeted inspections of problem areas.

While FRA continues to recognize BMWED's and NTSB's concerns, FRA has decided not to alter the text as proposed in the NPRM. FRA is concerned that defining a specific segment length that would apply uniformly to all track owners would greatly exceed the expectations of minimum track safety standards and result in an excessive amount of segments that would be too large for the current fleet of rail inspection vehicles to cover. This would become too costly and burdensome for track owners to manage, and ultimately render this part of the rule ineffective.

Nonetheless, in its comments on the NPRM, AAR disagreed with the proposed requirement that FRA must grant approval for any change to a railroad's designated test segments. AAR contended that FRA approval for such changes would be unnecessary, since FRA approval would not be required for the initial designation of a segment. Instead, AAR suggested that if after a railroad notifies FRA of any change to a designated segment, FRA detects any problem with the change, the new provisions proposed under § 213.241 regarding FRA's review of inspection records would determine compliance.

FRA supports the intent of the text as proposed in the NPRM and makes clear that FRA approval to change a segment length is required to ensure that the segment change will not have any detrimental impact on overall safety. To change the designation of a rail inspection segment or to establish a new segment pursuant to this section, a track owner must submit a detailed request to the FRA Associate Administrator for Railroad Safety/Chief Safety Officer (Associate Administrator). Within 30 days of receipt of the submission, FRA will review the request. FRA will then approve, disapprove or conditionally approve the submitted request, and will provide written notice of its determination. Consequently, while track owners will be able to designate their rail inspection segment lengths as of the effective date of the final rule, FRA approval of proposed changes to these segment lengths will ensure that the changes do not negatively impact safety, such as a change to a segment length specifically to absorb an area of defect development and rail failure to unacceptably reduce the test inspection frequency.

Paragraph (c). FRA redesignates former paragraph (c) as paragraph (e) and revises it, as discussed below. New paragraph (c) contains maximum time and tonnage intervals for rail inspections that are based on former paragraph (a) and revised. Specifically, FRA requires that internal rail inspections on Class 4 and 5 track, or Class 3 track with regularly-scheduled passenger trains or that is a hazardous materials route, not exceed a time interval of 370 days between inspections or a tonnage interval of 30 mgt between inspections, whichever is shorter. The 370-day interval or 30-mgt accumulation, whichever is shorter, provides a maximum timeframe and a maximum tonnage interval between tests on lines that may not be required to undergo testing on a more frequent basis in order to achieve the performance target rate. If maximum limits were not set, for example, a railroad line carrying only 2 mgt a year could possibly go 15 years without testing. Such a length of time without testing was unacceptable to the Task Force. Paragraph (c) also provides that internal rail inspections on Class 3 track that is without regularly-scheduled passenger trains and not a hazardous materials route must be inspected at least once each calendar year, with no more than 18 months between inspections, or at least once every 30 mgt, whichever interval is longer, but in no case may inspections be more than 5 years apart.

In its comments on the NPRM, New Jersey Transit Rail Operations (NJTR) took issue with the NPRM's proposed changes to paragraph (c). NJTR stated that requiring a test to be completed within 370 calendar days would result in NJTR scheduling successive tests earlier in each calendar year, to the point that a test may have to be scheduled at a time when it is impractical to conduct a test, such as during ''leaf'' season, which affects commuter rail agencies in the Northeast. NJTR proposed that the paragraph be revised to replace both the 370-day interval and the 18-month interval with a uniform 15-month or 450-day interval.

The Metropolitan Transit Authority (MTA) also raised concern with the proposed changes to paragraph (c). According to MTA, it has certain crossovers that trains operate over at Class 3 and Class 4 speeds that it currently tests once per year and it has difficulty in scheduling testing on these crossovers with the current high volume of service and availability of testing equipment. MTA proposed that paragraph (c) be revised to replace the 370-day interval with a uniform 400-day interval.

FRA does not agree with extending the timeframe between testing on certain portions of Class 3 and Class 4 tracks as a result of difficulty in scheduling testing on these tracks due to the volume of service or the availability of testing equipment. It is standard practice that many track owners maintain a predictable and consistent test schedule throughout the year. However, other track owners do schedule their tests as determined by seasonal issues or resource availability. This can vary from region to region. Nonetheless, FRA believes that 370 days allows all track owners sufficient time to plan their test schedules to account for the volume of traffic, availability of testing equipment, change of seasons, or similar issues that they each may face. In particular, FRA notes that 370 days is the maximum inspection interval allowed and is not intended in any way to restrict a railroad's ability to conduct inspections more frequently. Indeed, FRA expects that most railroads would conduct annual inspections on a relatively fixed schedule, using the additional days allowed for scheduling flexibility.

FRA notes that the maximum tonnage interval for testing internal rail defects on Class 4 and 5 track, and certain Class 3 track, has decreased from 40 mgt in former paragraph (a) of this section to 30 mgt. This change results from studies showing that, while the predominant factor that determines the risk of rail failure is the rate of development of internal rail flaws, the development of internal rail flaws is neither constant nor predictable. Earlier studies on the development of transverse-oriented rail defects showed the average development period to be 2% of the cross-sectional area of the rail head per mgt, which meant that rail testing would have to be completed with every 50 mgt. However, the RITF took into consideration the conclusions of a more recent study performed by the Transportation Technology Center, Inc., *Improved Rail Defect Detection*

Technologies: Flaw Growth Monitoring and Service Failure Characterization, concerning the development of transverse-oriented detail fracture defects, cited in the discussion of § 213.113(c), above. The study concluded that detail fracture transverse development averaged 5% of the cross-sectional area of the rail head per mgt. By itself, this finding would mean that testing would need to be completed no less frequently than every 20 mgt. However, because of the very lack of consistency and predictability in the development of internal rail flaws to allow such a firm conclusion to be drawn from the study, consensus was instead reached to lower this section's 40-mgt maximum tonnage limit between tests to a maximum of 30 mgt.

Selecting an appropriate frequency for rail testing is a complex task involving many different factors including rail head wear, accumulated tonnage, rail surface conditions, track geometry, track support, steel specifications, temperature differentials, and residual stresses. Taking into consideration the above factors, FRA's research suggests that all of these criteria influence defect development (and ultimately rail service failure rates) and are considered in the determination of rail inspection frequencies when utilizing the performance-based, self-adaptive test method.

For track owners without access to a sophisticated self-scheduling algorithm to determine testing frequencies, FRA has posted an algorithm program designed by the Volpe Center on the FRA Web site at *www.fra.dot.gov*. The algorithm requires five inputs: (1) Service failures per mile in the previous year; (2) detected defects per mile in the previous year; (3) annual tonnage; (4) number of rail tests conducted in the previous year; and (5) the targeted number of service failures per mile. Once the input is complete, the algorithm will take the average of two numbers when it calculates the number of rail tests. The first number will be based on the service failure rate. The second will be based on the total defect rate, which is the service defect rate plus the detected defect rate. This rate of designated tests per year for the designated segment will be the number of required tests per year enforced by FRA for the segment.

In paragraph (c)(2), the final rule also includes the addition of requirements for inspection of rail intended for reuse, or ''plug rail.'' On March 8, 2006, FRA issued Notice of Safety Advisory 2006–02 (SA), which promulgated recommended industry guidelines for the reuse of plug rail. 71 FR 11700. The recommendations in the SA consisted of two options for assuring that reused rail was free from internal defects. Specifically, FRA's SA recommended that the entire length of any rail that is removed from track and stored for reuse be retested for internal flaws. FRA also recommended that, recognizing that some track owners do not have the equipment to test second-hand rail in accordance with the recommendation above, track owners were encouraged to develop a classification program intended to decrease the likelihood that a second-hand rail containing defects would be installed back into active track. In addition, FRA recommended that a highly visible, permanent marking system be developed and used to mark defective rails that railroads remove from track after identifying internal defects in those rails.

During some of the first RITF discussions, NTSB expressed concern over one aspect of FRA's SA: The guidance that provides that rail is suitable for reuse if it has not accumulated more than 15 mgt since its last valid rail test. NTSB suggested that such rail could experience up to 55 mgt before its next inspection if it were put in track at a location that had just been inspected and whose inspection frequency is every 40 mgt. NTSB believed that all plug rail should be immediately inspected prior to reuse.

NTSB also had concerns regarding the proposed rule language in paragraph(c)(2), which would allow the accumulation of 30 mgt before ensuring replacement rail is free from detectable defects. In its comments on the NPRM, NTSB did not agree with FRA that some track owners do not have the equipment to test secondhand rail in accordance with NTSB's Safety Recommendation R–02–05, which NTSB believed should be incorporated into the final rule in its entirety. R–02–05 states that FRA should ''require railroads to conduct ultrasonic or other appropriate inspections to ensure that rail used to replace defective segments of existing rail is free from internal defects.''

During RITF discussions, track owners described their method for assuring that rail intended for reuse is free of internal defects. In general, it was found that most track owners perform an ultrasonic inspection on rail intended for reuse while in the track and allow accumulation of tonnage prior to removal, or they perform an inspection and certification process of the rail after it has been taken out of service and prior to re-installation. However, they stressed that plug rail inspection requirements should not be overly burdensome and should meet the same standards as any other rail inspections per the regulations.

FRA shares the track owners' concerns about creating a standard for rail inspection that would allow up to a 30-mgt accumulation on in-service rail, but would mandate immediate inspection of plug rail prior to reuse. Consequently, the final rule requires plug rail to be inspected at the same frequency as conventional rail. This requirement therefore supersedes FRA Safety Advisory 2006–02 and codifies current industry practice by allowing the use of rail that has been previously tested to be placed in track and retested at the normal frequency for that track segment. Nonetheless, all else being equal, FRA does recommend that the rail be tested prior to installation in track for reuse, even though FRA believes that requiring the track owner to test the rail immediately prior to re-installation is too restrictive. Alternatively, FRA believes that the track owner should have knowledge of the date the rail was last tested and ensure that the 30-mgt maximum tonnage accumulation is not exceeded prior to retesting the rail. In this regard, paragraph (c)(2) requires that the track owner be able to verify that any plug installed after the effective date of this final rule has not accumulated more than a total of 30 mgt in previous and new locations since its last internal rail flaw test, before the next test on the rail required by this section is performed. Thereafter, the rail must be tested in accordance with the test frequency of the designated segment in which it is installed.

FRA notes that the AAR, in its comments on the NPRM, requested that the verification language proposed in paragraph (c)(2) be revised to clarify that the regulation applies only to plug rail installed after the regulation's effective date. Otherwise, AAR believed the text as proposed in the NPRM would require railroads to identify each location where rail was installed in the past and retest each plug location, causing extra burden and expense.

FRA makes clear that it is not FRA's intent to require track owners to identify each location where rail was installed prior to the effective date of the final rule and retest each plug location, which would be too costly and burdensome for most track owners. FRA is aware that the majority of the plug rails that were previously installed have been absorbed into the track owners' current inspection cycles and have been tested while in track. Therefore, a requirement to re-inspect the previously installed plug rails would be unnecessarily restrictive and would not have a significant impact on safety. Accordingly, paragraph (c)(2) in the final rule makes clear that the verification requirement applies only to plug rail installed after the regulation's effective date. Similarly, in preparing the final rule FRA has modified paragraph (c)(3) to make clear that the provision applies only after the regulation's effective date.

Paragraph (d). Former paragraph (d) is redesignated as paragraph (g) and revised, as discussed below. New paragraph (d) contains restrictions that apply if the service failure target rate identified in paragraph (a) is not achieved on a segment of track for two consecutive twelve-month periods. FRA recognizes that the service failure target rate may be exceeded within one defined twelve-month period. Therefore, the track owner is allowed an additional year to adjust its rail integrity management program to bring the service failure rate on the offending track segment into compliance with the requirements. If the service failure target rate is exceeded for two consecutive twelve-month periods, the track owner is required to comply with the requirements in paragraph (d) for either a minimum rail test frequency or a speed restriction on the offending track segment.

In its comments on the NPRM, NTSB disagreed with the language proposed in paragraph (d)(1) concerning the service failure rate. NTSB stated that the performance-based, risk management approach proposed in the NPRM may be a step in the right direction to mitigate risk of rail failure. However, according to NTSB, in order to be consistent with damage tolerance principles, the algorithms and methods used by the track owners should have the capability to identify areas of high stress that would suggest worn rail conditions, poor track support, rail with high accumulated tonnage, or rail with high residual stresses. NTSB stated that there was no systematic approach in the NPRM that would assure that FRA could use the data to ensure acceptable performance. Consequently, NTSB recommended that track owners should be required to regularly report service failure information to FRA and that FRA should review service failure data on a regular basis not only across entire segments to assess the overall performance of the track owner as proposed in the NPRM, but also in shorter lengths of track to assess track owner performance in timely identification and remediation of areas that are at high risk of failure.

In the final rule, FRA continues to support the rule text as proposed in the NPRM. FRA believes that the remedial action for inspection frequency in paragraph (d)(1)(i), which requires that the segment be tested every 10 mgt if the performance target is not met for two consecutive years, ensures that an optimal amount of inspection is conducted in order to capture areas where accelerated defect development is occurring and not restrict railroads so significantly that they cannot inspect other segments as required by paragraph (a). Further, during RITF meetings there was much discussion that the practice of increased test frequency on localized areas would lead to unmanageable amounts of test frequencies. The AAR noted that there is a limited supply of inspection vehicle resources and test operators, and that a greatly increased amount of test frequencies would not be achievable by the railroads. FRA agrees, and notes that its rail integrity specialists will be reviewing service failure data on a regular basis. During these reviews, FRA will seek to identify any instances where shorter lengths of track have high failure rates and will follow up as necessary.

Paragraph (e). As noted above, FRA is redesignating former paragraph (c) as paragraph (e) with some revision. Specifically, in paragraph (e) FRA requires that each defective rail be marked with a highly visible marking on both sides of the web and base except that, where a side or sides of the web and base are inaccessible because of permanent features, the highly visible marking may be placed on or next to the head of the rail. This option to mark the rail head in certain situations provides an alternative to the railroad in areas where the web and base may not be accessible. Former paragraph (e) is redesignated as paragraph (h) and revised, as discussed below.

Paragraph (f). As stated above, FRA redesignates former paragraph (b) as paragraph (f) without substantive change.

Paragraph (g). Paragraph (g) addresses circumstances where a valid search for internal rail defects cannot be made because of rail surface conditions, equipment issues, or other factors. Several types of technologies are presently employed to continuously search for internal rail defects, some capable of displaying and monitoring search signal returns. A continuous search is intended to mean an uninterrupted search by whatever technology is being used, so that there are no segments of rail that go untested. If the test is interrupted, e.g., as a result of rail surface conditions that inhibit the transmission or return of the signal, then the test over that segment of rail may not be valid because it was not continuous. Therefore, in the final rule, a valid search for internal rail defects is defined in paragraph (j), below, as a ''valid test'' during which the equipment is performing as intended and equipment responses are interpreted by a qualified operator as defined in § 213.238. In conducting a valid search, the operator needs to determine that the test has not been compromised due to environmental contamination, rail conditions, or test equipment performance.

Paragraph (h). FRA redesignates former paragraph (e) as paragraph (h) and revises it. In paragraph (h), FRA specifies the options available to a railroad following a non-test. At least one of these options must be exercised prior to the expiration of the time or tonnage limits as specified in paragraph (a) or (c) of this section.

Paragraph (i). FRA adds new paragraph (i) to require that the rail flaw detector car operator be qualified as defined in new § 213.238, ''Qualified operator,'' which prescribes minimum training, evaluation, and documentation requirements for personnel performing in this occupation.

Paragraph (j). FRA adds paragraph (j) to provide new definitions for terms that are used in this section. These terms are applicable only to this section.

Hazardous materials route. FRA defines ''hazardous materials route'' for purposes of determining the appropriate service failure target rate pursuant to paragraph (a) of this section. ''Hazardous materials route'' means track over which a minimum of 10,000 car loads or intermodal portable tank car loads of hazardous materials as defined in 49 CFR 171.8 travel over a period of one calendar year; or track over which a minimum of 4,000 car loads or intermodal portable tank car loads of the hazardous materials specified in 49 CFR 172.820 travel, in a period of one calendar year.

In its comments on the NPRM, UP raised concern that the definition of ''hazardous materials route'' proposed in the NPRM did not mirror the intent of the RITF. UP believed that, as proposed in the NPRM, the definition would apply to certain movements of hazardous materials over ''any track of any class,'' when the intent was to apply the definition only to Class 3 or higher track classes.

In the final rule, FRA defines ''hazardous materials route'' consistent with the RITF's intent that the term apply only to track Classes 3 through 5, as the meaning was inadvertently changed in preparing the NPRM. However, FRA believes that it is unnecessary and potentially confusing to specify in the definition that the term applies only to track Classes 3 through 5. The definition applies only to specific provisions of § 213.237 and only to Class 3, 4, or 5 track, or all three depending on the circumstances. Consequently, removing any mention of class of track in the definition is clearer and more concise. Separately, FRA notes that the RSAC consensus language recommended that the rule apply to those tracks carrying the defined hazardous materials ''over a period of one year,'' which could be construed as a rolling 12-month timeframe. To ensure that the interpretation of this period is consistent, and applied as intended, the definition makes clear that this period is ''one calendar year.''

Plug rail. FRA defines ''plug rail'' to mean a length of rail that has been removed from one track location and stored for future use as a replacement rail at another location.

Service failure. FRA defines ''service failure'' to mean a broken rail occurrence, the cause of which is determined to be a compound fissure, transverse fissure, detail fracture, or vertical split head. Only the listed fatigue defects, i.e., compound fissure, transverse fissure, detail fracture, or vertical split head, are required to be utilized for determining the fatigue service failure rate. Since other defect types are more likely to go undetected, and how well defects can be detected is influenced by conditions other than fatigue, other defect types are not included in the service failure rate calculation.

Valid search. FRA provides a definition of ''valid search'' to help ensure that valid rail flaw detection tests under this section are conducted. Under this definition, the test equipment must perform as intended and equipment responses must be properly interpreted by a qualified operator as defined in § 213.238.

Section 213.238 Qualified Operator

FRA adds this new section to require that any entity that conducts rail flaw detection have a documented training program to ensure that a rail flaw detection equipment operator is qualified to operate each of the various types of equipment currently utilized in the industry for which he or she is assigned, and that proper training is provided when new rail flaw detection technologies are utilized.

In its comments on the NPRM, the AAR noted that this proposed section was inconsistent in specifying who bears the responsibility for evaluating a rail flaw detector car operator's training. The AAR believed the NPRM suggested that railroads must ensure that there are training programs in place and qualified operators but that the operators' employers are responsible for actually providing the training and qualifying the operators. The AAR also noted that the responsibility of the employer of the personnel operating the rail flaw detection equipment is to provide training and qualification requirements, conduct training and testing, and supply training and qualification credentials. The AAR stated that in many cases the rail flaw detection equipment is proprietary and that the railroads would have neither the information nor the expertise necessary for such training and qualification. The AAR therefore recommended that FRA clarify § 213.238 to state that the provider of the rail flaw detection operator is responsible for the training and qualification requirements.

FRA is aware that it is the responsibility of the employer of the personnel operating the rail flaw detection equipment to develop training and qualification requirements, conduct training and testing, and supply training and qualification credentials. FRA concurs that the rail flaw detection equipment is often proprietary and that the track owner may not have the information or the expertise necessary for such training and qualification. For that reason, the final rule imposes the responsibility for implementing this section principally on the provider of the rail flaw detection equipment, which may of course be the track owner itself. However, FRA does believe that it is the responsibility of the track owner to reasonably ensure that any operator of rail flaw detection equipment over its track is qualified to conduct an inspection in accordance with the training and qualification requirements in this section, because the track owner is ultimately responsible for the conformance of its track and rail with the requirements of the Track Safety Standards. This responsibility is incorporated into paragraph (a).

As provided in paragraph (b), each operator of rail flaw detection equipment must have documentation from his or her employer that designates his or her qualifications to perform the various functions associated with the flaw detection process. Specifically, the requirements help ensure that each operator is able to conduct a valid search for internal rail flaws, determine that the equipment is functioning properly at all times, properly interpret the test results, and understand test equipment limitations.

In paragraph (c), the operator must receive a minimum amount of documented, supervised training according to the rail flaw detection equipment provider's training program. FRA understands that this training may not be entirely held within the classroom environment and is in agreement that the employer should have the flexibility to determine the training process that is appropriate for demonstrating compliance. The operator is required to demonstrate proficiency for each type of equipment the employer intends the operator to use, and documentation must be available to FRA to verify the qualification.

As provided in paragraph (d), operator reevaluation and, as necessary, refresher training is required in accordance with the documented training program. The employer is provided flexibility to determine the process used in reevaluating qualified operators, including the frequency of operator reevaluation. The reevaluation process shall require that the employee successfully complete a recorded examination and demonstrate proficiency to the employer on the specific equipment type(s) to be operated. The reevaluation and recurrent training may also consist of a periodic review of test data submitted by the operator.

In paragraph (e), FRA requires that the employer maintain a written or electronic record of each operator's qualification. The record must include the operator's name, type of equipment qualification, date of initial qualification, and most recent re-evaluation of his or her qualifications, if any. This paragraph is intended to ensure consistent recordkeeping and allow FRA to accurately verify compliance.

FRA provides in paragraph (f) that rail flaw detection equipment operators who have demonstrated proficiency in the operation of rail flaw detection equipment prior to publication of this final rule be considered qualified to operate the equipment as designated by the employer. Such an operator must thereafter undergo reevaluation in accordance with paragraph (d) of this section. Any employee that is considered for the position of qualified operator subsequent to the publication of this final rule must be qualified in accordance with paragraph (c) of this section.

Finally, in paragraph (g) FRA requires that the records specifically associated with the operator qualification process be maintained at a designated location and made available to FRA as requested, to assist in verifying compliance.

Section 213.241 Inspection Records

This section contains requirements for keeping, handling, and making available records of track inspections required in accordance with subpart F.

Paragraphs (a) and (b) remain unchanged.

FRA revises paragraph (c) to require that internal rail inspection records include the date of inspection, track identification and milepost for each location tested, type of defect found and size if not removed prior to the resumption of rail traffic, and initial remedial action as required by § 213.113. Paragraph (c) also requires that the records document all tracks that do not receive a valid test pursuant to § 213.237(g). These changes respond to a recommendation arising out of the report by DOT's OIG, ''*Enhancing the Federal Railroad Administration's Oversight of Track Safety Inspections,*'' referenced above. The OIG recommended that FRA ''[r]evise its track safety regulations for internal rail flaw testing to require the railroads to report all track locations (milepost numbers or track miles) covered during internal rail flaw testing.'' *See* OIG report at p. 8. FRA has revised this section, accordingly. The last sentence of former paragraph (c) is moved to paragraph (d), as discussed below.

FRA redesignates former paragraph (d) as paragraph (f). In its place, FRA slightly modifies the last sentence in former paragraph (c) and redesignates it as paragraph (d). Paragraph (d) requires the track owners to maintain the rail inspection records at least for two years after an inspection has occurred and for one year after the initial remedial action has been taken. This information is vital for FRA to determine compliance with the rail integrity and inspection requirements in § 213.113 and § 213.237.

FRA redesignates former paragraph (e) as paragraph (g) without substantive change. In new paragraph (e), rail inspection records must be maintained to demonstrate compliance with § 213.237(a). This requirement is intended to provide sufficient information to determine that accurate data concerning detected defects is utilized by the railroads as input into the performance-based test frequency formula. During RITF discussions, track owners asked that FRA requests for records of rail inspections demonstrating compliance with required test frequencies be made by a designated FRA Rail Integrity Specialist; each track owner would then designate a person within its organization whom the Rail Integrity Specialists would contact when requesting records of rail inspections. FRA agrees that this suggested approach is an efficient way to obtain inspection records and FRA intends to adopt this approach through guidance in FRA's Track Safety Compliance Manual.

As discussed above, FRA redesignates former paragraph (d) as paragraph (f) without substantive change. Paragraph (f) provides that track inspection records be made available for inspection and copying by FRA upon request.

Finally, as discussed above, FRA redesignates former paragraph (e) as paragraph (g) without substantive change. Paragraph (g) contains the requirements for maintaining and retrieving electronic records of track and rail inspections.

Appendix B to Part 213—Schedule of Civil Penalties

Appendix B to part 213 contains a schedule of civil penalties for use in connection with this part. Because such penalty schedules are statements of agency policy, notice and comment are not required prior to their issuance. *See* 5 U.S.C. 553(b)(3)(A). Accordingly, FRA is amending the penalty schedule to reflect the addition of a new section in this part, § 213.238, Qualified operator.

VIII. Regulatory Impact and Notices

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

This final rule has been evaluated in accordance with existing policies and procedures and determined to be non-significant under both Executive Orders 12866 and 13563 and DOT policies and procedures. *See* 44 FR 11034; February 26, 1979. FRA has prepared and placed in the docket a regulatory evaluation addressing the economic impact of this final rule.

As part of the regulatory evaluation, FRA has assessed the quantitative costs from the implementation of this rule and has a high degree of confidence that the majority of the rail industry is already in compliance with the new requirements; therefore, there are minimal costs associated with this rule. FRA's analysis follows DOT's revised ''Guidance on the Economic Value of a Statistical Life in US Department of Transportation Analyses,'' published in March 2013. Based on real wage growth forecasts from the CBO, DOT's guidance estimates that there will be 1.07 percent annual growth rate in median real wages over a 20-year period (2014–2034). Real wages represent the purchasing power of nominal wages. FRA assumed an income elasticity of 1.0 and adjusted the Value of Statistical Life (VSL) in future years in the same way. VSL is the basis for valuing avoided casualties. FRA's analysis further accounts for expected wage growth by adjusting the taxable wage component of labor costs. Other non-labor hour-based costs and benefits are not impacted.

In analyzing the benefits of the final rule, FRA estimates that over a 20-year period the industry will save $62.9 million, with a present value (PV), discounted at 7 percent, of $35.5 million. This cost-benefit analysis shows that the potential benefits from the rule will exceed the total costs. In fact, the estimated benefit shows an overall increase of 2.6% compared to the estimates provided in the NPRM. Part of this increase is due to the application of the CBO's real wage forecast, which adjusts the annual growth rate by 1.07 percent annually. FRA also determined that the initial implementation year would be 2014; therefore, all wages have been adjusted accordingly. The change in the initial implementation year accounts for the remainder of the increased benefits.

FRA considered the industry costs associated with the final rule, which include: New requirements for effective rail inspection frequencies, changes to rail flaw remedial actions, minimum qualification requirements for rail flaw detection equipment operators, and new requirements for rail inspection records. The bulk of this regulation revises FRA's Track Safety Standards by codifying the industry's current good practices. The only entities that may be impacted by portions of this rule are Class III railroads with Class 3, 4, or 5 track. For more details, please see the regulatory evaluation found in the docket.

FRA anticipates that this rulemaking will enhance safety by helping to allocate more time to rail inspections, increasing the likelihood of detecting more serious rail defects sooner, ensuring that qualified operators conduct rail inspections, and including more specific information in rail inspection records for analysis and compliance purposes. The main benefit associated with this rule is derived from granting railroads a four-hour window to verify certain defects found during an inspection. The defects subject to the deferred verification allowance are considered less likely to cause immediate rail failure, and require less restrictive remedial action. However, without the additional time to verify these defects, railroads must stop their inspections to avoid a possible civil penalty. The additional time both permits railroads to continue their inspections and search for more serious defects and avoids the cost of paying their internal inspection crews or renting a rail flaw detector car an additional half day, saving the industry approximately $8,400 per day. FRA believes the value of the anticipated benefits will easily justify the cost of implementing the final rule.

B. Regulatory Flexibility Act and Executive Order 13272

To ensure potential impacts of rules on small entities are properly considered, FRA has developed this final rule in accordance with Executive Order 13272 (''Proper Consideration of Small Entities in Agency Rulemaking'') and DOT's procedures and policies to promote compliance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 601 et seq.).

The Regulatory Flexibility Act requires an agency to review regulations to assess their impact on small entities. An agency must prepare a regulatory flexibility analysis (RFA) unless it determines and certifies that a rule, if promulgated, would not have a significant economic impact on a substantial number of small entities.

This final rule amends the Federal Track Safety Standards to improve rail flaw detection processes and promote safety in railroad operations. In particular, FRA is specifying minimum qualification requirements for rail flaw detection equipment operators, as well as revising the requirements for effective rail inspection frequencies, rail flaw remedial actions, and rail inspection records. FRA is also removing regulatory requirements concerning joint bar fracture reporting.

(1) Description of Regulated Entities and Impacts: The ''universe'' of the entities to be considered generally includes only those small entities that are reasonably expected to be directly regulated by this action. This final rule directly affects Class I, Class II, and Class III railroads that operate over Class 3, 4, or 5 track.

''Small entity'' is defined in 5 U.S.C. 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) likewise includes within the definition of this term not-for-profit enterprises that are independently owned and operated, and are not dominant in their field of operation. 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.'' Additionally, 5 U.S.C. 601(5) defines as ''small entities'' governments of cities, counties, towns, townships, villages, school districts, or special districts with populations less than 50,000.

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 statement of agency policy that formally establishes ''small entities'' or ''small businesses'' as being railroads, contractors, and hazardous materials shippers that meet the revenue requirements of a Class III railroad as set forth in 49 CFR 1201.1–1, which is $20 million or less in inflation-adjusted annual revenues; and commuter railroads or small governmental jurisdictions that serve populations of 50,000 or less. *See* 68 FR 24891, May 9, 2003, codified at appendix C to 49 CFR part 209. The $20 million-limit is based on the Surface Transportation Board's revenue threshold for a Class III railroad. Railroad revenue is adjusted for inflation by applying a revenue deflator formula in accordance with 49 CFR 1201.1–1. FRA is using this definition for this rulemaking.

Railroads: FRA regulates approximately 782 railroads. There are 7 Class I freight railroads and 10 Class II railroads, none of which are considered to be small. There are a total of 29 commuter/passenger railroads, including Amtrak, affected by this rule. However, most of the affected commuter railroads are part of larger public transportation agencies that receive Federal funds and serve major jurisdictions with populations greater than 50,000.

The level of costs incurred by each railroad should generally vary in proportion to the number of miles of Class 3, 4, or 5 track. For instance, railroads with less track should have lower overall costs associated with implementing the standards. There are 738 Class III railroads, of which, only 58 are affected by this rule. However, FRA has confirmation that the practices of 51 of these small railroads already conform with the requirements of this regulation. FRA believes that the practices of the remaining 7 Class III railroads also conform with the requirements of this regulation, and that no small entity will be negatively impacted by this regulation as a result. FRA published this analysis in the Initial Regulatory Flexibility Analysis (IRFA) that accompanied the NPRM and requested comments. No comments were received on FRA's analysis of the rule's impact on small entities. Even if the 7 Class III railroads were impacted, the economic impact on them would likely not be significant.

If these 7 small railroads that FRA believes are in compliance with the rule are in fact not in compliance, the added costs would be minimal. Seven railroads would not be a substantial number of the 738 Class III railroads. FRA estimates that it would cost a Class III railroad $2,000 per day to rent a rail flaw detector car. The average Class III railroad that owns Class 3, 4, or 5 track has approximately 70 miles of track. FRA estimates it would take 3 days to inspect each railroad's entire track. The total cost per railroad would be $6,000 per year, for the base year. FRA has a high level of confidence that these railroads are already inspecting their track at least once a year. However, if these entities are not in compliance, FRA believes a cost of $6,000 per year would not be a significant economic impact on any railroad.

During the public comment period following the NPRM, FRA did not receive any comments discussing the IRFA or Executive Order 13272. FRA certifies that the final rule will not have any significant economic impact on the competitive position of small entities, or on the small entity segment of the railroad industry as a whole.

(2) Certification: Pursuant to the Regulatory Flexibility Act (5 U.S.C. 605(b)), FRA certifies that this final rule will not have a significant economic impact on a substantial number of small entities. Although a substantial number of small railroads will be affected by the final rule, none of these entities will be significantly impacted.

C. Paperwork Reduction Act

The information collection requirements in this final rule are being submitted 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 and new information collection requirements and the estimated time to fulfill each requirement are as follows:

CFR Section	Respondent universe	Total annual responses	Average time per response	Total annual burden hours
213.4—Excepted track:				
—Designation of track as excepted	236 railroads	20 orders	15 minutes	5
—Notification to FRA about removal of excepted track.	236 railroads	15 notifications	10 minutes	3
213.5—Responsibility for compliance	728 railroads	10 notifications	8 hours	80
213.7—Designation of qualified persons to supervise certain renewals and inspect track:				
—Designations	728 railroads	1,500 names	10 minutes	250
—Employees trained in CWR procedures	37 railroads	80,000 tr. employees	8 hours	640,000
—Written authorizations and recorded exams.	37 railroads	80,000 auth. + 80,000 exams.	10 minutes + 60 minutes.	93,333
—Designations (partially qualified) under paragraph (c) of this section.	37 railroads	250 names	10 minutes	42
213.17—Waivers	728 railroads	6 petitions	24 hours	144
213.57—Curves; elevation and speed limitations:				
—Request to FRA for vehicle type approval	728 railroads	2 requests	40 hours	80
—Written notification to FRA prior to implementation of higher curving speeds.	728 railroads	2 notifications	8 hours	16
—Written consent of track owners obtained by railroad providing service over that track.	728 railroads	2 written consents	45 minutes	2
213.110—Gage restraint measurement systems (GRMS):				
—Implementing GRMS—notices & reports	728 railroads	5 notifications + 1 tech rpt.	45 minutes/4 hours	8
—GRMS vehicle output reports	728 railroads	50 reports	5 minutes	4
—GRMS vehicle exception reports	728 railroads	50 reports	5 minutes	4
—GRMS/PTLF—procedures for data integrity.	728 railroads	4 proc. docs.	2 hours	8
—GRMS training programs/sessions	728 railroads	2 programs + 5 sessions.	16 hours	112
—GRMS inspection records	728 railroads	50 records	2 hours	100
213.118—Continuous welded rail (CWR); plan review and approval:				
—Plans w/written procedures for CWR	279 railroads	279 plans	4 hours	1,116
—Notification to FRA and RR employees of CWR plan effective date.	279 RRs/80,000 employees.	279 + 80,000 notifications.	15 minutes + 2 minutes	2,737
—Written submissions after plan disapproval.	728 railroads	20 written submissions	2 hours	40
—Final FRA disapproval and plan amendment.	728 railroads	20 amended plans	1 hour	20
213.119—Continuous welded rail (CWR); plan contents:				
—Annual CWR training of employees	37 railroads	80,000 tr. employees	30 minutes	40,000
—Recordkeeping	279 railroads	2,000 records	10 minutes	333
—Recordkeeping for CWR rail joints	279 railroads	360,000 rcds.	2 minutes	12,000
—Periodic records for CWR rail joints	279 railroads	480,000 rcds.	1 minute	8,000
—Copy of track owner's CWR procedures	279 railroads	279 manuals	10 minutes	47
213.233—Track inspections—Notations	728 railroads	12,500 notations	1 minute	208
213.237—Inspection of rail (New Requirements):				
—Detailed request to FRA to change designation of a rail inspection segment or establish a new segment.	10 railroads	50 requests	15 minutes	13
—Notification to FRA and all affected employees of designation's effective date after FRA's approval/conditional approval.	10 railroads	50 notices + 120 notices/bulletins.	15 minutes	43
—Notice to FRA that service failure rate target in paragraph (a) of this section is not achieved.	10 railroads	12 notices	15 minutes	3
—Explanation to FRA as to why performance target was not achieved and provision to FRA of remedial action plan.	10 railroads	12 letters of explanation + 12 plans.	15 minutes	6
213.241—Inspection records	728 railroads	1,542,089 records	Varies	1,672,941
213.303—Responsibility for compliance	2 railroads	1 notification	8 hours	8
213.305—Designation of qualified individuals; general qualifications Designations (partially qualified).	2 railroads	20 designations	10 minutes	3
213. 317—Waivers	2 railroads	1 petition	80 hours	80
213.329—Curves; elevation and speed limitations:				
—FRA approval of qualified vehicle types based on results of testing.	2 railroads	2 documents	80 hours	160

CFR Section	Respondent universe	Total annual responses	Average time per response	Total annual burden hours
—Written notification to FRA prior to implementation of higher curving speeds.	2 railroads	3 notifications	40 hours	120
—Written consent of other affected track owners obtained by railroad.	2 railroads	3 written consents	45 minutes	2
213.333—Automated vehicle-based inspection systems:				
—Request for atypical measurements	10 railroads	1 request	8 hours	8
—TGMS output/exception reports	10 railroads	18 reports	20 hours	360
—Track/vehicle performance measurement system: copies of most recent exception reports/additional records.	10 railroads	13 reports/records	20 hours	260
—Notification to track personnel when onboard accelerometers indicate track related problem.	10 railroads	10 notices	40 hours	400
—Requests for an alternate location for device measuring lateral accelerations.	10 railroads	10 requests	40 hours	400
—Report to FRA providing analysis of collected monitoring data.	10 railroads	4 reports	8 hours	32
213.341—Initial inspection of new rail and welds:				
—Mill inspection	2 railroads	2 reports	16 hours	32
—Welding plant inspection	2 railroads	2 reports	16 hours	32
—Inspection of field welds	2 railroads	125 records	20 minutes	42
213.343—Continuous welded rail (CWR)	2 railroads	150 records	10 minutes	25
213.345—Vehicle/track system qualification:				
—Vehicle qualification program for all vehicle types operating at track Class 6 speeds or above or at curving speeds above 5 inches of cant deficiency.	10 railroads	10 programs	120 hours	1,200
—Previously qualified vehicle types qualification programs.	10 railroads	10 programs	80 hours	800
—Written consent of other affected track owners obtained by railroad.	10 railroads	1 written consent	8 hours	8
213.347—Automotive or railroad crossings at grade:				
—Protection plans	1 railroad	2 plans	8 hours	16
213.369—Inspection records:				
—Record of inspection of track	2 railroads	500 records	1 minute	8 hours
—Internal defect inspections and remedial action taken.	2 railroads	50 records	5 minutes	4

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 paperwork package that is being submitted to OMB, please contact Mr. Robert Brogan, Information Clearance Officer, Federal Railroad Administration, at 202–493–6292 (*Robert.Brogan@dot.gov*), or Ms. Kimberly Toone, Records Management Officer, Federal Railroad Administration, at 202–493–6132 (*Kim.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, DC 20503, Attention: FRA Desk Officer. Comments may also be sent via email 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 that do not display a current OMB control number, if required. FRA intends to obtain current OMB control numbers for any new information collection requirements resulting from this rulemaking action prior to the effective date of this final rule. The OMB control number, when assigned, will be announced by separate notice in the **Federal Register**.

D. 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 action 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. 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 final rule 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.

E. 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.

FRA has analyzed this final rule in accordance with the principles and criteria contained in Executive Order 13132. This final rule will not have a substantial direct effect on the States, on the relationship between the Federal government and the States, or on the distribution of power and responsibilities among the various levels of government. FRA has also determined that this final rule will not impose substantial direct compliance costs on State and local governments. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

Moreover, FRA notes that RSAC, which recommended the majority of this final rule, has as permanent members two organizations representing State and local interests: AASHTO and ASRSM. Both of these State organizations concurred with the RSAC recommendations made in this rulemaking. RSAC regularly provides recommendations to the Administrator of FRA for solutions to regulatory issues that reflect significant input from its State members. To date, FRA has received no indication of concerns about the federalism implications of this final rule from these representatives or from any other representatives of State government.

However, this final rule could have preemptive effect by operation of law under 49 U.S.C 20106 (sec. 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 ''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 sec. 20106. Accordingly, FRA has determined that preparation of a federalism summary impact statement for this final rule is not required.

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 the 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. This final rule will not result in the expenditure, in the aggregate, of $100,000,000 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.'' *See* 66 FR 28355 (May 22, 2001). Under the Executive Order a ''significant energy action'' is defined as any action by an agency 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 the Executive Order.

H. Privacy Act Statement

Anyone is able to search the electronic form of any comment or petition for reconsideration received into any of DOT's dockets by the name of the individual submitting the comment or petition (or signing the comment or petition, 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 published in the **Federal Register** on April 11, 2000 (Volume 65, Number 70, Pages 19477–78), or you may visit *http://www.dot.gov/privacy.html.*

List of Subjects in 49 CFR Part 213

Penalties, Railroad safety, Reporting and recordkeeping requirements.

The Rule

For the reasons discussed in the preamble, FRA amends part 213 of chapter II, subtitle B of title 49, Code of Federal Regulations, as follows:

PART 213—[AMENDED]

■ 1. The authority citation for part 213 continues to read as follows:

Authority: 49 U.S.C. 20102–20114 and 20142; Sec. 403, Div. A, Public Law 110–432, 122 Stat. 4885; 28 U.S.C. 2461, note; and 49 CFR 1.89.

Subpart A—General

■ 2. Revise § 213.3(b) to read as follows:

§ 213.3 Application.

* * * * *

(b) This part does not apply to track:

(1) Located inside an installation that is not part of the general railroad system of transportation (i.e., a plant railroad). As used in this part, a plant railroad means a plant or installation that owns or leases a locomotive, uses that locomotive to switch cars throughout the plant or installation, and is moving goods solely for use in the facility's own industrial processes. The plant or installation could include track immediately adjacent to the plant or installation if the plant railroad leases the track from the general system railroad and the lease provides for (and actual practice entails) the exclusive use of that track by the plant railroad and the general system railroad for purposes of moving only cars shipped to or from the plant. A plant or installation that operates a locomotive to switch or move cars for other entities, even if solely within the confines of the plant or installation, rather than for its own purposes or industrial processes, will not be considered a plant railroad because the performance of such activity makes the operation part of the general railroad system of transportation. Similarly, this exclusion does not apply to track over which a general system railroad operates, even if that track is located within a plant railroad;

(2) Used exclusively for tourist, scenic, historic, or excursion operations that are not part of the general railroad system of transportation. As used in this part, tourist, scenic, historic, or excursion operations that are not part of the general railroad system of transportation means a tourist, scenic, historic, or excursion operation conducted only on track used exclusively for that purpose (i.e., there is no freight, intercity passenger, or commuter passenger railroad operation on the track); or

(3) Used exclusively for rapid transit operations in an urban area that are not connected to the general railroad system of transportation.

Subpart D—Track Structure

■ 3. Revise § 213.113 to read as follows:

§ 213.113 Defective rails.

(a) When an owner of track learns that a rail in the track contains any of the defects listed in the table contained in paragraph (c) of this section, a person designated under § 213.7 shall determine whether the track may continue in use. If the designated person determines that the track may continue in use, operation over the defective rail is not permitted until—

(1) The rail is replaced or repaired; or

(2) The remedial action prescribed in the table contained in paragraph (c) of this section is initiated.

(b) When an owner of track learns that a rail in the track contains an indication of any of the defects listed in the table contained in paragraph (c) of this section, the track owner shall verify the indication. The track owner must verify the indication within four hours, unless the track owner has an indication of the existence of a defect that requires remedial action A, A2, or B identified in the table contained in paragraph (c) of this section, in which case the track owner must immediately verify the indication. If the indication is verified, the track owner must—

(1) Replace or repair the rail; or

(2) Initiate the remedial action prescribed in the table contained in paragraph (c) of this section.

(c) A track owner who learns that a rail contains one of the following defects shall prescribe the remedial action specified if the rail is not replaced or repaired, in accordance with this paragraph's table:

REMEDIAL ACTION TABLE

Defect	Length of defect (inch(es))		Percentage of existing rail head cross-sectional area weakened by defect		If the defective rail is not replaced or repaired, take the remedial action prescribed in note
	More than	But not more than	Less than	But not less than	
Compound Fissure			70	5	B.
			100	70	A2.
				100	A.
Transverse Fissure			25	5	C.
Detail Fracture			60	25	D.
Engine Burn Fracture			100	60	A2, or [E and H].
Defective Weld				100	A, or [E and H].
Horizontal Split Head					
Vertical Split Head					
Split Web	1	2			H and F.
Piped Rail	2	4			I and G.
Head Web Separation	4				B.
Defective Weld (Longitudinal)	(1)	(1)			A.
Bolt Hole Crack	½	1			H and F.
	1	1½			H and G.
	1½				B.
	(1)	(1)			A.
Broken Base	1	6			D.
	6 (2)				A, or [E and I].
Ordinary Break					A or E.
Damaged Rail					C.
Flattened Rail Crushed Head	Depth ≥ ⅜ and Length ≥ 8.				H.

(1) Break out in rail head.

(2) Remedial action D applies to a moon-shaped breakout, resulting from a derailment, with length greater than 6 inches but not exceeding 12 inches and width not exceeding one-third of the rail base width.

Notes:

A. Assign a person designated under § 213.7 to visually supervise each operation over the defective rail.

A2. Assign a person designated under § 213.7 to make a visual inspection. After a visual inspection, that person may authorize operation to continue without continuous visual supervision at a maximum of 10 m.p.h. for up to 24 hours prior to another such visual inspection or replacement or repair of the rail.

B. Limit operating speed over the defective rail to that as authorized by a person designated under § 213.7(a), who has at least one year of supervisory experience in railroad track maintenance. The operating speed cannot be over 30 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower.

C. Apply joint bars bolted only through the outermost holes to the defect within 10 days after it is determined to continue the track in use. In the case of Class 3 through 5 track, limit the operating speed over the defective rail to 30 m.p.h. until joint bars are applied; thereafter, limit the speed to 50 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower. When a search for internal rail defects is conducted under § 213.237, and defects are discovered in Class 3 through 5 track that require remedial action C, the operating speed shall be limited to 50 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower, for a period not to exceed 4 days. If the defective rail has not been removed from the track or a permanent repair made within 4 days of the discovery, limit operating speed over the defective rail to 30 m.p.h. until joint bars are applied; thereafter, limit speed to 50 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower. When joint bars have not been applied within 10 days, the speed must be limited to 10 m.p.h. until joint bars are applied.

D. Apply joint bars bolted only through the outermost holes to the defect within 7 days after it is determined to continue the track in use. In the case of Class 3 through 5 track, limit operating speed over the defective rail to 30 m.p.h. or less as authorized by a person designated under § 213.7(a), who has at least one year of supervisory experience in railroad track maintenance, until joint bars are applied; thereafter, limit speed to 50 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower. When joint bars have not been applied within 7 days, the speed must be limited to 10 m.p.h. until the joint bars are applied.

E. Apply joint bars to the defect and bolt in accordance with § 213.121(d) and (e).

F. Inspect the rail within 90 days after it is determined to continue the track in use. If the rail remains in the track and is not replaced or repaired, the reinspection cycle starts over with each successive reinspection unless the reinspection reveals the rail defect to have increased in size and therefore become subject to a more restrictive remedial action. This process continues indefinitely until the rail is removed from the track or repaired. If not inspected within 90 days, limit speed to that for Class 2 track or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower, until it is inspected.

G. Inspect rail within 30 days after it is determined to continue the track in use. If the rail remains in the track and is not replaced or repaired, the reinspection cycle starts over with each successive reinspection unless the reinspection reveals the rail defect to have increased in size and therefore become subject to a more restrictive remedial action. This process continues indefinitely until the rail is removed from the track or repaired. If not inspected within 30 days, limit speed to that for Class 2 track or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower, until it is inspected.

H. Limit operating speed over the defective rail to 50 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower.

I. Limit operating speed over the defective rail to 30 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower.

(d) As used in this section—

(1) *Bolt hole crack* means a crack across the web, originating from a bolt hole, and progressing on a path either inclined upward toward the rail head or inclined downward toward the base. Fully developed bolt hole cracks may continue horizontally along the head/web or base/web fillet, or they may progress into and through the head or base to separate a piece of the rail end from the rail. Multiple cracks occurring in one rail end are considered to be a single defect. However, bolt hole cracks occurring in adjacent rail ends within the same joint must be reported as separate defects.

(2) *Broken base* means any break in the base of the rail.

(3) *Compound fissure* means a progressive fracture originating from a horizontal split head that turns up or down, or in both directions, in the head of the rail. Transverse development normally progresses substantially at a right angle to the length of the rail.

(4) *Crushed head* means a short length of rail, not at a joint, which has drooped or sagged across the width of the rail head to a depth of ⅜ inch or more below the rest of the rail head and 8 inches or more in length. Unlike flattened rail where the depression is visible on the rail head only, the sagging or drooping is also visible in the head/web fillet area.

(5) *Damaged rail* means any rail broken or otherwise damaged by a derailment, broken, flat, or unbalanced wheel, wheel slipping, or similar causes.

(6) *Defective weld* means a field or plant weld containing any discontinuities or pockets, exceeding 5 percent of the rail head area individually or 10 percent in the aggregate, oriented in or near the transverse plane, due to incomplete penetration of the weld metal between the rail ends, lack of fusion between weld and rail end metal, entrainment of slag or sand, under-bead or shrinkage cracking, or fatigue cracking. Weld defects may originate in the rail head, web, or base, and in some cases, cracks may progress from the defect into either or both adjoining rail ends. If the weld defect progresses longitudinally through the weld section, the defect is considered a split web for purposes of remedial action required by this section.

(7) *Detail fracture* means a progressive fracture originating at or near the surface of the rail head. These fractures should not be confused with transverse fissures, compound fissures, or other defects which have internal origins. Detail fractures may arise from shelled spots, head checks, or flaking.

(8) *Engine burn fracture* means a progressive fracture originating in spots where driving wheels have slipped on top of the rail head. In developing downward these fractures frequently resemble the compound or even transverse fissures with which they should not be confused or classified.

(9) *Flattened rail* means a short length of rail, not at a joint, which has flattened out across the width of the rail head to a depth of ⅜ inch or more below the rest of the rail and 8 inches or more in length. Flattened rail occurrences have no repetitive regularity and thus do not include corrugations, and have no apparent localized cause such as a weld

or engine burn. Their individual length is relatively short, as compared to a condition such as head flow on the low rail of curves.

(10) *Head and web separation* means a progressive fracture, longitudinally separating the head from the web of the rail at the head fillet area.

(11) *Horizontal split head* means a horizontal progressive defect originating inside of the rail head, usually ¼ inch or more below the running surface and progressing horizontally in all directions, and generally accompanied by a flat spot on the running surface. The defect appears as a crack lengthwise of the rail when it reaches the side of the rail head.

(12) *Ordinary break* means a partial or complete break in which there is no sign of a fissure, and in which none of the other defects described in this paragraph (d) is found.

(13) *Piped rail* means a vertical split in a rail, usually in the web, due to failure of the shrinkage cavity in the ingot to unite in rolling.

(14) *Split web* means a lengthwise crack along the side of the web and extending into or through it.

(15) *Transverse fissure* means a progressive crosswise fracture starting from a crystalline center or nucleus inside the head from which it spreads outward as a smooth, bright, or dark round or oval surface substantially at a right angle to the length of the rail. The distinguishing features of a transverse fissure from other types of fractures or defects are the crystalline center or nucleus and the nearly smooth surface of the development which surrounds it.

(16) *Vertical split head* means a vertical split through or near the middle of the head, and extending into or through it. A crack or rust streak may show under the head close to the web or pieces may be split off the side of the head.

§ 213.119 [Amended]

■ 4. Remove and reserve § 213.119(h)(7)(ii).

Subpart F—Inspection

■ 5. Revise § 213.237 to read as follows:

§ 213.237 Inspection of rail.

(a) In addition to the inspections required by § 213.233, each track owner shall conduct internal rail inspections sufficient to maintain service failure rates per rail inspection segment in accordance with this paragraph (a) for a 12-month period, as determined by the track owner and calculated within 45 days of the end of the period. These rates shall not include service failures that occur in rail that has been replaced through rail relay since the time of the service failure. Rail used to repair a service failure defect is not considered relayed rail. The service failure rates shall not exceed—

(1) 0.1 service failure per year per mile of track for all Class 4 and 5 track;

(2) 0.09 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains or is a hazardous materials route; and

(3) 0.08 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains and is a hazardous materials route.

(b) Each rail inspection segment shall be designated by the track owner no later than March 25, 2014 for track that is Class 4 or 5 track, or Class 3 track that carries regularly-scheduled passenger trains or is a hazardous materials route and is used to determine the milepost limits for the individual rail inspection frequency.

(1) To change the designation of a rail inspection segment or to establish a new segment pursuant to this section, a track owner must submit a detailed request to the FRA Associate Administrator for Railroad Safety/Chief Safety Officer (Associate Administrator). Within 30 days of receipt of the submission, FRA will review the request. FRA will approve, disapprove, or conditionally approve the submitted request, and will provide written notice of its determination.

(2) The track owner's existing designation shall remain in effect until the track owner's new designation is approved or conditionally approved by FRA.

(3) The track owner shall, upon receipt of FRA's approval or conditional approval, establish the designation's effective date. The track owner shall advise in writing FRA and all affected railroad employees of the effective date.

(c) Internal rail inspections on Class 4 and 5 track, or Class 3 track with regularly-scheduled passenger trains or that is a hazardous materials route, shall not exceed a time interval of 370 days between inspections or a tonnage interval of 30 million gross tons (mgt) between inspections, whichever is shorter. Internal rail inspections on Class 3 track that is without regularly-scheduled passenger trains and not a hazardous materials route must be inspected at least once each calendar year, with no more than 18 months between inspections, or at least once every 30 mgt, whichever interval is longer, but in no case may inspections be more than 5 years apart.

(1) Any rail used as a replacement plug rail in track that is required to be tested in accordance with this section must have been tested for internal rail flaws.

(2) The track owner must verify that any plug rail installed after March 25, 2014 has not accumulated more than a total of 30 mgt in previous and new locations since its last internal rail flaw test, before the next test on the rail required by this section is performed.

(3) If plug rail not in compliance with this paragraph (c) is in use after March 25, 2014, trains over that rail must not exceed Class 2 speeds until the rail is tested in accordance with this section.

(d) If the service failure rate target identified in paragraph (a) of this section is not achieved, the track owner must inform FRA of this fact within 45 days of the end of the defined 12-month period in which the performance target is exceeded. In addition, the track owner may provide to FRA an explanation as to why the performance target was not achieved and provide a remedial action plan.

(1) If the performance target rate is not met for two consecutive years, then for the area where the greatest number of service failures is occurring, either:

(i) The inspection tonnage interval between tests must be reduced to 10 mgt; or

(ii) The class of track must be reduced to Class 2 until the target service failure rate is achieved.

(2) In cases where a single service failure would cause the rate to exceed the applicable service failure rate as designated in paragraph (a) of this section, the service failure rate will be considered to comply with paragraph (a) of this section unless a second such failure occurs within a designated 12-month period. For the purposes of this paragraph (d)(2), a period begins no earlier than January 24, 2014.

(e) Each defective rail shall be marked with a highly visible marking on both sides of the web and base except that, where a side or sides of the web and base are inaccessible because of permanent features, the highly visible marking may be placed on or next to the head of the rail.

(f) Inspection equipment shall be capable of detecting defects between joint bars, in the area enclosed by joint bars.

(g) If the person assigned to operate the rail defect detection equipment (i.e., the qualified operator) determines that a valid search for internal defects could not be made over a particular length of track, that particular length of track may not be considered as internally inspected under paragraphs (a) and (c) of this section.

(h) If a valid search for internal defects could not be conducted, the track owner shall, before expiration of the time or tonnage limits in paragraph (a) or (c) of this section—

(1) Conduct a valid search for internal defects;

(2) Reduce operating speed to a maximum of 25 m.p.h. until such time as a valid search can be made; or

(3) Replace the rail that had not been inspected.

(i) The person assigned to operate the rail defect detection equipment must be a qualified operator as defined in § 213.238 and have demonstrated proficiency in the rail flaw detection process for each type of equipment the operator is assigned.

(j) As used in this section—

(1) *Hazardous materials route* means track over which a minimum of 10,000 car loads or intermodal portable tank car loads of hazardous materials as defined in 49 CFR 171.8 travel over a period of one calendar year; or track over which a minimum of 4,000 car loads or intermodal portable tank car loads of the hazardous materials specified in 49 CFR 172.820 travel, in a period of one calendar year.

(2) *Plug rail* means a length of rail that has been removed from one track location and stored for future use as a replacement rail at another location.

(3) *Service failure* means a broken rail occurrence, the cause of which is determined to be a compound fissure, transverse fissure, detail fracture, or vertical split head.

(4) *Valid search* means a continuous inspection for internal rail defects where the equipment performs as intended and equipment responses are interpreted by a qualified operator as defined in § 213.238.

■ 6. Add § 213.238 to read as follows:

§ 213.238 Qualified operator.

(a) Each provider of rail flaw detection shall have a documented training program in place and shall identify the types of rail flaw detection equipment for which each equipment operator it employs has received training and is qualified. A provider of rail flaw detection may be the track owner. A track owner shall not utilize a provider of rail flaw detection that fails to comply with the requirements of this paragraph.

(b) A qualified operator shall be trained and have written authorization from his or her employer to:

(1) Conduct a valid search for internal rail defects utilizing the specific type(s) of equipment for which he or she is authorized and qualified to operate;

(2) Determine that such equipment is performing as intended;

(3) Interpret equipment responses and institute appropriate action in accordance with the employer's procedures and instructions; and

(4) Determine that each valid search for an internal rail defect is continuous throughout the area inspected and has not been compromised due to environmental contamination, rail conditions, or equipment malfunction.

(c) To be qualified, the operator must have received training in accordance with the documented training program and a minimum of 160 hours of rail flaw detection experience under direct supervision of a qualified operator or rail flaw detection equipment manufacturer's representative, or some combination of both. The operator must demonstrate proficiency in the rail defect detection process, including the equipment to be utilized, prior to initial qualification and authorization by the employer for each type of equipment.

(d) Each employer shall reevaluate the qualifications of, and administer any necessary recurrent training for, the operator as determined by and in accordance with the employer's documented program. The reevaluation process shall require that the employee successfully complete a recorded examination and demonstrate proficiency to the employer on the specific equipment type(s) to be operated. Proficiency may be determined by a periodic review of test data submitted by the operator.

(e) Each employer of a qualified operator shall maintain written or electronic records of each qualification in effect. Each record shall include the name of the employee, the equipment to which the qualification applies, date of qualification, and date of the most recent reevaluation, if any.

(f) Any employee who has demonstrated proficiency in the operation of rail flaw detection equipment prior to January 24, 2014, is deemed a qualified operator, regardless of the previous training program under which the employee was qualified. Such an operator shall be subject to paragraph (d) of this section.

(g) Records concerning the qualification of operators, including copies of equipment-specific training programs and materials, recorded examinations, demonstrated proficiency records, and authorization records, shall be kept at a location designated by the employer and available for inspection and copying by FRA during regular business hours.

■ 7. Amend § 213.241 by:

■ a. Redesignating paragraphs (d) and (e) as (f) and (g),

■ b. Revising paragraph (c),

■ c. Adding new paragraphs (d) and (e), and

■ d. Revising newly redesignated paragraphs (f) and (g) to read as follows:

§ 213.241 Inspection records.

* * * * *

(c) Records of internal rail inspections required by § 213.237 shall specify the—

(1) Date of inspection;

(2) Track inspected, including beginning and end points;

(3) Location and type of defects found under § 213.113;

(4) Size of defects found under § 213.113, if not removed prior to the next train movement;

(5) Initial remedial action taken and the date thereof; and

(6) Location of any track not tested pursuant to § 213.237(g).

(d) The track owner shall retain a rail inspection record under paragraph (c) of this section for at least two years after the inspection and for one year after initial remedial action is taken.

(e) The track owner shall maintain records sufficient to demonstrate the means by which it computes the service failure rate on all track segments subject to the requirements of § 213.237(a) for the purpose of determining compliance with the applicable service failure rate target.

(f) Each track owner required to keep inspection records under this section shall make those records available for inspection and copying by FRA upon request.

(g) For purposes of complying with the requirements of this section, a track owner may maintain and transfer records through electronic transmission, storage, and retrieval provided that—

(1) The electronic system is designed so that the integrity of each record is maintained through appropriate levels of security such as recognition of an electronic signature, or another means, which uniquely identifies the initiating person as the author of that record. No two persons shall have the same electronic identity;

(2) The electronic storage of each record shall be initiated by the person making the inspection within 24 hours following the completion of that inspection;

(3) The electronic system shall ensure that each record cannot be modified in any way, or replaced, once the record is transmitted and stored;

(4) Any amendment to a record shall be electronically stored apart from the record which it amends. Each

amendment to a record shall be uniquely identified as to the person making the amendment;

(5) The electronic system shall provide for the maintenance of inspection records as originally submitted without corruption or loss of data;

(6) Paper copies of electronic records and amendments to those records that may be necessary to document compliance with this part shall be made available for inspection and copying by FRA at the locations specified in paragraph (b) of this section; and

(7) Track inspection records shall be kept available to persons who performed the inspections and to persons performing subsequent inspections.

■ 8. Amend appendix B to part 213 by adding the entry for § 213.238 in numerical order under subpart F to read as follows:

Appendix B to Part 213—Schedule of Civil Penalties

Section	Violation	Willful violation [1]
* * * * *	*	*
SUBPART F—Inspection:		
* * * * *	*	*
213.238 Qualified operator	$2,500	$5,000
* * * * *	*	*

[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.

Issued in Washington, DC, on January 16, 2014.

Joseph C. Szabo,

Administrator.

[FR Doc. 2014–01387 Filed 1–23–14; 8:45 am]

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