DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Part 229

[Docket No. FRA–2006–26174]

RIN 2130–AB83

Locomotive Safety Standards; Sanders

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: FRA proposes to revise the existing requirements related to sanders on locomotives. The proposed rule would modify the existing regulations by permitting additional flexibility in the use of locomotives with inoperative sanders. The proposal would provide railroads the ability to better utilize their locomotive fleets while ensuring that locomotives are equipped with operative sanders in situations where they provide the most benefit from a safety and operational perspective. The proposed rule would also make the regulations related to operative sanders more consistent with existing Canadian standards related to the devices.

DATES: (1) Written comments must be received by May 7, 2007. Comments received after that date will be considered to the extent possible without incurring additional expenses or delays.

(2) FRA anticipates being able to resolve this rulemaking without a public, oral hearing. However, if FRA receives a specific request for a public, oral hearing prior to April 5, 2007, one will be scheduled and FRA will publish a supplemental notice in the **Federal Register** to inform interested parties of the date, time, and location of any such hearing.

ADDRESSES: *Comments:* Comments related to Docket No. FRA–2006–26174, may be submitted by any of the following methods:

Web site: *http://dms.dot.gov.* Follow the instructions for submitting comments on the DOT electronic docket site.

Fax: 202–493–2251.

Mail: Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL–401, Washington, DC 20590–001.

Hand Delivery: Room PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC between 9 a.m. and 5 p.m. Monday through Friday, except Federal holidays.

Federal eRulemaking Portal: Go to *http://www.regulations.gov.* Follow the online instructions for submitting comments.

Instructions: All submissions must include the agency name and docket number or Regulatory Identification Number (RIN) for this rulemaking. Note that all comments received will be posted without change to *http://dms.dot.gov* including any personal information. Please see the Privacy Act heading in the **SUPPLEMENTARY INFORMATION** section of this document for Privacy Act information related to any submitted comments or materials.

Docket: For access to the docket to read background documents or comments received, go to *http://dms.dot.gov* at any time or to PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC between 9 a.m. and 5 p.m. Monday through Friday, except Federal Holidays.

FOR FURTHER INFORMATION CONTACT: George Scerbo, Office of Safety Assurance and Compliance, Motive Power & Equipment Division, RRS–14, Mail Stop 25, Federal Railroad Administration, 1120 Vermont Avenue, NW., Washington, DC 20590 (telephone 202–493–6247), or Michael Masci, Trial Attorney, Office of Chief Counsel, Mail Stop 10, Federal Railroad Administration, 1120 Vermont Avenue, NW., Washington, DC 20590 (telephone 202–493–6037).

SUPPLEMENTARY INFORMATION:

I. Statutory and Regulatory Background

FRA has broad statutory authority to regulate railroad safety. The Locomotive Inspection Act (formerly 45 U.S.C. 22–34, now 49 U.S.C. 20701–20703) was enacted in 1911. It prohibits the use of unsafe locomotives and authorizes FRA to issue standards for locomotive maintenance and testing. In order to further FRA's ability to respond effectively to contemporary safety problems and hazards as they arise in the railroad industry, Congress enacted the Federal Railroad Safety Act of 1970 (Safety Act) (formerly 45 U.S.C. 421, 431 *et seq.*, now found primarily in chapter 201 of Title 49). The Safety Act grants the Secretary of Transportation rulemaking authority over all areas of railroad safety (49 U.S.C. 20103(a)) and confers powers necessary to detect and penalize violations of any rail safety law. This authority was subsequently delegated to the FRA Administrator (49 CFR 1.49) (Until July 5, 1994, the Federal railroad safety statutes existed as separate acts found primarily in title 45 of the United States Code. On that date, all of the acts were repealed, and their provisions were recodified into title 49.).

Pursuant to its general statutory rulemaking authority, FRA promulgates and enforces rules as part of a comprehensive regulatory program to address the safety of railroad track, signal systems, communications, rolling stock, operating practices, passenger train emergency preparedness, alcohol and drug testing, locomotive engineer certification, and workplace safety. In the area of locomotive safety, FRA has issued regulations, found at 49 CFR part 229 (''part 229''), addressing topics such as inspections and tests, safety requirements for brake, draft, suspension, and electrical systems, and cabs and cab equipment. All references to parts and sections in this document shall be to parts and sections located in Title 49 of the Code of Federal Regulations. FRA continually reviews its regulations and revises them as needed to keep up with emerging technology.

On July 12, 2004, the Association of American Railroads (AAR), on behalf of itself and its member railroads, petitioned the FRA to delete the requirement as contained in 49 CFR 229.131. The petition and supporting documentation asserted that contrary to popular belief, depositing sand on the rail will not have any significant influence on the emergency stopping distance of a train. Subsequent to the petition, FRA and interested industry members began identifying various issues related to locomotive safety standards with the intent that FRA would potentially address the issues through its Railroad Safety Advisory Committee (RSAC).

II. RSAC Overview

In March 1996, FRA established the RSAC, which provides a forum for developing consensus recommendations on rulemakings and other safety program issues. The Committee includes representation from all of the agency's major customer groups, including railroads, labor organizations, suppliers and manufacturers, and other interested parties. A list of member groups follows:

American Association of Private Railroad Car Owners (AARPCO)
American Association of State Highway & Transportation Officials (AASHTO)
American Public Transportation Association (APTA)
American Short Line and Regional Railroad Association (ASLRRA)
American Train Dispatchers Association (ATDA)
Amtrak

Association of American Railroads (AAR)
Association of Railway Museums (ARM)
Association of State Rail Safety Managers (ASRSM)
Brotherhood of Locomotive Engineers and Trainmen (BLET)
Brotherhood of Maintenance of Way Employees Division (BMWED)
Brotherhood of Railroad Signalmen (BRS)
Federal Transit Administration (FTA)*
High Speed Ground Transportation Association (HSGTA)
International Association of Machinists and Aerospace Workers
International Brotherhood of Electrical Workers (IBEW)
Labor Council for Latin American Advancement (LCLAA)*
League of Railway Industry Women*
National Association of Railroad Passengers (NARP)
National Association of Railway Business Women*
National Conference of Firemen & Oilers
National Railroad Construction and Maintenance Association
National Railroad Passenger Corporation (Amtrak)
National Transportation Safety Board (NTSB)*
Railway Supply Institute (RSI)
Safe Travel America (STA)
Secretaria de Communicaciones y Transporte*
Sheet Metal Workers International Association (SMWIA)
Tourist Railway Association Inc.
Transport Canada*
Transport Workers Union of America (TWU)
Transportation Communications International Union/BRC (TCIU/BRC)
United Transportation Union (UTU)

*Indicates associate membership.

When appropriate, FRA assigns a task to the RSAC, and after consideration and debate, the RSAC may accept or reject the task. If a task is accepted, the 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 unanimous consensus on recommendations for action, the package is presented to the RSAC for a vote. If the proposal is accepted by a simple majority of the RSAC, the proposal is formally recommended to FRA. FRA then determines what action to take on the recommendation. Because FRA staff has played 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 the recommended rule achieves the agency's regulatory goal, 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. If the working group or the RSAC is unable to reach consensus on recommendations for action, FRA moves ahead to resolve the issue through traditional rulemaking proceedings.

III. Proceedings to Date

On February 22, 2006, FRA presented, and the RSAC accepted, the task of reviewing existing locomotive safety needs and recommending consideration of specific actions useful to advance the safety of rail operations. The RSAC established the Locomotive Safety Standards Working Group (Working Group) to handle this task and develop recommendations for the full RSAC to consider. Members of the Working Group, in addition to FRA, included the following:

APTA
ASLRRA
Amtrak
AAR
ASRSM
BLET
BMWE
BRS
BNSF Railway Company (BNSF)
California Department of Transportation
Canadian National Railway (CN)
Canadian Pacific Railway (CP)
Conrail
CSX Transportation (CSXT)
Florida East Coast Railroad
General Electric (GE)
Genesee & Wyoming Inc.
International Association of Machinists and Aerospace Workers
IBEW
Kansas City Southern Railway (KCS)
Long Island Rail Road
Metro-North Railroad
MTA Long Island
National Conference of Firemen and Oilers
Norfolk Southern Corporation (NS)
Public Service Commission of West Virginia
Rail America, Inc.
Southeastern Pennsylvania Transportation Agency
SMWIA
STV, Inc.
Tourist Railway Association Inc.
Transport Canada
Union Pacific Railroad (UP)
UTU
Volpe Center
Wabtech Corporation
Watco Companies

The task statement approved by the full RSAC sought immediate action from the Working Group regarding the need for and usefulness of the existing regulation related to locomotive sanders. The task statement established a target date of 90 days for the Working Group to report back to the RSAC with recommendations to revise the existing regulatory sander provision. The Working Group conducted two meetings that focused almost exclusively on the sander requirement. The meetings were held on May 8–10, 2006, in St. Louis, Missouri, and on August 9–10, 2006, in Fort Worth, Texas. Minutes of these meetings have been made part of the docket in this proceeding. After broad and meaningful discussion related to the potential safety and operational benefits provided by equipping locomotives with operative sanders, the Working Group reached consensus on a recommendation for the full RSAC.

On September 21, 2006, the full RSAC unanimously adopted the Working Group's recommendation on locomotive sanders as its recommendation to FRA. The RSAC recommendation included the Working Group's consensus rule text, and requested that FRA draft a regulatory proposal related to the use of sanders on locomotives performing switching service at outlying locations. The Working Group's discussion of outlying locations had been based on an apparent need to distinguish locations that did not have sufficient access to a sand delivery system from those that do have such access. FRA has reviewed and accepted RSAC's recommendation and has developed this regulatory proposal based on that recommendation. The specific regulatory language recommended by the RSAC has been amended slightly for clarity and consistency and FRA has independently developed provisions related to the use of sanders on locomotives used in switching service at outlying locations.

FRA agrees with the Working Group's determination that locomotive sanders provide limited safety benefits and that the primary benefits derived from the devices are operational. Accordingly, this proposal attempts to preserve the limited safety benefits while addressing the overly restrictive nature of the

existing provision. This proposal is intended to provide appropriate relief from the existing requirement by creating a more precise standard. Under the existing requirements, a locomotive cannot depart from a daily inspection with inoperative sanders and can only move as far as the next daily inspection if sanders become inoperative en route. The proposal attempts to require sander maintenance based on operational realities instead of the current time-based standard. The NPRM provides relief according to specific identified operational conditions. The proposal distinguishes between the following conditions: Lead and non-lead locomotives; locomotives in road service and switching service; and, locomotives at locations with or without a sand delivery system. These distinctions would modify the current requirement to better reflect railroad operations while maintaining the current level of safety. The proposed rule would also harmonize the sander requirement with the Canadian rule by placing a fourteen day limit on service for lead locomotives in road service with inoperative sanders, in lieu of the current requirement.

Throughout the preamble discussion of this proposal, FRA refers to comments, views, suggestions, or recommendations made by members of the Working Group. When using this terminology, FRA is referring to views, statements, discussions or positions identified or contained in the minutes of the Working Group meetings. These documents have been made part of the docket in this proceeding and are available for public inspection as discussed in the **ADDRESSES** portion of this document. These points are discussed to show the origin of certain issues and the course of discussions on those issues at the task force or working group level. We believe this helps illuminate factors FRA has weighed in making its regulatory decisions, and the logic behind those decisions. The reader should keep in mind, of course, that only the full RSAC makes recommendations to FRA, and it is the consensus recommendation of the full RSAC on which FRA is acting.

IV. Technical Background

On July 12, 2004, the AAR, on behalf of itself and its member railroads, petitioned the FRA to delete the requirement as contained in 49 CFR 229.131, which states, ''[e]xcept for MU locomotives, each locomotive shall be equipped with operable sanders that deposit sand on each rail in front of the first power operated wheel set in the direction of movement.'' AAR's rationale for its petition was that, despite being in existence for many decades, this requirement does not provide any safety benefit. Enclosed with the petition was a presentation by CN to the 81st Annual Meeting of the Air Brake Association in September 1989. In that presentation, CN reported on a number of tests that measured the stopping distances of a train from emergency braking with and without sanding, with the conclusion that sanding from the locomotive consistently did not have any significant influence upon the emergency stopping distance of freight trains. Subsequently, FRA reviewed the overall operation of locomotive sanders to fully evaluate the petition. In addition to stopping distances, FRA examined other ramifications that the lack of sanding may have on the operation of locomotives and trains. For each technical aspect affected, FRA wanted to determine if it affects safety, operation efficiency, or both.

A. Adhesion

A generally recognized benefit of sanding is improved adhesion of the locomotive wheels to the rail. The maximum force or pull that a locomotive can generate in order to pull a train is limited by the weight of the locomotive and the amount of adhesion that it can maintain without wheel slippage. Once the wheel starts to slip, the pulling force is greatly reduced. Adhesion is critical for the locomotive pulling power on a steep grade. For a heavy freight train, the grade resistance will slow the train in an uphill move. As the speed drops, the tractive effort of the locomotive consist will go up. At a certain speed, the tractive effort may balance the total resistance including that from the grade. In that case, a constant speed can be maintained for the train to crest over the peak. However, at a low speed, the adhesion limit becomes an important factor because the maximum tractive effort that the locomotives can develop to pull the train is the product of the locomotive weight and the adhesion limit. Heavier six-axle locomotives can develop a higher tractive effort than the lighter four-axle locomotives of the same horsepower. If this maximum tractive effort is not sufficient to overcome the total resistance, the train will eventually stall on this grade. The presence of a stalled train on mainline track creates a safety issue as well as an apparent operational inconvenience. In addition, a stalled train at a grade crossing could tempt pedestrians to cross through the train. As the pedestrian crosses, the train could move and injure the pedestrian. The use of sand could prevent such a potentially dangerous situation.

If the total horsepower results in force output higher than the maximum tractive effort that the adhesion between rail and wheel can provide, wheel slip will occur resulting in the actual pulling force being limited by the maximum tractive effort. Under this condition, sanding will provide a higher adhesion coefficient, boosting the maximum tractive effort. In some previous studies with conventional DC motors, the adhesion limit with smooth wheels on smooth rails can be as low as 10 percent under wet rail condition. With sanding, the adhesion can be increased to 30 percent. The same principle applies to AC motors, except that the adhesion limits with and without sanding will both be higher because of the inherent advantage of AC motors. For dispatching purposes, the railroads produce tonnage-rating tables that are used to determine the number and the kind of locomotives to be assigned to a train given its length and weight. These tables are often developed with the assumption that sanding is available to boost the adhesion limit. Appropriate adhesion limits with the use of sanding are assumed for various types of locomotive equipment to calculate the available maximum tractive effort to ensure that trains will not stall on the ruling grade. This is particularly important for heavy merchandise trains, unit coal trains, and unit mineral trains. Speed is not very important for these trains. For better asset utilization and overall operation efficiency, railroads want to assign just enough locomotive units to enable the trains to climb up the ruling grade at low speed but not to stall. Sanding is very useful to increase the tractive effort. Using sanding to improve adhesion, railroads can reduce the number of locomotives assigned to a train, resulting in lower locomotive cost, one of the important factors in the overall cost structure of a rail operation.

Sanding will increase the capability of a train to climb up the ruling grade. While lack of sanding will affect the efficiency of train operations and will become a safety issue if the train stalls on the track, the operational issue may be resolved if the locomotive engineer handles the situation to prevent undesirable consequences from wheel slipping. With automatic wheel slip control, the system will see wheel slip, cut power to the traction motor for a short duration, and reapply the power. If the engineer maintains the high throttle position, the traction motor will again overpower the adhesion, and the wheels will slip again. This continuous

recycling of power on and power off of the traction motors will cause the locomotive to chatter loudly. This phenomenon may cause damage to wheel and rail. The train forces may spike high and low, leading to track train dynamics problems. Sometimes rail corrugation and rail burns are attributed to continuous wheel slipping, which is a common practice. Under this circumstance, the locomotives should be throttled down gradually to avoid long duration of wheel slipping. The train should be anchored on the grade, and the crew should call for help. Although the various railroads' airbrake and train-handling manuals do not describe this instruction and procedure, it is a common practice for an underpowered train with insufficient pulling force to successfully operate up a grade with or without sanding.

Some members of the Working Group raised the concern that damage to rail from slipping wheels can lead to development of transverse defects and broken rails. Corrugation and shelling of the rail head can mask internal rail defects and can defeat internal rail flaw detection. These circumstances can lead to train derailments unless they are properly managed, and the heavy cumulative tonnages experienced by most rail now in service is already taxing the ability of the railroads to manage these issues successfully. Railroads are expected to manage these issues and have done so thus far. FRA invites comments on this issue.

B. Braking Distance

As sanding may increase the coefficient of friction between wheel and rail, one may anticipate that sanding can reduce the stopping distance of a train from braking, especially on wet rail. However, the following factors should be considered before drawing such a conclusion:

- The increase in friction is on the first few sets of axles only (i.e., on the locomotives). Sanding will splash and be dispersed rather quickly from the rails once several wheels roll over it. Over 90 percent of the wheels in a train will likely not receive any benefit from sanding. Thus, it is unlikely that the stopping distance will be affected by it.
- Wet rail and dirty rail can be dried out and cleaned out rather quickly with the rolling of several axles on it. In numerous field tests, the second locomotive's tractive effort is always 20–30 percent higher than the first unit, especially on wet rail. This is an indication that the rail can be dried out and cleaned out just by one locomotive passing over it. Therefore, wet rail conditions will only affect one to two locomotives, and the rest of a train will be braked on relatively dry conditions, even though the rails are originally wet. Given the above explanation, sanding will hardly make any difference in the braking performance of all the cars behind the locomotives.
- Engineers have been trained to rely on dynamic brakes instead of the pneumatic brakes, unless during extreme emergency situations. In emergency braking, little difference will occur in stopping distance with or without sanding because, as explained earlier, sanding likely only affects, if any, the braking efforts of the first few axles.
- When insufficient adhesion prevails during braking, the wheels may slide. The coefficient of friction during this sliding will maintain the retardation rate of the trains.

Therefore, it is not surprising that the results of CN's testing show that the emergency braking stopping distances under various speeds and conditions were unchanged by sanding. However, the results of the test of the stopping distances of a short VIA passenger train with and without sanding were somewhat less expected. The conclusion for the VIA test was the same as that for the freight trains. As the train consist is very short for the passenger trains, typically as short as several vehicles, the factors described above are not all applicable to the passenger trains. It may be expected that some effect would occur on the stopping distance of a passenger train as a result of sanding. The vehicles in the tested passenger trains had mixed wheel and disk braking, but it is not clear as to how disk braking is affected by sanding. Nonetheless, the tests with VIA trains, submitted by the AAR with the petition, showed that sanding had no effect in the stopping distance of the trains. Even if sanding can affect the braking of these short passenger trains, we should note that the stopping distance of a short passenger train is extremely short compared to the heavy freight trains, and therefore the actual difference in the stopping distance will not be too significant. Some MU equipment always avoids sanding because this equipment is light and the number of axles in a train is usually small, thus, rail-shunting ability may get affected by sanding. This is the primary reason why the MU equipment is not equipped with sanders.

The braking distance tests submitted by the railroads did not include stopping distances for ''lite'' locomotive consists. Locomotives are frequently moved without cars in order to reposition power. Lite locomotives do not respond favorably to braking because of the ratio of axle load to available rail/wheel contact zone. Despite results in other brake tests, FRA would expect that sand applied on multiple axles could be an important contributor to maintaining satisfactory stopping distances of lite locomotive consists under unfavorable conditions (wet rail, etc.).

FRA also notes that the Working Group received little information related to actual use of sand in conjunction with extended range dynamic braking, which is now used extensively to slow trains and (with rolling resistance and perhaps the independent brake) bring them to a stop. Locomotive engineers may utilize dynamic brakes rather than the automatic train brake, where possible, in order to conserve fuel and avoid mechanical problems.

C. Operating Rules and Training

In order to determine what instructions each railroad gives to the locomotive engineers on the use of sanding, FRA obtained and reviewed the air braking and train handling manuals of NS, CSXT, UP, and BNSF. Past experience indicating that sanding affects the safety of the train operation, would likely be reflected in the instructions given to the engineers in these manuals. The results of the review of the latest version of the manuals revealed the following:

- *NS*: No reference to sanding exists in NS–1, ''Rules of Equipment Operation and Handling.'' Discussion with the senior road foreman revealed that Norfolk Southern simply instructed locomotive engineers to use sanding to improve adhesion when wheels start to slip. The railroad does instruct engineers to back off the throttle if wheel slip continues to occur even with sanding. If the train stalls on the ruling grade, then the engineer must ask for help.
- *CSXT*: Only one section of the railroad's operating rules makes reference to sanding (excluding instructions to check for sander operation during daily inspection): 5503 Sanding Use—sand as provided below: 1. Use sand only when necessary to improve traction, which includes ''sanding the rail;'' 2. When conditions require, use sand as the train is stopping to avoid wheel slipping when starting; and 3. Use trainline sanding only when front/lead truck sanding proves inadequate. CSXT's rules also include the definition of sanding, which states: ''Sanding the Rail: A term used to describe the act of putting sand on a rail in advance of an anticipated train

movement to ensure greater adhesion when movement begins.''

• *UP*: No specific instruction exists on the circumstance and manner that sanding should be used, other than instructions to check for sanding operation during daily inspection.

• *BNSF*: Other than instructions to check for sanding operation during daily inspection, BSNF's rules include the statement, ''Apply sand as conditions warrant,'' in sections to instruct how to operate during start, going upgrade, negotiating undulating grade, and cresting grade. In the two sections where instructions are given to stop a train in a descending grade or controlling the speed using dynamic brake, the engineers must perform the following steps:

• As dynamic braking becomes ineffective near the stopping point, turn on the sand and develop enough brake cylinder pressure with the independent brake valve to prevent forward surge.

• Make a final brake pipe reduction to complete the stop with the service exhaust blowing at the stopping point.

• After stopping, move the dynamic brake controller to OFF and reduce the remote(s) DB to IDLE.

• Fully apply the independent brake and turn off the sand after the stop is completed.

Apparently, BNSF believes that the use of sanding with the independent brake at near zero speed will brake the locomotive more effectively so that a surge of the locomotives can be prevented when dynamic braking becomes ineffective. However, it is not a general practice for all railroads to operate that way.

D. Train Simulations

The AAR Train Operation and Energy Simulation (TOES) Model makes no mention of the use of sand for braking purposes. This further points to the conclusion that sanding is not considered for emergency or other braking purposes.

E. General Considerations

In the Working Group, representatives of locomotive engineers supported retention of a requirement for provision of sand to support safe and efficient operations. FRA is conscious of the fact that, unlike other safety statutes, the Locomotive Inspection law, at 49 U.S.C. 20701, requires that each locomotive be ''in proper condition'' as well as ''safe''. Railroad representatives agree that sand remains useful for adhesion in many circumstances and would not remove sanders from locomotives even if allowed to do so. These considerations argue for proceeding with caution as the regulation is revised.

Finally, it should be noted that there are a variety of situations in yard switching (where locomotives only may be relied upon for stopping a switching movement) and over the road (where it is necessary to cross a ruling grade with marginal motive power) where sand would ordinarily be relied upon. Members of the Working Group raised the possibility that a locomotive engineer might feel compelled to skirt other safeguards in order to overcome operational difficulties should sand be unavailable. This is a concern that should be factored in when determining how much latitude to provide in this rulemaking. FRA welcomes comment on this issue.

V. Current Regulatory Impediments

Relaxing the locomotive sanding requirement as proposed would maintain safety and would allow railroads to better utilize their locomotive fleets. The current requirement allows a locomotive found with a defective sander to continue in service to the next forward location where repairs can be made or the next calendar day inspection, which ever occurs first. Under the proposed requirement, a lead locomotive in an over-the-road train may continue to be utilized by the railroad for up to fourteen days; in the case of a trailing locomotive, it may continue to be utilized by the railroad until placed in a facility with a sand delivery system or departure from an initial terminal.

Sanding may reach optimal effectiveness even where one or more locomotive sanders in a consist is inoperative. Locomotives are routinely equipped with two sanders at each end. Often a consist will contain multiple locomotives. Each locomotive in a multiple-locomotive consist distributes sand to the rail. As a result, when each of the locomotives in a multiple locomotive consist are operating with all sanders operative, the train could potentially distribute more sand to the rail than it will utilize. At that point the effect of the sand on the train would be the same if one or two sanders in the consist were inoperative.

Requirements for sanders can be traced back to the steam locomotive era; at that time, sanding the rail was thought to enhance adhesion between the steam locomotive wheel and the rail. Modern diesel locomotives rely on wheel slip and wheel creep devices, as well as sand, to provide adhesion between the wheel and rail. Where sanders are inoperative on a diesel locomotive the total loss of adhesion would be less than it would have been for a steam locomotive. Notably, any reduced adhesion would limit the ability of the locomotive to pull its train. Loss of the ability to pull the train is a productivity concern that is not being addressed by this proposed rule.

Sanding the rail in braking mode provides little additional adhesion to a train, because train handling depends primarily on train brakes to maintain train dynamics. The locomotive braking has limited effect. As stated in the technical discussion above, by the time the locomotives in the consist have passed over the sanded rail, little to no sand remains on the rail and little or no benefit is provided to train braking.

VI. Section-by-Section Analysis

Proposed Amendments to 49 CFR Part 229

Section 229.5 Definitions.

FRA is proposing to add the term ''sand delivery system'' in this section. The term would mean a permanently stationed or fixed device designed to deliver sand to locomotive sand boxes that do not require the sand to be manually delivered or loaded. A sand delivery system will be considered permanently stationed if it is at a location at least five days a week for eight hours per day. FRA seeks views from interested parties regarding this definition.

FRA is also proposing to add the term ''initial terminal.'' The definition of this term would be identical to that currently contained in 49 CFR 232.5 and 238.5. The term would mean ''a location where a train is originally assembled.''

Section 229.9 Movement of non-complying locomotives.

FRA proposes to amend this section to exempt locomotives operated under proposed paragraphs 229.131(b) and (c)(1) from the movement for repair provision contained in Section 229.9. In general, Section 229.9 currently provides movement for repair requirements for part 229. Proposed paragraphs 229.131(b) and (c)(1) contain specific requirements relating to the movement and continued use of locomotives with defective sander equipment. Because the proposed paragraphs specifically address movement for repair, applying Section 229.9 would be superfluous or conflicting, and would no longer be necessary.

FRA also proposes to make a clarifying amendment to this section of part 229. Section 229.9 currently contains the following exception that reads: ''[e]xcept as provided in * * *

229.125(h)'' The exception relates to locomotive auxiliary lights and although a correct citation when originally inserted into the regulations, later amendments to that section resulted in redesignation of the paragraphs. The exception should refer to Section 229.125(g). Like Section 229.131(b) and (c)(1), Section 229.125(g) sets forth movement for repair requirements specific to that section. Consequently, FRA is proposing to make this clarification in this regulatory proceeding.

Section 229.131 Sanders.

Paragraph (a). This paragraph would establish a general requirement that locomotives be equipped with operative sanders before departing an initial terminal. Any time a locomotive is in use before leaving the initial terminal it will be required to have operative sanders. The term ''in use'' has been consistently applied to mean when a locomotive is capable of being used. Thus, the locomotive does not have to actually be used to be in use. Examples of a locomotive in use are when a locomotive has been inspected, or a locomotive is on a ready track. FRA agrees with the RSAC's recommendation that the initial terminal would be an appropriate place to initially require operative sanders, because it is a place where sander maintenance can usually be accomplished without imposing a significant burden on the railroad. In many instances, locations where trains are initiated are equipped with sand delivery systems and are capable of making repairs to the sander mechanisms. FRA notes that this proposal will permit locomotives to be released from daily locomotive inspections with inoperative sanders. However, the proposal would require sanders to be repaired or handled for repair under Section 229.9 if defective when the locomotive is preparing to depart from an initial terminal. In instances where repairs cannot be performed, a locomotive may be dispatched from an initial terminal but only under the strict provisions contained in Section 229.9. Thus, the locomotive could only continue in use to the nearest forward location where necessary repairs could be effectuated or to the locomotive's next calendar day inspection, whichever occurs first. FRA further notes that if a locomotive is at an initial terminal for its train and that location has a sand delivery system or is otherwise capable of making sander repairs, then the locomotive may not legally depart that location with inoperative sanders. FRA also intends to make clear that a locomotive's sanders will only be considered operative if appropriate amounts of sand are deposited on each rail in front of the first power operated wheel set in the direction of movement.

FRA recognizes that this proposal would be less restrictive than the movement for repair provisions currently contained in Section 229.9. In most instances, locomotives will likely encounter an initial terminal less frequently than a daily inspection. This will facilitate more efficient railroad operations. Under the current provision, a railroad will take a locomotive out of service when a sander defect is found at the daily inspection. By requiring operative sanders less frequently, the new requirement allows the railroad to keep the locomotive in service more often. With more locomotives in service, the railroad will be able to better utilize its power throughout its fleet.

Paragraph (b). This paragraph contains the proposed requirements for handling locomotives used in road service where sanders become inoperative after departure from an initial terminal. Road service would be distinguished from yard service because the type of service affects the need for sand. Locomotives performing road service will likely be in longer trains and run at higher speeds than those performing switching service. The existing definition of switching service, as it appears in Sections 229.5 and 232.5, provides background for the distinction between road service and switching service. Switching service means ''assembling cars for train movements * * * or moving rail equipment in connection with work service that does not constitute a train movement.'' Any movement that is not considered ''switching service'' would be considered ''road service.'' Therefore, any service which constitutes a ''train movement'' would be considered ''road service'' for purposes of this section. The preamble to the final rule related to part 232 (66 FR 4104, January 17, 2001) contains detailed discussion of the factors that are to be considered when determining what constitutes a ''train movement.'' *See* 66 FR 4148–49.

Paragraph (b)(1). This paragraph proposes requirements related to lead locomotives being used in road service where sanders are discovered to be inoperative after departure from an initial terminal. Once inoperative sanders are discovered on these locomotives, there are four proposed triggers that would determine how long a lead locomotive will be permitted to remain in service with inoperative sanders. The proposed triggers are: the next initial terminal; a location where it is placed in a facility with a sand delivery system; its next periodic inspection under Section 229.23; or fourteen calendar days from the date the sanders are first discovered to be inoperative, whichever occurs first.

FRA agrees with the Working Group's determination that the four triggering events will ensure that sanders are repaired in a timely fashion while providing railroads the ability to better utilize their locomotive fleets. Under the existing rule, a locomotive can move only until the next daily inspection with inoperative sanders. Utilizing four different triggers allows the railroad a greater degree of operational flexibility. Each trigger provides a logical point at which sander maintenance should and can be conducted without impacting a railroad's operation to a significant degree. The initial terminal is an appropriate place to require operative sanders for the reasons stated in paragraph 229.131(a). When a locomotive is placed in a facility that has a sand delivery system it is appropriate to require a railroad to provide sander maintenance. Placed in a facility is intended to mean actually placed on trackage with access to the sand delivery system, and not merely passing through a location with a sand delivery system on the premises. Similarly, when a locomotive is given its required periodic inspection it is expected that the location will be capable of providing repairs and additional sand to the locomotive sanders with little burden. Permitting a lead locomotive to remain in service for no longer than fourteen days is reasonable as it permits the locomotive to reach the destination of a long-distance train run, ensures timely repairs to the sanders, and is consistent with the current Canadian requirement.

Paragraph (b)(2). This paragraph proposes the requirements for handling trailing locomotives, including distributed power locomotives, that are being used in road service when sanders are discovered to be inoperative after departure from an initial terminal. Once inoperative sanders are discovered, the NPRM proposes three triggering events that will determine how long the trailing locomotive will be permitted to remain in service with inoperative sanders. The triggering events proposed in this paragraph are identical to those proposed in paragraph (b)(1) except for the elimination of the fourteen day requirement. FRA agrees with the Working Group's determination that the need to provide sand to a trailing locomotive is less critical than it is for a lead locomotive. The engineer

operating the train or locomotive consist may be more familiar with the lead locomotive than with the trailing locomotive. The engineer is likely to be operating from the lead locomotive, and thus, that locomotive is less likely to be switched out of the consist while moving over the road.

The term ''trailing locomotive,'' as used in this paragraph, specifically refers to a locomotive that is located behind the lead locomotive in a train or locomotive consist. A distributed power locomotive, as defined in Section 229.5, is a locomotive that is part of a distributed power system that provides control to a number of locomotives dispersed in a consist from command signals originating in the lead locomotive. The distributed power locomotives are also trailing locomotives because they are located behind the lead locomotive in the train. Including both the terms ''trailing locomotives'' and ''distributed power locomotives'' may add clarity by emphasizing all trailing locomotives are subject to the requirements of this paragraph. FRA seeks comment and views from interested parties regarding the relationship between these two terms and whether there is a need to use both terms in this paragraph.

Paragraph (c). This paragraph proposes requirements for handling locomotives used in switching service where sanders become inoperative. The Working Group and the full RSAC recommended that the use of sand on locomotives performing switching service should be distinguished from locomotives being used in road service as described above in paragraph (b). Included as part of the RSAC's recommendation to FRA in this area, it was requested that FRA unilaterally develop criteria for the handling of locomotives being used in switching service that experience inoperative sanders. The request specifically related to the identification of what constituted locomotives at ''outlying locations'' and the identification of the triggering events for repairing inoperative sanders on such locomotives. FRA considered the discussions and views provided by members of the Working Group when developing this proposal.

Rather than attempt to define what constitutes an ''outlying location,'' FRA believes that the most appropriate method of distinguishing between switching locomotives and the locations where they operate, is to base the determination on the existence of a sand delivery system at the location. FRA believes that locomotives being used in switching service at a location with a sand delivery system should be able to be maintained and handled for repair in a more timely manner, with less disruption to railroad operations, than locomotives being used in switching service at locations without sand delivery systems. If there is no sand delivery system at a location, then the railroad is required to send maintenance vehicles or crews to the location or is required to move the locomotive to another location to effectuate necessary repairs. This can have a significant impact on the efficiency and continuity of switching operations at certain locations. Thus, paragraphs (c)(1) and (c)(2) separate the requirements for maintaining the sanders on locomotives being used in switching service based on the presence of a sand delivery system at the location where the locomotive is being used.

Paragraph (c)(1). This paragraph proposes requirements for handling locomotives being used in switching service at locations that are not equipped with a sand delivery system. In order to remain consistent with the overall design of the proposal submitted by the RSAC, FRA believes that some operational flexibility needs to be provided to locomotives being used in switching service at locations not capable of quickly delivering sand or making necessary repairs. As noted above, the simplest way of making this determination is based on whether or not the location has a sand delivery system. FRA believes that seven days is a reasonable amount of time to permit railroads to provide necessary sander attention to a locomotive being used in switching service at a location that does not have a sand delivery system. This amount of time is consistent and within the time frame in which locomotives used in switching service will need some other type of maintenance or attention, most likely re-fueling. The seven day mark appears to be a reasonable outer-limit for the requirement. The second triggering event proposed in this paragraph is if the locomotive becomes due for its periodic inspection pursuant to Section 229.23 of this part. FRA solicits comments and views concerning the appropriateness of this proposed provision.

Paragraph (c)(2). This paragraph proposes requirements for handling locomotives used in switching service at locations equipped with a sand delivery system. FRA agrees with the opinions of the Working Group and full RSAC that sanders on these types of locomotives can be maintained with little burden on a railroad's operation as they are already at the location where sand can be delivered and effective repairs can be effectuated. Therefore, FRA accepts the RSAC's recommendation and retains the existing requirements applicable to these locomotives. Consequently, when sanders become inoperative on these locomotives they would have to be handled in accordance with the provisions contained in Section 229.9.

Paragraph (d). This paragraph is proposed in an effort to ensure that any locomotive with inoperative sanders is properly tagged under the tagging provisions contained in Section 229.9(a). As paragraphs (b) and (c)(1) provide railroads with more flexibility with regard to using a locomotive with inoperative sanders than what is currently permitted by Section 229.9, FRA wants to ensure that proper notification and records are maintained on in-service locomotives with inoperative sanders. Thus, FRA proposes to require that locomotives operating with defective sanders be tagged in accordance with the provisions contained in Section 229.9(a). This will also ensure that the individuals operating the locomotive are fully informed as to the fact that the locomotive they are operating does not have working sanders.

VII. Regulatory Impact and Notices

Executive Order 12866 and DOT Regulatory Policies and Procedures

This rule has been evaluated in accordance with existing policies and procedures, and determined to be non-significant under both Executive Order 12866 and DOT policies and procedures (44 FR 11034; February 26, 1979). FRA has prepared and placed in the docket a regulatory analysis addressing the economic impact of this proposed rule. Document inspection and copying facilities are available at 1120 Vermont Avenue, 7th Floor, Washington, DC 20590. Photocopies may also be obtained by submitting a written request to the FRA Docket Clerk at Office of Chief Counsel, Federal Railroad Administration, 400 Seventh Street, SW., Washington, DC 20590.

As part of the regulatory impact analysis FRA has assessed quantitative measurements of cost and benefit streams expected from the adoption of this proposed rule. For the twenty year period the estimated quantified costs are minimal. For this period the estimated quantified benefits have a PV of $70.6 million

The major benefits anticipated from implementing this proposed rule include: a reduction in the number of times locomotives have sand loaded or the number of times the sanders are made operative. This reduction

produces a reduction in injuries related to the operation of filling sand boxes on the locomotive and the employee days absent related to these injures. Finally the proposed rule would also harmonize the sander requirement with the Canadian rule by placing a fourteen day limit on service for lead locomotives in road service with inoperative sanders.

Regulatory Flexibility Act and Executive Order 13272

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) and Executive Order 13272 require a review of proposed and final rules to assess their impact on small entities. FRA has prepared and placed in the docket an Analysis of Impact on Small Entities (AISE) that assesses the small entity impact of this proposal. Document inspection and copying facilities are available at the Department of Transportation Central Docket Management Facility located in Room PL–401 on the Plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC 20590. Docket material is also available for inspection on the Internet at *http://dms.dot.gov.* Photocopies may also be obtained by submitting a written request to the FRA Docket Clerk at Office of Chief Counsel, Stop 10, Federal Railroad Administration, 1120 Vermont Avenue, NW., Washington, DC 20590; please refer to Docket No. FRA–2005–23080.

''Small entity'' is defined in 5 U.S.C. 601 as a small business concern that is independently owned and operated, and is not dominant in its field of operation. The U.S. Small Business Administration (SBA) has authority to regulate issues related to small businesses, and stipulates in its size standards that a ''small entity'' in the railroad industry is a railroad business ''line-haul operation'' that has fewer than 1,500 employees and a ''switching and terminal'' establishment with fewer than 500 employees. SBA's ''size standards'' may be altered by Federal agencies, 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'' as being railroads that meet the line-haulage revenue requirements of a Class III railroad. See 68 FR 24891 (May 9, 2003). Currently, the revenue requirements are $20 million or less in annual operating revenue. The $20 million limit is based on the Surface Transportation Board's threshold of a Class III railroad carrier, which is adjusted by applying the railroad revenue deflator adjustment (49 CFR part 1201). The same dollar limit on revenues is established to determine whether a railroad shipper or contractor is a small entity.

For the proposed rule over 600 railroads could potentially be affected. The proposed rule would impact all locomotives except those propelled by steam power. Given this application, only railroads that operate steam locomotives exclusively, would be unaffected. For those railroads that would be affected the impact will be minimal, if any. The focus is on permitting additional flexibility in the use of locomotives with inoperative sanders. It is anticipated that the additional flexibility will produce mostly positive impacts, i.e., savings and injury reductions.

The AISE developed in connection with this NPRM concludes that this proposal would not have a significant economic impact on a substantial number of small entities. Thus, FRA certifies that this proposed rule is not expected to have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act or Executive Order 13272. In order to determine the significance of the economic impact for the final rule's Regulatory Flexibility Act requirements, FRA invites comments from all interested parties concerning the potential economic impact on small entities caused by this proposed rule. The Agency will consider the comments and data it receives in making a decision on the small entity impact for the final rule.

Paperwork Reduction Act

The proposed rule contains one section that would change the current regulation, Section 229.131. The proposed change would not change the current information collection activity. The information collection burden associated with the proposed rule already exists under Section 229.9. OMB clearance for the current rule has been granted and no further approval is sought at this time. If new information collection issues arise in the final rule stage, FRA will seek OMB approval.

FRA is not authorized to impose a penalty on persons for violating information collection requirements which do not display a current OMB control number, if required. The OMB control number assigned for information collection related to this proposed rule is OMB No. 2130–0004.

Federalism Implications

FRA has analyzed this proposed rule in accordance with the principles and criteria contained in Executive Order 13132, issued on August 4, 1999, which directs Federal agencies to exercise great care in establishing policies that have federalism implications. *See* 64 FR 43255. This proposed rule will not have a substantial effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among various levels of government. This proposed rule will not have federalism implications that impose any direct compliance costs on State and local governments.

FRA notes that the RSAC, which endorsed and recommended the majority of this proposed rule to FRA, has as permanent members two organizations representing State and local interests: AASHTO and the Association of State Rail Safety Managers (ASRSM). Both of these State organizations concurred with the RSAC recommendation endorsing this proposed rule. The RSAC regularly provides recommendations to the FRA Administrator 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 rulemaking from these representatives or of any other representatives of State government. Consequently, FRA concludes that this proposed rule has no federalism implications, other than the preemption of state laws covering the subject matter of this proposed rule, which occurs by operation of law under 49 U.S.C. Section 20106 whenever FRA issues a rule or order.

Environmental Impact

FRA has evaluated this proposed regulation 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 proposed regulation 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. Section 4(c)(20) reads as follows:

(c) Actions categorically excluded. Certain classes of FRA actions have been determined to be categorically excluded from the requirements of these Procedures as they do not individually or cumulatively have a significant effect on the human environment.

* * * The following classes of FRA actions are categorically excluded: * * *

(20) Promulgation of railroad safety rules and policy statements that do not result in significantly increased emissions or air or water pollutants or noise or increased traffic congestion in any mode of transportation.

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

Unfunded Mandates Reform Act of 1995

Pursuant to Section 201 of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 2 U.S.C. 1531), each Federal agency ''shall, unless otherwise prohibited by law, assess the effects of Federal regulatory actions on State, local, and tribal governments, and the private sector (other than to the extent that such regulations incorporate requirements specifically set forth in law).'' Section 202 of the Act (2 U.S.C. 1532) further requires that ''before promulgating any general notice of proposed rulemaking that is likely to result in the promulgation of any rule that includes any Federal mandate that may result in expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $128,100,000 or more (adjusted annually for inflation) in any 1 year, and before promulgating any final rule for which a general notice of proposed rulemaking was published, the agency shall prepare a written statement'' detailing the effect on State, local, and tribal governments and the private sector. The proposed rule would not result in the expenditure, in the aggregate, of $128,100,000 or more in any one year, and thus preparation of such a statement is not required.

Privacy Act

FRA wishes to inform all potential commenters that anyone is able to search the electronic form of all comments received into any agency docket by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78) or you may visit *http://dms.dot.gov*.

List of Subjects in 49 CFR Part 229

Locomotives, Railroad safety, and Sanders.

The Proposed Rule

For the reasons discussed in the preamble, FRA proposes to amend part 229 of chapter II, subtitle B of Title 49, Code of Federal Regulations, as follows:

PART 229—[AMENDED]

1. The authority citation for part 229 continues to read as follows:

Authority: 49 U.S.C. 20102–03, 20107, 20133, 20137–38, 20143, 20701–03, 21301–02, 21304; 28 U.S.C. 2401, note; and 49 CFR 1.49(c), (m).

2. Section 229.5 is amended by adding alphabetically the definitions of ''initial terminal'' and ''sand delivery system'' to read as follows:

§ 229.5 Definitions.

* * * * *

Initial terminal means a location where a train is originally assembled.

* * * * *

Sand delivery system means a permanently stationed or fixed device designed to deliver sand to locomotive sand boxes that do not require the sand to be manually delivered or loaded. A sand delivery system will be considered permanently stationed if it is at a location at least five days a week for eight hours per day.

* * * * *

3. Section 229.9 is amended by revising the introductory phrase contained in paragraph (a) to read as follows:

§ 229.9 Movement of non-complying locomotives.

(a) Except as provided in paragraphs (b), (c), § 229.125(g), and § 229.131(b) and (c)(1), * * *

* * * * *

4. Section 229.131 is revised to read as follows:

§ 229.131 Sanders.

(a) Prior to departure from an initial terminal, each locomotive, except for MU locomotives, shall be equipped with operative sanders that deposit sand on each rail in front of the first power operated wheel set in the direction of movement or shall be handled in accordance with the requirements contained in § 229.9.

(b) Locomotives being used in road service with sanders that become inoperative after departure from an initial terminal shall be handled in accordance with the following:

(1) Lead locomotives being used in road service that experience inoperative sanders after departure from an initial terminal may continue in service until the earliest of the following occurrences:

(i) Arrival at the next initial terminal;

(ii) Arrival at a location where it is placed in a facility with a sand delivery system;

(iii) The next periodic inspection under § 229.23; or,

(iv) Fourteen calendar days from the date the sanders are first discovered to be inoperative; and

(2) Trailing locomotives and distributed power locomotives being used in road service that experience inoperative sanders after departure from an initial terminal may continue in service until the earliest of the following occurrence:

(i) Arrival at the next initial terminal;

(ii) Arrival at a location where it is placed in a facility with a sand delivery system; or,

(iii) The next periodic inspection under § 229.23.

(c) Locomotives being used in switching service shall be equipped with operative sanders that deposit sand on each rail in front of the first power operated wheel set in the direction of movement. If the sanders become inoperative, the locomotives shall be handled in accordance with the following:

(1) Locomotives being used in switching service at a location not equipped with a sand delivery system may continue in service for seven calendar days from the date the sanders are first discovered inoperative or until its next periodic inspection under § 229.23, which ever occurs first; and

(2) Locomotives being used in switching service at locations equipped with a sand delivery system shall be handled in accordance with the requirements contained in § 229.9.

(d) Locomotives being handled under the provisions contained in paragraph (b) and (c)(1) of this section shall be tagged in accordance with § 229.9(a).

Issued in Washington, DC, on February 27, 2007.

Joseph H. Boardman,

Federal Railroad Administrator.

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