FEDERAL REGISTER

Vol. 77 Tuesday,
No. 1 January 3, 2012

Part II

Department of Transportation

Federal Railroad Administration

49 CFR Parts 238 and 239
Passenger Train Emergency Systems II; Proposed Rule

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Parts 238 and 239

[Docket No. FRA–2009–0119, Notice No. 1]

RIN 2130–AC22

Passenger Train Emergency Systems II

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

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice of proposed rulemaking (NPRM) is intended to further the safety of passenger train occupants through both enhancements and additions to FRA's existing requirements for emergency systems on passenger trains. In this NPRM, FRA is proposing to add requirements for interior vestibule doors and enhance emergency egress and rescue access signage requirements. FRA is also proposing to establish requirements for low-location emergency exit path markings to assist occupants in reaching and operating primary emergency exits, particularly under conditions of darkness or smoke. Further, FRA is proposing to add minimum emergency lighting standards for all existing passenger cars so that emergency lighting systems are provided in all passenger cars, and FRA is proposing to enhance requirements for the survivability of emergency lighting systems in new passenger cars. Finally, FRA is clarifying existing requirements for participation in debriefing and critique sessions following emergency situations and full-scale simulations.

DATES: (1) Written comments must be received by March 5, 2012. Comments received after that date will be considered to the extent possible without incurring additional expense or delay.

(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 February 2, 2012, 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–2006–25273 may be submitted by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the online instructions for submitting comments.
- *Mail:* Docket Management Facility, U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001.
- *Hand Delivery or Courier:* 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: Note that all comments received will be posted without change to *http://www.regulations.gov,* including any personal information provided. Please see the Privacy Act heading below.

Docket: For access to the docket to read background documents or comments received, go to *http://www.regulations.gov* at anytime, or to 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. Follow the online instructions for accessing the dockets.

FOR FURTHER INFORMATION CONTACT: Brenda J. Moscoso, Office of Railroad Safety, Director, Safety Analysis, Mail Stop 25, Federal Railroad Administration, 1200 New Jersey Avenue SE., Washington, DC 20590 (telephone (202) 493–6282); or Michael Masci, Trial Attorney, Office of Chief Counsel, Federal Railroad Administration, 1200 New Jersey Avenue SE., Washington, DC (telephone (202) 493–6037).

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I. Executive Summary

On May 20, 2003, FRA presented, and the Railroad Safety Advisory Committee (RSAC) accepted, the task of reviewing existing passenger equipment safety needs and programs and recommending consideration of specific actions that could be useful in advancing the safety of rail passenger service. The RSAC established the Passenger Safety Working Group (Working Group) to handle this task and develop recommendations for the full RSAC to consider. The Working Group met 14 times between September 9, 2003 and September 16, 2010. The Working Group successfully reached consensus on the following issues related to passenger train emergency systems: doors, emergency lighting, markings and instructions for selected emergency systems, photoluminescent materials, and participation of personnel at debriefing and critique sessions after emergencies. It also recommended consolidation of all requirements related to doors that are currently contained in parts 238 and 239. The full RSAC voted to recommend the consensus issues to FRA on September 20, 2008. This NPRM is based on the RSAC recommendations.

This NPRM proposes requirements related to the following subject areas: doors, emergency lighting, emergency markings and instruction for emergency egress and rescue access, emergency communication, low-location emergency exit path markings, and debriefing and critique of emergency situations and simulations. The following is a brief overview of the proposal organized by the subject area:

Doors

- The proposal related to vestibule doors (and certain other interior doors), would require such doors in new passenger cars to be fitted with a removable panel or window for use in accessing and exiting the passenger compartment from the vestibule in the event that the vestibule door is inoperable. Additionally, FRA is proposing distinct requirements for bi-

parting doors, including provisions for a manual override and retention mechanisms. For security reasons, an exception is included to allow railroads discretion when deciding whether or not to include an emergency panel in doors leading to a cab compartment. The proposal also sets forth requirements for the inspection, testing, reporting, and repairing of vestibule door safety mechanisms.

Emergency Lighting

• The proposed rule would require: minimum illumination levels within passenger cars; standards for the number and placement of power sources that power the emergency lighting system; and, establish requirements for testing lighting fixtures and power sources that are related to the emergency lighting system.

• Currently, emergency lighting power sources include batteries located under the passenger car, which are not reliable following a collision or derailment due to their location. The proposal is intended to ensure that these essential backup power sources are able to function as intended by requiring that they be located in the passenger compartment where they are better protected.

Emergency Egress and Rescue Access Markings & Instructions

• Emergency communication systems: this proposal contains more specific requirements for the luminescent material used to mark intercoms. Currently, the location of each intercom is required to be clearly marked with luminescent material, and legible and understandable operating instructions for operating the intercom must be posted at or near each such intercom to facilitate passenger use. Public address and intercom systems would be required to have back-up power to remain operational for at least 90 minutes when the primary power source fails.

• Emergency Roof Access: this proposal contains more specific requirements for providing markings of, and instructions for, emergency roof access locations. Currently, each emergency roof access location is required to be conspicuously marked with retroreflective material of contrasting color, and legible and understandable instructions must be provided near the emergency roof access.

• Emergency Signage: this proposal would enhance current signage requirements by specifying requirements for signage recognition, design requirements, location, size, color and contrast, and materials. This additional detail would help ensure that emergency egress points can be easily identified and operated by passengers and train crew members needing to evacuate a passenger car during an emergency.

Low-Location Emergency Exit Path Marking (LLEEPM)

• This proposal would establish minimum requirements for photoluminescent and electrically-powered LLEEPM to provide visual guidance for passengers and train crewmembers when the emergency lighting system has failed or when smoke conditions obscure overhead emergency lighting. The rule would also require railroads to conduct periodic inspections and tests to verify that all LLEPM system components, including power sources, function as intended.

Photoluminescent Materials

• The proposal related to signage standards, including the use of high-performance photoluminescent (HPPL) material and policies and procedures for ensuring proper placement and testing of photoluminescent materials to ensure maximum illumination in an emergency situation will ensure train occupants can identify emergency exits and the path to the nearest exit in the dark. Existing signage inside some passenger compartment areas within a passenger car has been ineffective due to their inability to absorb sufficient levels of ambient or electrical light. The requirements in this proposal would improve illumination of signage and marking in the passenger compartment, and thus increase the discernability of the exit signs and markings in the dark.

Debriefing and Critique

FRA is proposing a modification to the existing debrief and critique requirement to clarify that passenger train personnel who have first-hand knowledge of an emergency are intended to participate in debriefing and critique sessions after the emergency occurs.

FRA has assessed the cost to railroads that are expected to result from the implementation of this rule as proposed. For the 20-year period analyzed, the estimated quantified cost that would be imposed on industry totals $21.8 million with a present value (PV, 7 percent) of $13.4 million. The proposed rulemaking is expected to improve railroad safety by promoting the safe evacuation of passengers and crewmembers in the event of an emergency.

20-YEAR COST FOR PROPOSED RULE

Door/Removable Panels or Windows, and Bi-Parting Doors	$4,399,223
Emergency Lighting	2,450,213
Emergency Egress and Rescue Access Marking and Instructions	4,730,631
Low-Location Emergency Exit Path Markings	1,377,615
Debriefing and Critique	N/A
Inspection, Testing, and Recordkeeping	405,296
Total	13,362,979

Dollars are discounted at a present value rate of 7 percent.

The primary benefits include a heightened safety environment in egress from a passenger train after an accident. The requirements will enable passenger car occupants to more readily identify, reach, and operate emergency exits and emergency responders to more readily identify and operate rescue access points. This corresponds to a reduction of casualties and fatalities in the aftermath of collisions, derailments, and other emergency situations. FRA believes the value of the anticipated safety benefits would justify the cost of implementing the rule as proposed.

II. Statutory and Regulatory Background

In September of 1994, the Secretary of Transportation (Secretary) convened a meeting of representatives from all sectors of the rail industry with the goal of enhancing rail safety. As one of the initiatives arising from this Rail Safety Summit, the Secretary announced that

DOT would begin developing safety standards for rail passenger equipment over a five-year period. In November of 1994, Congress adopted the Secretary's schedule for implementing rail passenger equipment safety regulations and included it in the Federal Railroad Safety Authorization Act of 1994 (the Act), Pub. L. 103–440, 108 Stat. 4619, 4623–4624 (November 2, 1994). Congress also authorized the Secretary to consult with various organizations involved in passenger train operations for purposes of prescribing and amending these regulations, as well as issuing orders pursuant to them. Section 215 of the Act (codified at 49 U.S.C. 20133).

III. Railroad Safety Advisory Committee 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 stakeholders, 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 and Transportation Officials (AASHTO);
American Chemistry Council;
American Petroleum Institute;
American Public Transportation Association (APTA);
American Short Line and Regional Railroad Association (ASLRRA);
American Train Dispatchers Association (ATDA);
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 Employes Division (BMWED);
Brotherhood of Railroad Signalmen (BRS);
Chlorine Institute;
Federal Transit Administration (FTA); *
Fertilizer Institute;
High Speed Ground Transportation Association (HSGTA);
Institute of Makers of Explosives;
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);
Transportation Security Administration; * and
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 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 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. History

On May 4, 1998, pursuant to § 215 of the Act, FRA issued a Passenger Train Emergency Preparedness (PTEP) final rule. *See* 63 FR 24629. The rule contains minimum Federal safety standards for the preparation, adoption, and implementation of emergency preparedness plans by railroads connected with the operation of passenger trains, including freight railroads hosting the operations of passenger rail service. Elements of the required emergency preparedness plan include: communication; employee training and qualification; joint operations; tunnel safety; liaison with emergency responders; on-board emergency equipment; and passenger safety information. This rule also established specific requirements for passenger train emergency systems. The requirements include: conspicuous marking of all emergency window exits with luminescent material on the interior and all windows intended for rescue access by emergency responders be marked on the exterior with retroreflective material and that instructions be provided for their use; all door exits intended for egress be lighted or marked; and all door exits intended for rescue access by emergency responders be marked and that instructions be provided for their use. In addition, the rule contains specific requirements for debriefing and critique sessions following emergency situations and full-scale simulations.

On May 12, 1999, FRA issued the Passenger Equipment Safety Standards (PESS) final rule. *See* 64 FR 25540. This rule established comprehensive safety standards for railroad passenger equipment. The standards included requirements for the size, and operation of exterior side doors used for emergency egress or access for all passenger cars and for emergency lighting for new passenger cars. After publication of the PESS final rule, interested parties filed petitions seeking FRA's reconsideration of certain requirements contained in the rule. These petitions generally related to the following subject areas: structural design; location of emergency exit

windows; fire safety; training; inspection, testing, and maintenance; and movement of defective equipment. To address the petitions, FRA grouped issues together and published three sets of amendments to the final rule in 2000 and 2002 in the **Federal Register**. *See* 65 FR 41284; 67 FR 19970; and 67 FR 42892.

On February 1, 2008, FRA published a final rule on Passenger Train Emergency Systems (PTES) addressing: emergency communication, emergency egress, and rescue access. This rule expanded the applicability of requirements for public address systems to all passenger cars, for intercom systems, and for emergency responder roof access to all new passenger cars. It also enhanced existing requirements for emergency window exits and established requirements for rescue access windows used by emergency responders. *See* 73 FR 6370.

During the development of the PESS rule and the PTES rule, FRA identified the following issues for possible future rulemaking: doors; emergency lighting; emergency signage and markings for egress, access, and emergency communication; and low-location emergency exit path markings. FRA determined that these issues would benefit from additional research, the gathering of additional operating experience, or the development of industry standards, or all three. FRA believes that these issues have sufficiently developed and is addressing these issues in this proposal.

On May 20, 2003, FRA presented, and the RSAC accepted, the task of reviewing existing passenger equipment safety needs and programs and recommending consideration of specific actions that could be useful in advancing the safety of rail passenger service. The RSAC established the Working Group to handle this task and develop recommendations for the full RSAC to consider. Members of the Working Group, in addition to FRA, include the following:

AAR, including members from BNSF Railway Company, CSX Transportation, Inc., and Union Pacific Railroad Company;
AAPRCO;
AASHTO;
Amtrak;
APTA, including members from: Bombardier, Inc., Herzog Transit Services, Inc., Interfleet Technology Inc., Long Island Rail Road (LIRR), Metro-North Commuter Railroad Company (Metro-North), Northeast Illinois Regional Commuter Railroad Corporation (Metra), Southern California Regional Rail Authority (Metrolink), and Southeastern Pennsylvania Transportation Authority (SEPTA);
BLET;
BRS;
FTA;
HSGTA;
IBEW;
NARP;
NTSB;
RSI;
SMWIA;
STA;
TCIU/BRC;
TWU; and
UTU.

Staff from DOT's John A. Volpe National Transportation Systems Center (Volpe Center) attended all of the meetings and contributed to the technical discussions. The Working Group has held meetings on the following dates and locations:

September 9–10, 2003, in Washington, DC;
November 6, 2003, in Philadelphia, PA;
May 11, 2004, in Schaumburg, IL;
October 26–27, 2004 in Linthicum/Baltimore, MD;
March 9–10, 2005, in Ft. Lauderdale, FL;
September 7, 2005 in Chicago, IL;
March 21–22, 2006 in Ft. Lauderdale, FL;
September 12–13, 2006 in Orlando, FL;
April 17–18, 2007 in Orlando, FL;
December 11, 2007 in Ft. Lauderdale, FL;
June 18, 2008 in Baltimore, MD;
November 13, 2008 in Washington, DC;
June 8, 2009 in Washington, DC; and
September 16, 2010 in Chicago, IL.

At the meetings in Chicago and Ft. Lauderdale in 2005, FRA met with representatives of Metra and the South Florida Regional Transportation Authority (Tri-Rail), respectively, and toured their passenger equipment. The visits, which included demonstrations of emergency system features, were open to all members of the Working Group, and FRA believes they have added to the collective understanding of the Group in identifying and addressing passenger train emergency system issues.

Due to the variety of issues involved, at its November 2003 meeting, the Working Group established four task forces: Emergency Preparedness, Vehicle/Track Interaction, Crashworthiness/Glazing, and Mechanical. Each task force is a smaller group that develops recommendations on specific issues within each group's particular area of expertise. Members of the task forces include various representatives from the respective organizations that were part of the larger Working Group. Members of the Emergency Preparedness Task Force (Task Force), in addition to FRA, include (or have included) the following:

Amtrak;
APTA, including members from Bombardier, Ellcon National, Go Transit, Interfleet Technology, Inc, Jacobs Civil Engineering, Jessup Manufacturing Company, Kawasaki Rail Car, Inc., LIRR, LTK, Luminator, Maryland Transit Administration, Massachusetts Bay Transportation Authority (MBTA), Metrolink, Metro-North, Northern Indiana Commuter Transit District (NICTD), SEPTA, San Diego Northern Commuter Railroad (Coaster), Permalight, Po's Ability USA, Inc., Prolink, Transit Design Group (TDG),Transit Safety Management (TSM), Translite, STV Inc., and Visual Marking Systems, Inc.;
BLET;
California Department of Transportation (Caltrans);
FTA;
NARP;
RSI, including Globe Transportation Graphics;
TWU; and
UTU.

While they are not voting members of the Task Force, representatives from TSA, of the U.S. Department of Homeland Security (DHS), attended certain of the meetings and contributed to the discussions of the Task Force. In addition, staff from the Volpe Center attended all of the meetings and contributed to the technical discussions through their comments and presentations and by setting up various lighting, marking, and signage demonstrations.

The task force held 17 meetings on the following dates and locations:

February 25–26, 2004, in Los Angeles, CA;
April 14–15, 2004, in Cambridge, MA;
July 7–8, 2004, in Washington, DC;
September 13–14, 2004, in New York, NY;
December 1–2, 2004, in San Diego, CA;
February 16–17, 2005, in Philadelphia, PA;
April 19–20, 2005, in Cambridge, MA;
August 2–3, 2005, in Cambridge, MA;
December 13–14, 2005, in Baltimore, MD;
August 10, 2006, in Grapevine, TX;
October 25–26, 2006, in Philadelphia, PA;
December 6–7, 2006, in Washington, DC;

March 28–29, 2007, in Los Angeles, CA; June 13–14, 2007, in San Francisco, CA; October 17–18, 2007, in Arlington, VA; May 13–14, 2008, in Arlington, VA; and March 31, 2009, in Washington, DC.

At meetings in Los Angeles, Cambridge, Washington, New York, San Diego, Philadelphia, and San Francisco, FRA met with representatives of Metrolink, MBTA, Amtrak, LIRR, Coaster, SEPTA, and Caltrans, respectively, and toured their passenger equipment. The visits were open to all members of the various task forces and included demonstration of emergency system features. As in the case of the Working Group visits, FRA believes they have added to the collective understanding of RSAC members in identifying and addressing passenger train safety issues for not only this rulemaking, but for other RSAC initiatives as well. After reaching consensus on a variety of issues, and receiving formal recommendations from the RSAC, FRA issued the PTES rule. As noted above, the final rule was published on February 1, 2008, and it addressed requirements for emergency window exits, rescue access windows, emergency communication, and roof access locations.

V. Proceedings to Date

Like the first PTES rule, the NPRM in This rulemaking proceeding, Passenger Train Emergency Systems II (PTES II), was developed to address a number of the concerns raised, and issues discussed, during the various Task Force and Working Group meetings. The issues include: doors, emergency lighting, emergency marking and instruction for egress and access, emergency communication, low-location emergency exit path markings, and debriefing and critique of emergency situations and simulations. The Working Group reached full consensus on all the regulatory provisions contained in the NPRM at its meeting in December 2007. The Working Group presented its consensus recommendations to the full RSAC for concurrence at its meeting on February 20, 2008. All of the members of the full RSAC in attendance at its February 2008 meeting accepted the regulatory recommendations submitted by the Working Group. Thus, the Working Group's recommendations became the full RSAC's recommendations to FRA. FRA subsequently met with the Task Force twice after that to make some non-substantive technical clarifications and review technical research findings related to potential enhancements of emergency systems. A Tier II Sub-Task Force also met to discuss the proposed requirements affecting Tier II equipment, *i.e.,* passenger equipment operating at speeds in excess of 125 mph but not exceeding 150 mph. It did not recommend any changes to the proposed rule text. After reviewing the full RSAC's recommendations, FRA agrees that the recommendations provide a sound basis for a proposed rule and hereby adopts the recommendations with generally minor changes for purposes of clarity and **Federal Register** formatting.

VI. Technical Background and Overview of Issues Addressed in this Proposal

Experience with passenger train accidents and simulations, and technological advances in emergency systems provide the main impetus for these proposed enhancements and additions to FRA's existing requirements related to passenger train emergency systems, as highlighted below.

A. Doors

In February 1996, as a result of a near head-on collision between a Maryland Mass Transit Administration MARC Train Service (MARC) train and an Amtrak train in Silver Spring, Maryland, and subsequent fire, eight passengers and three crewmembers died in one car. This incident raised concerns that at least some of the passengers in the MARC train tried unsuccessfully to exit via the exterior side doors in the rear vestibule of the lead, passenger-occupied cab car. Following its post-collision investigation, the NTSB expressed concern regarding passengers' ability to exit through interior and exterior passageway doors. During the accident, the front end of the cab car that led the MARC train suffered extensive structural damage and fire destroyed the controls for the left- and right-side rear exterior doors. The left-side exterior door's interior emergency release handle was also damaged by the fire and could not be pulled down to operate the door. The right-side door's interior emergency release handle was in a secured cabinet in the lavatory and it failed to open the door when later tested by the NTSB. The NTSB did note in its investigation report of the Silver Spring train collision that ''[e]xcept for those passengers who died of blunt trauma injuries, others may have survived the accident, albeit with thermal injuries, had proper and immediate egress from the car been available.'' NTSB/RAR–97/02 at page 63. The NTSB explained in its explicit findings on the collision that ''the emergency egress of passengers was impeded because the passenger cars lacked readily accessible and identifiable quick-release mechanisms for the exterior doors, removable windows or kick panels in the side doors, and adequate emergency instruction signage.'' *Id.* at 73.

Specifically, the NTSB recommended that FRA ''[r]equire all passenger cars to have either removable windows, kick panels, or other suitable means for emergency exiting through the interior and exterior passageway doors where the door could impede passengers exiting in an emergency and take appropriate emergency measures to ensure corrective action until these measures are incorporated into minimum passenger car safety standards.'' R–97–15. In addition, the Task Force identified concerns related to door egress from a car that is not upright. Emergency egress simulations organized by the Volpe Center confirmed this. Such simulations at the FRA-funded ''roll-over rig,'' located at the Washington Metropolitan Area Transit Authority's training facility, demonstrated that egress from a passenger rail car that is not upright can be very challenging. The simulations have demonstrated that emergency egress from a car that is on its side could present a significant challenge related to the operation of the pocket doors. If the pocket for a door is situated on the side of the car that is above the door when the car comes to rest on its side, gravity would work against opening the door and maintaining it in place for occupants to egress. Although passenger rail cars with single-panel vestibule doors are usually designed such that on the two ends of a car the pockets are on opposite sides of the panel, emergency situations may affect either end of the car rendering one or more of the vestibule and end-frame doors unavailable for emergency egress. In addition, doors could be rendered inoperable due to structural deformation of the doors or their frames and surrounding structures following a collision or derailment, blocking the egress pathways.

As with other items identified for future consideration during the PESS rulemaking proceedings, the Task Force gave thoughtful consideration to the issue of vestibule and end-frame door egress. With assistance from the Task Force, FRA explored the feasibility of designing removable panels or windows in interior and exterior passenger car doors that could be used for emergency egress, and funded research to develop and evaluate various designs. Interior door egress was examined first. In some passenger cars, exterior side or end-

frame doors, or both, are located in vestibule areas that are separated from the seating area(s) by an interior vestibule door. Structural deformation or malfunctioning of vestibule doors would inhibit or unduly delay access to the vestibules from the passenger compartments. End-frame door egress was examined next. Ultimately, no design was identified that would address three overriding concerns related to end-frame doors: (1) Unintentional removal of the door, which would result in a safety hazard for occupants attempting emergency egress from the train; (2) crashworthiness of the door containing the panel or window; and, (3) prevention of fluids, such as fuel, from entering the car during an accident. Therefore, the Task Force developed a recommendation that was limited to interior vestibule doors. The Task Force generally recommended requiring a removable panel or window in each vestibule door, and a retention mechanism for new passenger cars. In such cases, occupants could use a removable panel or window in the door to gain access from the seating area to the exterior doors in the vestibule. Alternatively, this panel or window could also facilitate passage in the opposite direction from the vestibule area to the seating area. Given the unique circumstances surrounding passenger train accidents, the Task Force considered it prudent to recommend that access be available from both areas.

The Task Force specifically evaluated kick-panels and ultimately decided that such panels could be partially or fully removed unintentionally creating a safety hazard, particularly for small children who could get caught in the opening and become injured by the door sliding into its pocket. For security reasons, the Task Force also recommended an exception to the removable panel or window requirement for a vestibule door that leads directly into a cab compartment. The Task Force believed that each railroad is best situated to determine whether equipping such a vestibule door with a removable panel or window would be appropriate for its specific equipment and operation.

FRA believes that its proposal in this rulemaking to require vestibule doors to be equipped with a removable panel or window would, in the event that vestibule doors are not operable, provide a means for occupants in the passenger seating area to reach the vestibules where exterior door are located. Once located near an exterior door, emergency responders will be able to reach the occupants. FRA further believes that its proposal would satisfy the safety concerns expressed in the NTSB's recommendation without raising other safety concerns both during normal operations and in accident situations.

The Task Force considered requiring that existing equipment be retrofitted to comply with the proposed vestibule door requirement. Because of limitations posed by the design of existing doors, the Task Force decided not to recommend that the equipment be retrofitted. Vestibule doors are designed with a horizontal structural member, located approximately at the vertical center of the door, which provides rigidity. The design would significantly limit both the size and location of a properly functioning removable panel or window. Although there are existing windows in the upper half of certain vestibule doors, the windows are not sufficiently large for adults to pass through and would be difficult to access in many situations. In addition, the existing door pockets would require modification. Removable windows would likely be designed similarly to emergency windows that are equipped with a handle to facilitate the removal of the gasket that holds the emergency window in place. The doors would need to be modified to accommodate the protrusions in the door that would be created by adding the handle. As noted above, the Task Force also examined the emergency egress issue as it relates to exterior end-frame doors. After much deliberation, the Task Force recommended not to proceed with a removable window or panel requirement for end-frame doors at this time, due to remaining concerns related to the crashworthiness of the exterior end-frame doors. The Task Force did, however, extend the proposed removable window or panel requirement to ''any other interior door used for passage through a passenger car'' to further expand options for emergency egress.

B. Identification of Emergency Systems

Passenger train evacuation can be complicated by various circumstances, such as: an overturned rail car(s); rail car(s) being located in a narrow bridge or tunnel; and the presence of smoke or darkness. Such circumstances necessitate enhanced systems for use in emergency evacuations. The PESS rule highlighted a systems approach to effective passenger train evacuation that takes into consideration the interrelationship between features such as the number of door and window exits in a passenger car, lighted signs that indicate and facilitate the use of the door and window exits, and floor exit path marking (such as that required by the Federal Aviation Administration (FAA) for passenger aircraft), in addition to the general emergency lighting level in a car. 64 FR 25598. In particular, the PESS final rule stated that FRA was investigating emergency lighting requirements, as part of a systems approach to effective passenger train evacuation. FRA also stated that it would examine the APTA standard on emergency lighting to determine whether the standard satisfactorily addresses matters related to emergency signage, exit path marking, and egress capacity. *See* 64 FR 25598.

As FRA was issuing comprehensive Federal requirements for passenger train safety in the late 1990s, APTA was also developing and authorizing complementary passenger rail equipment safety standards applicable to equipment operated by its commuter and intercity passenger railroad members. APTA developed a three-standard, systems-based approach to facilitate the safe evacuation of a passenger car in an emergency under various circumstances. These three standards, (the most recent revised versions were approved by APTA in 2007) which address emergency lighting, signage, and low-location exit path markings, were designed to work together to provide a means for passengers and crew to identify, reach, and operate passenger car emergency exits.

The most recent revised versions of the APTA standards approved by APTA and all authorized on October 7, 2007, are listed below and copies are included in the docket.

- APTA SS–E–013–99, Rev. 1 Standard for Emergency Lighting System Design for Passenger Cars.
- APTA SS–PS–002–98, Rev. 3 Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment.
- APTA SS–PS–004–99, Rev. 2 Standard for Low Location Exit Path Marking.

The APTA approach recognizes that, in the majority of emergencies, the safest place for passengers and crew is on the train. Should evacuation from a particular rail car be required, the safest course of action for passengers and crew is normally to move into an adjacent car. This evacuation strategy avoids or minimizes the hazards inherent with evacuating passengers onto the railroad right-of-way. It is only in unavoidable or extreme life-threatening situations that it would be necessary for passengers

and crew leaves the train to reach a place of safety.

The Task Force was charged with reviewing the three APTA standards and recommending revisions that would enhance the existing emergency lighting requirements contained in § 238.115 and the egress and rescue access marking requirements contained in §§ 238.113 and 238.114. In addition, the Task Force was charged with adding a new requirement for low location exit path marking. After careful review, the Task Force recommended that the three APTA standards be revised to address relevant evolving technology, and that the standards be incorporated by reference in their entirety into the Federal regulations. With assistance from the Task Force, APTA revised the three APTA standards to enable FRA to incorporate them by reference and take advantage of certain technological advances which allowed for certain other desired enhancements. In addition, the Task Force recommended applying the requirements of the emergency lighting, emergency signage, and low-location exit path marking APTA standards (as revised in 2007), which apply to both new and existing equipment. Incorporation by reference of these APTA standards into part 238 would extend their applicability to all commuter and intercity passenger railroads and make them enforceable by FRA.

C. Emergency Lighting

Section 238.115 contains emergency lighting requirements applicable for new passenger cars. As noted in the PESS final rule, experience gained from emergency response to several passenger train accidents indicated that emergency lighting systems either did not work or failed after a short time, greatly hindering rescue operations. *See* 64 FR 25596. Emergency lighting system failures, or low levels of illumination during these accidents, or both, have been cited as a cause for confusion and contributing to the injuries and casualties. For example, according to the NTSB accident report, two passengers in a coach car of the MARC train involved in the 1996 Silver Spring, Maryland, accident stated that emergency lighting was not available following the accident, and that, along with one passenger's injuries and another's loss of eyeglasses, made it more difficult to move in the darkness. *See* R–97–17. The coach car's tilted position also contributed to their disorientation and hindered mobility. Post accident investigation by the NTSB revealed that the main car battery powering the emergency lighting had been damaged as a result of the derailment.

The NTSB expressed concern regarding emergency lighting survivability because the location of the battery supplying power to the emergency lighting system below the car made it susceptible to damage from the rail, the car's trucks, and the ground surface in the event of a derailment. The NTSB concluded that ''[a] need exists for Federal standards requiring passenger cars be equipped with reliable emergency lighting fixtures with a self-contained independent power source when the main power supply has been disrupted to ensure passengers can safely egress.'' The NTSB issued recommendation R–97–17 to FRA, as follows:

> Require all passenger cars to contain reliable emergency lighting fixtures that are each fitted with a self-contained independent power source and incorporate the requirements into minimum passenger car safety standards.

In addition, on May 16, 1994, in Selma, NC, an Amtrak train derailed after colliding with an intermodal trailer from a freight train on an adjacent track. This accident resulted in 1 fatality and 121 injuries. According to the NTSB accident report, three of the injured passengers reported difficulty exiting the passenger cars because they could not identify the emergency exit windows in the darkness. NTSB/RAR–95/02. When they were finally able to escape through the doors leading outside, they said that they were not sure how far they were above a surface, which may not have been solid ground, because they could not see below the steps of the car. The NTSB found that fixed emergency lighting systems were not operating inside several passenger cars because the batteries and the wiring connecting the batteries to the lights were damaged as a result of the derailment.

In the 1999 PESS final rule, FRA established performance criteria for emergency lighting, including minimum illumination levels for certain locations in new passenger car door locations, aisles, and passageways, because it would enable the occupants of the passenger cars to discern their immediate surroundings (situational awareness) and thereby minimize or avoid panic in an emergency. Establishing an illumination requirement at floor level adjacent to doors, was intended to permit passenger car occupants to see and negotiate thresholds and steps that are typically located near doors. The illumination requirement 25 inches above the floor for aisles and passageways was intended to permit passenger car occupants to see and make their way past obstacles as they exit a train in an emergency. FRA also pointed out that the existing requirement contained in § 238.115 provides greater flexibility to railroads related to the placement of lighting fixtures for new equipment. FRA also required that the emergency lighting system remain operational on each car for 90 minutes, consistent with FAA requirements for passenger aircraft emergency lighting.

With respect to existing equipment, FRA noted that it desired achievable emergency lighting enhancements and that it would evaluate an APTA emergency lighting standard when completed. The Task Force developed a revised APTA emergency lighting standard that would enhance the existing FRA emergency lighting requirements in § 238.115 by: (1) applying the requirements to existing equipment; and, (2) improving the back-up power supply survivability requirement (with application to both new and existing cars). The APTA emergency lighting standard specifies the same minimum illumination levels and duration that are required by § 238.115 for doors, aisleways, and passageways in new equipment. In addition, the APTA standard requires that additional locations be provided with emergency lighting, such as stairways and toilet rooms.

The Task Force recommended revisions to the APTA emergency lighting standard to address older equipment not currently covered by the emergency lighting requirements contained in § 238.115. The revised APTA standard now specifies minimum emergency lighting performance criteria for all passenger cars (new and existing). The levels of illumination and duration required for equipment ordered before September 8, 2000, and placed in service before September 9, 2002, are half the levels that are required for newer equipment. This takes into consideration the more limited capabilities of older electrical lighting systems. The APTA emergency lighting standard provides that these illumination and duration requirements be implemented by January 1, 2015, or when the equipment is transferred, leased, or conveyed to another railroad for more than 6 months of operation, whichever occurs first. Some railroads indicated their intention to retire certain equipment by 2015. The Task Force agreed it would not be cost-justified to retrofit such equipment.

In addition, the APTA emergency lighting standard requires that

emergency lighting systems installed on each passenger car ordered on or after April 7, 2008, or placed in service for the first time on or after January 1, 2012, meet minimum illumination levels by means of an independent power source(s) that is located in or within one half of a car length of each light fixture it powers, and that operates when normal power is unavailable. As previously noted, these illumination levels are the same as the ones already specified in § 238.115 for doors, aisleways, and passageways. The independent power source requirement is not currently contained in § 238.115, and is being proposed in this rulemaking proceeding. The Task Force evaluated the feasibility of equipping each emergency lighting fixture with self-contained power sources, as a back-up power source, independent of the main car battery. After deliberation, the Task Force concluded that maintenance would be very costly due to the high number of power sources. The Task Force examined other methods for addressing the issue of emergency lighting system reliability and assisted APTA in revising the APTA emergency lighting standard to better address those situations in which an emergency lighting system may be most beneficial. For example, in the event of a derailment resulting in a car rollover, the importance of situational awareness is heightened. Occupants are likely not in the same location as they were before the incident and, in conditions of darkness, are likely unaware as to where in the car they are located in relation to the nearest exit. APTA added four requirements that address NTSB's recommendation to FRA regarding emergency lighting survivability for new passenger cars, as described below.

First, the APTA emergency lighting standard was revised to require an independent power source within the car body located no more than a half-car length away from the fixture it powers. For most passenger car designs, this translates into a minimum of two batteries, one in each end of the car. In the Silver Spring accident, passenger cars incurred collision and derailment damage to underfloor battery boxes, causing the wet cell batteries contained in those boxes to leak electrolyte. Because of the damage and leakage, the batteries failed to provide power to the emergency lighting on board the passenger cars. Placing the batteries within the car body will reduce the risk of damage to the battery during a collision, and increase the likelihood that the batteries will be capable of providing power to the emergency lighting.

Second, each of these independent power sources is required to have an automatic self-diagnostic module to perform a discharge test to ensure timely detection and notification of a malfunction. Third, emergency lighting systems in new cars are required to be capable of operating in all equipment orientations to address accident situations resulting in the rollover of a car. During an accident, passenger cars may tilt, causing wet cell batteries contained in those cars to leak electrolyte and, as a consequence, fail to provide power to the emergency lighting on board the passenger cars. Wet cell batteries will likely leak when tilted in a rollover, because wet cell batteries are designed with a vent on top that allows liquid to escape when tipped over. Alternatively, a sealed battery is capable of functioning as intended regardless of the battery's orientation. When a sealed battery is tilted during an accident, it will not fail to provide power to emergency lighting merely as a result of the batteries being tilted. Finally, the APTA standards provides that emergency lighting systems must be designed so that at least 50 percent of the light fixtures operate notwithstanding the failure of any single fixture or power source.

In support of revising the APTA emergency lighting standard, the Volpe Center researched various alternative, cost-effective technologies for addressing the reliability of emergency lighting systems. The Volpe Center found that the development of emergency-lighting systems that can function reliably for a decade or more with minimal maintenance and that can withstand passenger train collision/derailment forces has been greatly facilitated by two recent technologies:

- Solid-State Lighting (SSL)—most commonly known as light emitting diodes (LEDs)
- Supercapacitors—devices that store about 100 times as much electrical charge per unit volume as previous types of capacitors.

Solid-state lighting includes conventional LEDs and other emerging technologies to produce illumination without the use of incandescent filaments or excited gases in glass containers. Compared with older lighting technologies, the solid-state lighting devices are much smaller, are able to withstand hundreds or thousands of times as much shock forces, and have service lives ten to one hundred times greater. Their light output per unit of electric power consumed is currently equivalent to fluorescent lighting, and continues to improve. Prototypes of new LED and other SSL devices use only half as much energy to produce a given amount of light as the best fluorescent lamps. The light output of current white LEDs ranges from 20 to 60 lumens per Watt, which means that a large area can be illuminated to a required minimum value (one lumen per square foot) with only one Watt of power. Furthermore, use of LEDs avoids the disposal costs of mercury-containing lamps. For these reasons, railroads have already started specifying the use of LED devices for new passenger car lighting, and to some extent have already used LEDs for retrofitting existing car lighting.

Capacitors are devices that store energy in an electrical field (as opposed to a battery, in which the energy is stored chemically). Chemicals that store and release energy in amounts that are useful in batteries are inherently corrosive, which limits battery life to about a thousand charge-discharge cycles, or about seven years in applications where the battery is rarely discharged. By avoiding use of corrosive chemicals, capacitors are far more durable; but until recently, they could not store enough energy to be useful in emergency lighting. New supercapacitors are rated for 500,000 charge-discharge cycles, and their service lives are expected to extend to at least ten years. Currently, commercial supercapacitors are available that store as much as 5 Watt-hours of energy. Combined with very efficient LEDs or other SSL devices, they allow the manufacture of emergency lighting systems using self-contained power with the ability to withstand collision forces of much greater magnitude than emergency lighting systems currently in use. As discussed in sections D, E, and F below, the brightness of newer photoluminescent materials which can be used for emergency egress signs and exit path marking can be a cost-effective means of addressing concerns regarding the survivability of emergency lighting systems, particularly for older equipment in operation, until it is retired from service.

D. Marking and Instructions for Emergency Egress and Rescue Access

To initially address emergency egress and rescue access, as well as other issues related to the 1996 Silver Spring accident cited earlier, FRA issued Emergency Order No. 20 (EO 20). 61 FR 6876. In addition to other requirements, EO 20 required commuter and intercity passenger railroads to mark the location, and provide instructions for the use, of emergency window exits by no later

than April 20, 1996. In an effort to respond to this requirement as effectively as possible in the short timeframe provided, affected railroads began to install photo-luminescent emergency exit markings to mark doors intended for emergency egress and emergency window exits with photoluminescent materials that were available at the time for this purpose.

On May 4, 1998, FRA issued the PTEP final rule that requires door exits that are intended for emergency egress to be lighted or conspicuously marked with luminescent material, and that instructions for their use be provided. The rule also requires that emergency window exits be conspicuously marked with luminescent material, and that instructions for their use be provided. *See* 63 FR 24630. Doors and windows intended for emergency access by emergency responders for extrication of passengers must also be marked with retroreflective material, and instructions for their use must be posted. Notably, the rule did not specify specific criteria for minimum luminance levels or letter size or sign color but stated that the marking of the door and window exits must be conspicuous enough so that a reasonable person, even while enduring the stress and panic of an emergency evacuation can determine where the closest and most accessible route out of the car is located. *See* 63 FR 24669. Many railroads installed signs made of zinc-sulfide, which were capable of providing luminance only for a period of less than 10 minutes in many cases. Subsequently, photoluminescent sign technology evolved, and other materials began to be used, such as strontium-aluminate, which is capable of providing high levels of luminance for much longer periods.

The original APTA emergency signage standard was revised in 1999 to require the installation of emergency exit signs with specific minimum ''higher performance'' photoluminescent material, in terms of brightness and duration, as well as larger minimum letter sizes, color contrast, etc., for emergency exit signs. The second revision, authorized in 2002, included a reorganization of certain sections, citation of ASTM International (ASTM) retroreflectivity standards, as well as the revision of annex guidance to evaluate the performance characteristics of the emergency exit signs. FRA considered incorporating elements of the APTA standard into the PTES final rule in 2008 so that emergency exit signs and intercom markings in passenger cars would be required to be made of photoluminescent material with higher levels of brightness for longer duration. However, the Task Force recommended that certain requirements in the APTA emergency signage standard be revised to address technical issues with the performance characteristics of certain types of photoluminescent materials already installed in existing passenger rail cars, as well as other necessary clarifications addressing sign size, color, and contrast, etc., before the standard is incorporated by reference by FRA. *See* 63 FR 6886.

APTA revised its emergency signage standard to incorporate the Task Force recommendations. The recommendations were based on Volpe Center research findings and technological advances in photoluminescence (as discussed in Section F below). Substantively, the revised APTA standard requires that each passenger rail car have interior emergency signage to assist passengers and train crewmembers in more readily locating, reaching, and operating emergency exits in order to safely evacuate from the rail car or train; and exterior signage to assist emergency responders in more readily locating, reaching operating emergency access points, during an emergency situation that warrants immediate passenger rail car or train evacuation. To ensure visibility to passengers, signs that are required to mark the location of vestibule door markings must meet the brightness and duration performance criteria requirements for photoluminescent material, as specified in the APTA standard.

Although the APTA emergency signage standard does not address emergency communication system signage, the Task Force also recommended applying certain criteria for photoluminescent marking specified in that standard to intercom systems, as further described in Section G below. The APTA standard also includes specifications for retroreflective marking and material, which are consistent with FRA requirements for rescue access point marking for doors, windows, and roof access locations. The APTA standard is more detailed than the relevant existing FRA requirements contained in part. For example, the APTA standard requires specific minimum letter sizes for doors and emergency window exits and includes specific criteria for color, color contrast, etc.

The revised APTA emergency signage standard requires periodic testing of certain system components and contains procedures to ensure compliance. APTA designed its emergency signage standard to offer flexibility in application, as well as to achieve the desired goal of facilitating passenger and crew egress from potentially life-threatening situations in passenger rail cars. Individual railroads have the responsibility to design, install, and maintain an emergency signage system that is compatible with their internal safety policies for emergency evacuation, while complying with the performance criteria specified in this standard.

The Task Force recommended that FRA adopt the specific retroreflective material criteria contained in the 2007 APTA emergency signage standard related to rescue access windows and doors intended for access by emergency responders, into the new section 238.114 in the 2008 rule which added a requirement for installation of a minimum number and the location of rescue access windows on all passenger cars. Thus, in the 2008 rule, FRA added a definition of ''retroreflective material'' that incorporates by reference criteria form ASTM's Standard D 4956–07 for Type 1 Sheeting, which is consistent with the APTA emergency signage standard. Accordingly, FRA requests comment regarding the need to keep the definition in the rule given the incorporation of the APTA emergency signage standard. FRA also made other revisions related to rescue access marking, consistent with the other rescue access marking requirements specified in the APTA. *See* 73 FR 6389.

E. Low-Location Emergency Exit Path Marking

A review of past passenger rail accidents involving passenger and train crew emergency evacuation has indicated that, in certain cases, both passengers and emergency responders lacked sufficient information necessary for expedient emergency egress and responder access due to the absence of identifiable markings. A lack of adequate markings indicating the location of emergency exits, in conjunction with lighting system failures, or low levels of illumination, or both, during conditions of darkness when these accidents occurred caused confusion and contributed to injuries and casualties. In addition, the presence of fire or smoke may substantially increase the difficulty of evacuating passenger train occupants.

To avoid the many hazards associated with evacuation onto the right-of-way, the preferred means of egress from a passenger car that is not located at a station is via the end door(s) to the next car. Under conditions of darkness, or when illumination from emergency lighting fixtures located at or near the ceiling are obscured by smoke, such

markings (including exit signs) remain discernible. Particularly in the smoke situation, the most viable escape path is the more visible path, which is likely to be at or near the floor where occupants are forced to lower themselves towards (where the pathway markings are located) to avoid inhaling the smoke.

The 1999 APTA standard for low-location emergency exit path marking (LLEPM) required high performance photoluminesent (HPPL) material to be installed on all new passenger rail cars. Such markings are intended to maintain a visible pathway for passengers to use to locate and reach emergency exits under conditions of darkness even if the emergency lighting system fails, and include aisleways, stairways, and passageways, which identify the path to the primary exit for a duration of 90 minutes for both existing and new cars, using either HPPL or an independent power source for a duration of 90 minutes. Certain revisions were made to the original LLEPM standard which primarily consisted of additional definitions, reorganization of certain sections and revision, and the addition of annexes used to evaluate the performance of HPPL material used for LLEPM.

In December of 2006, with participation of the Emergency Preparedness Task Force, the Volpe Center conducted a series of emergency egress simulations at the Washington Metropolitan Area Transportation Authority training facility, which demonstrated that egress from a rail passenger car can be very challenging. Initially, a single-level passenger with some photoluminescent emergency exit sign materials commonly found in passenger rail cars and some HPPL sign and LLEPM materials were placed in a car that was darkened to demonstrate the difference in performance between the two types. ''High performance'' is defined as material that exhibits significantly enhanced surface brightness for a much longer time period compared with zinc sulfide photoluminescent material. Section F below provides further information relating to photoluminescent material performance characteristics. Next, the car was filled with theatrical smoke, which quickly rose and filled most of the car, making all photoluminescent signs indiscernible (including HPPL markings), except for door exit location and LLEPM markings located near the floor. Members of the Task Force participating in the simulation attempted to exit the car via an end door by moving along the aisle in a crouching position and using an HPPL LLEPM system as guidance. The LLEPM system was covered in one end (half) of the car to demonstrate the noticeable effectiveness of the LLEPM system that remained visible in the other end (half) of the car, in terms of brightness and duration. Next, the darkened car was tilted to a 15 degree angle. This car orientation was used to demonstrate firsthand the potential difficulties associated with trying to maintain one's balance and walk through the car to a door exit.

The low-location exit path marking (LLEPM) system complements the emergency signage system by identifying all primary door exits with HPPL and the emergency lighting system by providing a visible path to emergency exits that is not dependent on a power sources outside of the passenger compartment, ensuring that all primary emergency exits in a passenger car can be identified from every seat in the car. The Task Force reviewed the 2002 APTA LLEPM standard and recommended that certain revisions be made to address the same type of issues related to photoluminescent material, as for the emergency signage standard, as well as other technical revisions, for consistency with the emergency signage standard, and to enable the FRA to incorporate the standard by reference.

F. Photoluminescent Marking Materials

As mentioned above, as result of the NTSB's investigation of the February 1996 Silver Spring accident, the NTSB expressed concern that at least some of the passengers in the MARC train were unable to locate, reach, or operate doors and emergency window exits due to the failure of emergency lighting. Shortly after, FRA issued EO 20 requiring commuter and intercity passenger railroads to mark emergency window exits with luminescent material. *See* 61 FR 6876. The most conspicuous and visible markings related to emergency egress are either internally illuminated (illuminated by a self-contained source), or made of HPPL materials.

Since the issuance of EO 20, Volpe Center research has provided extensive information to FRA and the Task Force for different types of photoluminescent materials and their performance characteristics, when installed in passenger rail cars. The luminescence (brightness) levels for many of the emergency exit signs and LLEPM marking, using zinc sulfide material, originally installed in response to EO 20, are very low and the duration is very short originally and thus do not perform as well as the newer HPPL materials, using strontium aluminate, which are capable of a much higher initial brightness and longer duration time. In addition, Volpe Center research shows that placement of the photoluminescent sign and marking materials relative to sources of illumination is key to proper performance in terms of brightness and duration. Other factors that affect the ability of occupants to see signs and marking and read signs include: the size of the letters, distance from the sign or marking, and the visual acuity of the person seeing the sign and marking.

Separately, and in conjunction with industry representatives, the Volpe Center conducted illumination and luminance tests in various in-service passenger cars of different design and age and demonstrated that some of the photoluminescent markings were not as luminescent (*i.e.,* bright) as they were intended to be. Signs and LLEPM markings certified to be capable of achieving certain luminance levels were found not to meet those criteria due to inadequate charging light levels. The presence of shadows cast by nearby structures and fixtures, the location of light fixtures relative to emergency exit sign and LLEPM markings, the condition of light diffusers, and the type of lamps used to provide the illumination were all causes for why either the zinc sulfide or the HPPL products were unable to charge sufficiently and thus achieve expected luminance levels.

The Task Force considered the use of HPPL material to be an important improvement over the previous, less strenuous, requirements for duration and luminance of photoluminescence materials and also a cost-effective means of addressing concerns regarding the survivability of emergency lighting systems, particularly for older equipment in service. Adoption of the APTA LLEPM standard by FRA by incorporation by reference into part 238 also addresses the NTSB Silver Spring recommendation to require that the path to the emergency exits be marked in all passenger cars.

To develop a more effective photoluminescent standard that would address the Volpe Center findings, the Task Force developed HPPL material specifications with Volpe Center technical assistance that APTA included in its 2007 revision of both the emergency signage standard and the LLEPM standard. FRA notes that the Task Force proposed revisions to the emergency signage and LLEPM standards to: (1) Allow flexibility for use of different types of charging light sources, (2) require that new HPPL signs meet the same luminance requirements with lower charging light levels, (3) allow alternative testing criteria using

meters that do not measure off-axis illuminance accurately, (4) grandfather signs that are likely to perform as intended for 60 minutes, and (5) in small areas, to allow lower levels of luminance or use of larger signs to compensate for even lower light levels. APTA revised the two APTA standards which now establish more stringent minimum requirements for the HPPL material performance criteria to provide visual guidance for passengers and train crewmembers to locate, reach, and operate door exits and emergency window exits, especially during conditions of darkness when the emergency lighting system has failed, (or when smoke conditions obscure overhead emergency lighting).

G. Emergency Communication System Marking

The NTSB accident investigation report for the February 9, 1996 collision near Secaucus, New Jersey, that involved two New Jersey Transit Rail Operations (NJTR) trains and resulted in three fatalities and numerous injuries, illustrates the importance of emergency communication systems to prevent panic and further injuries. According to the NTSB report (NTSB/RAR–97/01, at p. 27):

> [a]lthough the train crews said that they went from car to car instructing passengers to remain seated, passengers said that they were not told about the severity of the situation and were concerned about a possible fire or being struck by an oncoming train. They therefore left the train and wandered around the tracks waiting for guidance, potentially posing a greater hazard because of the leaking fuel from train 1107.
>
> No crewmember used the public address system to communicate with passengers. By using the public address system, all passengers would have received the same message in less time than it would have taken the NJT employees to walk from car to car.

The NTSB report also stated:

> Information about the possibility of a fire or a collision with an oncoming train could have been provided to passengers over the public address system to address their concerns and prevent them from leaving the train. The Safety Board concludes that the lack of public announcements addressing the passengers' concerns caused them to act independently, evacuate the train, and wander along the tracks, thus potentially contributing to the dangerous conditions at the collision site.

To address the NTSB report, FRA issued the PESS final rule in 1999, which established requirements for two-way emergency communication systems and markings for Tier II passenger equipment. *See* 64 FR 25540, 25641 (May 12, 1999). Public address (PA) systems allow the train crew to keep their passengers informed in an emergency situation and provide instructions to them in a timely manner. The train crew can provide instructions to passengers to not take an action that could place them or other passengers in any greater danger, such as instructing them, as appropriate, to remain on the train and not endanger themselves by unnecessarily evacuating the train on their own. Conversely, passengers could use the intercom feature of a two-way communication system to report security issues as well as other life-threatening situations. When head-end power is lost, having markings that remain conspicuous allow passengers to locate and use the intercom to communicate with the train crew. During the development of the 2008 PTES final rule, some railroad representatives on the Task Force noted that although instructions were posted at the intercom locations on their passenger cars, luminescent markings to mark the intercom location were not used. The Task Force therefore recommended that luminescent markings be required for that purpose. It should be noted that FRA proposed to adopt such a requirement in the PTES final rule, and invited comment on whether the luminescent material should be HPPL material, as discussed below. *See* 71 FR 50293. As noted above, in the discussion concerning emergency window exit signage, the APTA emergency signage standard contains specific criteria for luminescent markings. The Task Force focused on revisions to this APTA standard in order to recommend whether to incorporate some or all of its contents into part 238 by reference and thereby require that luminescent markings for intercoms comply with the standard as it relates to luminescent markings. APTA PRESS had also indicated that they intended to revise APTA SS–PS–001–98, ''Standard for Passenger Railroad Emergency Communications,'' to include more specific requirements for marking emergency communication systems. However, no comments were received, and the PTES final rule required luminescent marking of each intercom location to ensure that the intercom can be easily identified for use in the event that both normal and emergency lighting are not functioning. The posted operating instructions, however, are not required to be luminescent. Some Task Force members indicated that the instructions may be easier to read when not luminescent.

As noted previously, the Task Force discussed at length issues associated with the development of HPPL material component requirements. Due to the APTA revision of the performance criteria for HPPL material, the Task Force recommended that the intercom system comply with the brightness and duration of HPPL material performance criteria in the emergency lighting standard. Accordingly, FRA believes that applying the luminescent marking requirements in the revised APTA emergency signage standard to intercom systems would further address the NTSB report emergency communication concerns.

H. Debriefing and Critique Session Following Emergency Situations and Full-Scale Simulations

As an illustration of the importance of train crew participation in a debrief and critique session, FRA notes that on May 25, 2006, a power outage disrupted all rail traffic on the Northeast Corridor between Washington and New York during the morning rush hour, stranding approximately 112 trains with tens of thousands of passengers on board. Currently, part 239 requires that train crew members participate in the required debriefing and critique session of such incidents. However, the managers of the train crew of at least one train participated in the debriefing and critique session, rather than the train crew. The Task Force recognized the importance of the participation of train crew and other employees who actually have first-hand knowledge of the emergency in the debriefing and critique sessions. Accordingly, the Task Force reviewed the existing debriefing and critique requirements in section 239.105 and recommended that clarifications be made to ensure that to the extent practicable, all onboard crewmembers, control center personnel, and any other employees actually involved in emergency situations and full-scale simulations, be included in the debriefing and critique sessions. In addition, flexibility was provided to railroads by permitting participation in the required debriefing and critique sessions of the employees, either in person or by the use of alternative methods. As such, FRA proposes to clarify § 239.105 to reflect this necessary participation.

VII. Section-by-Section Analysis

This section-by-section analysis explains the provisions proposed. Several of the issues and provisions involving this proposed rule have been discussed and addressed in detail in the preamble, above. Accordingly, these

preamble discussions should be considered in conjunction with those below and will be referenced as appropriate.

A. Proposed Amendments to Part 238, Subparts B, C, and E

Section 238.5 Definitions

In this section, FRA is proposing a set of new definitions to be introduced into the regulation, as well as the revision of certain existing definitions. FRA intends these definitions to clarify the meaning of important terms as they are used in the text of the rule, in an attempt to minimize the potential for misinterpretation of the rule.

''APTA'' would mean The American Public Transportation Association.

FRA proposes the definition in this section to reflect the present name of APTA, ''American Public Transportation Association.'' This section's reference to APTA as the ''American Public Transit Association,'' has become outdated.

''End-frame door'' would mean an end-facing door normally located between or adjacent to the collision posts or similar end-frame structural elements. This term refers to exterior doors only. This term would be added for use in the definition of a vestibule door to make clear that an end-frame door is not a vestibule door.

FRA proposes to revise the definition of ''vestibule'' to clarify that a ''vestibule'' is located adjacent to a side door exit. The definition would make clear that certain interior doors would be considered vestibule doors, and thus, would be subject to the proposed requirements for removable panels or windows. In conjunction with another defined term in this proposal, ''vestibule door,'' this definition is intended to make clear that certain areas in a passenger car that are used for passing from a seating area to a side door exit are vestibules. Interior areas of a passenger car that normally do not contain seating and are used for passing from, but are not adjacent to, a side door are not vestibules. Therefore, doors located in such areas would not be subject to requirements for vestibule doors unless otherwise specified (*see* § 238.112(f)). Passageways located away from side door exits would not be considered vestibules.

''Vestibule door'' would mean a door separating a seating area from a vestibule. End-frame doors and doors separating sleeping compartments or similar private compartments from a passageway would not be vestibule doors. This term is referenced in § 238.112(f) as one type of door that would be required to have removable panels or windows for emergency egress use in new passenger cars. Note that § 238.112 also applies to other interior doors intended for passage through a passenger car, namely, the interior doors that, while not located adjacent to a side door, are located near one or both ends of a car (sometimes just the ''blind end'' of the car) and provide passage to the next car, such as the door(s) at the end(s) of the Metra Gallery Cars and Amtrak Amfleet I and II Cars, as well as the door located on the upper level of the Amtrak Superliner Cars.

Section 238.112 Doors

This proposed section would consolidate certain existing door requirements that apply to both Tier I and Tier II passenger cars, add new requirements related to removable panels or windows in vestibule doors, and clarify that an exterior side door is required ''in each side'' of a passenger car ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002. Existing door requirements are currently located in §§ 238.235 for Tier I equipment and 238.439 for Tier II equipment. Section 239.107 also contains interior and exterior marking and instruction requirements, respectively, for all doors intended for emergency egress and all doors intended for emergency access by emergency responders. All door requirements that apply both to Tier I and Tier II passenger cars would be moved to this new § 238.112. The new vestibule door requirements would enhance passenger safety by requiring an additional means of access to the vestibule area from the passenger seating area, and vice versa.

Proposed paragraphs (a) through (c) would contain the requirements currently located in paragraphs § 238.235(a) through (c). A minor modification is proposed to paragraph (b) to make clear that of the minimum two exterior side doors required in each passenger car ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002, one must be located in each side of the car. Moreover, paragraph (b) makes clear that a set of dual-leafed doors is considered a single door for purposes of this paragraph.

Proposed paragraphs (d) and (e) contain the requirements for interior and exterior door exit markings and instructions, respectively, which are currently contained in §§ 238.235(d) and 239.107(a). Both paragraphs would reference the requirements in new § 238.125.

Proposed paragraph (f) requires a removable panel or removable window in each vestibule door, as well as in any other interior door intended for passage through a passenger car. A vestibule door, or its pocket, may become deformed or otherwise inoperable during an emergency. The additional means of egress would be used in the event that a vestibule door cannot be opened, or it becomes difficult to retain the door in an open position, to allow for passage from the seating area to the exterior doors in the vestibule. The latter circumstance is of particular concern when a passenger car is on its side where the pocket for the door would now be located above the door, making it difficult to keep the door in the open position. In the case of other interior doors intended for passage through a passenger car (*see* discussion above related to the definition of vestibule door in the section-by-section analysis of § 238.5), the removable panel or window would facilitate passage to the next car. Distinct requirements would apply to bi-parting doors. Such doors, because each leaf is too narrow, cannot reasonably contain removable panels or windows that would allow occupants to pass through. To allow sufficient time for railroads and manufacturers of passenger cars to implement these requirements without costly modifications to existing car orders, the requirements in this paragraph would apply to equipment ordered on or after the effective date of the final rule or placed in service for the first time on or after a date 4 years later. Railroad representatives indicated that a 4-year time period was consistent with the time between the placement of an order and delivery of the ordered equipment.

Proposed paragraph (f)(1) makes clear that doors providing access to a control compartment would be exempt from this requirement. The doors to such compartments are usually locked, particularly in newer cars that have door lock override mechanisms, to prevent unauthorized access to the control compartment. Railroads may, at their discretion, include removable panels or other additional means of egress in these doors, but they would not be required to do so. This paragraph also requires a manual override device for the vestibule door if the door is powered, to ensure occupants can open the door in the even power is lost.

Proposed paragraph (f)(2)(i) requires that each removable panel or window be designed to permit rapid and easy removal from both the vestibule and passenger seating area without the use of a tool or other implement. Access

from both areas is consistent with the preferred means of car evacuation, which is to the next car and not onto the right-of-way. The designs for removable windows or panels would likely be very similar to the removable gasket design and other designs generally used for dual-function windows, which serve both as emergency window exits and rescue access windows and therefore can be opened and removed from inside or outside of the car. This requirement is intended to be consistent with the ease of operability requirement currently applicable to emergency window exits in § 238.113, which dual-function windows must meet. For example, the design presented by Kawasaki for a removable panel in a vestibule door, described in the February 1, 2008 final rule, would satisfy the requirements for ease of operability being proposed. *See* 73 FR 6370. Proposed paragraph (f)(2)(ii) requires that removal of the panel or window create an unobstructed opening with minimum dimensions of 21 inches horizontally by 28 inches vertically. The Task Force consulted with passenger car and door manufacturers to ensure that the dimensions being proposed could be met without sacrificing the basic structural design and integrity properties of vestibule doors, including firmness, balance, and stability. Manufacturers agreed that the maximum width that could be reasonably achieved is 21 inches. The proposed 28-inch vertical dimension allows for the door to have a vertically-centered horizontal structural member as well as retain a window in the upper half, which is common to many existing door designs and a feature that railroads are interested in retaining.

Proposed paragraph (f)(2)(iii) would require that the removable panel or window be located so that the lowest point of the opening is no higher than 18 inches from the floor. This requirement is intended to provide ease of use for pass through after removal of the panel or window. The opening should be located close to the floor so that car occupants could crawl through without undue difficulty or undue delay.

Proposed paragraphs (f)(3) would contain distinct requirements for bi-parting doors. Each powered, bi-parting vestibule door would have to be equipped with a manual override device and a mechanism to retain each door leaf in the open position. Examples of a retention mechanism include a ratchet and pawl system that allows movement in one direction but locks it in the other, and a sprag. The retention mechanism would be used to hold the door panels, which can be relatively heavy, in place once they are opened. The override mechanism would provide a means to operate the doors in the event that power is lost. It would have to be located adjacent to the door leaf it controls and be designed and maintained so that a person could readily access and operate it from both the vestibule and the seating area, without the use of any tool or other implement. Access from both areas is consistent with the preferred means of car evacuation, which is to the next car, and not onto the right-of-way.

Proposed paragraph (f)(4) specifically contains requirements related to the capabilities of manual override devices. A manual override device is intended to allow a passenger to unlock a car door during an emergency that has been locked by the railroad for operational purposes. Without the manual override device, a key or other tool or implement is typically needed to unlock the door. By making the door easier to unlock, the manual override device will expedite passenger egress during an emergency.

Proposed paragraph (f)(5) contains requirements for marking and operating instructions for removal panels and windows as well as bi-parting door override devices and retention mechanisms. To ensure that each removable panel or removable window can be identified in the dark, these would have to be conspicuously and legibly marked with high-performance photoluminescent material on both the vestibule and the passenger seating area sides of the door. Use of such material is consistent with requirements for emergency window exit and door exit signage. Legible and understandable operating instructions for each removable panel or window would also have to be provided on both the vestibule and seating area side of the door. The same marking and instruction requirements would apply to bi-parting door manual override devices and retention mechanisms.

FRA believes that it is important to inspect, maintain, and repair manual door override devices and door retention mechanisms to ensure that they function properly in the event of an emergency. FRA believes that testing of a representative sample of manual override devices and door retention mechanisms no less frequently than once every 184 days to verify that they are operating properly would be reasonable and appropriate for safety. This frequency is consistent with existing requirements contained in § 238.113 for the testing of emergency window exits. However, because emergency window exits are subject to different service conditions than removable panels and windows located on vestibule doors, separate tests would be needed. Following each test, FRA also believes that inoperative manual override devices should be repaired before the cars they are in reenter service. FRA requests comments regarding the proper timing of the testing and repair of manual override door devices and retention devices as proposed in paragraph (f)(6).

Section 238.113 Emergency Window Exits

This section would be amended to require markings and instructions for emergency window exits to comply with the APTA marking standards that FRA is proposing to incorporate by reference in this rulemaking in § 238.125. The inspection requirement related to marking of emergency window exits currently contained in § 239.107(b) would also be added to this section. FRA believes these changes will enhance the reliability of markings for locating and instructions for operating emergency window exits.

Existing requirements in parts 223 and 239 for the marking of emergency exits, as well as existing requirements in part 238 for the marking of emergency communications transmission points, specify the use of luminescent materials. (Door exits intended for emergency egress may also be lighted, in accordance with § 239.107(a)(1).) Part 238 defines ''luminescent material'' as material that absorbs light energy when ambient levels of light are high and emits this stored energy when ambient levels of light are low, making the material appear to glow in the dark. *See* 49 CFR § 238.5. Paragraph (d) would continue to require that luminescent material be used to mark emergency window exits. However, as further discussed below, FRA is proposing to incorporate, by reference, in § 238.125 APTA Standard SS–PS–002–98, Rev. 3, ''Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment.'' The APTA standard would establish specific criteria for luminescent material, including how bright the material must be and how long it must stay luminescent. The APTA standard also contains specific design requirements to facilitate recognition and reliability, including letter size and color contrast requirements as well as requirements for door locator signs to facilitate identification of door locations that may not be easily seen by seated passengers.

FRA is proposing to move the existing emergency window exit testing requirements contained in § 239.107(b)

to a new paragraph (e) in this section. Generally, emergency window exits are intended to supplement door exits, which are normally the preferred means of egress in an emergency situation. Emergency windows provide an alternative means of emergency egress should doors be rendered inoperable or inaccessible. They also provide an additional means of egress in life-threatening situations requiring very rapid exit, such as a fire on board or submergence of the car in a body of water. The requirement to periodically test a representative sample of emergency window exits arose from EO No. 20 and is being carried forward from § 239.107 into this new proposed paragraph.

Section 238.114 Rescue Access Windows

This section would be amended to add the APTA marking standards that are being proposed for incorporation by reference in this rulemaking in § 238.125 to the existing rescue access windows requirements. Proposed paragraph (d) continues to require that retroreflective material be used to mark rescue access windows. However, as further discussed below, FRA is proposing to incorporate by reference an APTA standard into § 238.125 that would establish specific criteria to maintain optimum retroreflective properties of the base material.

As noted above in the discussion of emergency window exits, § 238.125 proposes to incorporate by reference APTA Standard SS–PS–002–98, Rev. 3, ''Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment.'' The APTA standard contains detailed criteria for marking rescue access windows, including the use of retroreflective material. FRA invited comment on whether the criteria in the APTA standard or in other existing standards for marking rescue access windows were appropriate for use in the PTES final rule. *See* 71 FR 50292. While no written comments were received on this issue, both the Task Force and the Working Group for the first PTES rulemaking recommended that FRA add the criteria to the final rule. In order to maintain the optimum retroreflective properties of the base material, any retroreflective markings that have ink or pigment applied should utilize a translucent or semi-translucent ink, as per the manufacturer's instructions. A clear coat that protects against ultra-violet light may be added to prevent fading. Retroreflectivity requirements shall be met if protective coatings or other materials for the enhancement of sign durability are used.

FRA believes that adopting the APTA standard will increase the quality and reliability of the retroreflective materials used in rescue access windows and doors. This section was originally prompted in part by the April 23, 2002 collision involving a Metrolink passenger train near Placentia, CA, and the ensuing NTSB Safety Recommendation (R–03–21) to FRA, which illustrated the potential importance of having rescue access windows on each level of a passenger car. The general intent of the provision is to provide a means for emergency responders to quickly identify and effectively operate rescue access windows in order to gain access directly into every passenger compartment on every level of a passenger car, in the event that a stairway or interior door is compromised and exterior doors are blocked. The enhanced quality and reliability of the retroreflective material are intended to ensure the markings and instructions remain conspicuous and legible taking into consideration the environment in which passenger trains operate.

Section 238.115 Emergency Lighting

To enhance the performance of emergency lighting in passenger cars, FRA proposes to expand the application of this section to all passenger cars, and modify the emergency lighting requirements by incorporating by reference APTA Standard SS–E–013–99, Rev. 1 (October 7, 2007) Standard for Emergency Lighting Design for Passenger Cars, or an alternative standard providing at least an equivalent level of safety if approved by FRA pursuant to § 238.21. This section currently contains requirements for emergency lighting in passenger cars ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002. Incorporating this APTA standard for all passenger cars would enhance the existing standards for new passenger cars and establish standards for passenger cars both ordered before September 8, 2000, and placed in service before September 9, 2002. Part 238 requires minimum illumination levels at doors, aisles, and passageways. In addition to those locations, the APTA emergency lighting standard requires minimum levels of emergency illumination for stairways, crew areas of multiple-unit (MU) locomotives and cab cars, toilets, and other areas.

The existing requirements in part 238 related to emergency lighting require a ''back-up power system'' capable of operating in all equipment orientations within 45 degrees of vertical, as well as after the initial shock of certain collision or derailment scenarios. The car's main car battery is considered an acceptable ''back-up power system.'' A main car battery is limited in its ability to provide power in equipment orientations greater than 45 degrees of vertical. Additionally, because it is common for such batteries to be at least partially located below the car body, it would not be unusual for the main car battery to be damaged in the event of a derailment and render the emergency lighting system inoperable as occurred in the MARC train cab car that was involved in the 1996 accident in Silver Spring. For equipment ordered on or after April 7, 2008 or first placed in service on or after January 1, 2012, the 2007 APTA lighting standard requires an independent power source to be located within the car body and placed no more than a half-car length away from the fixture it powers in the event the main car battery is not able to power the system. This system must also be capable of operating in all equipment orientations. The APTA emergency lighting standard contains additional design and performance criteria for batteries that are used as independent power sources. It also contains rigorous requirements for periodic testing of batteries used as independent power sources.

Existing § 238.307 requires railroads to perform periodic mechanical inspections of passenger equipment, including passenger cars. The periodic mechanical inspection requires the inspection of interior and exterior mechanical components not less frequently than every 184 days. As part of this inspection the railroad is required to verify that all emergency lighting systems are in place and operational as specified in § 238.115. The APTA emergency lighting standard contains more detailed periodic inspection and maintenance related to emergency lighting. The APTA standard requires that periodic tests to confirm the minimum illumination levels and duration be conducted no less frequently than every eight years. A representative sample of cars or areas must be tested. However, if the first two cars or areas exceed the minimum illumination levels by a factor of 4 or greater, no further testing is required. Importantly, the APTA standard also requires railroads to replace each sealed battery that is used as an independent power source for an emergency light circuit at two-year intervals, unless equipped with controllers that

automatically prevent unnecessary battery discharge or other measures are taken to prevent routine discharge (*e.g.,* maintaining equipment on wayside power or HEP). If so equipped, the APTA standard requires that the battery-replacement interval shall be according to manufacturer's specifications, or if not specified, at least every five years. For emergency lighting systems that use capacitors as independent power sources, a functional test of the devices shall be conducted as part of the periodic inspection. Due to their long life, the two-year replacement requirement does not apply to capacitor-based energy storage devices. However, a functional test of the devices shall be conducted as part of the periodic inspection. The APTA standard also requires initial verification tests on at least one representative car or area of a car for each emergency lighting system layout to ensure compliance with the minimum duration and illumination levels. The Task Force, APTA, and its member railroads, have invested considerable time and effort in developing industry standards that address emergency lighting in passenger cars. FRA has reviewed the industry standards it proposes to incorporate by reference in this rule and has determined that the standards contain the proper specifications for emergency lighting in passenger cars. FRA believes that compliance with the APTA standard requirements identified in this section will help ensure effective operation of emergency lighting in new passenger cars. Establishment of requirements for older existing equipment will help ensure emergency lighting systems are capable of providing sufficient illumination for passengers to retain situational awareness in the event normal lighting is not available, particularly in the event of an emergency situation. FRA expects that almost all affected railroads are already in compliance with the APTA standard requirements. Some railroads, including railroads that are not members of APTA, are not currently in compliance with the APTA standard requirements. To allow railroads that are not currently in compliance with the APTA standard requirements enough time to comply with the requirements, FRA will delay implementation of the requirements for one year from the effective date of the final rule in this proceeding.

Section 238.121 Emergency Communications

To clarify existing paragraph (a)(2), FRA proposes to insert the word ''after'' directly before the date ''April 1, 2010.'' The previous omission of the word ''after'' in the existing paragraph was a typographical error. The existing language is intended to identify cars ordered on or after April 1, 2010, and not only cars ordered on April 1, 2010. As such, the clarification would not result in substantive change to the existing requirements contained in this section.

Proposed paragraph (b)(2) applies the requirements for luminescent materials proposed to be incorporated in § 238.125 for emergency signage markings, to the existing requirements for luminescent material at intercom locations in existing paragraph (b)(2). Existing paragraph (b)(2) requires that the location of each intercom intended for passenger use be clearly marked with luminescent material and that legible and understandable operating instructions be posted at or near each such intercom to facilitate passenger use. The Task Force recommended an effective date of April 1, 2010, for this requirement. However, to allow for sufficient implementation time, FRA is not using this date. This proposed paragraph would become effective on the date the rule becomes effective. This proposed paragraph also makes clear that photoluminescent markings that were installed in accordance with the February 1, 2008 PTES rule are, and would remain, in compliance for the first 2 years following the effective date of the rule, as recommended by the Task Force.

Proposed paragraph (c) continues to require that PA and intercom systems on all new Tier I passenger cars and all Tier II passenger trains have back-up power for a minimum period of 90 minutes. An example of a back-up power source is the main battery in a passenger car. The only change FRA is proposing is to clarify the applicability of this paragraph, which was originally added by the February 1, 2008 PTES final rule without any express applicability dates. FRA intended that the back-up power requirements have the same applicability dates as those for intercom systems in the February 1, 2008 final rule. That is, paragraph (c) applies to each Tier I passenger car ordered on or after April 1, 2008, or placed in service for the first time on or after April 1, 2010, and to all Tier II passenger cars. While FRA believes that the application of paragraph (c) is understood from a reading of this section as a whole, adding these dates will remove any confusion that may arise.

Section 238.123 Emergency Roof Access

This proposal would amend paragraph (e) to include the APTA standard for marking emergency roof access and providing retroreflective material and instructions that is being proposed for inclusion in this rulemaking in § 238.125. Existing paragraph (e) contains requirements for marking, and providing instructions for, emergency roof access locations. Currently, each emergency roof access location is required to be conspicuously marked with retroreflective material of contrasting color, and legible and understandable instructions must be provided near the emergency roof access location. The retroreflective material is intended to enable emergency responders to quickly identify the access locations by shining a light on the roof, and the instructions are intended to facilitate the proper use of the emergency roof access by emergency responders. To maximize the potential use of the required retroreflective material and instruction for emergency roof access, this rulemaking would apply the proposed requirements of § 238.125, which incorporates APTA's standard for retroreflective material by reference. APTA and its member railroads have invested considerable time and effort in developing industry standards that address retroreflective material in passenger cars. FRA has reviewed the industry standards it proposes to incorporate in this rule and has determined that the standards contain the proper specifications for retroreflective material in passenger cars. FRA believes that compliance with the APTA standard identified in this section will ensure that the retroreflective material markings for emergency roof access are conspicuous and instructions are legible and thus facilitate emergency responder access to passenger cars.

Section 238.125 Marking and Instructions for Emergency Egress and Rescue Access

To enhance the performance of emergency signage and markings for egress and access in passenger cars, FRA proposes to modify the emergency signage and markings for egress and access requirements by incorporating by reference APTA Standard SS–PS–002–98, Rev. 3 (authorized on October 7, 2007), Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment. This proposal would also permit use of an alternative standard providing at least an equivalent level of

safety if approved by FRA pursuant to § 238.21.

Generally, the APTA signage standard requires that each passenger rail car have interior emergency signage to assist passengers and train crewmembers in locating and operating emergency exits in order to safely evacuate from the rail car or train, and exterior signage to assist emergency responders in locating and operating emergency access points, during an emergency situation that warrants passenger rail car or train evacuation. Passenger railroads recognize that, in the majority of emergency situations, the safest place for passengers and crew is on the train. Should evacuation from a particular car be required, the safest course of action for passengers and crew is normally to move into an adjacent car. This avoids or minimizes the hazards inherent with evacuating passengers onto the railroad right-of-way. The standard was designed to offer flexibility in application, as well as to achieve the desired goal of facilitating passenger and crew egress from potentially life threatening situations in passenger rail cars. Individual railroads have the responsibility to design, install and maintain an emergency signage system that is compatible with their internal safety policies for emergency evacuation, while complying with the performance criteria specified in this APTA standard. The APTA signage standard requirements would improve upon the existing standards by increasing the overall efficacy of the signage providing evacuation guidance for passengers and train crew members and rescue access guidance for emergency responders. The existing Federal requirements related to signage require that the signage be legible and conspicuous. The APTA standard specifies requirements related to signage including: recognition, design requirements, location, size, color and contrast, materials, and others. Incorporation of more detailed APTA signage standard requirements would help ensure that emergency egress points are easily identified and operated by passengers and train crew members to evacuate a passenger car during an emergency.

Existing § 238.307 requires railroads to perform periodic mechanical inspections of passenger equipment, including passenger cars. The periodic mechanical inspection requires the inspection of interior and exterior mechanical components not less frequently than every 184 days. As part of this inspection the railroad is required to verify that all safety-related signage is in place and legible. *See* §§ 238.305(c)(7) and 238.307(c)(12) . The APTA standard specifies more detailed periodic inspection and maintenance related to signage. Notably, as with the LLEPM standard, the signage standard requires railroads to verify that all emergency signage system components function as intended. Section 10.2.1.2 of the APTA Signage Standard addresses photoluminescent (including HPPL) systems, and requires railroads to:

- Conduct tests and inspections in conformance with the requirements of APTA SS—I & M—005–98, Rev. 2, Standard for Passenger Compartment Periodic Inspection and Maintenance;
- Conduct periodic tests and inspections to verify that all emergency signage system components, including power sources, function as intended;
- Test a representative sample of passenger rail cars/areas, in accordance with Sections 10.2.1.1 and 10.2.1.2 (of the APTA Signage Standard) using procedures in Annex F of the Standard or another statistically valid documented sampling method; and
- Conduct periodic illuminance tests to confirm that photoluminescent components receive adequate charging light no less frequently than once every 8 years, with the first test conducted no later than 8 years after the car was placed in service for the first time:
- HPPL signs/markings placed in areas designed or maintained with normal light levels of less than 5 fc.; and
- Grandfathered PL materials, where the sign/marking in placed in an area designed or maintained with normal light levels of less than 10 fc. If all of the illuminance levels in the first two randomly selected representative sample cars/areas exceed the minimum required to charge the photoluminescent components required by this Standard by at least a factor of 2, no further testing is required for the cars/areas represented by the sample car/area tested for the periodic inspection cycle.

The Task Force, APTA, and its member railroads have invested considerable time and effort in developing industry standards that address emergency signage and markings for egress and access in passenger cars. FRA has reviewed the industry standard it proposes to incorporate by reference and has determined that the standard contains the proper specifications for emergency signage and markings for egress and access that will allow passenger car occupants to identify and operate emergency exits and emergency responders to identify and operate rescue access points. FRA believes that compliance with the APTA standard identified in this section will ensure effective use of emergency signage and markings for egress and access in passenger cars. FRA expects that almost all affected railroads are already in compliance with the APTA standard requirements. Some railroads, including railroads that are not members of APTA, are not currently in compliance with the APTA standard requirements. To allow railroads that are not currently in compliance with the APTA standard requirements enough time to comply with the requirements, FRA will delay implementation of the requirements for one year from the effective date of the final rule in this proceeding.

Section 238.127 Low-Location Emergency Exit Path Marking

To facilitate passenger car evacuation, particularly under conditions of darkness and smoke, FRA proposes to incorporate by reference APTA's low-location emergency exit path marking standard: APTA SS–PS–004–99, Rev. 2 (authorized on October 7, 2007), Standard for Low-Location Exit Path Marking. This proposal would also permit use of an alternative standard providing at least an equivalent level of safety if approved by FRA pursuant to § 238.21.

Generally, the APTA standard was developed to establish minimum requirements for low-location exit path marking (LLEPM) in both existing and new passenger cars to provide visual guidance for passengers and train crewmembers to identify, reach, and operate primary exits during conditions of darkness when the emergency lighting system has failed or when smoke conditions obscure overhead emergency lighting. This standard requires that each passenger rail car have an LLEPM system, visible in the area from the floor to a horizontal plane 4 feet (1.22 m) above the aisle of the rail car to direct passengers to exit the affected car to the adjacent car (or, at the option of the railroad, off the train). This LLEPM system, located in or near the rail car floor, is intended to assist passengers and train crewmembers in identifying the path to exit the rail car in an emergency under conditions of darkness and especially smoke.

The APTA LLEPM standard would complement the existing emergency signage requirements by increasing the overall efficacy of such systems to enable passengers and train crew members to locate, reach, and operate emergency exits under a greater range of emergency situations, particularly life-threatening circumstances involving smoke. Existing Federal requirements require that the signage be legible and

conspicuous. Much like the APTA signage standard, the APTA LLEPM standard specifies requirements related to the selection of the physical characteristics, informational content, and placement of LLEPM systems for installation within passenger railcars to provide consistent identification of both primary and secondary exits, under certain conditions, and the path(s) to follow to reach such exits.

Existing § 238.307 requires railroads to perform periodic mechanical inspections of passenger equipment, including passenger cars. The periodic mechanical inspection requires the inspection of interior and exterior mechanical components not less frequently than every 184 days. As part of this inspection the railroad is required to verify that all vestibule steps are illuminated. *See* § 238.305(c)(9). The APTA LLEPM standard specifies additional periodic inspection and maintenance related to LLEPM signage and markings. Notably, the periodic inspection requirement in the APTA LLEPM standard requires railroads to conduct periodic inspections and tests to verify that all LLEPM system components, including power sources, function as intended. Like the APTA signage standard, it requires railroads to test a representative sample of passenger rail cars or areas using a statistically-valid, documented sampling method.

The Task Force, APTA, and its member railroads have invested considerable time and effort in developing industry standards that address low-location emergency exit path markings in passenger cars. FRA has reviewed the industry standard it proposes to incorporate in this rule and has determined that the standard contains the proper specifications for low-location emergency exit path markings. FRA believes that compliance with the APTA standard identified in this section will help ensure that passenger car occupants are able to identify, reach, and operate primary egress points during an emergency. FRA expects that almost all affected railroads are already in compliance with the APTA standard requirements. Some railroads, including railroads that are not members of APTA, are not currently in compliance with the APTA standard requirements. To allow railroads that are not currently in compliance with the APTA standard requirements enough time to comply with the requirements, FRA will delay implementation of the requirements for one year from the effective date of the final rule in this proceeding.

Section 238.235 Doors

FRA proposes to remove § 238.235. The existing door requirements in this section would be moved to § 238.112. The substantive requirements would remain the same, and would be moved only for user convenience. Proposed § 238.112 would consolidate into one section, all existing door requirements from §§ 238.235, 238.439, and 239.107 that apply, as specified, to all passenger cars. Because all of the requirements in § 238.235 would be moved to § 238.112, no requirements would remain in § 238.235.

Section 238.305 Interior Calendar Day Mechanical Inspection of Passenger Cars

FRA proposes clarifying existing paragraph (a), and adding new paragraphs (c)(11) and (13) to address the inspection of removable panels and windows in vestibule doors and certain other interior doors, as well as the inspection of low-location emergency exit path markings. Paragraph (c)(11) would contain requirements for ensuring that low-location emergency exit path markings required by § 238.127 are in place and conspicuous.

Proposed paragraph (a) would correct an erroneous cross-reference. The existing paragraph contains an erroneous cross-reference to paragraph (d) of this section, which was caused by a previous redesignation of the original paragraph (d). *See* 65 FR 41284, 41308; July 3, 2000. Paragraph (a) currently identifies equipment that requires an interior calendar day inspection and references paragraph (d) as the providing exceptions to the requirement. However, current paragraph (d) does not address when the inspection is required, whereas current paragraph (e) does. FRA is proposing to correct the cross reference by changing the cross-reference within paragraph (a), from (d) to (e).

Paragraph (c)(13) proposes requirements for ensuring that removable panels and windows in vestibule doors and other interior doors used for passage through a passenger car are properly in place and secured, based on a visual inspection performed during the interior calendar day mechanical inspection. This paragraph also affords flexibility for handling noncompliant equipment, provided that the railroad has developed and follows written procedures for mitigating the hazard(s) caused by the noncomplying condition and the train crew is given written notification of the defect and a record of the time and date the defect was discovered is maintained. Thus, a passenger car with an inoperative or nonfunctioning removable panel or window is permitted to remain in passenger service until no later than the car's fourth interior calendar day mechanical inspection or next periodic mechanical inspection required under § 238.307, whichever occurs first, or for a passenger car used in long-distance intercity train service until the eighth interior calendar day mechanical inspection or next periodic mechanical inspection required under § 238.307, whichever occurs first, after the noncompliant condition is discovered. At that time, the removable panel or window would have to be repaired, or the car would have to be removed from service.

This existing section currently contains the requirements related to the performance of interior calendar day mechanical inspections of passenger cars (*e.g.,* passenger coaches, MU locomotives, and cab cars) each calendar day that the equipment is used in service. Paragraph (c) identifies the various components that require visual inspection as part of the interior calendar day mechanical inspection. Inspection, testing, and maintenance of emergency systems will help ensure that these systems are either available for use in the event of an emergency, or that the train crew is aware that they are not available. This will allow for more effective and safe resolution of emergency situations. The proposed modification would also allow flexibility for operating equipment in passenger service with certain noncompliant conditions. The operational flexibility will give railroads sufficient time to repair the equipment without undue disruption to normal operations.

Section 238.307 Periodic Mechanical Inspection of Passenger Cars and Unpowered Vehicles Used in Passenger Trains

FRA proposes the modification of this section to add requirements for inspecting and repairing removable panels, removable windows, manual override devices, and door retention mechanisms, in accordance with § 238.112, as well as low-location emergency exit path markings required by § 238.127. FRA is also proposing to relocate the existing requirement for inspecting and repairing emergency window exits in § 239.107 to this section. In this regard, FRA would continue to require that records of emergency window exit inspection, testing, and maintenance be retained for two calendar years after the end of the calendar year to which they relate, as currently required by § 239.107(c). FRA

is concerned in particular that sufficient records be kept of periodic emergency window exit testing, which FRA is proposing to move from § 239.107(b) to § 238.113(e). Inspection, testing, and maintenance of emergency systems will help ensure that these systems are available for use in the event of an emergency. This will allow for more effective and safe resolution of emergency situations.

Section 238.311 Single Car Test

FRA proposes amending this section to reflect the present name of APTA, ''American Public Transportation Association''; and its present address at 1666 K Street NW., Washington, DC 20006. This section's reference to APTA as the ''American Public Transit Association,'' located at 1201 New York Avenue NW., Washington, DC 20005, has become outdated. No substantive change to the requirement of this section is intended. The APTA standard referenced in this section remains the same.

Section 238.439 Doors

This section currently contains the requirements for doors on Tier II passenger cars. As noted, FRA is generally proposing to consolidate the requirements of this section, along with those in its Tier I counterpart (§ 238.235), into a single section applicable to both Tier I and Tier II equipment: § 238.112, Specifically, FRA is proposing to remove current paragraphs (a), (b), (e), and (g), which would then be addressed by the requirements of new § 238.112. The remaining paragraphs (c), (d), and (f) would then be redesignated as paragraphs (a) through (c), and current paragraph (f) would also be revised. Current paragraphs (c) and (d) have no counterpart in the Tier I equipment requirements and would remain in this section. Paragraph (c) currently requires the status of powered, exterior side doors to be displayed to the crew in the operating cab and, if door interlocks are used, the sensors to detect train motion must nominally be set to operate at not more than 3 mph. Paragraph (d) currently requires that powered, exterior side doors be connected to an emergency back-up power system. Both would remain as redesignated paragraphs (a) and (b).

Paragraph (f) currently requires passenger compartment end doors to be equipped with a kick-out panel, pop-out window, or other means of egress in the event the doors will not open, or be so designed as to pose a negligible probability of becoming inoperable in the event of car body distortion following a collision or derailment. This paragraph does not apply to such doors providing access to the exterior of a trainset, however, as in the case of an end door in the last car of a train. Paragraph (f) would be redesignated as paragraph (c) and revised to limit its applicability to Tier II passenger cars both ordered prior to the effective date of the final rule in this rulemaking proceeding and placed in service within four years after the effective date of the same final rule. Accordingly, this proposal would effectively limit the current requirement to existing Tier II passenger cars; all new Tier II passenger cars would be subject to the more stringent requirement in § 238.112 related to equipping cars with a kick-out panel, pop-out window, or other similar means of egress. To date, no such arrangement has been placed in a Tier II passenger car, on the basis that the doors pose a negligible probability of failure following a collision or derailment. As proposed, § 238.112 would require that such features be installed in new passenger cars without providing for a showing as to how the doors perform in the event of a collision or derailment.

Section 238.441 Emergency Roof Access

This rulemaking proposes to amend existing paragraphs (a) and (c) to include the APTA emergency signage standard requirements for retroreflective material and instruction, proposed in this rulemaking in § 238.125. Existing paragraphs (a) and (c) contain requirements for marking, and providing instructions for, emergency roof access locations in passenger cars ordered prior to April 1, 2009, and placed in service prior to April 1, 2011, and all power cars. Each emergency roof access location is required to be conspicuously marked with retroreflective material of contrasting color, and legible and understandable instructions must be provided near the emergency roof access location. The retroreflective material is intended to enable emergency responders to quickly identify the access location(s) by shining a light on the roof, and the instructions are intended to facilitate the proper use of the emergency roof access feature(s) by emergency responders. To enhance the potential use of the required retroreflective material, markings, and instructions for emergency roof access, this rulemaking would apply the requirements of § 238.125, which would incorporate by reference the APTA standard for retroreflective material. APTA and its member railroads have invested considerable time and effort in developing industry standards that address retroreflective material for passenger cars. FRA has reviewed the industry standards it proposes to incorporate in this rule and has determined that the standards specify the proper retroreflective material for passenger cars. FRA believes that compliance with the APTA standard identified in this section will help ensure that retroreflective material and instructions for emergency roof exits will enable emergency responders to gain access to occupants in passenger cars.

Appendix A to Part 238—Schedule of Civil Penalties

Appendix A to part 238 contains a schedule of civil penalties for use in connection with this part. FRA intends to revise the schedule of civil penalties in issuing the final rule to reflect revisions made to part 238. 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). Nevertheless, commenters are invited to submit suggestions to FRA describing the types of actions or omissions for each proposed regulatory section that would subject a person to the assessment of a civil penalty. Commenters are also invited to recommend what penalties may be appropriate, based upon the relative seriousness of each type of violation.

B. Proposed Amendments to Part 239, Subpart B

Section 239.105 Debriefing and Critique

This section would clarify the existing debriefing and critique requirements by expressly requiring train crew participation in debrief and critique sessions. Currently, a debriefing and critique session is required after each passenger train emergency situation or full-scale simulation to determine the effectiveness of the railroad's emergency preparedness plan, and the railroad is required to improve or amend its plan, or both, as appropriate, in accordance with the information developed. The debriefing and critique is intended to be an opportunity to evaluate the effectiveness of the emergency preparedness plan. Employees directly involved in the emergency situation or full-scale simulation, have valuable first-hand knowledge of the event. Participation by these employees in the debriefing and critique is necessary to adequately evaluate the effectiveness of the emergency preparedness plan. FRA

proposes to clarify the language of the existing requirement to reflect this necessary participation. As such, the proposed language would specify that to the extent practicable, all on-board personnel, control center personnel, and any other employees involved in the emergency situation or full-scale simulation shall participate in the session. The section would also be clarified with respect to the flexibility for employees to participate in the debrief and critique sessions in person, offsite via teleconference, or in writing, by a statement responding to question provided prior to the session, and by responding to any follow-up questions.

Section 239.107 Emergency Exits

FRA is proposing to remove § 239.107 and move the existing requirements that are contained in this section into proposed §§ 238.112 and 238.307. Existing requirements that are contained in § 239.107 and are related to doors would be moved to proposed § 238.112. Existing requirements that are contained in § 239.107 and are related to windows would be moved to proposed § 238.307. FRA believes that the consolidation of these requirements will make the regulation more user-friendly, which will help facilitate compliance with its requirements. FRA does not intend to make substantive changes to the requirements contained in this section in moving them to new sections. Of course, FRA does note that it is proposing to amend the requirements for emergency exits as discussed in this rule.

Appendix A to Part 239—Schedule of Civil Penalties

Appendix A to part 239 contains a schedule of civil penalties for use in connection with this part. FRA intends to revise the schedule of civil penalties in issuing the final rule to reflect revisions made to part 239. 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). Nevertheless, commenters are invited to submit suggestions to FRA describing the types of actions or omissions for each proposed regulatory section that would subject a person to the assessment of a civil penalty. Commenters are also invited to recommend what penalties may be appropriate, based upon the relative seriousness of each type of violation.

VIII. Regulatory Impact and Notices

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

This proposed rule has been evaluated in accordance with existing policies and procedures and determined to be non-significant under both Executive Order 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 proposed rule. As part of the regulatory evaluation, FRA has assessed quantitative estimates of the cost streams expected to result from the implementation of this proposed rule. For the 20-year period analyzed, the estimated quantified cost that would be imposed on industry totals $21.8 million with a present value (PV, 7 percent) of $13.4 million.

FRA considered the industry costs associated with complying with the three APTA standards, installation of removable panels or windows in single-panel vestibule door of new passenger cars, requirements for bi-parting vestibule doors as well as inspection, testing, and maintenance. The range of total cost estimates depends mostly on whether voluntary implementation of the APTA standards; SS–E–013–99, Rev. 1 Standard for Emergency Lighting System Design for Passenger Cars; SS–PS–004–99, Rev. 2 Standard for Low-Location Exit Path Marking; and SS–PS–002–98, Rev. 3 Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment, in this proposed rule are considered as a cost of the rulemaking. Many railroads have already implemented these APTA standards in advance of this NPRM. .

FRA believes that $13.4 million is the most appropriate estimate of regulatory cost. For more details on the costing, please see the Regulatory Evaluation found in the docket. The requirements that are expected to impose the largest burdens relate to emergency lighting, door/removable panels or windows (or bi-parting doors), and emergency egress and rescue access marking and instructions. The table below presents the estimated costs associated with the proposed rulemaking.

20-Year Cost for Proposed Rule

Door/Removable Panels or Windows, and Bi-Parting Doors	$4,399,223
Emergency Lighting	2,450,213
Emergency Egress and Rescue Access Marking and Instructions	4,730,631
Low-Location Emergency Exit Path Markings	1,377,615
Debriefing and Critique	N/A
Inspection, Testing, and Recordkeeping (APTA Standards)	405,296
Total	13,362,979

Future costs are discounted to present value using a 7 percent discount rate.

As part of the Regulatory Evaluation, FRA has explained what the likely benefits for this proposed rule would be, and provided a break-even analysis. The proposed rulemaking is expected to improve railroad safety by promoting the safe evacuation of passengers and crewmembers in the event of an emergency. The primary benefits include a heightened safety environment in egress from a passenger train after an accident. This corresponds to a reduction of casualties and fatalities in the aftermath of an accident or other emergency situations. FRA believes the value of the anticipated safety benefits would justify the cost of implementing the proposed rule.

B. Initial Regulatory Flexibility Act and Executive Order 13272

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 *et seq.*) and Executive Order 13272 (67 FR 53461; August 16, 2002) require agency review of proposed and final rules to assess their impact on small entities. An agency must prepare an initial regulatory flexibility analysis (IRFA) unless it determine and certifies that a rule, if promulgated, would not have a significant impact on a substantial number of small entities. FRA has not determined whether this proposed rule would have a significant impact on a substantial number of small entities. Therefore, FRA is publishing this IRFA to aid the public in commenting on the potential small business impacts of the proposed requirements in this NPRM. FRA invites all interested parties to submit data and information regarding the potential

economic impact on small entities that would result from adoption of the proposals in this NPRM. FRA will consider all comments received in the public comment process when making a final determination.

The proposed rule would apply to commuter and intercity passenger railroads. Based on information currently available, FRA estimates that less than 2 percent of the total railroad installation costs associated with implementing the proposed rule would be borne by small entities. Based on analysis that uses generally conservative assumptions, FRA estimates that the cost for the proposed rule will range between $21.8 million and $40.8 million for the railroad industry. There are two passenger railroads that would be considered small for purposes of this analysis and together they comprise less than 7 percent of the railroads impacted directly by this proposed regulation. Both of these railroads would have to make some investment to meet the proposed requirements. These small railroads have much smaller fleets that the average passenger railroad, allowing them to meet the proposed requirements at lower overall costs. Thus, although a substantial number of small entities in this sector would likely be impacted, the economic impact on them would likely not be significant. This IRFA is not intended to be a stand-alone document. In order to get a better understanding of the total costs for the railroad industry, which forms the basis for the estimates in this IRFA, or more cost detail on any specific requirement, please see the Regulatory Evaluation that FRA has placed in the docket for this rulemaking.

In accordance with the Regulatory Flexibility Act, an IFRA must contain:

(1) A description of the reasons why the action by the agency is being considered.

(2) A succinct statement of the objectives of, and legal basis for, the proposed rule.

(3) A description—and, where feasible, an estimate of the number—of small entities to which the proposed rule will apply.

(4) A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirements and the types of professional skills necessary for preparation of the report or record.

(5) An identification, to the extent practicable, of all relevant federal rules that may duplicate, overlap, or conflict with the proposed rule.

1. Reasons for Considering Agency Action

Experience with passenger train accidents and simulations, and technological advances in emergency systems provide the main impetus for these proposed enhancements and additions to FRA's existing requirements related to passenger train emergency systems. Incorporation by references of these APTA standards into Part 238 would extend their applicability to all commuter and intercity passenger railroads and make them enforceable by FRA.

As FRA was issuing comprehensive Federal standards for passenger train safety in the late 1990s, APTA was also developing and authorizing complementary industry standards applicable to its commuter and intercity passenger railroad members. By design, three of these APTA standards taken together represent an effective systems approach to enable passengers and train crewmembers to locate, reach, and operate emergency exits, thereby facilitating safe evacuation in an emergency. The APTA standards address emergency lighting, signage for emergency egress and access, and low-location exit path markings. While the three APTA standards contain specific requirements, they allow for flexibility in the application of those requirements. The Emergency Preparedness Task Force was charged with reviewing the standards. After careful review, the Task Force recommended revising the standards to address relevant evolving technology, and incorporating them by reference in their entirety into the Federal regulations.

2. A Succinct Statement of the Objectives of, and Legal Basis for, the Proposed Rule

The purpose of this rulemaking is to further the safety of passenger train occupants through both enhancements and additions to FRA's existing requirements for emergency systems on passenger trains. As discussed in the Regulatory Evaluation, FRA is proposing incorporate three APTA standards covering emergency lighting; emergency egress and rescue access signage; and low-location emergency exit path markings for all passenger cars. For new passenger cars, FRA is also proposing requiring vestibule doors and other interior doors intended for passage through a passenger car to be equipped with removable panels or windows or bi-parting doors. The substance of this proposed regulation was developed by the RSAC's Passenger Safety Working Group. In addition, FRA is clarifying requirements for debriefing and critique following emergency situations and simulations.

In November of 1994, Congress adopted the Secretary's schedule for implementing rail passenger equipment safety regulations and included it in the Federal Railroad Safety Authorization Act of 1994 (the Act), Public Law 103–440, 108 Stat. 4619, 4623–4624 (November 2, 1994). Congress also authorized the Secretary to consult with various organizations involved in passenger train operations for purposes of prescribing and amending these regulations, as well as issuing orders pursuant to them. Section 215 of the Act (codified at 49 U.S.C. 20133).

3. A Description of, and Where Feasible, an Estimate of Small Entities to Which the Proposed Rule Would Apply

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 proposed rule would directly affect commuter and intercity passenger railroads. It would indirectly impact manufacturers of passenger cars, emergency egress and rescue access related marking, and low-location emergency exit path marking .

''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 ''small entities'' 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

There are only two intercity passenger railroads, Amtrak and the Alaska Railroad. Neither is considered to be a small entity. Amtrak is a Class I railroad and the Alaska Railroad is a Class II railroad. The Alaska Railroad is owned by the State of Alaska, which has a population well in excess of 50,000.

The level of costs incurred by each organization should generally vary in proportion to either the size of their passenger car fleet. For instance, railroads with fewer passenger cars would have lower overall costs associated with implementing the proposed standards. There are currently 28 commuter railroad operations in the U.S. Most commuter railroads are part of larger transportation organizations that receive Federal funds and serve major metropolitan areas with populations greater than 50,000. However, two commuter railroads do not fall in this category and are considered small entities. The impact of the two small railroads is discussed in the following section.

4. A Description of the Projected Reporting, Recordkeeping, and Other Compliance Requirements of the Rule, Including an Estimate of the Class of Small Entities That Will Be Subject to the Requirements and the Type of Professional Skill Necessary for Preparation of the Report or Record

For a thorough presentation of cost estimates, please refer to the Regulatory Evaluation, which has been placed in the docket for this rulemaking.

FRA notes that the requirements contained in this proposed rule were developed in consultation with an RSAC Working Group and task force that included representatives from Amtrak, individual commuter railroads, individual passenger car manufacturers, sign manufacturers and suppliers, and APTA, which represents the interests of commuter railroads and passenger car manufacturers in regulatory matters.

The first small entity that would be impacted by this proposal is a commuter train operation that is an express service to and from a sporting event. It is owned by a Class III freight railroad that owns and operates the 6 bi-level passenger cars used for this commuter operation. The impacts on this entity could include upgrades related to achieving compliance with the 2007 APTA standards for emergency lighting, emergency signage, and low-location exit path markings. The initial costs associated with completing these upgrades for the railroad is estimated to range between $14,482 and $28,694 depending on the existing level of compliance and could be spread over 2 to 3 years. Since this railroad provides service under contract to a State institution, it could be able to pass some or all of the compliance cost on to that institution. Thus, the small entity itself would not be significantly impacted.

The second small entity is a commuter railroad that is owned by a Class III railroad. This entity is fully compliant with existing passenger railroad regulations. Out of its entire fleet of 9 cars, FRA estimates that 4 cars may need emergency lighting upgrades to comply with the emergency lighting requirement. The costs associated with the upgrades of these four cars are estimated to be $18,758, which could be spread over 2 to 3 years.

The proposed rule would require railroads to test a representative sample of passenger railcars in accordance with the APTA LLEPM standard, using the procedures in Annex F or another statistically valid documented sampling method. The estimated cost of an inspection/record keeping is $1,500 per car over the 20-year period analyzed. This cost was included in the total costs for each of the small entities above. By following the proposed regulation, only a small percentage of the fleet would need to be tested. Due to the size of the fleet of each of these small entities, it is estimated only one car would be tested in each of the fleets. The record keeping burden to the railroad industry is estimated to be approximately 5 additional minutes per new car introduced to the fleet. FRA assumed that a ''Maintenance of Equipment & Stores'' [1] personnel would have the professional skills to prepare the records. Neither of these railroads is operating newly build cars. They both operate cars purchased from other passenger railroads.

FRA believes that the two small entities directly impacted would not be impacted significantly. One of the entities probably would be able to pass these costs onto a public entity that contracts to use the small entity's equipment for fall sporting events. The other entity would likely only need to upgrade the emergency lighting in four cars, and the FRA does not believe that will be a significant financial impact on their operations.

5. An Identification, to the Extent Practicable, of All Relevant Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rule

FRA is not aware of any relevant federal rules that may duplicate, overlap or conflict with the proposed rule.

FRA invites all interested parties to submit data and information regarding the potential economic impact that would result from adoption of the proposals in this NPRM. FRA will consider all comments received in the public comment process when making a determination.

C. Paperwork Reduction Act

The information collection requirements in this proposed 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 new and current information collection requirements and the estimated time to fulfill each requirement are as follows:

CFR Section	Respondent universe (railroads)	Total annual responses	Average time per response	Total annual burden hours
238.112—Doors (New) —Conspicuously marking/posting instructions on emergency egress doors.	28	45,804 markings/Instructions.	15 minutes	11,451

[1] Surface Transportation Board (STB) Data Statement No. A–300 for Year 2009 indicates that ''Maintenance of Equipment & Stores'' personnel earn, on average, a ''straight time rate'' of $25.25 per hour.

CFR Section	Respondent universe (railroads)	Total annual responses	Average time per response	Total annual burden hours
—Marking/posting instructions on emergency responder access doors.	28	30,536 markings	15 minutes	7,634
—Marking/posting instructions on removable panel in car vestibule doors.	28	1,340 panel markings.	15 minutes	335
238.113—Emergency window exits				
—Markings (Current requirement)	28	662 markings	60 min./90 min./120 min.	964
238.114—Rescue access windows				
—Markings/instructions on each access window (Current Requirement).	28	1,092 markings	45 minutes	819
238.121—Emergency Communications: Intercom System				
—Posting legible/understandable operating instructions at/near each intercom (Current requirement).	28	116 marked intercoms.	5 minutes	10
238.123—Emergency roof access				
—Marking/instructions of each emergency roof access (Current requirement).	28	232 marked locations.	30 minutes	116
238.303—Exterior calendar day mechanical inspection of passenger equipment				
—Replacement markings of rescue access related exterior markings, signs, instructions (Current requirement).	28	150 marking	20 minutes	50
238.303—Records of non-complying conditions (Current requirement).	28	150 records	2 minutes	5
238.305—Interior calendar day inspection of passenger cars				
—Non-complying end/side doors: Written notification to crew of condition + notice on door.	28	260 written notifications + 260 notices.	1 minute	9
—Non-complying public address/intercom systems: Written notification to crews.	28	300 written notifications.	1 minute	5
—Records of public address/intercom system non-complying conditions (Current requirements).	28	300 records	2 minutes	10
—*New requirement*				
—Written procedure for mitigating hazards of non-complying conditions relating to removable panels/windows in vestibule doors.	28	28 written Procedures.	40 hours	1,120
—Written notification to train crew of non-complying condition relating to panels/windows in vestibule doors.	28	458 notices	2 minutes	15
238.307—Periodic mechanical inspection of passenger cars				
—Records of the inspection, testing, and maintenance of emergency window exits (New requirement).	28	7,634 car inspections/Records.	5 minutes	636
—Emergency roof markings and Instructions—replacements (Current requirement).	28	32 markings	20 minutes	11
238.311—Single car test (Current Requirements)				
—Copies of APTA Standard SS–M–005–98 to Railroad Head Training Person.	28	28 copies	15 minutes	7
—Copies to Other Railroad Personnel	28	336 copies	2 minutes	11

All estimates include the time for reviewing instructions; searching existing data sources; gathering or maintaining the needed data; and reviewing the information.

Pursuant to 44 U.S.C. 3506(c)(2)(B), FRA solicits comments concerning: whether these information collection requirements are necessary for the proper performance of the functions of FRA, including whether the information has practical utility; the accuracy of FRA's estimates of the burden of the information collection requirements; the quality, utility, and clarity of the information to be collected; and whether the burden of collection of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology, may be minimized. For information or a copy of the paperwork package submitted to OMB, contact Mr. Robert Brogan, Office of Safety, Information Clearance Officer, at (202) 493–6292, or Ms. Kimberly Toone, Office of Information Technology, at (202) 493–6139.

Organizations and individuals desiring to submit comments on the collection of information requirements should direct them to Mr. Robert Brogan or Ms. Kimberly Toone, Federal Railroad Administration, 1200 New Jersey Avenue SE., 3rd Floor, Washington, DC 20590. Comments may also be submitted via email to Mr. Brogan or Ms. Toone at the following address: *Robert.Brogan@dot.gov; Kimberly.Toone@dot.gov.*

OMB is required to make a decision concerning the collection of information requirements contained in this proposed 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. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

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. 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 the final rule. The OMB control number, when assigned, will be announced by separate notice in the **Federal Register**.

D. Federalism Implications

Executive Order 13132, ''Federalism'' (64 FR 43255, Aug. 10, 1999), requires FRA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' are defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Under Executive Order 13132, the agency may not issue a regulation with federalism implications that imposes substantial direct compliance costs and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, the agency consults with State and local governments, or the agency consults with State and local government officials early in the process of developing the regulation. Where a regulation has federalism implications and preempts State law, the agency seeks to consult with State and local officials in the process of developing the regulation.

This NPRM has been analyzed in accordance with the principles and criteria contained in Executive Order 13132. This proposed rule would not have a substantial effect on the States or their political subdivisions; it would not impose any direct compliance costs; and it would not affect the relationships between the Federal government and the States or their political subdivisions, or the distribution of power and responsibilities among the various levels of government. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply. Nevertheless, State and local officials were involved in developing this proposed rule. The RSAC, which recommended the proposals addressed in this NPRM, has as permanent members two organizations directly representing State and local interests, AASHTO and ASRSM.

However, this proposed rule could have preemptive effect by operation of law under certain provisions of the Federal railroad safety statutes, specifically the former Federal Railroad Safety Act of 1970 (former FRSA), repealed and recodified at 49 U.S.C. 20106, and the former Locomotive Boiler Inspection Act at 45 U.S.C. 22–34, repealed and recodified at 49 U.S.C. 20701–20703. The former FRSA 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. Moreover, the former LIA has been interpreted by the Supreme Court as preempting the field concerning locomotive safety. *See Napier* v. *Atlantic Coast Line R.R.,* 272 U.S. 605 (1926).

E. 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. 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 are excluded.

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.

F. Unfunded Mandates Reform Act of 1995

Pursuant to Section 201 of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 2 U.S.C. 1531), each Federal agency ''shall, unless otherwise prohibited by law, assess the effects of Federal regulatory actions on State, local, and tribal governments, and the private sector (other than to the extent that such regulations incorporate requirements specifically set forth in law).'' Section 202 of the Act (2 U.S.C. 1532) further requires that ''before promulgating any general notice of proposed rulemaking that is likely to result in the promulgation of any rule that includes any Federal mandate that may result in expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any 1 year, and before promulgating any final rule for which a general notice of proposed rulemaking was published, the agency shall prepare a written statement'' detailing the effect on State, local, and tribal governments and the private sector. This monetary amount of $100,000,000 has been adjusted to $143,100,000 to account for inflation. This proposed rule would not result in the expenditure of more than $143,100,000 by the public sector in any one year, and thus preparation of such a statement is not required.

G. Privacy Act

FRA wishes to inform all interested parties that anyone is able to search the electronic form of any written communications and comments received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). Interested parties may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477) or visit *http://www.dot.gov/privacy.html.*

List of Subjects

49 CFR Part 238

Passenger equipment, Railroad safety, Reporting and recordkeeping requirements.

49 CFR Part 239

Passenger equipment, Railroad safety.

For the reasons discussed in the preamble, FRA proposes to amend parts 238 and 239 of chapter II, subtitle B of title 49, Code of Federal Regulations as follows:

PART 238—[AMENDED]

1. The authority citation for part 238 continues to read as follows:

Authority: 49 U.S.C. 20103, 20107, 20133, 20141, 20302–20303, 20306, 20701–20702, 21301–21302, 21304; 28 U.S.C. 2461, note; and 49 CFR 1.49.

2. Section 238.5 is amended by adding definitions of ''End-frame door'' and ''Vestibule door,'' and by revising the definitions of ''APTA'' and ''Vestibule'' in alphabetical order to read as follows:

§ 238.5 Definitions.

* * * * *

APTA means The American Public Transportation Association.

* * * * *

End-frame door means an end-facing door normally located between, or adjacent to, the collision posts or similar end-frame structural elements.

* * * * *

Vestibule means an area of a passenger car that normally does not contain seating, is located adjacent to a side exit door, and is used in passing from a seating area to a side exit door.

Vestibule door means a door separating a seating area from a vestibule. End-frame doors and doors separating sleeping compartments or similar private compartments from a passageway are not vestibule doors.

* * * * *

3. Section 238.112 is added to read as follows:

§ 238.112 Doors.

Except as provided in § 238.439—

(a) Each powered, exterior side door in a vestibule that is partitioned from the passenger compartment of a passenger car shall have a manual override device that is:

(1) Capable of releasing the door to permit it to be opened without power from inside the car;

(2) Located adjacent to the door which it controls; and

(3) Designed and maintained so that a person may readily access and operate the override device from inside the car without requiring the use of a tool or other implement. If the door is dual-leafed, only one of the door leaves is required to respond to the manual override device.

(b) Each Tier I passenger car ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002, and all Tier II passenger cars shall have a minimum of two exterior side doors, one in each side of the car. Each such door shall provide a minimum clear opening with dimensions of 30 inches horizontally by 74 inches vertically. A set of dual-leafed doors is considered a single door for purposes of this paragraph. Each powered, exterior side door on each such passenger car shall have a manual override device that is:

(1) Capable of releasing the door to permit it to be opened without power from both inside and outside the car;

(2) Located adjacent to the door which it controls; and

(3) Designed and maintained so that a person may access the override device from both inside and outside the car without requiring the use of a tool or other implement.

Note: The Americans with Disabilities Act (ADA) Accessibility Specifications for Transportation Vehicles also contain requirements for doorway clearance (*See* 49 CFR part 38).

(c) A manual override device used to open a powered, exterior door may be protected with a cover or a screen capable of removal without requiring the use of a tool or other implement.

(d) All doors intended for emergency egress shall be conspicuously and legibly marked on the inside of the car, and legible and understandable instructions shall be provided for their use, as specified in § 238.125.

(e) All doors intended for access by emergency responders shall be marked on the exterior of the car with retroreflective material, and legible and understandable instructions shall be posted at or near each such door, as specified in § 238.125.

(f) *Vestibule doors and other interior doors intended for passage through a passenger car.* The requirements of this paragraph apply only to passenger cars ordered on or after (DATE 60 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE **Federal Register**), or placed in service for the first time on or after (1520 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE **Federal Register**).

(1) *General.* Except for a door providing access to a control compartment and a bi-parting door, which is subject to the requirements in paragraph (f)(3) of this section, each vestibule door and any other interior door intended for passage through a passenger car shall be equipped with a removable panel or removable window in the event the door will not open in an emergency, or the car is on its side and the door is difficult to open. If the door is powered, it shall have a manual override device that conforms with the requirements of paragraphs (f)(4) through (f)(6) of this section.

(2) *Removable panels and windows.*

(i) *Ease of operability.* Each removable panel or window shall be designed to permit rapid and easy removal from both the vestibule and the passenger seating area during an emergency situation without requiring the use of a tool or other implement.

(ii) *Dimensions.* Removal of the panel or window shall create an unobstructed opening in the door with minimum dimensions of 21 inches horizontally by 28 inches vertically.

(iii) *Location.* Each removable panel or removable window shall be located so that the lowest point of the opening created by removing the panel or window is no higher than 18 inches from the floor.

(3) *Bi-parting doors.* Each powered, bi-parting vestibule door and any other interior, powered bi-parting door intended for passage through a passenger car shall be equipped with a manual override device and mechanism to retain each door leaf in the open position (*e.g.,* ratchet and pawl, or sprag). Each manual override device shall conform with the requirements of paragraphs (f)(4), (f)(5)(ii), and (f)(6) of this section.

(4) *Manual override devices.* Each manual override device shall be:

(i) Capable of releasing the door or door leaf, if door is bi-parting, to permit it to be opened without power;

(ii) Located adjacent to the door or door leaf, if door is bi-parting, it controls; and

(iii) Designed and maintained so that a person may readily access and operate the override device from both the vestibule and the passenger seating area without the use of any tool or other implement.

(5) *Marking and instructions.*

(i) Each removable panel or window in a vestibule door shall be conspicuously and legibly marked with luminescent material on both the vestibule side of the door and the passenger seating area side of the door, to facilitate passenger egress in an emergency situation, as specified in section 5.4.2 of APTA Standard SS–PS–002–98, Rev. 3, ''Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment,'' October 2007, or an alternative standard providing at least an equivalent level of safety, if approved by FRA pursuant to § 238.21. Legible and understandable operating instructions shall be posted on both the vestibule and the passenger seating area sides of the door at each such panel or window.

(ii) Each manual door override device and each retention mechanism shall be conspicuously and legibly marked with luminescent material. Legible and understandable operating instructions for each manual override device and each retention mechanism shall be

posted at or near each such device or mechanism.

(6) *Testing.* At an interval not to exceed 184 days, as part of the periodic mechanical inspection, a railroad shall test a representative sample of the removable panels, removable windows, manual override devices, and door retention mechanisms on its cars to determine that they operate as intended. The sampling method must conform to a formalized statistical test method.

4. Section 238.113 is amended by revising paragraph (d) and adding new paragraph (e) to read as follows:

§ 238.113 Emergency window exits.

* * * * *

(d) *Marking and instructions.*

(1) Each emergency window exit shall be conspicuously and legibly marked with luminescent material on the inside of each car to facilitate egress, as specified in § 238.125.

(2) Legible and understandable operating instructions, including instructions for removing the window, shall be posted at or near each such window exit, as specified in § 238.125. If window removal may be hindered by the presence of a seatback, headrest, luggage rack, or other fixture, the instructions shall state the method for allowing rapid and easy removal of the window, taking into account the fixture(s), and this portion of the instructions may be in written or pictorial format.

(e) At an interval not to exceed 184 days, as part of the periodic mechanical inspection, a railroad shall test a representative sample of emergency window exits on its cars to determine that they operate as intended. The sampling method must conform to a formalized statistical test method.

5. Section 238.114 is amended by revising paragraph (d) to read as follows:

§ 238.114 Rescue access windows.

* * * * *

(d) *Marking and instructions.*

(1) Each rescue access window shall be marked with retroreflective material on the exterior of each car as specified in § 238.125. A unique and easily recognizable symbol, sign, or other conspicuous marking shall also be used to identify each such window.

(2) Legible and understandable window-access instructions, including instructions for removing the window, shall be posted at or near each rescue access window as specified in § 238.125.

6. Section 238.115 is revised to read as follows:

§ 238.115 Emergency lighting.

After [DATE ONE YEAR AFTER EFFECTIVE DATE OF THE FINAL RULE], emergency lighting shall be provided in each passenger car in accordance with the minimum requirements specified in APTA Standard SS–E–013–99, Rev. 1, ''Standard for Emergency Lighting System Design for Passenger Cars,'' October 2007, or an alternative standard providing at least an equivalent level of safety if approved by FRA pursuant to § 238.21.

7. Section 238.121 is amended by revising the first sentence of paragraph (a)(2), paragraph (b)(2), and the introductory text of paragraph (c) to read as follows:

§ 238.121 Emergency communications.

(a) * * *

(2) *New Tier I and all Tier II passenger cars.* Each Tier I passenger car ordered on or after April 1, 2008, or placed in service for the first time on or after April 1, 2010, and all Tier II passenger cars shall be equipped with a PA system that provides a means for a train crewmember to communicate by voice to passengers of his or her train in an emergency situation. * * *

(b) * * *

(2) *Marking and instructions.* The following requirements apply to each Tier I passenger car on or after April 1, 2010, and to all Tier II passenger cars. Legible and understandable operating instructions shall be posted at or near each such intercom, and the location of each intercom intended for passenger use shall be conspicuously marked with luminescent material that either:

(i) Meets the minimum requirements as specified in § 238.125, or an alternative standard providing at least an equivalent level of safety if approved by FRA pursuant to § 238.21; or

(ii) For material installed prior to [DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE], meets the requirements specified in paragraph (b)(2) of this section in effect on April 1, 2008 (*see* 49 CFR parts 200–299, revised as of October 1, 2008).

(c) *Back-up power.* PA and intercom systems in Tier I passenger cars ordered on or after April 1, 2008, or placed in service for the first time on or after April 1, 2010, and in all Tier II passenger cars shall have a back-up power system capable of—

* * * * *

8. Section 238.123 is amended by revising paragraph (e) to read as follows:

§ 238.123 Emergency roof access.

* * * * *

(e) *Marking and instructions.* As specified in § 238.125—

(1) Each emergency roof access location shall be conspicuously marked with retroreflective material of contrasting color; and

(2) Legible and understandable instructions shall be posted at or near each emergency roof access location.

9. Section 238.125 is added to read as follows:

§ 238.125 Marking and instructions for emergency egress and rescue access.

After [DATE ONE YEAR AFTER EFFECTIVE DATE OF THE FINAL RULE], emergency signage and markings shall be provided for each passenger car in accordance with the minimum requirements specified in APTA Standard SS–PS–002–98, Rev. 3, ''Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment,'' October 2007, or an alternative standard providing at least an equivalent level of safety, if approved by FRA pursuant to § 238.21.

10. Section 238.127 is added to read as follows:

§ 238.127 Low-location emergency exit path marking.

After [DATE ONE YEAR AFTER EFFECTIVE DATE OF THE FINAL RULE], low-location emergency exit path marking shall be provided in each passenger car in accordance with the minimum requirements specified in APTA Standard SS–PS–004–99, Rev. 2. ''Standard for Low-Location Exit Path Marking,'' October, 2007, or an alternative standard providing at least an equivalent level of safety, if approved by FRA pursuant to § 238.21.

§ 238.235 [Removed and reserved]

11. Section 238.235 is removed and reserved.

12. Section 238.305 is amended by revising paragraph (a), revising the introductory text of paragraph (c), adding paragraphs (c)(11) and (c)(13), and revising the introductory text of paragraph (d) to read as follows:

§ 238.305 Interior calendar day mechanical inspection of passenger cars.

(a) Except as provided in paragraph (e) of this section, each passenger car shall receive an interior mechanical inspection at least once each calendar day that it is placed in service.

* * * * *

(c) As part of the interior calendar day mechanical inspection, the railroad shall verify conformity with the following conditions, and nonconformity with any such condition renders the car defective when discovered in service, except as

provided in paragraphs (c)(8) through (c)(13) and paragraph (d) of this section.

* * * * *

(11) Low-location emergency exit path markings required by § 238.127 are in place and conspicuous.

* * * * *

(13) Removable panels and windows in vestibule doors and other interior doors used for passage through a passenger car are properly in place and secured, based on a visual inspection. A noncomplying passenger car may remain in passenger service until no later than the car's fourth interior calendar day mechanical inspection or next periodic mechanical inspection required under § 238.307, whichever occurs first, or for a passenger car used in long-distance intercity train service until the eighth interior calendar day mechanical inspection or next periodic mechanical inspection required under § 238.307, whichever occurs first, after the noncomplying condition is discovered, where it shall be repaired or removed from service; provided—

(i) The railroad has developed and follows written procedures for mitigating the hazard(s) caused by the noncomplying condition. The railroad's procedures shall include consideration of the type of door in which the removable panel or window is located, the manner in which the door is normally opened, and the risk of personal injury resulting from a missing, broken, or improperly secured removal panel or window; and

(ii) The train crew is provided written notification of the noncomplying condition.

(d) Any passenger car found not to be in compliance with the requirements contained in paragraphs (c)(5) through (c)(11) of this section at the time of its interior calendar day mechanical inspection may remain in passenger service until the car's next interior calendar day mechanical inspection where it must be repaired or removed from passenger service; provided, all of the specific conditions contained in paragraphs (c)(8) through (c)(10) of this section are met and all of the following requirements are met:

* * * * *

13. Section 238.307 is amended by revising paragraphs (c)(4), (c)(5), and (e)(1) to read as follows:

§ 238.307 Periodic mechanical inspection of passenger cars and unpowered vehicles used in passenger trains.

* * * * *

(c) * * *

(4) A representative sample of the following emergency systems properly operate: removable panels, removable windows, manual override devices, and door retention mechanisms, in accordance with § 238.112; and emergency window exits, in accordance with § 238.113. This portion of the periodic mechanical inspection may be conducted independently of the other requirements in this paragraph (c). Each railroad shall retain records of the inspection, testing, and maintenance of the emergency window exits for two calendar years after the end of the calendar year to which they relate.

(5) With regard to the following emergency systems:

(i) Emergency lighting systems required under § 238.115 are in place and operational; and

(ii) Low-location emergency exit path markings required under § 238.127 are operational.

* * * * *

(e) * * *

(1) A record shall be maintained of each periodic mechanical inspection required to be performed by this section. This record shall be maintained in writing or electronically, provided FRA has access to the record upon request. The record shall be maintained either in the railroad's files, the cab of the locomotive, or a designated location in the passenger car. Except as provided in paragraph (c)(4) of this section, the record shall be retained until the next periodic mechanical inspection of the same type is performed and shall contain the following information:

* * * * *

14. Section 238.311 is amended by revising paragraph (a) to read as follows:

§ 238.311 Single car test.

(a) Except for self-propelled passenger cars, single car tests of all passenger cars and all unpowered vehicles used in passenger trains shall be performed in accordance with either APTA Standard SS–M–005–98, ''Code of Tests for Passenger Car Equipment Using Single Car Testing Device,'' published March, 1998; or an alternative procedure approved by FRA pursuant to Sec. 238.21. The incorporation by reference of this APTA standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of the incorporated document from the American Public Transportation Association, 1666 K Street NW., Washington, DC 20006. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue SE., Washington, DC or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

* * * * *

15. Section 238.439 is amended by removing paragraphs (a), (b), (e), and (g), redesignating paragraphs (c), (d), and (f) as paragraphs (a) through (c), revising redesignated paragraph (c), and adding introductory text to read as follows:

§ 238.439 Doors.

In addition to the requirements of § 238.112—

* * * * *

(c) For a passenger car ordered prior to (60 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE **Federal Register**), and placed in service prior to (1520 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE **Federal Register**), a passenger compartment end door (other than a door providing access to the exterior of the trainset) shall be equipped with a kick-out panel, pop-out window, or other similar means of egress in the event the door will not open, or shall be so designed as to pose a negligible probability of becoming inoperable in the event of car body distortion following a collision or derailment.

16. Section 238.441 is amended by revising paragraphs (a) and (c) to read as follows:

§ 238.441 Emergency roof access.

(a) *Existing passenger cars and power cars.* Each passenger car and power car ordered prior to April 1, 2009 and placed in service for the first time prior to April 1, 2011, shall have a minimum of one roof hatch emergency access location with a minimum opening of 26 inches by 24 inches, or at least one structural weak point in the roof providing a minimum opening of the same dimensions, to provide access for properly equipped emergency response personnel. Each emergency roof access location shall be conspicuously marked, and legible and understandable operating instructions shall be posted at or near each such location. Such marking shall also conform to the requirements specified in § 238.125.

* * * * *

(c) *New power cars.* Each power car ordered on or after April 1, 2009, or placed in service for the first time on or after April 1, 2011, shall have a minimum of one emergency roof access location, with a minimum opening of 26 inches longitudinally by 24 inches

laterally, and comply with the emergency roof access requirements specified in § 238.123(b) and (d). Each emergency roof access location shall be conspicuously marked with retroreflective material of contrasting color meeting the minimum requirements specified in § 238.125, or an alternative standard providing at least an equivalent level of safety, if approved by FRA pursuant to § 238.21. Legible and understandable instructions shall be posted at or near each such location.

PART 239—[AMENDED]

17. Section 239.105 is amended by revising paragraph (a) to read as follows:

§ 239.105 Debriefing and critique.

(a) *General.* Except as provided in paragraph (b) of this section, each railroad operating passenger train service shall conduct a debriefing and critique session after each passenger train emergency situation or full-scale simulation to determine the effectiveness of its emergency preparedness plan, and shall improve or amend its plan, or both, as appropriate, in accordance with the information developed. The debriefing and critique session shall be conducted within 60 days of the date of the passenger train emergency situation or full-scale simulation. To the extent practicable, all on-board personnel, control center personnel, and any other employees involved in the emergency situation or full-scale simulation shall participate in the session either:

(1) In person;

(2) Offsite via teleconference; or

(3) In writing, by a statement responding to questions provided prior to the session, and by responding to any follow-up questions.

* * * * *

§ 239.107 [Removed and reserved]

18. Section 239.107 is removed and reserved.

Issued in Washington, DC, on December 19, 2011.

Joseph C. Szabo,

Administrator.

[FR Doc. 2011–33103 Filed 12–30–11; 8:45 am]

BILLING CODE 4910–06–P