FRA Passenger Rail Safety Initiatives and Regulatory Activities

2019 PRIIA NGEC ANNUAL CONFERENCE

DEVIN ROUSE, PE
DIRECTOR, PASSENGER RAIL DIVISION
Outline

- Recent Passenger Equipment Rulemaking
- Proposed Rulemakings
- Future Efforts
New Passenger Equipment Safety Standards (Tier III) Rule

WHAT IS IT?
2018 Passenger Equipment Safety Standards Rule

Published on November 21, 2018
(83 FR 59182, Nov. 21, 2018)

Primarily addresses two major issues:
1. Codifies requirements for trainsets using crash energy management (CEM) – based on 2011 Guidance
2. Establishes baseline design requirements for next generation of very high-speed trainsets (“Tier III”)

Developed from industry recommendations through Engineering Task Force (ETF) of the Railroad Safety Advisory Committee (RSAC)
Crashworthiness & Crash Energy Management

- Developed by FRA’s Engineering Task Force (ETF) with input from supply industry
- Based largely on EN 15227 and other governing international standards
- Provides more safety approaches and procurement options using proven international vehicle platforms
What is Tier III?

Tier III defines the requirements for next generation very high-speed trainsets

**Key features are:**
- Allows maximum authorized speeds of up to 220 mph
- Provides complete interoperability with conventional passenger & freight operations up to 125 mph
- Designed to harmonize with “service proven” international standards and design methodologies
- Follows on the inspection and maintenance regime established for service proven trainsets.
Tier III Regulatory Approach

**Guiding principle:** conceive performance-based regulations which accommodate existing service-proven designs **WITH MINIMUM MODIFICATIONS.**

**Approach:**

- **Systematic** – consider safety from a “system” perspective
- **Technology Neutral** – some metrics must be defined by the system and technology implemented, not prescribed

Rotary eddy current brake (courtesy of Wikipedia)
Vision:
Create passenger equipment regulatory environment incorporating "service proven" designs, advanced technology, and a systematic approach to safety.

Tier I – conventional & alternative crashworthiness, speeds up to 125mph

Tier II – 160 mph maximum authorized speed on existing ROW (i.e. NEC)

Tier III – interoperable w/ all tiers up to 125 mph, dedicated ROW up to 220 mph

Tier IV – Technology specific HSR projects and “other” technologies for insular systems. [proposed]
Proposed Rulemakings

CURRENTLY UNDER DEVELOPMENT
Passenger Equipment Regulatory Plan

Significant planned rules effecting passenger equipment

**Passenger Equipment Standards Rule 1:**
- Tier I alternative crashworthiness
- Tier III crashworthiness standards
- Codify Tier III Glazing
- Tier III Braking Systems
- Align Tier II MAS with Class 8 limit

**Passenger Equipment Standards Rule 2:**
- Tier III Safety Appliances & General Safety Requirements
- Tier III Inspection Testing & Maint.
- Single car/locomotive CEM
- Tier IV Definition
- Tier I safety appliances updates
- Electronics (hardware/software Safety) & Passenger ECP
- Compliance Testing/Documentation & Start-up Procedures
Passenger Equipment Rule 2 – under development

A second rulemaking governing passenger equipment safety standards has been under development since 2013

This rule is a complimentary expansion to the November 2018 rulemaking and will cover:

- Single car/locomotive CEM requirements;
- Tier III Inspection, Testing and Maintenance (ITM) requirements
- Updates to safety appliance requirements to address modern needs (including Tier III)
- Revisions to testing and commissioning process for new and rebuilt equipment designs
Single Car/Locomotive Crashworthiness

Updates current requirements for single car/locomotives to address CEM dynamics

Based on input from industry experts and suppliers through RSAC’s Engineering Task Force

Similar (but not identical) to what was done for trainset crashworthiness in November 2018 Rule
Revisions to Pre-revenue Service Testing & Commissioning

FRA is currently working with industry to update and refresh the passenger equipment testing and commissioning requirements (238.111)

The current proposal would:

- Separate the substantive requirements into two sections:
  1. 238.110 - Design criteria, testing, documentation, and approvals
  2. 238.111 - Pre-Revenue service acceptance testing (Dynamic)

The intent is to clarify exactly what is required and when – based on experience since 1999
Updates to Passenger Equipment Safety Appliance Standards

Addresses the need for more modern language governing passenger safety appliances

Designed to be an ‘option’ - may still choose traditional Part 231 compliance

Designed to eliminate a number of existing waivers (Rock Island Rule)

Clarifies some welding requirements

Eliminates appliances that are unnecessary with modern technology
Future Efforts

AND RELEVANT UPDATES
Reorganization of RSAC

In September 2018 the Railroad Safety Advisory Committee was re-established under a new charter.

Membership and administrative changes were made at the request of the Secretary consistent with changes to other DOT Federal Advisory Committees.

First resolution of the new RSAC was to continue the passenger safety regulatory work of the Engineering Task Force.

New working group activities will include:
- Finishing second ETF passenger equipment rulemaking; and
- Create a platform for addressing general passenger safety regulatory needs.
Thank you