Highlights Since Last Meeting: 2/20/15

- Technical Subcommittee Overview
- Document Management
- Vehicle Specification Current Versions
- Dual Mode Locomotive Specification
- Diesel Exhaust Fluid (DEF) Working Group
- Diesel-Electric Locomotive Procurement
- Bi-Level Car Procurement
- RVAAC/Accessibility Working Group
Technical Subcommittee Overview

• Membership
  – Core Team; Members from Amtrak, FRA and States
  – Industry Members; 258 Registered Participants

• Structure
  – Technical Working Groups; VTI, Structural, Electrical, Mechanical, Interiors, DTL and DEF

• Meetings
  – Subcommittee; Alternate Thursdays @ 3:00pm ET
  – Technical Working Groups; As Needed
Document Management - To Create Specifications

- Major PRIIA Technical Subcommittee Effort
- Technical Writer Support Contract Through AASHTO
- Change review process essentially the same for each document
Document Management – To Control Changes

Summary

Details
RCC-Revision Control Coordinator
DCC-Document Control Coordinator
DCB-Document Control Board
TSC-Technical Subcommittee
NGEC-Executive Board
Vehicle Specs: Current Versions

- Bi-Level: C.3 – 7/21/15
- Locomotive: A.1 – 12/9/14
- Single Level: A – 11/13/12
- Trainset: A – 12/10/13
- DMU: IR – 9/4/12
- Dual Mode Locomotive: IR – 2/2/16
Dual Mode (DM) Locomotive Specification
Dual Mode Locomotive Specification Development

• Requirements Document Initial Release
  – Approved by Executive Committee on December 6, 2011
• Requirements Document Rev A
  – Approved by Executive Committee on January 6, 2015
  – Provides Basis for Specification Details
• Develop First Draft Chapters 1/7/15 to 5/7/15
• TSC Open Comment Period 6/4/15 to 7/2/15
• Technical Subcommittee Approval 8/19/15
• Create Review Panel Review Spec vs. Req. Document
• Review Panel Approval 1/28/16
• Executive Committee Approval 2/2/16

2 Amtrak P-32DMs - Built 1998
DM- Amtrak, MNR & LIRR Service into New York City

Tracks with Over-running 3rd Rail, Under-running 3rd Rail, and Catenery Electrification in NYC Metropolitan Area

Legend:
- Under-running 3rd Rail - MNR
- Over-running 3rd Rail - LIRR & AMTK
- Catenery
- Catenery & Over-running 3rd Rail - LIRR & AMTK
- No Electrification
- No Electrification (NJT Catenary Lines are not indicated)

Data Source: NYSDOT Rail Program Delivery Bureau Various Railroad Employee Timetables
10 August 2015

Next Generation Equipment Committee (NGEC)
The NGEC will provide national leadership in standardization, acquisition, financing and management of passenger rail equipment.

AMTRAK
Metro-North Railroad
Long Island Railroad

Connecticut

New York

New Jersey

Poughkeepsie

Southeast

Wassaic

Wasserl

Danbury, CT

Waterbury, CT

New Haven, CT

New Canaan, CT

New York State

New Canaan, CT

Croton-Harmon

Grand Central Terminal

Penn Station New York

Over-Rail Bay

Huntington

Hicksville

Ronkonkoma

Jamaica

Bay Shore

Suffolk County

Suffolk County

Shoe on train

Insulated Cover

Shoe on train

Current Rail

Sleeper

Fixing

Bottom Contact

Contact with Cover
DM- Environmental and Operating Conditions Specification

- Original revised to include North East Corridor, Tunnel and Third Rail Information
- Technical Subcommittee Approval 9/24/15
- Executive Committee Approval 10/27/15
Operations & Performance

- Designed for interoperability with existing single level vehicles in mixed consists
- Designed to be integrated into existing fleet of locomotives with minimal impact or create stand alone new fleet
- Designed for operation requirements for New York City tunnels

- Sustained 110 mph capability in diesel-electric mode
- Sustained 80 mph capability in electric mode
- Designed for ability to make transition between propulsion modes while in motion
- Ability to draw power for both underrunning and overrunning 3rd rail
- Meets all FRA laws and regulations
Safety

- Designed for PRIIA crashworthiness and structural strength regulatory requirements
- Incorporates integrated crash energy management (CEM) features with coach mating push-back couplers
- Cab area design provides for emergency exit or ingress
- Compartmentalized fuel tank

Electrical/Comm

- Head End Power capacity of 800 kW @ 100% duty cycle
- Includes Positive Train Control (PTC) and Electronic Train Management System Requirements-cab signal and/or ATC
- Design provides for 27 pin MU Trainline and 27 pin Communications (digital train line for communications)
Environmental Initiatives  New Technology

- Designed for lowest possible weight and unsprung mass, weight optimization program
- Regenerative brake system, requires up to 80% of kinetic energy to be returned to power system
- EPA Tier IV compliant
- Diesel engine equipped with AESS system for fuel management

- Design provides for Crash Energy Management (CEM) energy absorbing couplers, deformable anticlimber
- Environmentally responsible, energy efficient, low weight, low noise and vibration, and energy efficient lighting
- Common design platform for possible electric power by overhead catenary system
UREA = CO(NH$_2$)$_2$
DEF = 32.5% UREA and 67.5% De-Ionized Water

- Led by Jennifer Bastian
- Estimated consumption for DEF has been reviewed
- Storage Requirements
  - Freezes at 12°F, Boils >212°F
  - Requires Special Materials because Corrosive
- Handling Requirements
  - Causes Damage to Aquatic Environments
Locomotive Procurement

- Led by Illinois DOT on behalf of Illinois, Michigan, Missouri, California and Washington
- 11 Locomotives currently in production
- Tier IV Compliant
- FDR is Complete
- Compression Test Passed
- Built by Siemens
Led by California on behalf of California, Illinois, Missouri, Michigan and Iowa. Procurement is for a total of 130 cars, made up of Coach, Cab, Café Lounge (CA) and Business Class (IDOT) Cars. Contract is with Sumitomo and manufacturer is Nippon-Sharyo.

- Cars feature Crash Energy Management, PTC and are capable of 125mph.
- Intermediate Design review is complete.
- Full size hard mock-ups of passenger seats, work tables and cab control compartment have been completed. Next milestone is the Final Design Review.
Accessibility Working Group

• Led by FRA
  – Melissa Shurland is the liaison between the Rail Vehicles Access Advisory Committee (RVAAC) and the PRIIA Accessibility Working Group
  – Bi-weekly updates provided to the Technical Subcommittee on recommendations for improved accessibility on rail vehicles.

• Efforts past year
  – Contract issued to conduct spatial study of AWG recommendations for restrooms and seating area
  – Participated in Full RVAAC meetings and subcommittees monthly calls
  – FRA will continue to work with Oregon State University to review the spatial impact of the on-board circulation and seating recommendations
Thank You

• NGEC Exec. Board
• Steve Hewitt
• Camren Cordell
• Tammy Krause
• Jeff Gordon
• Technical Working Group Leaders
• Technical Subcommittee Members
• Technical Support, Consultants & Industry Members