The Midwest Interstate Passenger Rail Commission AGM
The Charger Locomotive Procurement
September 28 & 29, 2016 in St Louis

Fast Facts
5 Customers, 91 locomotives (Multi States 71, AAF 21)

- Standardization
  - A common product across the country
  - 5 customers. IDOT, Caltrans, WSDOT, MARC, AAF

- High Performance and Efficiency
  - Speed. 125 mph with good acceleration
  - Emissions. Tier IV with a 90% improvement
  - Fuel efficiency. An improvement of 16%

- Maintainability and Reliability
  - Plug and play concept. High redundancy.

- Safety
  - Tier II carbody with crash energy management

- Local commitment
  - Fully buy America compliant. FRA & FTA.
Multi State Project Status

Overview
- Contract awarded in March 2014
- First article and FRA product readiness inspection achieved
- All locomotive safety tests completed.
- Acceptance testing completed at TTCI and on the NEC
- High speed tests completed at TTCI and on the NEC
- Tier IV EPA certification received in April 2016
- Production is progressing well with 16 locos through final assembly and 28 through carshell production

Primary Challenge
- Schedule retention. We have experienced some challenges but are confident of deliveries within the funding deadline.
- This will however require the support of the JPE’s

Acceptance Testing at TTCI Pueblo
Achieved speeds in excess of 135 mph with load
Acceptance Testing on the NEC
Well within FRA specified vehicle stability limits

We Recognize our Customers Needs

- **Ridership**  Intercity passenger rail ridership is at an all time high.
  We will get your passengers to their destinations faster and on time

- **Growth.** In the state of Illinois ridership has increased 85% on main routes.
  The Chicago to St. Louis route grew over 200% in the past 5 years

- **Environment.** A 90% improvement on emission. Low noise levels, very quite

- **Safety.** Cab safety cage with push back couplers

- **Efficiency.** Less fuel, regenerative braking, LED lighting

- **Maintenance.** Ease of equipment removal, limited double stacking

- **Reliability.** Proven system and component technology. High redundancy.

- **Monitoring and diagnostics.** Self monitoring with wayside capability

- **Comfort & Ergonomics.** Large free flowing operators cab design

- **Standardization.** Interoperability, interchangeability and supplier flexibility

- **Local commitment.** Manufactured in America using local suppliers
Together we will Succeed !!!!!

Thank you!

Charger Technical Characteristics

- Loco type: High speed with full streamlined carbody
- Power type: AC Diesel Electric
- Crashworthiness: CEM and AAR–S–580
- Configuration: Bo’ Bo’ single axle control
- Compatibility: all Amtrak DE and E Locomotives
- Environment: Amtrak environmental spec. 963
- Loco Length Couplers: 71'6" (21 655 mm)
- Loco Width: 10' (3022 mm)
- Loco Height: 14'6" (4385 mm)
- Bogie centers: 43' (13 050 mm)
- Axle centers: 118"
- Track gauge: 4’ 8.5” (1435 mm)
- Curve radius track: min 250 ft (coupled to 85 ft coach)
- Wheel diameter: new 44” worn 41”
### Charger Technical Main Data

- **Rated DE power**: max. 4400 hp at engine speed 1800 rpm
- **HEP power supply**: 800 kW (600 kW) (3AC 480 V), Redundant
- **Aux power supply**: ≤ 150 kW (3AC 480 V), Redundant
- **Starting tractive effort**: 65 000 lbs (290 kN)
- **Continuous tractive effort**: 61 800 lbs (275 kN)
- **Brake effort**: 27 000 lbs (120 kN)
- **Track super elevation**: 6” (9” design)
- **Weight**: 271 000 lbs (base)
- **Operating speed max**: max 125 mph
- **Design speed**: max 135 mph
- **Fuel Capacity**: max 2,200 gal (8400 liters)
- **Engine type**: 16 cylinder 4 stroke Type Cummins QSK95
- **Engine speed range**: 600 to 1800 rpm
- **Emission standard**: EPA Tier IV

### Design Approach

- **Robust design**, based on service proven equipment
- **Platform logic** allows customizing to accommodate long-distance, cab car and dual mode variants
- **High speed** (125 mph), high performance (4,400 HP max) and light weight (268,000 lbs)
- **Intelligent control system** assuring improved fuel economy, with lower LCC
- **Modular plug and play design** with improved maintenance, reliability and availability
- **High speed trucks**. Service proven high speed truck and drive system
- **High performance Cummins QSK 95 engine**, designed from ground up with EPA Tier IV+ in mind
- **Single axle AC traction control** offering optimum redundancy
- **Advanced monitoring and diagnostics** with onboard and remotely
- **100% HEP and auxiliary load redundancy**. Common inverter with traction
- **Bold appearance** while considering ease of maintenance and collision repair
- **NGEC Spec compliance**. Compliant with the NGEC PRIIA 305-005 technical specification
- **Advanced microprocessor control** with various PTC system combinations
Equipment Layout

Underfloor Equipment Layout
Siemens Locomotives in North America

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Σ 177 Locomotives On Order / Delivered

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