ATTACHMENT A

Scope of Work

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1. BACKGROUND / OVERVIEW

A. Virginia Railway Express (VRE) seeks to replace the electronic fuel injector assemblies utilized by its fleet of MP36PH-3C locomotives with new electronic fuel injector assemblies. VRE's passenger locomotives currently use fuel injector assemblies manufactured by Electro-Motive Diesel (EMD), the Original Equipment Manufacturer (OEM).

B. In June 2008, the Environmental Protection Agency (EPA) finalized a three-part program dramatically reducing emissions from diesel locomotives of all types including passenger rail. VRE's locomotives were manufactured by MotivePower, Inc. (MPI) in 2010 – 2011 and were subject to the Tier 2 requirements defined by the EPA as part of this program.

C. However, using new electronic fuel injectors marketed and sold as a Tier 1 injector by Electro-Motive Diesel (now Progress Rail), and other technology, MPI was able to configure, build, test and certify that VRE's locomotives met the Tier 2 requirements as defined by the EPA.

D. In accordance with EPA regulations, VRE must maintain and repair its locomotives as specified in the maintenance instructions provided by the certifying manufacturer. MPI identifies the electronic fuel injector as an emission-critical component that must be changed every three (3) years to maintain MPI's representations regarding emissions compliance.

2. GENERAL REQUIREMENTS

A. The Contractor shall provide all labor, supervision, equipment, material, and transportation necessary to furnish and deliver to VRE three hundred twenty (320) new electronic fuel injector assemblies for MP36PH-3C locomotives, EMD Part Number 40112933 or approved equal.

B. The electronic fuel injector assemblies shall be new, not remanufactured, overhauled, or an exchanged core unit and shall meet the criteria set forth in **ATTACHMENT F - MOTIVEPOWER, INC. (MPI) MP36PH-3C DIESEL LOCOMOTIVE MAINTENANCE MANUAL.**

C. The electronic fuel injector assemblies shall meet EPA's Tier 2 emissions performance standards for MPI's locomotive certification.

D. A core return program is required for this procurement as specified in Section 7 below.

E. The electronic fuel injector assemblies shall adhere to all applicable requirements of the current editions of the following:

i. 49 CFR 229, Railroad Locomotive Safety Standards

ii. 49 CFR 238, Passenger Equipment Safety Standards

iii. 40 CFR Parts 85, 89 and 92, Emission Standards for Locomotives and Locomotive Engines

3. SALIENT CHARACTERISTICS

A. The electronic fuel injector assemblies shall not degrade the engine performance, exhaust, or smoke emissions.

B. The electronic fuel injector assemblies must be compatible and fully functional with an MPI 16-645F3B-T2 diesel engine assembly installed in an MP36PH-3C locomotive using Grade 2 diesel fuel.

C. Each injector model shall have two (2) fuel line connections. One (1) line shall receive fuel from the fuel manifold and the other shall return excess fuel to the tank by the return line of the fuel manifold.

D. Each injector shall have internal plungers actuated by the engine camshaft and rocker arm mechanisms to pressurize and atomize the diesel fuel.

E. Metering and timing of each injector shall be controlled by a Heinzmann Electronic Fuel Injector Controller Model No. MVC01-20, which communicates with a QES-III Microprocessor.

F. Each injector shall have a unique serial number permanently stamped on the injector solenoid.

G. Each injector shall have a calibration code stamped near the serial number on the injector solenoid. The calibration code will be entered in the Heinzmann Electronic Fuel Injector Controller by VRE. VRE will adjust the injector's solenoid operation and poppet valve closure duration to compensate for mechanical tolerances which differ for each injector.

H. Each injector shall facilitate the ability to perform a "click" test using the Heinzmann Electronic Fuel Injector Controller via the QES-III Microprocessor. The "click" test shall be used when the engine is not running and shall verify the injector's solenoid can close the poppet valve that allows fuel to be pressurized and injected during normal engine operation.

I. The electronic fuel injector assemblies shall comply with all EPA regulations, including those required for Tier 2 emissions compliance, as

well as recommendations set forth by the OEM for fuel savings and smoke reduction.

4. **DELIVERY SCHEDULE**

A. All three hundred twenty (320) electronic fuel injector assemblies shall be delivered and invoiced to VRE within **two hundred seventy-five (275) consecutive calendar days** from the date set forth in the written Notice-To-Proceed (NTP) for this Contract.

B. The Contractor shall make preparations to ship, two (2) shipments, each containing one hundred sixty (160) electronic fuel injector assemblies, to VRE in accordance with Section 6 below.

C. The initial shipment of one hundred sixty (160) electronic fuel injectors shall be delivered to VRE within thirty (30) consecutive calendar days from the receipt of the NTP by the Contractor.

D. The final shipment shall be delivered within seventy-five (75) consecutive calendar days from the first shipment.

5. **SHIPMENT**

A. Shipments shall be FOB destination, freight prepaid and allowed.

B. Any damage incurred in shipping the electronic fuel injector assemblies to VRE is the sole responsibility of the Contractor.

C. In response to any damage that occurs during shipping, the Contractor shall replace each damaged electronic fuel injector within fifteen (15) consecutive calendar days.

D. A Purchase Order and written shipping release shall be obtained from VRE by the Contractor before shipping the electronic fuel injectors.

E. With each shipment to VRE, the Contractor shall include a packing list identifying each electronic fuel injector assembly included in the shipment by part number and serial number.

F. Deliveries shall be made between the hours of 9:00 A.M. and 4:00 P.M. Eastern Time, Monday through Friday (excluding Federal Observed Holidays), to the following location:

VRE Crossroads Maintenance and Storage Facility Warehouse
9400 Crossroads Parkway
Fredericksburg, VA 22408

G. With each shipment to VRE, the Contractor shall prepare its own packing list documenting the equipment by part number, serial number, and VRE Purchase Order number.

6. ELECTRONIC FUEL INJECTOR ASSEMBLY CORE RETURN

A. All electronic fuel injector cores will be packaged securely and shipped to the Contractor's designated ship-to address within sixty (60) consecutive calendar days of receipt and acceptance of each shipment (as specified in Section 4.C. and 4.D.) of new electronic fuel injector assemblies by VRE.

B. Each core return shipment from VRE will be accompanied by a Return Core Certification form. This form shall provide quantities and serial numbers of all fuel injector cores contained in each shipment to the Contractor.

C. Additionally, the Return Core Certification form confirms the receipt and acceptance of each electronic fuel injector core by the Contractor and must be signed by the Contractor's authorized personnel and returned to VRE within fifteen (15) calendar days of receipt.

D. All completed and signed Return Core Certification forms shall be returned by the Contractor to VRE's Manager of Operations Administration, Detrius Williams, at dwilliams@vre.org.

E. All testing and quality control of the returned cores shall be the responsibility of the Contractor.