State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER DE-10-004-03

Pursuant to the authority vested in the Air Resources Board (ARB) by the Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-02-003;

Relating to Exemptions under Section 27156 of the Vehicle Code, and Verification under Sections 2700 to 2711 of Title 13 of the California Code of Regulations (CCR)

Cleaire Advanced Emission Controls, LLC (Cleaire)
LongMile™ System

ARB has reviewed Cleaire's request for verification of the LongMile™ system (system). Based on an evaluation of the data provided and pursuant to the terms and conditions specified below, the Executive Officer of ARB hereby finds that the Cleaire LongMile™ system reduces emissions of diesel particulate matter (PM) consistent with a Level 3 Plus device (greater than or equal to an 85 percent reduction and meets the 2009 nitrogen dioxide emissions limit) (Title 13, CCR, Sections 2702 (f) and 2708). Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies the LongMile™ system as a Level 3 Plus system for heavy-duty on-road vehicles that use heavy-duty diesel engines from the engine families listed in Attachment 1.

The aforementioned verification is subject to the following terms and conditions:

- The engine must be originally manufactured from model year 1993 through 2006 and have an engine family name listed in Attachment 1.
- The engine must be used by an on-road motor vehicle with a manufacturer's Gross Vehicle Weight Rating of over 14,000 pounds.
- The application must have a duty cycle with a temperature profile greater than 260 degrees Celsius for at least 7 percent of the time.
- The engine must be in its original certified configuration.
- The engine may or may not employ exhaust gas recirculation.
- The engine may or may not be certified to have an original equipment manufacturer (OEM) diesel oxidation catalyst (DOC).
- The engine must not be certified to have an OEM diesel particulate filter (DPF).

- The engine must be certified for on-road applications at a PM emission level of at most 0.1 grams per brake horsepower-hour (g/bhp-hr), and greater than 0.01 g/bhp-hr.

- The engine's displacement must be between 5.3 and 16.0 liters, inclusive.

- The engine must have a four-stroke combustion cycle.

- The engine must be turbocharged.

- The engine must be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.

- Lube oil, or other oil, must not be mixed with the fuel.

- The engine must be operated on fuel that has a sulfur content of no more than 15 parts per million (ppm) by weight.

- The system must not be operated with fuel additives, as defined in Section 2701 of Title 13 of the CCR, unless explicitly verified for use with the fuel additive(s).

- The system must not be used with any other systems or engine modifications without ARB and manufacturer's approval.

- The DPF component of the system may be swapped among other systems with the same diesel emission control strategy family name if authorized by Cleaire. DPF swapping must be performed in accordance with Section 2706, Title 13, CCR, and the policy document found here: http://www.arb.ca.gov/diesel/verdev/swap/swap.htm

- The system may be re-designated in its entirety to other vehicles or equipment within a common ownership fleet if authorized by Cleaire. A system re-designation must be performed in accordance with Section 2706, Title 13, CCR, and the policy document found here: http://www.arb.ca.gov/diesel/verdev/swap/swap.htm

- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of the LongMile™ system, manufactured by Cleaire Advanced Emissions Controls of 14775 Wicks Boulevard, San Leandro, California, 94577, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore the LongMile™ system is exempt from the prohibitions in Section 27156 of the Vehicle Code for installation on heavy-duty on-road vehicles using engines listed in Attachment 1. This exemption is only valid provided the engines meet the aforementioned conditions.

The LongMile™ system consists of the following major system components, listed in order from exhaust inlet to outlet as they are arranged within the exhaust system of the vehicle: one inlet cone, one DOC, one sintered metal DPF, and one outlet cone. The LongMile™ system also includes a backpressure monitor and warning system. The major components of the LongMile™ system are identified in Attachment 2. Schematics of the approved product and engine labels are shown in Attachment 3.

The LongMile™ system is comprised of a single DOC and a single sintered metal DPF designed to filter the exhaust from a single engine. LongMile™ systems with multiple DPFs and/or multiple DOCs, including designs with two or more filter components canned together or multiple individually-canned filter components in parallel or in series (or any combination thereof), are not valid under this Executive Order. Channeling exhaust from a single engine through multiple LongMile™ systems, deployed in parallel or in series or any combination thereof, is also not valid under this Executive Order.

This Executive Order is valid provided that installation instructions for the LongMile™ system do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Cleaire must ensure that the installation of the LongMile™ system conforms to all applicable industrial safety requirements.

No changes are permitted to the device without the written approval of ARB. Changes from the verified design without written approval of ARB shall invalidate this Executive Order.

Changes made to the design or operating conditions of the LongMile™ system, as exempted by ARB, which adversely affect the performance of the vehicle's pollution control system, shall invalidate this Executive Order.

Marketing of the LongMile™ system using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior written approval is obtained from ARB.

This Executive Order shall not apply to any LongMile™ system advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

A copy of this Executive Order must be provided to the ultimate purchaser at the time of sale.

As specified in Section 2706(j) (Title 13, CCR) of the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Procedure), ARB assigns each diesel emission control strategy a family name. The designated family name for the verification as outlined above is:

CA/CLE/2010/PM3+/N00/ON/DPF01

As stated in the Procedure, Cleaire is responsible for recordkeeping requirements (Section 2702), honoring the required warranty (Section 2707), and conducting in-use compliance testing (Section 2709).

Proper engine maintenance is critical for the proper functioning of the diesel emission control strategy. The owner of the vehicle on which the diesel emission control strategy is installed is strongly advised to adhere to all good engine maintenance practices. Failure to document proper engine maintenance, including keeping records of the engine's oil consumption, may be grounds for denial of a warranty claim.

This Executive Order is valid provided that the diesel fuel used in conjunction with the device complies with Title 13, CCR, Sections 2281 and 2282, and if biodiesel is used, the biodiesel blend shall be 20 percent or less subject to the following conditions:

- The biodiesel portion of the blend complies with the American Society for Testing and Materials Specification D6751 applicable for 15 ppm sulfur content, and

- The diesel fuel portion of the blend complies with Title 13, CCR, Sections 2281 and 2282.

Other alternative diesel fuels such as, but not limited to, ethanol diesel blends and water emulsified diesel fuel are excluded from this Executive Order.

In addition to the foregoing, ARB reserves the right in the future to review this Executive Order and the exemption and verification provided herein to assure that the exempted and verified add-on or modified part continues to meet the standards and procedures of Title 13, CCR, Section 2222, et seq, and Title 13, CCR, Sections 2700 through 2711.

Systems verified under this Executive Order shall conform to all applicable California emissions regulations.

This Executive Order does not release Cleaire from complying with all other applicable regulations.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order.

This Executive Order hereby supersedes Executive Order DE-10-004-02 (dated June 16, 2011), Executive Order DE-10-004-01 (dated January 18, 2011), and Executive Order DE-10-004 (dated October 18, 2010).

Executed at El Monte, California, and effective this 20th day of June 2011.

Robert H. Cross, Chief
Mobile Source Control Division

Attachment 1: Table 1: ARB-Approved Engine Families for the Cleaire LongMile™ System

Table 2: ARB-Approved Engine Families with Special Considerations

Table 3: ARB-Approved Federal Engine Families for the Cleaire LongMile™

Attachment 2: Parts List for the Cleaire LongMile™ System

Attachment 3: Label for the Cleaire LongMile™ System