State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER DE-14-005-02

Pursuant to the authority vested in the California Air Resources Board (ARB) by Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code section 39515 and 39616 and Executive Order G-14-012;

This action relates to Verification under sections 2700 through 2711 of title 13 of the California Code of Regulations:

Miratech Group, LLC (Miratech)
MIRATECH® LTR™ DOC/DPF

ARB has reviewed Miratech's request for verification of the MIRATECH® LTR™ DOC/DPF. 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 MIRATECH® LTR™ DOC/DPF reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to 85 percent reductions) (California Code of Regulations (CCR), title 13, sections 2702 (f) and (g) and section 2708) and complies with the ARB January 1, 2009, nitrogen dioxide (NO_2) limit (CCR, title 13, section 2702 (f) and section 2706 (a)). Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies the MIRATECH® LTR™ DOC/DPF as a Level 3 Plus for use with stationary emergency standby generators using engine families listed in Attachment 1.

This verification is subject to the following terms and conditions:

- The engine must be used in a stationary application associated with emergency standby generators and rated greater than or equal to 50 horsepower (hp).
- The engine must be certified for use in California or certified by the United States Environmental Protection Agency and the engine must be in its original certified configuration.
- The engine must be certified Tier 1, Tier 2, Tier 3, Tier 4i with a rated horse power between 50 and 75 or over 750, or Tier 4 Alt 20% NOx and PM, nonroad or stationary diesel engine meeting 0.22 grams per brake horsepower hour (g/bhp-hr) diesel particulate matter (PM) or less based on certification or in-use emissions testing (as tested on an appropriate steady-state certification cycle outlined in the ARB off-road regulations – similar to ISO 8178 D2).
- The engine must not employ exhaust gas recirculation (EGR).
- The engine must not have a pre-existing oxidation catalyst.

- The engine must not have a pre-existing diesel particulate filter.
- The engine must not have a pre-existing selective catalytic reduction.
- The engine must be four-stroke.
- The engine can be turbocharged or naturally-aspirated.
- Miratech must review actual operating conditions (duty cycle, baseline emissions, and engine exhaust backpressure and temperature profiles, and other pre-installation compatibility assessments as required in section 2706 (t) of title 13, of the CCR) prior to retrofitting an engine with the MIRATECH® LTR™ DOC/DPF to ensure compatibility.
- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- The MIRATECH® LTR™ DOC/DPF must not be operated with fuel additives, as defined in section 2701 of title 13, of the CCR, unless explicitly verified for use with fuel additive(s).
- The other terms and conditions specified below.

Table 1: Conditions for the MIRATECH® LTR™ DOC/DPF

Parameter	Value
Application	Stationary Emergency Standby Power Generation
Size Range	Diesel engines rated greater than or equal to 50 hp
Engine Type	Diesel, with or without turbocharger, without EGR, mechanically or electronically controlled, Tier 1, Tier 2, Tier 3, Tier 4i with a rated horse power between 50 and 75 or over 750, or Tier 4 Alt 20% NOx and PM, certified to 0.22 g/bhp-hr or less of PM.
Minimum Exhaust Temperature for Filter Regeneration	260° Celsius / 500° Fahrenheit. At 550° Fahrenheit, regeneration takes approximately 45 minutes.
Maximum Consecutive Minutes Operating Below Passive Regeneration Temperature	720 Minutes
Number of Cold Start and 40 Minute Idle Sessions before Regeneration Required	18
Number of Hours of Operation Before Cleaning of Filter Required	Application Specific. 2000 Hours Typical.
Fuel	California diesel fuel with less than or equal to 15 ppm sulfur or a biodiesel blend provided that the biodiesel portion of the blend complies with ASTM D6751, the diesel portion of the blend complies with title 13 (CCR), sections 2281 and 2282, and the blend contains no more than 20 percent biodiesel by volume.
Verification Level	Level 3 Plus Verification: • PM - at least 85% reduction • NO_2 - meets January 2009 limit

This Executive Order is valid provided that installation instructions for MIRATECH® LTR™ DOC/DPF do not recommend tuning the engine to specifications different from those of the engine manufacturer. The product must not be used with any other systems or engine modifications without ARB and manufacturer approval.

The MIRATECH® LTR™ DOC/DPF is a passive diesel exhaust filter system. It consists of a filter housing, DOC, DPF, and monitoring system (backpressure sensor, temperature sensor, and a display unit that provides warnings when the filter becomes clogged or damaged).

Changes made to the design or operating conditions of MIRATECH® LTR™ DOC/DPF, as exempted by ARB, which adversely affect the performance of the engine's pollution control system, shall invalidate this Executive Order.

No changes are permitted to the MIRATECH® LTR™ DOC/DPF without ARB evaluation and approval. ARB must be notified in writing of any changes to any part of MIRATECH® LTR™ DOC/DPF. Failure to do so shall invalidate this Executive Order.

Marketing of the MIRATECH® LTR™ DOC/DPF using identification other than that shown in the Executive Order or for an application other than that listed in the Executive Order shall be prohibited unless prior approval is obtained from ARB.

As specified in the Diesel Emission Control Strategy Verification Procedure (CCR, title 13, section 2706 (j)), ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is:

CA/MES/2014/PM3+/N00/ST/DPF01

This designated family name must be used in reference to this Executive Order as part of the system labeling requirement. Labels attached to the MIRATECH® LTR™ DOC/DPF and the engine must be identical.

Proper engine maintenance is critical for the proper functioning of the diesel emission control strategy. The owner of the equipment 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.

The terms and conditions of this Executive Order must be satisfied regardless of where the system is sold in order for the system to be considered verified. Systems sold as verified, or which carry an ARB-approved label, must satisfy all the terms and conditions of this Executive Order.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Miratech is responsible for honoring the record keeping requirements (CCR, title 13, section 2702), their warranty (CCR, title 13, section 2707), conducting in-use compliance testing (CCR, title 13, section 2709), and complying with the system labeling requirements (CCR, title 13, section 2706 (j)).

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

Systems verified under this Executive Order shall conform to all applicable California emissions regulations. This Executive Order does not release Miratech from complying with all other applicable regulations.

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

Executive Order DE-14-005-01 is hereby superseded and is of no further force and effect.

Executed at Sacramento, California, this 27th day of July 2016.

Richard W. Corey
Executive Officer
by

Cynthia Marvin, Chief
Transportation and Toxics Division

Attachment 1