STATE OF CALIFORNIA

AIR RESOURCES BOARD

Proposed Evaluation Procedure for New Aftermarket Diesel Particulate Filters Intended as Modified Parts for 2007 Through 2009 Model Year On-Road Heavy-Duty Diesel Engines	**)**	**Hearing Date: April 22, 2016**

COMMENTS OF THE

TRUCK AND ENGINE MANUFACTURERS ASSOCIATION

April 18, 2016

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The Truck and Engine Manufacturers Association ("EMA") hereby submits its comments on the California Air Resources Board's ("CARB's") Notice of Public Hearing to consider proposed California Evaluation Procedures for New Aftermarket Diesel Particulate Filters Intended as Modified Parts for 2007 Through 2009 Model Year On-Road Heavy-Duty Diesel Engines (hereinafter, the "Aftermarket DPF Proposal").

EMA is the trade association that represents the world's leading manufacturers of heavy-duty on-highway internal combustion engines and commercial motor vehicles. More specifically, EMA's members are the manufacturers of the original heavy-duty engines and vehicles, previously certified by CARB for compliance with California emission regulations, and equipped with the diesel particulate filters that are replaced from time to time with the types of aftermarket parts being evaluated under the Aftermarket DPF Proposal. Accordingly, EMA and its members have a direct and significant stake in the regulatory proposal at issue.

I. Overview

EMA strongly supports CARB's objective to evaluate and regulate the installation of aftermarket diesel particulate filters (DPFs) that are intended as replacements for the DPFs that original equipment manufacturers (OEMs) previously designed, certified, and originally produced in compliance with the CARB new engine emission standards applicable to 2007-2009 model year heavy-duty engines. EMA also strongly supports CARB's efforts to prohibit tampering with certified engine configurations, including through the installation of unapproved aftermarket replacement parts.

That said, EMA members are concerned that the Aftermarket DPF Proposal does not adequately protect end-users as CARB claims. Increasing vehicle maintenance downtime by curtailing current DPF maintenance practices is a negative consequence of the regulations as proposed. Moreover, providing end-users with a lower cost, but less reliable (or even worse, with an incompatible DPF) than might otherwise be available from the original engine manufacturer is not protective of those users' interests or the public interest.

II. Proposed Regulation

The Aftermarket DPF Proposal, as described in section 2222(k)(5), would effectively preclude the sale of OEM-provided remanufactured or refurbished DPFs in California. Those provisions, if implemented, would have the unintended consequence of crippling the transportation industry in California by requiring that OEM-provided DPF maintenance be completed on the originally-installed DPF rather than through the common industry practice of swapping-out DPFs to facilitate vehicle maintenance while avoiding significant vehicle downtime. Currently, many OEM service operations provide DPF cleaning services by swapping a clean DPF for one that requires cleaning to minimize vehicle downtime. The removed DPF is cleaned and used for replacement on a subsequent equipment maintenance cycle. The DPFs involved are OEM-produced parts and are equivalent to the original DPFs installed by the OEM at the time of manufacture, and are considered replacement parts under CCR Section 1900. EMA supports the proposed regulatory intent of ensuring that aftermarket DPFs are newly manufactured and not salvaged parts. However, allowing the continued practice of DPF swapping with OEM-produced DPFs is critical for the efficient operation of 2007-2009 model year vehicles that are the subject of the proposed regulation. Accordingly, EMA recommends that the language of the Aftermarket DPF Proposal be revised to read: "…or salvaged diesel particulate filter that is not a replacement part as defined in Title 13, California Code of Regulations, Section 1900 in California."

III. Evaluation Procedure for New Aftermarket Diesel Particulate Filters Intended as Modified Parts for 2007 through 2009 Model Year On-Road Heavy-Duty Diesel Engines

A. Emission Control Group

The discussion of an Emission Control Group (ECG), as described in the proposed application process, identifies significant factors that an applicant must utilize to restrict the use of specific aftermarket DPFs to those engines with common engine design, engine programming, duty-cycles, and applications to avoid unnecessary safety or emission related risks. However, the proposal proceeds to identify ECGs in an overly-broad manner, allowing for a single ECG for the full product line offered by an OEM or even by a group of manufacturers (*see* Appendix B, Appendix 1).

It is not clear if the determination of such a broad ECG includes all related OEM-incorporated sensors associated with the pressures and temperatures that are critical to the integration of a DPF into a viable engine system. OEM DPF designs vary across their respective product offerings in regard to those sensors, in addition to engine design and the other factors noted above.

Accordingly, allowing one ECG per manufacturer, as currently proposed, is not adequate. EMA instead recommends increasing the minimum number of ECGs to one per OEM engine displacement group, in the event that increasing the number of ECGs to one per engine family is considered an unacceptable burden for the manufacturers of aftermarket DPFs.

B. Application Process

The proposal to allow aftermarket DPFs that have an independent engine control unit (ECU) is incompatible with the vitally important requirement that any aftermarket device not adversely affect the OEM's engine ECU. OEM development of ECUs is a very intensive process that takes into account a significant number of parameters as described in the original certification documentation provided to CARB at the time of certification, including, but not limited to, the interaction with auxiliary emission control devices (AECDs) and CARB's requirement for Engine Monitoring and Diagnostics (EMD) and on-board diagnostics (OBD). It seems inconceivable that an aftermarket ECU associated with a replacement DPF could perform its anticipated functions without in some ways impacting the OEM ECU. Determining whether such interactions are adverse to the OEMs' ECUs is highly complex and EMA members are concerned that such interactions will not be adequately evaluated to protect the customer and the OEM from the unintended consequences of such interactions.

The test plan requirements as specified in the proposed application process include critical parameters (such as failure modes and regeneration) and engine characteristics (such as displacement, horsepower, operating temperature, emissions profile, EGR operation, infrequent regeneration events, and application differences). However, as noted above, the overly-broad ECG determination – that would allow the use of one ECG for all of an OEM's product line – appears to undermine those requirements.

The testing described in the proposed application process includes laboratory and field testing to demonstrate durability and compatibility, which seems appropriate, except that the testing requirements are limited to a particular ECG that, as described above, does not adequately address the diversity of products due to the use of just one ECG per OEM or group of OEM's as proposed under Appendix B, Appendix 1.

C. Testing Requirements

The proposed emission test cycles (reference Table 2-1) consisting of 1 FTP group (1 cold start and 3 hot starts) at three test points (degreened, 300 hour, and 500 hour) is substantially less testing and aging than CARB requires for OEMs to certify their engines as originally equipped with a DPF. In addition, the requirement to qualify the engine utilizing 1 set of 3 hot start SET test cycles, which are never evaluated with the aftermarket DPF, appears to provide a significant disparity in operational requirements for the qualification of the aftermarket DPF when compared to the requirements for OEMs, or even compared with the aftermarket retrofit emission control requirements set forth in California CCR Title 13 Section 2704.

Similarly, there are no prescribed requirements for the aftermarket DPF to demonstrate the influence of infrequent regeneration emissions. OEMs, in contrast, are required to adjust emission levels for the infrequent regeneration emissions, but it appears the manufacturers of aftermarket DPF's are not required to make any such determination.

There also are no requirements identified in the testing procedures regarding DPF influence on surrounding component temperatures, either in normal operation or during a regeneration event. OEM DPF designs are evaluated for interaction with all related component

temperatures including, but not limited to, surface temperature and discharge gas temperature. Aftermarket DPF replacement parts should not result in higher temperature exposure to nearby parts and/or exhaust gas discharge.

D. Labels

The proposed aftermarket DPF label should include clarification that the applicant is the party responsible for any related product warranty.

E. Installation Requirements

The installation instructions provided by the aftermarket DPF supplier must include clarification that installation of the aftermarket DPF voids any claims related to the DPF system as provided by the OEM. In addition, the maintenance procedures, technical service bulletins, and other service information related to the aftermarket DPF are the responsibility of the aftermarket DPF supplier, not the OEM.

F. Reporting

There are no reporting requirements identified in the Aftermarket DPF Proposal beyond the need to provide information to CARB upon request. By contrast, OEMs are required to report production volumes to CARB on an annual basis, and also are required to submit warranty and defect reports to CARB based on a variety of factors, including service parts sales. It seems prudent for CARB to require aftermarket DPF suppliers to provide similar annual sales information in addition to being subject to the same warranty and parts defect reporting requirements as OEMs.

IV. Conclusion

EMA encourages the Board to direct CARB staff to address each of the important issues identified in EMA's comments. EMA stands ready to work with CARB staff to make the aftermarket DPF approval process workable and implementable, and to ensure that CARB's air quality goals continue to be achieved.

Respectfully submitted,

TRUCK AND ENGINE
MANUFACTURERS ASSOCIATION