

**WRITTEN COMMENTS OF THE
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION
ON CALIFORNIA AIR RESOURCES BOARD'S
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**

April 18, 2016

The Manufacturers of Emission Controls Association (MECA) is pleased to respond to the California Air Resources Board's request for public comments on its Proposed Evaluation Procedure for New Aftermarket Diesel Particulate Filters (DPF) Intended as Modified Parts for 2007 through 2009 Model Year On-Road Heavy-Duty Diesel Engines. We support the broad objectives of the proposal to ensure availability of cost-effective aftermarket choices for end users. We thank staff for critically reviewing all of the data provided from a broad group of stakeholders to establish a methodology to ensure that aftermarket DPFs are designed and tested for specific groups of engine applications. We believe that the proposed testing and evaluation procedure that combines engine aging and dynamometer testing in a laboratory followed by field demonstration on three different vehicles from the same emission control group will insure that aftermarket DPF modified parts will be durable and compatible. However, we believe that some of the proposed requirements concerning installers and recordkeeping impose costs with no improvement in durability or performance. We believe that further consideration should be given to provide flexibility in how the recordkeeping and installation requirements are implemented to benefit the performance and reliability aspects of aftermarket DPFs and enforceability of the regulation. Finally, we believe that the same installation, engine pre-assessment and recordkeeping requirements should be applied to all replacement DPFs sold in California.

MECA is a non-profit association of the world's leading manufacturers of emission control technology for mobile sources. Our members have over 40 years of experience in developing and manufacturing emission control technology for a wide variety of on-road and off-road vehicles and equipment in all world markets. Our members have been developing and commercializing verified retrofits for diesel engines, gasoline aftermarket converters, original equipment manufacturer (OEM) first-fit DPFs, as well as supplying DPFs for OEM replacement parts. Several MECA members have been selling aftermarket DPF parts in the 49 states outside of California for over five years. Our industry has played an important role in the emissions success story associated with mobile sources in the United States, and MECA has continually supported efforts to develop innovative, performance-based, emissions programs to respond to air quality problems.

The widespread acceptance of wall-flow particulate filter technology around the world as best available control technology (BACT) speaks to the performance and durability of this technology in both diesel and gasoline direct injected engine applications. There are currently approximately 3.5 million trucks in the United States operating with DPFs as well as over

300,000 retrofit DPFs installed on both on-highway and off-road vehicles and equipment. Previously, truck owners have questioned the reliability and safety of retrofit and first-fit DPF devices. At the direction of the Board, ARB staff investigated these claims and found that DPFs, in both retrofit and those originally equipped on trucks since 2007, are operating properly in the field. The study found that most trucking fleets are not having problems with emission control technology, and they do not increase the likelihood of truck fires. Upon further investigation, ARB staff found that fleets that implement regular preventative maintenance practices have far fewer issues with their DPFs. The results of this year-long study can be found here: <http://www.arb.ca.gov/msprog/onrdiesel/documents/DPFEval.pdf>. An article entitled “Proper Engine Maintenance Necessary to Extend Life of DPFs, Managers Say” in the May 26, 2014 issue of Transport Topics supports the importance of preventative engine and upstream component maintenance on DPF durability in more detail. Upstream components that may result in damage to the DPF if not properly maintained per the manufacturer’s instructions include EGR coolers, fuel injectors and turbochargers.

MECA supports the need for establishing a well-defined process by which the performance and durability of DPF aftermarket modified parts (AMP) can be demonstrated and approved for installation on 2007-2009 OEM DPF-equipped heavy-duty trucks after the manufacturer’s warranty has expired. MECA commends ARB on its efforts to receive stakeholder input over the past sixteen months and revise the requirements in order to achieve a balanced framework that ensures aftermarket DPF part alternatives that are durable and effective. MECA and our members have been actively engaged with ARB during this process. Previously, MECA members participated in the regulatory development and implementation of ARB’s aftermarket catalytic converter regulation and the diesel retrofit verification regulation. This current aftermarket DPF proposal includes much of the complex administrative and procedural requirements from the retrofit verification program, despite the many differences between aftermarket DPF parts for vehicles that were designed to operate with a DPF and diesel retrofit devices that are installed on trucks that were never intended to use a DPF. Similarities between gasoline aftermarket converters and aftermarket DPFs should not be overlooked when setting administrative requirements such as record keeping, warranty reporting and installation.

MECA supports robust laboratory and field testing requirements of aftermarket modified parts as well as the inclusion of a DPF catalyst activity evaluation on the degreened and final engine-aged plus field-aged AMP devices. The combination of engine aging, laboratory emission testing and field demonstration on three different vehicles and applications is an appropriate comprehensive process to ensure performance and compatibility of aftermarket DPFs across engine families. MECA proposed a soot accumulation method for evaluating the passive soot oxidation on the DPF as an industry accepted test for evaluating passive soot regeneration performance on the DPF. In this proposal ARB included the soot regeneration as well as an NO₂ test as two options that AMP manufacturers could use. MECA continues to believe that the NO₂ test is not a robust method for the purpose of comparing two DPFs. The competing mechanisms of NO₂ formation and consumption across DOC + DPF systems is discussed in SAE paper 2013-01-0526. NO₂ measurement across a DPF is dependent on the backpressure sensitivity of the engine calibration, aging condition of the DOC, engine-out NO_x emissions, as well as the soot and ash loading in the DPF at the time of the measurement. The experience of our members gained in the retrofit verification program has shown that it is difficult to obtain repeatable NO₂

results across a DPF due to the number of variables that influence the chemical reactions on the catalyst. Because of the multiple sources of variability in this measurement, we believe that trying to match the NO₂ activity between two DPFs to within 15% is extremely difficult.

Our concern with the current proposal is that aftermarket DPFs will have to compete with the other replacement DPF options from which truck and fleet owners have to choose. MECA supports banning the sale of used or remanufactured DPFs in California. Used catalytic converters were banned under the gasoline aftermarket converter regulation due to the uncertainty in performance and durability of used emission control parts that have an unknown history. The banning of the sale and installation of used emission control products is a critical step to achieving a level playing field and ensuring that all aftermarket modified parts are tested under a rigorous and defined procedure, and we strongly support staff's inclusion of this provision in this proposal. Because remanufactured parts are cleaned OEM DPFs and indistinguishable from other OEM parts, we believe that aftermarket modified parts will still have to compete with these cheapest untested DPF options. Setting administrative requirements for recordkeeping and installation on aftermarket DPFs and not OEM replacement DPFs has unintended consequences in competitiveness in the market place. We ask ARB to consider equitable recordkeeping, engine pre-assessment and recall requirements that are within applicants' ability to deliver and comparable to those imposed on new and used OEM parts.

The diesel retrofit program was a mandatory program with no competing technology whereas in the aftermarket modified parts market, the consumer makes choices based on cost. The current version of the regulation imposes inconsistent recordkeeping requirements on applicants, and these requirements will be difficult to effectively fulfill. This proposal requires tracking of end-user contact information for a total of eight years whereas pre-installation records and warranty reporting are required to be retained for six years. MECA requests ARB to harmonize all recordkeeping requirements to six years from the time of sale. This would result in a strong, consistent and less expensive recordkeeping requirement while providing support to consumers. MECA continues to urge ARB to establish equitable recordkeeping requirements between the competing original equipment replacement and aftermarket DPF options in the market place.

The aftermarket parts business model is entirely different than that of retrofit devices, with one reason being that aftermarket sales go through parts networks, distributors and over the counter stores. MECA understands ARB's desire in having detailed records in case of a recall. However, a very low return rate for owner and vehicle contact and warranty information is a reality in the market. MECA's experience from gasoline aftermarket converters, which only require the return of a simple warranty card filled out by installers, is that less than 20% of the cards ever make it back to manufacturers. Some reasons contributing to this low return rate are time required to fill out cards and distributors unwilling to share customer lists with applicants. Furthermore, maintaining accurate end user contact information is very difficult because resale of trucks or owner relocation are often not reported to applicants. The proposal imposes a strict penalty of rescinding the Executive Order (EO) for an applicant's aftermarket modified part due to missing or inadequate records. MECA requests that ARB staff consider flexibility when responding to situations where records are missing but not the fault of the applicant. MECA supports allowing applicants the option to conduct recordkeeping online in electronic databases,

including installer training and authorization, and warranty card registration. MECA feels that this would reduce the risk to applicants and installers while reducing the burden on end users, and may result in more complete records. Furthermore, we believe these requirements should be harmonized for all replacement and aftermarket DPFs, including OEM replacement parts.

ARB has proposed that an aftermarket DPF may only be installed by an authorized installer selected by the applicant. Although this may be relevant in the installation of complex retrofit systems, it is far less critical for the replacement of a DPF core. Truck owners are not required to have other replacement parts installed by a dealer, and it is common for them to perform their own engine repairs. The burden on authorized installers may be enough to discourage them from participating in the program and drive truck owners away from purchasing aftermarket modified DPFs due to the financial burden associated with truck downtime while searching for and scheduling a repair with a conveniently located authorized installer. No such requirement is imposed on installers of OEM replacement filter cores or gasoline aftermarket converters. Although OEM DPF cores must be purchased from a dealer, they may be shipped to the owner for self-installation in order to save cost and convenience of not having to bring the truck to the dealer. The replacement of a filter core is far less complicated and represents less risk than installing diesel retrofit systems. It is a less risky installation than replacing a fuel injector or other regular maintenance items, which are allowed to be replaced by the truck owner or fleet mechanic. MECA affirms that engines must be operating per the manufacturers specifications, including repair of any existing engine problems, before a replacement DPF is installed on the truck. This reduces the possibility of poor engine operation that could affect vehicle performance and result in damage to the new DPF. The procedure for pre-assessing the engine can be provided to the installer without requiring that only authorized installers be allowed to install the replacement part. Otherwise the same pre-assessment requirement should be imposed on all replacement part options in the market.

ARB should clarify their definition of a “worst case” engine within an emission control group as this term may be interpreted in many ways and based on properties such as emission characteristics, horsepower range or type of application. The uncertainty added by this implicit terminology could lead to delays for applicants when working with ARB staff to select an appropriate test engine. MECA encourages ARB to allow some level of flexibility in engine selection, which may be necessary due to the limited availability of engines meeting the testing criteria as 2007-2009 trucks get older.

MECA requests that ARB remains open to the use of appropriate test data that may have been generated prior to the approval of this procedure. We agree that some limits are necessary on archived data in order to minimize deterioration effects. We would like to point out that the retrofit verification process allowed for the use of prior data at the discretion of ARB staff. Applicants will have to do a significant amount of testing on a representative engine as part of their technology development process since no changes to the technology may be made after submitting an application. Applicants will need to develop baseline data for their test engine and conduct testing to insure the technology is robust. ARB retains the right to refuse data if they do not meet the criteria of the application, but it doesn't seem reasonable to outright refuse appropriate and good data simply based on a date stamp. Therefore, we believe some consideration for flexibility should be included here. Furthermore, MECA requests that the

Board directs staff to accept early implementation of this procedure immediately following Board approval so that applicants can begin to generate allowable data as part of their application.

Finally, we are concerned that ARB allocates sufficient resources to review the number of applications from different manufacturers that are expected when a new program like this is launched. It has been suggested that two ARB staff will manage the entire aftermarket DPF program. As the 2007-2009 population of engines ages, the potential aftermarket DPF market diminishes each year. This limits the opportunity for an applicant to sell a sufficient number of aftermarket parts under this regulation to justify the cost of an EO. We urge ARB to allocate additional resources for reviewing applications and test results under this regulation to be able to process EOs in a timely manner.

In conclusion, MECA would like to extend our appreciation to ARB staff for their diligent work and dedication to address the concerns of all stakeholders in developing this proposal. MECA member companies are committed to developing and commercializing diesel aftermarket DPF cores that are durable, reliable and offer a cost effective maintenance part for owners of 2007-2009 trucks in California. Manufacturers need a clear and equitable set of requirements to justify bringing their aftermarket products to California. MECA recommends Board approval and early implementation of the rule so that applicants may immediately begin working on their applications.

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