

**STATEMENT OF THE  
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION  
ON THE AIR RESOURCES BOARD'S  
PROPOSED AMENDMENTS TO THE VERIFICATION PROCEDURE,  
WARRANTY AND IN-USE COMPLIANCE REQUIREMENTS FOR IN-USE  
STRATEGIES TO CONTROL EMISSIONS FROM DIESEL ENGINES.**

**January 24, 2008**

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The Manufacturers of Emission Controls Association (MECA) is pleased to provide testimony in support of ARB's proposed amendments to the verification procedure, warranty and in-use compliance requirements for existing on-road, off-road and stationary diesel-fueled vehicles and equipment. We believe that the proposed amendments to the regulations present a balanced, fair, and flexible approach to ensure that verified diesel emission control technologies deliver the performance and durability necessary to achieve the goals of all regulations that make up ARB's Diesel Risk Reduction Plan.

MECA is a non-profit association of the world's leading manufacturers of emission control technology for motor vehicles. Our members have over 35 years of experience and a proven track record in developing and manufacturing emission control technologies for a wide variety of on and off-road vehicles and equipment running on gasoline, diesel and alternative fuels. Many of our members have verified diesel retrofit emission control technologies including diesel particulate filters, diesel oxidation catalysts, crankcase filter systems, EGR/DPF systems and lean NOx catalysts for on-road, off-road and stationary applications to help ARB meet the emission reduction objectives under current and future in-use regulations.

MECA and our members have been actively engaged throughout the development of the original verification regulation adopted by the Board in May of 2002 and subsequently in providing feedback in workshops and meetings with ARB staff to continually improve the verification, warranty and in-use compliance requirements and make ARB's verification process a model for other retrofit programs in the U.S. and around the world. ARB's Diesel Risk Reduction Plan has served to develop a market for our members and others in the manufacture and commercial application of diesel retrofit emission control technology. The end result of these efforts has been a growing number of technology options for a wide variety of retrofit applications.

An effective retrofit verification and in-use compliance program must achieve a delicate balance between two critical elements. It must ensure that the verification procedures and in-use durability requirements are sufficiently rigorous so that verified retrofit technologies meet emission performance levels over the operating life of the device. On the other hand, it must caution against overly burdensome procedures that would dissuade potential technology providers from attempting to verify their devices in California and divert their resources toward other emission control market opportunities.

These opportunities include development and certification of technologies for original equipment diesel engine applications, as well as the many mandatory and voluntary retrofit program options across the country. ARB's program and the amendments in this proposal have largely maintained that balance.

MECA member companies are committed to developing and commercializing diesel retrofit technologies that cover a broad range of in-use engines and applications that reduce emissions from the millions of existing diesel engines that operate across the state of California. The success of ARB's efforts to clean-up the broad mix of existing diesel vehicles and equipment operating within the state depends on developing a competitive, verified retrofit technology portfolio that provides end users with a variety of proven, cost-effective retrofit options from a number of suppliers. ARB needs to do its part by putting additional qualified resources in place, as quickly as possible, to more efficiently manage the verification process and to handle multiple verification applications at a time from a single technology developer. Technology developers also need a stable set of verification requirements that allows them to know, with some degree of certainty, what is required to commercialize and maintain their retrofit products in the California market. Changes to the verification protocols that add significant costs to retrofit devices or the verification process need to be clearly justified in terms of their real benefits before they are approved.

MECA provides the following comments, on behalf of the emission control industry, in the spirit of further improving the verification process. We believe that the suggestions can substantially improve the proposed amendments while ensuring that the verified technologies will provide real emissions reductions from existing engines.

We support the change in test cycles for non-road engines from the current steady-state cycle to the non-road transient cycle (NRTC, hot-starts only). This represents a significant change for our industry as this test cycle has not been used to certify existing engines and will not be required of new engines until Tier 4 off-road engines begin to be certified. Due to the lack of experience with testing non-road engines using the NRTC, we thank ARB staff for providing a transition period to allow applicants to use the steady state cycle provided they submit a preliminary application and test plan by October 1, 2008. The proposal also requires that the preliminary application be approved within three months. We request that the ARB consider a provision that would extend the December 31, 2008 approval deadline in the event the delay is due to a lack of ARB resources to complete the review within that time frame.

MECA strongly supports the proposal to create broader classifications for NO<sub>x</sub> reduction starting at a minimum of 25% NO<sub>x</sub> conversion and including 5 classifications or "Marks" at 15% intervals. This represents realistic bands for NO<sub>x</sub> technologies similar to the "Level" classification already in place for PM.

We believe that the inclusion of specific procedures for NO<sub>2</sub> preconditioning and testing is an important step to help manufacturers meet California's NO<sub>2</sub> limits for VDECS. We thank ARB for providing specific procedures for testing and pre-

conditioning to standardize guidelines for conducting these tests. There is, however, limited experience within ARB as well as in our industry in running these procedures and understanding potential hidden issues. We do believe that the current weighting factors used for NO<sub>2</sub> measurements (equal weighting after 25 and 1000 hrs) may not represent NO<sub>2</sub> emissions in real world applications. These measurements are conducted on lab engines under controlled conditions and may be significantly different than NO<sub>2</sub> emissions under actual field operation. Furthermore, in-use engines represent older, more poorly maintained engines than those used in lab testing. We encourage ARB staff to conduct first hand measurements of NO<sub>2</sub> in the field from VDECS and use this experience to set refined weighting factors to be used for lab engine measurements if so indicated. An ideal opportunity for such testing and data gathering may be the upcoming off-road retrofit showcase that will be conducted in the South Coast.

As more and more NO<sub>x</sub> technologies enter the verification process, MECA recognizes the need for additional requirements for NO<sub>x</sub> control devices, such as SCR, that require a unique reductant, like urea, to meet performance targets. We fully support the requirements for monitoring, notification and inducements to ensure that adequate supply of a suitable reductant is available for the system to function properly.

We support the verification of NO<sub>x</sub> only devices as 2007 engines with OEM equipped diesel particulate filters enter the in-use, on-road diesel fleet. We recognize that combinations of retrofit NO<sub>x</sub> control technologies with OEM installed DPFs may pose some integration and compatibility issues which should be addressed within the verification process.

MECA recognizes the need for guidelines and clear instructions regarding proper installation of VDECS. This should include a direction of exhaust flow indicator on the device so that they are installed in the proper direction. Many of our members have already incorporated flow direction markings into the exterior labeling of their products. We believe that the additional requirement of modifying the design of devices to ensure that they can only be installed in one direction poses unnecessary costs to manufacturers and fleet owners. This represents a significant change to the requirements that warrants further justification by ARB. Furthermore, such requirements are not placed on OEM filters installed on 2007 and newer model year trucks. The costs of retooling, maintaining duplicate inventory and tracking of newly designed parts and replacement parts for existing devices will tie up resources and impact the development of new products. We believe that this proposed requirement, if approved, will result in a significant drain on ARB staff resources addressing requests for parts changes from currently verified manufacturers. We believe that this requirement may be met by other means such as requiring clearly visible labeling of the flow direction, proper training of installers, clear and consistent guidelines of acceptable practices in device owners manuals and enforcement by ARB officials in the field. Our members commit to working with ARB verification staff to develop a mutually agreeable solution to this device installation issue.

We commend ARB staff in developing the proposed improvements to the labeling requirements. MECA and our members have actively worked with ARB to make improvements to the labeling guidelines over the years. We are concerned with the reports of devices in the field with improper labels and believe that certain safeguards should be added to the label requirements to make it more difficult to abuse the guidelines. We believe that engine and device labels should be distinctly different and replacement labels should be clearly marked to eliminate the possibility of attaching a replacement engine label to an improper VDECS or counterfeit device. These safeguards would also support enforcement efforts aimed at insuring that appropriate VDECS are properly installed. We would like to work with ARB to further define labeling practices that meet the goals of the verification program and facilitate enforcement.

We support ARB's inclusion of guidelines in the proposal that require manufacturers to obtain Executive Officer approval if they authorize the practice of removing VDECS from vehicles and reinstalling them on other vehicles. We recognize that vehicle owners may want to swap devices from retired vehicles. We request that ARB clarify the impact of swapping retrofit devices on the manufacturers warranty and furthermore include a clause in the executive orders associated with verified devices that would require end users to obtain permission from the device manufacturers prior to reinstalling a device on another vehicle.

MECA believes that an important opportunity exists for ARB to develop guidelines, for verifying retrofit crankcase PM controls as VDECS. This would effectively reduce the total PM emissions, including tailpipe and crankcase PM<sub>2.5</sub>, from in-use diesel vehicles and engines. As Level 3 devices are installed on engines to achieve 0.01 g/bhp-hr or lower PM tailpipe emissions, the PM emissions coming from the crankcase represent upwards of 70% of the total remaining PM emissions from the vehicle. This becomes a significant source of PM<sub>2.5</sub> exposure for vehicle operators, passengers and bystanders. Several studies have measured the level of PM<sub>2.5</sub> emissions coming from the crankcase and tailpipe in the cabin and near school buses ([www.cleanenergy.org/schoolbusreport.cfm](http://www.cleanenergy.org/schoolbusreport.cfm), [www.catf.us/publications/view/82](http://www.catf.us/publications/view/82)). Both studies concluded that the concentration of PM<sub>2.5</sub> found in cabin air was dominated by PM coming from the crankcase and that the combination of ULSD, wall flow DPF and crankcase filter provided a comprehensive solution to improving air quality inside and outside of the vehicle. The results of these studies have motivated New Jersey and other states to require crankcase PM controls on all school bus retrofits as stand alone devices or in combination with other PM controls. Furthermore the U.S. EPA in the 2007 on-road regulations and 2011 non-road rules considers crankcase PM a significant contributor to total vehicle PM emissions and requires that they be measured and accounted for in meeting new vehicle emission limits. Retrofit crankcase controls exist today that can capture more than 95% of the PM<sub>2.5</sub> emitted from the crankcase. MECA would like to work with ARB to develop guidelines for bringing crankcase PM reduction technology into the verification process in order to take advantage of existing technologies for reducing this important source of vehicle PM emissions.

In closing, we commend the Air Resources Board for its continuing efforts to provide the people of California with healthy air quality and for demonstrating true leadership in establishing an innovative verification and in-use compliance program. We thank ARB staff for its willingness to work with all stakeholders throughout the regulatory process. Our industry pledges its commitment to work with ARB to continue to improve the verification requirements and to ensure that technologies and strategies are available to help achieve the objectives of the Diesel Risk Reduction Plan.

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