

**STATEMENT OF THE  
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION  
TO THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD  
REGARDING THE PROPOSED 15-DAY MODIFICATIONS TO THE STATE  
STANDARD TITLE 8, VEHICLE EXHAUST RETROFITS**

*April 25, 2011*

---

MECA would like to provide comments to the 15-day modifications to Title 8, Vehicle Exhaust Retrofits to the Occupational Safety and Health Standards Board. We believe that in their initial proposal, heard by the Board on February 17, 2011 as well as in the 15-day modification, OSHSB staff has failed to demonstrate the necessity of establishing a separate set of visibility standards for exhaust retrofit devices, beyond those that already exist (Section 1591(b)) for any installation of equipment or accessories to construction equipment. Furthermore, OSHSB staff has failed to consistently treat the visibility impacts caused by all modifications to construction equipment such as the installation of third-party, aftermarket accessories. Our recommendations focus on the consistency of the proposal with regard to the treatment of surface temperatures and visibility impacts associated with exhaust retrofits, existing hot exhaust surfaces and third-party add-on accessories. MECA is committed in our support of safe installation of exhaust retrofits or any other third-party accessories. We believe that if the goal is to insure the safety of construction workers, regulations must be consistent in their requirements and not set different standards to accessories based on their perceived functionality. In the interest of safety, regulations must serve to ensure that modifying construction equipment with a retrofit, or any other add-on part, is done with consideration to the safe operation of the vehicle, the operators and workers on construction sites.

MECA is a non-profit association of the world's leading manufacturers of emission control technology for motor vehicles. Our members have over 30 years of experience, and a proven track record, in developing and manufacturing emission control technology for a wide variety of new diesel and gasoline on-road and off-road vehicles and equipment. A number of our members have extensive experience in the development, manufacture, and application of PM and NOx control retrofit technologies including most of the devices on ARB's Verified Diesel Emission Control System (VDECS) list. MECA members are committed to insuring that retrofit devices on construction vehicles are installed in a safe and responsible manner.

We are concerned that in their 15-day modified proposal, staff chose to completely eliminate a clearly defined visibility measurement procedure that was the technical basis of their original proposal. The procedure, outlined in Appendix A of the original proposal presented to the Board on February 17, 2011, was the product of over a year's work championed by OSHSB and ARB staffs. It was developed by a multi-stakeholder workgroup that included the petitioners, OSHSB, DOSH, ARB and MECA, among others. The outcome was a comprehensive procedure based on the ISO 5006 safe visibility performance criteria for earth moving equipment that serves as a guideline to original equipment manufacturers in their design of construction vehicles and was agreed to by both agencies in the Governor's office last year. We are concerned that staff simply

eliminated the procedure without any justification beyond one stakeholder's comment that it was "too complex" and "allowed an unsafe level of masking" when in fact it was more restrictive, with respect to blocked visibility, than an internationally recognized safe visibility standard (ISO 5006). MECA believes that complexity should not be the reason for not establishing fair, balanced, performance based safety regulations.

MECA agrees that the proper integration of emission control technology on off-road vehicles and equipment must incorporate safety as the overarching goal. Our industry takes the safe operation and installation of emission control devices very seriously and has been engaged in OSHSB's process for amending the Title 8 regulation since the initial filing of Petition 507. At the time the petition was filed (August 7, 2008), CARB had established regulations that required exhaust retrofits on approximately 100,000 in-use, off-road construction vehicles. The petitioners were concerned that a huge increase of diesel exhaust retrofit installations would increase the number of workplace accidents due to potential blocked visibility caused by above hood installation of retrofit devices. To our knowledge, no such accidents were reported at that time nor have ever been attributed to the presence of exhaust retrofit devices on construction vehicles despite the installation of tens of thousands of these devices in California and elsewhere. On December 17, 2010, The California Air Resources Board amended their regulation to no longer require the installation of exhaust retrofits to comply but rather allowing retrofits to be used as a voluntary compliance option at the discretion of fleet owners. Section 1591(b) of Title 8 addresses the installation of equipment and accessories on haulage vehicles and requires that they do not block operator visibility to the front and sides. Retrofits represent a class of add-on accessories just like the many other add-on accessories that vehicle owners may choose to install on their equipment. In their staff report, OSHSB has not provided any data or evidence that would suggest that diesel retrofits have been found to increase the number of accidents due to visibility impairment.

Section 1591(b) addresses the concern of visibility impairment caused by accessories such as diesel exhaust retrofits. If the Board believes, that in the interest of safety, Section 1591(b) should be amended to include visibility impairment to the rear of the vehicle than the same requirement should apply consistently to all third-party, aftermarket parts. In their "Summary and Responses to Oral and Written Comments" response DH1, staff argues that defining "equipment" and "accessories" in Title 8 may have unintended consequences; however the consequences are not clarified. The staff report states that some accessories cannot be installed out of the operator's sight because it would not be practicable such as buckets and blades. This suggests that operators are trained to deal with partially restricted visibility when operating their equipment. There are hundreds of third-party add-on accessories that are installed on vehicles for which the vehicle was not originally designed but were developed by third-party suppliers to increase the functionality of the equipment above and beyond its original intended application (see examples provided by Charles Call dated 2/17/11). If concern over worker safety is the main reason for adding section 1591(m)5 to the regulation, than safe visibility should apply consistently to all aftermarket parts installed on vehicles or equipment. This was part of the original petition, and has been supported by all stakeholders throughout the process. Consistency has been overlooked in the proposed regulation.

The staff report references accident reports in OSHA's Integrated Management Information System (IMIS) where a contributing factor to these accidents was obstructed visibility by a part of the vehicle. None of these accidents were caused by the installation of an exhaust retrofit device. The staff report fails to justify why a visibility standard specific to exhaust retrofits is needed or why the installation of exhaust retrofits should be treated differently from the installation of other aftermarket parts on off-road equipment.

Off-road vehicle types inherently have varying levels of visibility even for OEM designs. For example, OEM equipment does not have identical visibility when comparing different equipment types or equipment of the same type made by different manufacturers. The NIOSH equipment visibility study showed that equipment such as dump trucks, scrapers, graders etc. inherently have large blind spots. Vehicle and equipment manufacturers have incorporated safety devices such as mirrors, back-up alarms, motion sensors and cameras into their designs to assist operators with the varying levels of visibility they experience while performing their task. OEM installed mirrors are important visibility aids that are installed to facilitate safely maneuvering the vehicle. The majority of OEM construction vehicles are equipped with mirrors because they would fail the guidelines established by the ISO 5006 standard if it did not allow for the use of mirrors in assessing masking. The vehicle manufacturer has provided the mirrors for a specific purpose, to facilitate visibility in areas around the vehicle that would otherwise be blocked. The staff report declares that mirrors or back-up cameras are not a safe, reliable substitute for an unobstructed view. Staff, in their response RB8, argued that "mirrors are missing, damaged or out of alignment", "the view in the mirror can be obstructed by vibration, dirt, fog, rain or snow". This contradicts Title 8, Section 1593(d) that requires that before operating a haulage vehicle the equipment and accessories must be checked for proper operation. This includes devices that facilitate visibility such as wipers, lights, defrosters and other safety equipment. Numerous construction site accident reports have recommended the use of back-up cameras or mirrors to prevent future accidents involving workers being struck by construction equipment (NIOSH Fatality Assessment and Control Evaluation (FACE) Program Case Report 04MI107, 06MI096). When driving our passenger vehicles, we rely on the use of mirrors and take the time to clean and adjust them before operating the vehicle because without them we would be completely blind to the rear. To preclude a piece of visibility safety equipment, such as an OEM installed mirror or camera designed to assist visibility, from a visibility focused standard appears contradictory to the fundamental goal of safety at the workplace. MECA continues to believe that mirrors are essential visibility aids and therefore the use of OEM installed mirrors should be allowed when assessing visibility around a vehicle or equipment.

We agree with staff's conclusion that hot surfaces of retrofit devices should be adequately shielded to prevent burn hazards to operators working with construction equipment. We believe that a distinction needs to be made between employees operating and working around the equipment and mechanics who must remove shielding and access the engine compartment for the purpose of making repairs. We believe that the regulation pertaining to thermal hazards should apply equally to retrofits as well as other hot surfaces found on vehicles. The proposed regulation is inconsistent in that it specifies a 140° F surface temperature for retrofits with no criteria as to the surface temperature of other hot surfaces found within the engine compartment of vehicles such as exhaust pipes, engine block, radiator, exhaust manifold, turbocharger housing etc. All of

these engine components have surface temperatures that far exceed 140° F. We agree that thermal hazards must be shielded to prevent burns caused by accidental contact by operators and bystanders. We believe that an under hood installation of a retrofit is shielded by the hood cowling or other heat shields that protects the operators from accidentally contacting the hot surface. Mechanics on the other hand, are trained in the location of hot surfaces within an engine compartment and may have to remove cowling and heat shield to gain access for the purpose of repair. We believe that the surface temperature criteria of 140° F should apply to those surfaces that may be contacted “during the performance of normal duties” as stated in the original proposal.

In closing we believe that neither the proposed 15-day modifications to the Title 8 California Code of Regulations nor the original proposal has clearly articulated the necessity for Section 1591(m)5 specifically addressing visibility impacts of diesel exhaust retrofits above and beyond Section 1591(b) governing impaired visibility caused by other aftermarket accessories installed on construction vehicles. The changes to CARB’s off-road fleet regulations have made the installation of exhaust retrofits a voluntary option and similar to the installation of any aftermarket accessory. The 15-day modifications to the original proposal have addressed several of our earlier concerns regarding other inconsistent and conflicting aspects of the regulation for retrofit devices. We agree with the comments of the petitioners that in order to be faithful to the interests of employee safety, there remains a need to consistently apply visibility impairment criteria to all aftermarket accessories and not single out one subset of accessories. We ask the Board their further consideration of our comments in evaluating the safety implication of the proposed modifications. We thank the OSHSB staff for their hard work and dedication in addressing the safety aspects of impaired visibility caused by construction equipment modifications. Our industry is committed to do its part to insure the safe installation of diesel exhaust retrofit systems on off-road vehicles and equipment.

**Contact:**

Joseph Kubsh  
Executive Director  
Manufacturers of Emission Controls Association  
2020 14<sup>th</sup> St. North, Suite 220  
Arlington, VA 22201  
Tel.: (202) 296-4797  
E-mail: [jkubsh@meca.org](mailto:jkubsh@meca.org)