

Caterpillar's comments to the proposed changes to:

*California Code of Regulations, Title 13, Division 3 Chapter 14. Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines*

## **2705 Field Demonstration Requirements**

### (c) Reporting Requirements.

- (1) Temperature and Backpressure Measurement Requirements. For strategies that include exhaust aftertreatment, engine backpressure, ~~and~~ exhaust temperature, and engine speed must be measured and recorded over the entire demonstration period. The applicant must propose a measurement and recording protocol for approval by the Executive Officer. The protocol may include, but is not limited to, measurement and recording of values once every few seconds, or higher frequency measurement with recording of averages, minima, and maxima over longer time intervals. The data must include an accurate date and time stamp that corresponds with periods of actual engine operation. Data must be submitted electronically in columns as a text file or another format approved by the Executive Officer.
- (2) NOx Emissions Measurement Requirements. For strategies that include exhaust aftertreatment to reduce emissions of NOx, the mass emissions of NOx both upstream and downstream of the aftertreatment device must be measured and recorded over the entire demonstration period. The applicant must propose a measurement method for approval by the Executive Officer. The method may include, but is not limited to, the use of NOx sensors before and after the device. Measurements of NOx emissions must occur on at least a 1 Hertz basis. Data must be recorded as averages over time intervals no greater than 10 seconds. The data must include an accurate date and time stamp that corresponds with periods of actual engine operation. Data must be submitted electronically in columns as a text file or another format approved by the Executive

Caterpillar comments:

RPM (engine speed):

The requirement for including RPM is unnecessary and unduly burdensome. This provision will require either measuring engine rotation directly, or by way of connecting to the machine's ECU. What does ARB gain by this information? If temperature and backpressure are measured to gauge device performance, RPM does not add to the monitoring of the system. Manufacturers are not likely to want to test every aftermarket device for compatibility with their electronics, nor share proprietary communications data. This provision also makes it very difficult to measure RPM if the machine has a mechanical engine installed. It would negate the ability to use an electronic communication strategy.

## 2706 Other Requirements

- (h) Maintenance Requirements. The applicant must provide information on maintenance of the diesel emission control strategy as follows:
- (1) The applicant must identify all normal maintenance requirements for the diesel emission control system strategy. The applicant must specify the recommended intervals for cleaning and/or replacing components. Any components to be replaced within the defects warranty period must be covered with the original diesel emission control system package or provided free of charge to the customer at the appropriate maintenance intervals. Any normal maintenance items that the applicant does not intend to provide free of charge must be approved by the Executive Officer (the applicant is not required to submit cost information for these items). In addition, the applicant must specify procedures for proper handling of spent components and/or materials cleaned from the diesel emission control strategy system. If any such materials are hazardous, the applicant must identify them as such in the owner's manual. For filter-based diesel emission control strategies, the applicant must include procedures for resetting any backpressure monitors after maintenance procedures are completed.
  - (2) The applicant must provide detailed maintenance information for a verified diesel emission control strategy to the owner upon delivery of the diesel emission control strategy. The information provided must be sufficient to enable an owner to properly maintain the diesel emission control strategy without requiring services be provided exclusively by the applicant or the applicant's distributor. The required information includes, but is not limited to:
    - (A) Specific maintenance and cleaning procedures and timeframes.
    - (B) All performance criteria used to determine a proper state of maintenance, such as the pressure drop across a fully-cleaned diesel particulate filter.
    - (C) Any prohibitions or specific maintenance practices which may result in damage to the diesel emission control strategy.

### Caterpillar comment:

1. The Caterpillar owner's manual is specific on the proper cleaning procedure and outlines the cleaning equipment required.
2. If maintenance and cleaning procedures are performed by the owner/operator or a third party, Caterpillar has no guarantee that OEM specified procedures are followed. Some owner/operator liability for aftertreatment failure due to improper cleaning is appropriate for that owner/operator, but no such provision is included in the changes. The manufacturer and installer should not be held responsible for the improper maintenance procedures of a third party.
3. To assist owners in selecting a third party provider of cleaning services, ARB should maintain a list of "approved" cleaners, similar to the "installers" list on ARB's website.
4. Third party cleaner and owner must be required to document all machine data (hours, serial number, date, owner) procedures adhered to, and cleaner data.

## (i) Component Swapping and Re-Designation

- (2) Device Re-Designation Practices. Applicants may authorize ~~end users to~~ the completely ~~remove~~ removal of a their verified diesel emission control strategy systems from the original ~~installed installation configuration and~~ ~~install them on other to another~~ vehicles- or equipment within the end user's commonly owned fleet, provided the following provisions are met:
- (A) Applicants must receive written approval from the Executive Officer prior to approving a diesel emission control strategy DECS re-designation.
  - (B) Any party which removes a verified diesel emission control strategy DECS from an engine/application must remove the verified diesel emission control strategy DECS engine label. If the engine label cannot be removed whole, it must be destroyed.
  - (C) Any party which re-designates a device to another engine/application which was never previously retrofit with that exact diesel emission control strategy DECS must obtain and properly install an appropriate diesel emission control strategy DECS engine label.
  - (D) Any party which removes a verified diesel emission control strategy DECS from an engine/application must ensure the engine/application returns to its original factory configuration.
  - (E) Diesel emission control strategies DECS which are more than 10 years old based on the month and date of manufacture listed on the device label, or devices of unknown age, are not legal candidate systems for re-designation to a new engine/application.
  - (F) Diesel emission control strategy DECS system re-designation must also comply with the requirements as described in subsection (i)(3).
  - (G) A diesel emission control strategy installed on a vehicle or piece of equipment that is repowered (see section 2701 (a)(34)) may remain installed provided:
    - 1. The replacement engine meets all the terms and conditions of the diesel emission control strategy Executive Order.

RE: (C) Any party which re-designates a device to another engine/application which was never previously retrofit with that exact diesel emission control strategy DECS must obtain and properly install an appropriate diesel emission control strategy DECS engine label.

Caterpillar comment:

An end-user that re-designates a device must provide **at their own cost** datalogging analysis or other documentation to the installer/manufacturer to support applicability of the control strategy to the new machine and obtain prior written installer/manufacturer approval *[to ensure proper sizing and compatibility]*.

## § 2711 Compliance

- (a) No person shall sell, offer to sell, or introduce into commerce an ARB verified diesel emission control strategy unless all of the conditions of the governing Executive Order and this Chapter are met.
- (b) The Executive Officer may modify, revoke or suspend an existing verification for any violation of the governing Executive Order or the procedures of this Chapter and seek any other remedy available under Part 5, Division 26 of the Health and Safety Code.
- (c) No person shall represent a device as being an ARB verified diesel emission control strategy unless it has received verification pursuant to this article.

Caterpillar comment:

§ Section 2711, if promulgated, may violate the U.S. Constitution's Commerce Clause due to the regulation's extraterritorial reach. Generally speaking, ARB cannot regulate commerce taking place in other states, only commerce taking place within California. Therefore, if a manufacturer of in-use diesel emission control systems ("DECS") located in Iowa were to sell an "ARB verified" DECS to a customer in Massachusetts, and the manufacturer failed to provide the full DECS warranty required by California law, California could not enforce the full warranty requirement against the out-of-state DECS manufacturer.