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## *Advanced Emission Controls*

January 26, 2010

Chairman Mary Nichols  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Comments regarding January 28, 2010 Agenda Item 10-1-3: Public Hearing to Consider Amendments to the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines

Dear Chairman Nichols,

Cleaire Advanced Emission Controls would like to provide three comments related to the proposed Verification Regulation.

### **Comment 1: Maintenance Requirements §2706. Other Requirements, (h) (2)**

Proposed language would require retrofit manufactures (paraphrased) to provide sufficient information to enable an owner to properly maintain the diesel emission control strategy without requiring services be provided exclusively by the applicant. Cleaire believes this is primarily associated with periodic de-ash of a diesel particulate filter. Cleaire supports the goal of this requirement and is prepared to provide information relative to normal and routine maintenance requirements, including visual inspection, de-ash air pressure, orifice size, post de-ash flow specification and recommendations against specific maintenance practices which may damage the diesel particulate filter.

However, Cleaire suggest the following:

1. Specifically included that damage done by end user users and/or third party cleaning services is not considered a warranty event under the regulation's warranty provisions. Cleaire does not believe is should be held responsible for damage caused by others.
2. Specifically include that the information provided is for normal and routine maintenance. Cleaire has developed advanced and proprietary de-ash techniques that in some cases may recover an abused or damaged diesel particulate filter at substantial investment.

Suggested revised language:

(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 perform normal and routine maintenance of** 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.
- (D) The applicant or the applicant's distributor shall not be required to honor warranty requirements associated with damage caused by maintenance performed by the end user or third party provider.

**Comment 2: Pre-Installation Compatibility Assessment, §2706. Other Requirements, (t) (2)**

Proposed language would clarify pre-installation exhaust temperature data logging requirements. Cleaire supports this clarification but offers the following suggestions for changes. The data loggers currently deployed collect data regardless of if the engine is on or off and can collect data for approximately 96 hours at a log rate of every 10 seconds. The hours of data collected is directly associated with the log frequency (e.g. every 5, 10, 15 or 20 seconds).

Cleaire recommends changing the engine running minimum to 16 hours from 24 and the log frequency from every 5 seconds to every 10 seconds. This will allow the current deployed data loggers to continue to be used.

Suggested revised language:

(D) The exhaust gas temperature of the candidate engine must be measured and recorded for a period that is long enough to determine the exhaust gas temperature profile associated with the candidate engine's duty cycle, but not less than 1624 hours of representative, actual engine run time. The data logging strategy must include a means to accurately determine when the engine is actually running. This may include use of a data logging system that starts automatically when the engine starts and stops automatically when the engine stops, or a means to identify and remove data that correspond to the engine being off such as by simultaneously logging data from an engine RPM sensor or applying a temperature threshold that corresponds to a temperature just below the idle temperature of the engine.

(E) The memory of the data logging system must be of sufficient size to ensure that data are not overwritten prior to retrieval.

(F) All data must be recorded at a frequency of at least once every 105 seconds (0.52 Hertz)

**Comment 3: Pre-Installation Compatibility Assessment §2706. Other Requirements, (t) (4)**

Proposed language would require installers to “ensure that a candidate engine is well maintained, in good working condition, and is appropriate for use with the diesel emission control strategy.” Specifically required would be a review of the engine’s oil consumption records to ensure that it is not consuming lubrication oil at a rate greater than that is specified by the engine manufacturer.

Current Cleaire dealer practice is to perform a basic engine health assessment prior to an exhaust retrofit installation. The checks performed include general visual inspection for oil leaks, check engine light (if applicable), excess white smoke, excess blue smoke, excess black smoke, oil residue on exhaust pipe and a fuel sample to check for lube oil in the fuel system. These checks are currently included in the retrofit installation cost.

Requiring the installer (and by extension the retrofit manufacturer) to “ensure” a well maintained engine is, in effect, a transfer of responsibility from the engine owner to the retrofit provider. Cleaire believes it is unreasonable to place the policing burden that an engine is well maintained on the installer and not the engine owner.

If implemented, this requirement will add substantial administrative review and engine evaluation at additional cost to the engine owner. This is assuming that an engine has oil consumption and/or maintenance records and will provide these records for review by an installer. It will most likely cause each candidate truck to be evaluated on a chassis dynamometer and other more expensive diagnostic evaluations. For off-road candidates a chassis dynamometer evaluation is not a option and other surrogate evaluations would be necessary.

Suggested revised language:

(4) Prior to installation of a diesel emission control strategy, the installer must perform a basic engine health assessment. The assessment shall include:

1. General visual inspection for oil leaks; and
2. Check engine light (if applicable); and
3. Excessive white smoke; and
4. Excessive blue smoke; and
5. Excessive black smoke; and
6. Oil residue on exhaust pipe; and
7. Fuel sample (check for lube oil in fuel system).

~~ensure that the candidate engine is well maintained, in good working condition, and is appropriate for use with the diesel emission control strategy. In particular, the installer must review the engine’s oil consumption records to ensure that it is not consuming lubrication oil at a rate greater than that specified by the engine manufacturer.~~ The installer must maintain a record of all documentation used to make the determination that the candidate engine was appropriate for use with the diesel emission control

strategy, ~~including oil consumption records at time of installation and that manufacturer recommended parts replacement schedules were followed.~~ Subsequent to installation of a diesel emission control strategy, the owner must continue to maintain oil consumption records for each retrofitted engine. All such records maintained by the installer and the owner must be made available to the Executive Officer within thirty days upon written request.

Thank you for the opportunity to provide comments to the proposed regulation changes.

Best regards,

A handwritten signature in blue ink that reads "Tom Swenson". The signature is written in a cursive, flowing style.

Tom Swenson, P.E.  
Director, Market Development