



Winston H. Hickox
Agency Secretary

Air Resources Board

Alan C. Lloyd, Ph.D.
Chairman

9528 Telstar Avenue • P.O. Box 8001 • El Monte, California 91731 • www.arb.ca.gov



Gray Davis
Governor

July 27, 2001

Mail-Out #MSC 01-12

TO: All Interested Parties

SUBJECT: PROPOSED MODIFICATIONS TO THE DIESEL RETROFIT
VERIFICATION PROCEDURE FOR PARTICULATE MATTER AND NO_x
CONTROL

Background: In August 1998, the Air Resources Board (ARB) identified particulate matter (PM) exhaust from diesel-fueled engines as a toxic air contaminant. Following that determination, the ARB formed a Diesel Advisory Committee with a wide variety of stakeholders to develop a Diesel Risk Reduction Plan (DRRP). The DRRP, approved by the Board in September 2000, identified retrofitting of in-use engines as a vital component of the overall PM control strategy.

ARB staff has begun the public process of developing regulations for the retrofit of in-use engines. Within the next few years, we plan to develop regulations that address on- and off-road diesel-fueled engines, as well as stationary and portable engine applications. In recognition of the important role that retrofit devices will have in reducing public exposure to diesel PM, last year, the ARB developed interim procedures to verify the emission reduction claims of retrofit technologies (Retrofit Verification Procedure). These procedures provide for the early introduction of verified retrofit technologies into the marketplace. In response to comments received on the Retrofit Verification Procedure, staff determined that modifications to the verification process are appropriate. The proposed modifications are summarized below.

Incorporate Additional Verification Thresholds: Currently the Retrofit Verification Procedure requires diesel retrofits achieve a 0.01 gram per brake horsepower-hour level, or an 85 percent or greater PM reduction. As we have gone forward with

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption.
For a list of simple ways you can reduce demand and cut your energy costs, see our Website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

Printed on Recycled Paper

implementation of the DRRP, we have found that for some applications and engines an 85 percent reduction in PM may not be technologically feasible. However, a lower level of PM reduction is possible with certain retrofits. In recognition of this, and in order to facilitate the retrofit process, we are proposing a multi-level approach to the Retrofit Verification Procedure.

The proposed incorporation of a multi-level approach will maintain current verification procedures but add three levels of PM reduction thresholds. Level 1 verification is designed to allow technologies that meet at least 30 percent reduction (and less than 60 percent) to participate in the verification process. Level 2 includes technologies that achieve at least 60 percent PM reduction (and less than 85 percent); and Level 3 includes technologies that achieve 85 percent or greater reductions in PM or an absolute level of 0.01 grams per brake horsepower-hour.

This should result in the continued development of high-efficiency control technologies and provide for a wide range of control technologies to participate in the verification process. It should be noted that, while we are proposing a multi-level approach to the verification procedures, we are not deviating from our goal to achieve the maximum reduction in diesel PM emissions that are economically and technologically feasible.

Verification of NOx Reductions: Several requests have been made to provide emission reduction verification for emissions control technologies that reduce oxides of nitrogen (NOx). We agree that this would be useful information, particularly in light of the increased focus on incentive and other regulatory programs to reduce NOx emissions. As such, we are proposing to revise the Retrofit Verification Procedure to quantify retrofit devices' effects on NOx emissions. We are not proposing to establish threshold values and level designations for NOx at this time.

Inclusion of Requirement to Monitor Backpressure: We are also proposing to include a requirement that backpressure monitors be used for filter-based systems. We believe this is a practical way to determine if the retrofitted vehicle is performing properly. For example, a sustained high backpressure could signal imminent plugging. A monitor would enable the operator of the vehicle to intervene and prevent having the engine stall. Knowledge of the status of the retrofit will be beneficial to the operator and will make the operator more comfortable with retrofitting the vehicle.

All Interested Parties
July 27, 2001
Page 3

Submittal of Comments and Next Steps

We welcome any comments or questions you may have on these proposed modifications to the retrofit verification process. Written comments should be provided by August 17, 2001 and can be mailed to:

Air Resources Board
Mobile Source Control Division
9528 Telstar Avenue
El Monte, CA 91731
Attn: Ms. Annette Hebert

For your information, we are planning on having a workshop in early September to discuss these and other modifications to the Retrofit Verification Procedure which is scheduled to be considered by our Board next year. Additional information on the exact date and location of the workshop will be sent to you under separate cover. If you would like more information on the diesel retrofit program, you may access ARB's website: <http://www.arb.ca.gov/diesel/dieselrrp.htm>. In addition, the latest draft of the retrofit verification procedure (mailout MSC 01-06) is available at <http://www.arb.ca.gov/diesel/mobile.htm>.

Should you have any questions regarding these modifications or the verification procedure in general, please contact Mr. Scott Rowland, Manager, Retrofit Assessment Section, by e-mail at srowland@arb.ca.gov or by phone at (626) 575-6972.

Sincerely,

//s//

Robert H. Cross, Chief
Mobile Source Control Division