TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF 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

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider adoption of amendments to the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines. The proposed amendments would revise, clarify and make specific requirements that pertain to the process for obtaining the ARB's verification of devices or strategies to control emissions from diesel engines.

DATE: January 24, 2008

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, CA 95814

This item will be considered at a one-day meeting of the Board, which will commence at 9:00 a.m., January 24, 2008. Please consult the agenda for the meeting, which will be available at least 10 days before January 24, 2008, to determine the day on which this item will be considered.

If you have a disability-related accommodation need, please go to http://www.arb.ca.gov/html/ada/ada.htm for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please contact the Bilingual Coordinator at (916) 324-5049. TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed amendments to title 13, California Code of Regulations (CCR), sections 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2708, 2709, and 2710.

Background:

In 1998, ARB identified diesel particulate matter (PM) as a toxic air contaminant (title 17, CCR, section 93000). In 2000, ARB adopted the Diesel Risk Reduction Plan (DRRP) with the goal of reducing PM emissions and their associated health risks by

85 percent by the year 2020. The DRRP identified a number of key measures to achieve this goal: more stringent standards for all new diesel-fueled engines and vehicles, retrofitting in-use diesel engines with diesel emission control systems, and the use of low-sulfur diesel fuel.

To support the DRRP, staff developed a verification procedure (Procedure) for in-use diesel emission control systems (systems) that was adopted by the Board in May 2002. The Procedure is used by staff to ensure that in-use diesel emission control systems achieve real and durable PM emissions reductions. It specifies test procedures, warranty requirements, and in-use compliance testing requirements. Systems that meet all of the Procedure's requirements are verified and thus become candidate compliance options for ARB fleet regulations that require the control of diesel emissions from in-use fleets.

In-use fleet regulations, both adopted by the Board and currently under development, rely on having verified diesel emission control systems available to fleet owners as compliance options. Diesel vehicles and equipment for which regulations have already been adopted include transit buses (title 13, CCR, section 2023, et seq.), solid waste collection vehicles (title 13, CCR, section 2021, et seq.), vehicles that belong to public agencies and utilities (title 13, CCR, section 2022, et seq.), mobile cargo handling equipment at ports and intermodal rail yards (title 13, CCR, section 2479), and transport refrigeration units (title 13, CCR, section 2477). A far-reaching in-use regulation is currently under development to control emissions from private on-road heavy-duty diesel vehicles. These regulations provide several paths to compliance, one of which is the installation of verified diesel emission control systems. To support the successful implementation of these regulations, it is therefore critical for the Procedure to be an effective and efficient means to evaluate diesel emission control systems. However, as the verification program has matured, staff has found that a number of amendments to the Procedure are necessary to better serve the needs of the in-use fleet regulations.

Proposed Amendments:

The proposed regulatory language and explanations can be found in the Staff Report: Initial Statement of Reasons (ISOR) and the attachments thereto. The most significant proposed amendments are summarized below:

Conditional Extensions

Staff proposes amendments that would provide for a conditional extension period during which verified diesel emission control systems may be more quickly deployed for use with a greater range of on-road applications than under the current Procedure. The conditional extension would allow applicants with verified systems to apply to extend their verifications to include additional on-road vehicles by submitting some, but not all of the information and data required by the Procedure. If an applicant is granted a conditional extension, the applicant would then be able to sell the system immediately as conditionally verified and would have one year to formally complete the extension by supplying the rest of the information required by the Procedure. Conditional extensions

would therefore accelerate the verification of proven technologies for additional on-road applications and provide regulated fleet owners with additional compliance options more quickly than can occur under the current Procedure.

Systems that Only Reduce Oxides of Nitrogen (NOx) Emissions

Currently, the Procedure does not apply to systems that are intended to reduce emissions of NOx only. Staff proposes that the scope of the Procedure be broadened to allow for the verification of systems that reduce emissions of NOx, but not PM, for certain diesel engines. This could help to address the need for additional reductions in emissions of NOx from in-use diesel engines.

Testing Requirements for Off-Road Applications and Fuel-Based Strategies

Staff proposes amendments to the Procedure that would require applicants seeking verification of a diesel emission control system intended for use with variable speed off-road applications to perform emission testing using the transient test procedures outlined in title 13, CCR, section 2423 and the incorporated California Exhaust Emissions Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C (New 2008 Off-Road Test Procedures). All systems intended for variable speed off-road engines would be required to undergo three hot-start tests using the Nonroad Transient Cycle (NRTC) as prescribed in the above-referenced procedures. The transition to a transient test cycle is important because most off-road engines and equipment have transient duty cycles that are not well characterized by the steady state test cycle currently required. As a result, the current test cycle provides a very limited means for evaluating the performance of many kinds of emission control systems. To assist applicants in the transition to the NRTC, staff proposes that applicants be allowed to continue to use the existing steady-state test procedures outlined in the current ARB off-road regulations until December 31, 2008, provided certain criteria are met.

Staff also proposes that all fuel-based control systems follow the verification procedures specified in section 2710. This will ensure similar emissions testing for all fuel-based strategies and require appropriate testing that ensures real and durable emissions reductions from applications subject to emissions requirements in the fleet rules.

Requirements for NOx Reduction Systems

Staff proposes that NOx reduction systems be verified using five levels, called Marks, defined by the lower bounds of NOx reduction performance. The lower bounds are equally spaced apart in 15 percent increments. Systems that achieve NOx reductions of less than 25 percent would not be verified. This proposal would address the growing need for NOx reductions by providing broadly defined verifications that complement existing technologies.

To assist in the evaluation of the in-use performance of aftertreatment-based NOx emission control systems, staff proposes that NOx emissions both upstream and downstream of the NOx device be measured and recorded during durability and field

demonstrations. These data provide a record of activity as well as insight into the functioning of a system while in actual use.

Staff also proposes that the Board eliminate the requirement to test an on-road NOx emission control system under conditions that generate off-cycle emissions. One fundamental issue with the current requirement is that there is no standard method or test cycle which is guaranteed to trigger off-cycle NOx emissions for all engine makes and models. Staff has had only limited success with emissions test conditions that reliably result in off-cycle emissions. The proposal should reduce verification costs and simplify the overall process.

Other Amendments

Staff proposes that the Board add additional clarifications of the current requirements. These include deadlines for submitting in-use compliance information, a requirement for specific information to be kept for each diesel emission control system sold, a requirement that verified systems actually be sold in California, and specific requirements regarding verification transfers, acceptance of pre-existing data, system labeling, and sales and installation. These proposed amendments will aid applicants by clarifying the intent of existing requirements.

COMPARABLE FEDERAL REGULATIONS

The United States Environmental Protection Agency (U.S. EPA) has published a draft document, "General Verification Protocol for Diesel Exhaust Catalysts, Particulate Filters, and Engine Modification Control Technologies for Highway and Nonroad Use Diesel Engines," but has not promulgated formal regulations for this verification protocol. That verification protocol is intended to support the voluntary retrofit programs initiated by U.S. EPA, while staff's proposal is to support ARB's DRRP and all the associated in-use fleet regulations. Also, the U.S. EPA protocol does not regulate changes in emissions of nitrogen dioxide caused by emission control systems.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

The Board staff has prepared the ISOR for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The ISOR is entitled: Proposed Amendments to the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines.

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on the ARB website listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, California 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing on January 24, 2008.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on the ARB website listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons, Ms. Danielle Robinson, Air Resources Engineer, Retrofit Assessment Section, at (626) 450-6109 or by email at drobinso@arb.ca.gov, or Ms. Shawn Daley, manager, Retrofit Assessment Section, at (626) 575-6972 or by email at sdaley@arb.ca.gov.

Further, the agency representative and designated back-up contact persons to whom non-substantive inquiries concerning the proposed administrative action may be directed are Alexa Malik, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-4011, or Amy Whiting, Regulations Coordinator, (916) 322-6533. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on the ARB Internet site for this rulemaking at www.arb.ca.gov/regact/2008/verdev2008/verdev2008.htm

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed amendments are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action would not create costs or savings to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, or other nondiscretionary cost or savings to state or local agencies.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts on representative private persons or businesses. In general, ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. Participation in the Procedure is purely voluntary, both in its current form and as amended under the proposed action. Presumably, only entities that expect to benefit financially by obtaining verification will do so. While it is true that participation in the verification process is voluntary and there is no prohibition against selling diesel emission control strategies in California that have not been verified by ARB, the Board has adopted and may in the future adopt regulations requiring reductions of PM from in-use diesel vehicles through the application of verified, retrofitted diesel emission control strategies in specific situations.

Entities subject to these retrofit requirements must use verified diesel emission control strategies to comply with these requirements under some compliance options. Consequently, entities that wish to pursue these compliance options will only purchase systems from manufacturers that have obtained ARB's verification. For the most part, the proposed amendments would not raise compliance costs, and in the case of conditional verification may result in cost savings by allowing diesel emission control strategies to be marketed and used before the verification process is completed. Nevertheless, staff is aware of certain cost impacts that a representative private person or business may, and in some cases would, necessarily incur in reasonable compliance with the proposed action, should they elect to do so. These cost impacts are discussed below.

The proposed transient testing requirements for off-road applications would require applicants to perform a test cycle that is different from the steady state cycle they currently conduct. Staff is aware of three laboratories that can perform the proposed test cycle with no increase in cost to applicants. Applicants who wish to test their products at an internal laboratory may incur costs if their testing facility cannot presently perform the proposed test cycle. If their laboratory can currently perform transient testing, staff estimates that applicants would spend $35,000 to $50,000 to install necessary software and hardware. As an alternative, applicants may use their own staff to develop and install software and hardware. Regardless, these facilities will ultimately incur these costs in order to perform NRTC testing for Tier 4 off-road engine certifications. Applicants whose laboratories can only perform steady state testing may spend $250,000 to $3,000,000. Staff estimates that applicants or independent laboratories that wish to build a completely new test cell that can support NRTC testing would spend up to $5,125,000. Staff estimates that a new steady state test cell costs up to $1,200,000. Therefore, applicants could incur up to nearly $4,000,000 in additional costs to build a new test cell that can run the NRTC. In all cases, costs vary greatly depending on the option selected by an applicant, which parties are chosen to do the necessary installations, and what equipment is installed.

Under staff's proposal, applicants with NOx reduction aftertreatment systems would be required to measure NOx emissions upstream and downstream of the aftertreatment systems. Staff estimates that applicants who choose to install NOx sensors upstream and downstream of the aftertreatment system would spend approximately $5,500 for each emissions measurement system. This estimate includes two NOx sensors, one mass air flow sensor, one electronic controller, and one datalogger. Many diesel emission control systems already have some of these components thus reducing these costs. In addition, the proposal eliminates emissions testing of NOx reduction systems under conditions that give rise to significant periods of elevated NOx emissions. This reduction in testing cost should offset the additional costs applicants would incur in complying with the proposed requirement to measure in-use NOx emissions.

Applicants with fuel additive-based systems may incur additional costs to comply with the proposed requirement for fuel-based systems. The proposal requires applicants to conduct additional emissions tests, as required in section 2710. The increased cost for

these additional emissions tests is estimated to be $50,000. Including toxics measurements, the increased cumulative costs are estimated to be up to $150,000. However, the Procedure currently requires additional emissions analysis for systems (including fuel-additive based systems) that may increase toxic air contaminants or other harmful compounds, which can include emissions analysis required in section 2710. As such, the actual estimated cost increases may be significantly less (closer to $50,000).

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action would not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulatory action would not affect small businesses because the Verification Program is a voluntary program and generally does not affect small businesses. Applicants that can meet the requirements and find verification advantageous choose to participate.

In accordance with Government Code sections 11346.3(c) and 11346.5(a)(11), the Executive Officer has found that the reporting requirements of the regulation which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board or that has otherwise been identified and brought to the attention of the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMITTAL OF COMMENTS

The public may also present comments relating to this matter orally or in writing at the meeting, and in writing or by email before the meeting. To be considered by the Board, written submissions not physically submitted at the meeting must be received **no later than 12:00 noon, January 23, 2008**, and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Facsimile submittal: (916) 322-3928

Please note that under the California Public Records Act (Government Code section 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request. Additionally, this information may become available via Google, Yahoo, and any other search engines.

The Board requests but does not require that 30 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing so that ARB staff and Board Members have time to fully consider each comment. The Board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

STATUTORY AUTHORITY AND REFERENCES

This regulatory action is proposed under that authority granted in Health and Safety Code, sections 39002, 39003, 39500, 39600, 39601, 39650-39675, 40000, 43000, 43000.5, 43011, 43013, 43018, 43105, 43600, and 43700 of the Health and Safety Code. This action is proposed to implement, interpret and make specific sections 39650-39675, 43000, 43009.5, 43013, 43018, 43101, 43104, 43105, 43106, 43107, and 43204-43205.5 of the Health and Safety Code and title 17, CCR, section 93000.

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with non-substantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action; in such event the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted.

The public may request a copy of the modified regulatory text from the ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, California 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

/S/

James Goldstene
Executive Officer

Date: November 20, 2007