

## **TITLE 13. CALIFORNIA AIR RESOURCES BOARD**

### **NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO HEAVY-DUTY VEHICLE REGULATIONS: 2004 EMISSION STANDARDS; AVERAGING, BANKING, AND TRADING; OPTIONAL REDUCED-EMISSION STANDARDS; CERTIFICATION TEST FUEL; LABELING; MAINTENANCE REQUIREMENTS AND WARRANTIES**

The Air Resources Board (the "Board" or "ARB") will conduct a public hearing at the time and place noted below to consider amendments to regulations specifying both mandatory and optional reduced-emission standards for 2004 and subsequent model year heavy-duty diesel engines. In addition, provisions to allow manufacturers of California-certified on-road diesel engines to participate in the federal Averaging, Banking, and Trading (ABT) program will be considered. Changes to the test fuel for engine-certified medium-duty diesel-cycle engines will also be considered. Finally, new warranty, maintenance, useful life and rebuild requirements for both diesel-cycle and Otto-cycle engines will be presented to the Board for consideration and adoption.

DATE: April 23, 1998

TIME: 9:30 a.m.

PLACE: Air Resources Board  
Hearing Room, Lower Level  
2020 L Street  
Sacramento, California

This item will be considered at a two-day meeting of the Board, which will commence at 9:30 a.m., April 23, 1998, and may continue at 8:30 a.m., April 24, 1998. This item may not be considered until April 24, 1998. Please consult the agenda for the meeting, which will be available at least 10 days before April 23, 1998, to determine the day on which this item will be considered.

This facility is accessible to persons with disabilities. If accommodation is needed, please contact Ms. Renee Kemena at (916)322-6921 or TDD(916)324-9531 or (800)700-8326 for TDD calls from outside the Sacramento area 14 days before April 23, 1998.

INFORMATIVE DIGEST/PLAIN ENGLISH POLICY STATEMENT OVERVIEW OF PROPOSED ACTION

Proposed Actions and Sections Affected:

In 1994, the Air Resources Board approved a State Implementation Plan (SIP) for ozone. The SIP contains measures M5 and M6, which call for new state and national emission standards for heavy-duty diesel vehicles beginning in 2004. In June 1995, ARB, the United States Environmental Protection Agency (U.S. EPA), and the manufacturers of heavy-duty vehicle engines signed a statement of principles (SOP) calling for harmonization of ARB and U.S. EPA heavy-duty vehicle regulations. The SOP is a cooperative agreement between ARB, U.S. EPA, and the engine manufacturers that recognizes the technological feasibility of significant emission reductions from heavy-duty vehicles. In October 1997, U.S. EPA adopted new emission standards, along with changes to the existing federal averaging, banking, and trading program, and changes to useful life and maintenance requirements for heavy-duty diesel engines. The proposed amendments to existing California emission standards and test procedures are designed to harmonize as closely as possible with the federal program, while still maintaining the emission reduction benefits of the current California program. The coordinated efforts of ARB, U.S. EPA, and the engine manufacturers to introduce lower-emission heavy-duty vehicles nationwide will result in substantial air quality benefits in California and the rest of the country.

**I. Amendment of the California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Engines and Vehicles -- Section 1956.8, Title 13, California Code of Regulations (CCR).**

Section 1956.8 includes exhaust emission standards and test procedures, and also incorporates by reference "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles." There are several proposed amendments to Section 1956.8 and the incorporated standards and test procedures, including: mandatory emission standards for heavy-duty diesel-cycle engines beginning in 2004; optional reduced-emission standards for those vehicles; provisions to allow heavy-duty and medium-duty diesel engines to participate in the federal averaging, banking, and trading program; changes to the useful life requirements and maintenance intervals; changes to the certification test fuel requirements; and changes to the non-methane hydrocarbon measurement test procedures.

Mandatory Emission Standards for Heavy-Duty Diesel-cycle Engines

Pursuant to Health and Safety code section 43806, the ARB, in June 1993, and June 1995 adopted amendments to the emission standards and test procedures for urban transit buses and engines and heavy-duty engines and vehicles. The ensuing regulations set the California particulate matter (PM) and oxides of nitrogen (NOx) emission standards for all 1996 and later California urban bus engines at 0.05 gram/brake horsepower-hour (g/bhp-hr) and 4.0 g/bhp-hr, respectively. For other heavy-duty engines (exclusive of urban transit buses) the PM and NOx

emission standards for all 1998 and later California heavy-duty engines and vehicles, were set at 0.1 and 4.0 g/bhp-hr, respectively. As of 1998, U.S. EPA emission standards for heavy-duty vehicles and urban transit buses are the same as the current California standards.

To further reduce emissions, however, in October 1997, U.S. EPA adopted regulations specifying more stringent emission standards for all 2004 and subsequent model year heavy-duty diesel engines (Federal Register, Vol. 62, No. 203, October 21, 1997, pp. 54694 - 54730). The 1990 Clean Air Act Amendments require that California's motor vehicle program be at least as stringent as the U.S. EPA's program. ARB staff's proposed amendments would align California's standards for 2004 and later model year new diesel heavy-duty engines, and for new replacement diesel heavy-duty engines, with the federal requirements. Like the adopted federal requirements, these proposed amendments include a NO<sub>x</sub> plus nonmethane hydrocarbon (NMHC) emission standard of 2.4 g/bhp-hr; or 2.5 g/bhp-hr with a 0.5 g/bhp-hr NMHC cap.

#### Optional Reduced-Emission Standards for Heavy-Duty Diesel Engines

California currently has optional reduced-emission standards for engines in heavy-duty vehicles. The federal program does not. In California, a vehicle owner/operator would need a vehicle certified to an optional reduced-emission standard to generate marketable emission reduction credits. These regulatory amendments include proposed NO<sub>x</sub> plus NMHC optional reduced-emission standards for 2004 and subsequent heavy-duty diesel-cycle engines. The proposed standards range from 1.8 to 0.3 g/bhp-hr NO<sub>x</sub> plus NMHC, in 0.3 g/bhp-hr increments (i.e., 1.8, 1.5, 1.2, 0.9, 0.6, and 0.3 g/bhp-hr NO<sub>x</sub> plus NMHC).

#### Averaging, Banking, and Trading for Heavy-Duty Diesel Engines

The federal averaging, banking, and trading program was designed to provide manufacturers flexibility in meeting NO<sub>x</sub> and PM standards. In 1997 U.S. EPA modified the ABT program to allow credits to be generated for NO<sub>x</sub> plus NMHC, and PM, among other modifications (federal modified ABT program).

In order to align California provisions with the federal program and allow similar flexibility, these regulations would allow manufacturers of California-certified engines to participate in the federal modified ABT program. Heavy-duty vehicles with diesel-cycle engines, having a gross vehicle weight rating (GVWR) greater than 14,000 pounds, could participate starting in 1998. The proposed ABT provisions would allow NO<sub>x</sub> credits to be generated and banked in 1998 through 2003. Banked credits could be used beginning in 2004. This provision slightly differs from the federal program (Title 40, Code of Federal Regulations, sections 86.098-15 and 86.004-15), which allows banked credits to be used before 2004. The proposed provisions would also allow continued participation in the federal program generating, banking, and trading provisions after 2003.

### Averaging, Banking, and Trading for Medium-Duty Vehicle Engines

Under the federal program vehicles in the 8,501 and 14,000 pounds GVWR range are considered heavy-duty vehicles. In California those vehicles are currently considered to be medium-duty vehicles, and are regulated under California's medium-duty vehicle program. In 1995, in anticipation of the federal rulemaking, ARB adopted a 2.4 g/bhp-hr NO<sub>x</sub> plus NMHC (or 2.5 with a 0.5 NMHC cap) emission standard for engine-certified medium-duty vehicles beginning in 2004. Therefore, the 2004 standards for those vehicles are already in-line with the recently adopted federal standards (Title 40, Code of Federal Regulations (CFR), section 86.004-11). To further align with the federal program, the proposed provisions would allow manufacturers of engines for engine-certified medium-duty vehicles to participate in the federal ABT program beginning in 2004.

### Useful life requirements

The proposed amendments would reference the new useful life definition (Title 40, CFR, section 86.004-2). The proposed amendments would extend the useful life requirement for heavy heavy-duty diesel-cycle vehicles to: 435,000 miles; 10 years; or 22,000 hours; which ever occurs first. The useful life requirement applies to all pollutants. For all other heavy-duty engine sub-categories, Otto-cycle and diesel-cycle, the useful life requirements is extended to 10 years for all pollutants (the mileage intervals remain unchanged). This amendment would align the California useful life definition with the federal definition.

### Maintenance intervals

The proposed regulations would increase the maintenance intervals for exhaust gas recirculation systems (except filters and coolers) in Otto-cycle and diesel light heavy-duty engines (14,001 to 19,000 pounds GVWR), to 100,000 miles or 3,000 hours, whichever occurs first. For diesel medium- and heavy heavy-duty engines the maintenance interval is increased to 150,000 miles or 4,500 hours, whichever occurs first. These regulations also propose new maintenance intervals for add-on emission-related components, and catalytic converters in diesel heavy-duty engines. For diesel light heavy-duty engines, the proposed maintenance interval is proposed at 100,000 miles or 3,000 hours, whichever occurs first. For diesel medium heavy-duty and heavy heavy-duty engines, the proposed maintenance interval is proposed at 150,000 miles or 4,500 hours, whichever occurs first. This amendment would align the California maintenance intervals with the federal definition (Title 40, CFR, section 86.004-25).

### Engine Certification Test Fuel

The 1995 amendments to the medium-duty vehicle standards included provisions to allow manufacturers the option of certifying on California diesel fuel. Since California diesel fuel is cleaner burning than federal diesel fuel, this option was considered to be beneficial to engine manufacturers. This option was provided to help manufacturers meet California medium-duty

vehicle and engine standards because they are stricter than the current federal standards. In 2004, emission standards for California-certified medium-duty diesel engines will be the same as federal standards. A proposed amendment to the test procedures would require that medium-duty diesel engines be certified on federal fuel beginning in 2004 (see federal fuel specifications in Title 40, CFR, section 86.1313-90). For 1998 through 2003, when the California standards are more stringent, engines could continue to be certified on California diesel fuel.

#### NMHC test method

Existing NMHC measurement procedures for heavy-duty diesel engines would be used through 2003. Beginning with the 2004 model year, staff proposes the following three options to NMHC measurement procedures: 1) use a total hydrocarbons (THC) measurement in place of an NMHC measurement; 2) use a measurement procedure selected by the manufacturer with prior approval of the Executive Officer; or 3) subtract two percent from the measured THC value to obtain an NMHC value. Heavy-duty engines using natural gas would have the added option of measuring NMHC through direct quantification of individual species by gas chromatography. The methodology would have to be specified at time of certification and would remain the same for the engine family throughout the engines' useful lives.

#### Rebuild requirements

The ARB staff is proposing provisions to help ensure that engines are rebuilt to equivalent to or lower-emission configurations than the original engines. These changes are the same as adopted federal requirements.

### **II. Amendment of the California Motor Vehicle Emission Control Label Specifications -- Section 1965, Title 13, CCR.**

The ARB staff is proposing amendments to the California Motor Vehicle Emission Control Label Specifications to help identify those diesel heavy-duty engines that are certified to the proposed optional NOx plus NMHC standards. Staff proposes that information be added to the emission control label or supplemental emission control label to identify the optional standard to which the engine is certified (or standards, for multi-fuel mode engines). This information could be used as part of an incentive program for the early introduction of low-emission heavy-duty vehicles.

### **III. Amendment of the Useful life Definition for Heavy-Duty Engines and Vehicles for the Procedures for In-Use Vehicle Voluntary and Influenced Recalls -- Section 2112, Title 13, CCR.**

The useful life definition is not only referenced in the regulations containing the emission standards, it is also referenced in the regulations dealing with in-use recalls. This proposed amendment to the useful life definition in Section 2112 would be specifically applicable to

Chapter 2 - Enforcement of Vehicle Emission Standards and Surveillance Influenced Recalls. Staff proposes that the useful life requirement be extended for all pollutants standards for 2004 and later heavy heavy-duty vehicles to: 435,000 miles, 10 years, or 22,000 hours, whichever occurs first. For all other heavy-duty subcategories it is proposed that the useful life requirement be extended to 10 years, with the mileage intervals remaining unchanged. This requirement would be consistent with what has been adopted by the U.S. EPA.

**IV. Amendment of the Defects Warranty Requirements for 1979 Through 1989 Model Passenger Cars, Light-duty Trucks, and Medium-Duty Vehicles; 1979 and Subsequent Model Motorcycles and Heavy-duty Vehicles; and Motor Vehicles Engines Used in Such Vehicles --Section 2036.**

U.S. EPA diesel heavy-duty regulations adopted in 1997 also contained revisions to warranty provisions for both diesel and Otto-cycle engines. Accordingly, these regulations require the warranty period be not less than the basic mechanical warranty that the manufacturer provides the individual engine purchaser. This amendment would align California's warranty provisions with U.S. EPA's.

**AVAILABILITY OF DOCUMENTS AND CONTACT PERSON/PLAIN ENGLISH POLICY STATEMENT OVERVIEW**

The Board staff has prepared a staff report which includes the initial statement of reasons for the proposed action and a summary of the environmental impacts of the proposal, if any. Copies of the staff report and the full text of the proposed regulatory language may be obtained from the Board's Public Information Office, 2020 L Street, Sacramento, CA 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing. The ARB has determined the proposed action will affect small business. The ARB has determined that it is not feasible to draft the regulation in plain English due to the technical nature of the regulations; however, a plain English summary of the regulation is available from the agency contact person named in this notice, and/or is also contained in the staff report for this regulatory action. The Board staff has compiled a record which includes all information upon which the proposal is based. This material is available for inspection upon request to the contact person identified immediately below.

Further inquiries regarding this matter should be directed to Ms. Renee Kemena, Air Resources Engineer, Regulatory Strategy Section, Mobile Source Control Division, at (916) 322-6921.

**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 in reasonable compliance with the proposed regulations are presented below.

The Executive Officer has determined that the proposed regulatory action will not create costs or savings, as defined in Government Code section 11346.5(a)(6), 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 savings to local agencies.

The Executive Officer has also determined that adoption of the proposed regulatory action will not have a significant adverse economic impact on businesses, including the ability of California businesses to compete with businesses in other states.

The Executive Officer has also determined that there will be no, or an insignificant, potential cost impact, as defined in Government Code section 11346.5(a)(9), on private persons or businesses directly affected resulting from the proposed action.

Because federal regulations already will require the use of heavy-duty engines throughout the United States that are able to meet the 2.4 g/bhp-hr NO<sub>x</sub> plus NMHC (or 2.5 with 0.5 NMHC cap) emission standard beginning in 2004, there would be no incremental cost increase for adopting the proposed mandatory California emission standard.

Should manufacturers choose to certify engines to an optional reduced-emission standard, the proposed regulations would impose small compliance costs on those manufacturers who use the optional supplemental labeling requirement provided by the regulations. Given that the proposed optional emission standards are not mandatory, it is assumed that market forces will prevent the use of optional standards unless manufacturers are able to fully recover their costs.

In accordance with Government Code sections 11346.3 and 11346.54, the Executive Officer has determined that the proposed regulatory action will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within California, or the expansion of businesses currently doing business within California. An assessment of the economic impacts of the proposed regulatory action can be found in the ARB's Staff Report: Initial Statement of Reasons.

The Executive Officer has also determined, pursuant to Government Code section 11346.3, that the regulation will not have an adverse economic impact on businesses or individuals. The directly affected California businesses include vehicle operators and engine rebuilders. However, vehicle operators and engine rebuilders would not incur any costs beyond those incurred as a result of the adopted federal requirements.

Before taking final action on the proposed regulatory action, the Board must determine that no alternative considered by the agency 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 present comments relating to this matter orally or in writing. To be considered by the Board, written submissions must be addressed to and received by the Clerk of the Board, Air Resources Board, P.O. Box 2815, Sacramento, CA 95812, no later than 12:00 noon, April 22, 1998, or received by the Clerk of the Board at the hearing.

The Board requests, but does not require, that 20 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing. 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 HEARING PROCEDURES

This regulatory action is proposed under that authority granted in California Health and Safety Code sections 39600, 39601, 43013, 43018, 43101, 43103, 43104, 43105, 43200, 43806, and Vehicle Code section 28114. This action is proposed to implement, interpret and make specific California Health and Safety Code sections 39002, 39003, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43105, 43106, 43107, 43200, 43204, 43205, 43205.5, 43806, 44004, 44010, 44011, 44012, 44015, and 44017.

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 nonsubstantial 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 Board's Public Information Office, 2020 L Street, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Michael P. Kenny  
Executive Officer