

## TITLE 13. CALIFORNIA AIR RESOURCES BOARD

### **NOTICE OF PUBLIC HEARING TO CONSIDER THE ADOPTION OF AMENDMENTS TO THE LOW-EMISSION VEHICLE REGULATIONS, INCLUDING PARTICULATE STANDARDS FOR GASOLINE VEHICLES, MORE STRINGENT EMISSION STANDARDS FOR FUEL-FIRED HEATERS, AND ADMINISTRATIVE REVISIONS**

The Air Resources Board (Board or ARB) will conduct a public hearing at the time and place noted below to consider amendments to its exhaust emission regulations for light- and medium-duty vehicles. These amendments will modify the Low-Emission Vehicle II (LEV II) regulations to establish particulate standards for gasoline vehicles, more stringent emission standards for fuel-fired heaters used in zero-emission vehicles, and make various other changes.

DATE: November 15, 2001

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency  
Air Resources Board  
Auditorium, Second Floor  
1001 "I" Street  
Sacramento, CA 95814

This item will be considered at a two-day meeting of the ARB, which will commence at 9:00 a.m., November 15, 2001, and may continue at 8:30 a.m., November 16, 2001. This item may not be considered until November 16, 2001. Please consult the agenda for the meeting, which will be available at least 10 days before November 15, 2001, 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 the Clerk of the Board at (916) 322-5594, or Telephone Device for the Deaf (TDD) (916) 324-9531 or (800) 700-8326 for TDD calls from outside the Sacramento area, by November 1, 2001, to ensure accommodation.

### **INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW**

**Sections Affected:** Amendments to title 13, California Code of Regulations (CCR), sections 1960.1 and 1961, and the incorporated "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" as last amended December 27, 2000, and "California Non-Methane Organic Gas Test Procedures" as last amended August 5, 1999; section 1960.5 and the incorporated "Guidelines for Certification of 1983 and Subsequent Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California" as last amended July 12, 1991; and section 1962 and the incorporated

“California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes” as last amended August 5, 1999. Adoption of the new “Guidelines for Certification of 2003 and Subsequent Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California,” to be incorporated in section 1960.5.

**Background:** Following a hearing in November 1998, the ARB adopted the second generation LEV II program. These regulations are a continuation of the Low-Emission Vehicle (LEV I) regulations originally adopted in 1990 and phased in through the 2003 model year. The LEV II regulations expand the scope of the LEV I regulations by increasing the stringency of the emission standards for all light- and medium-duty vehicles beginning with the 2004 model year, and making the expanded category of light-duty trucks (including almost all sport utility vehicles) subject to the same standards as passenger cars. There are several tiers of increasingly stringent LEV II emission standards to which a manufacturer may certify: low-emission vehicle (LEV); ultra-low-emission vehicle (ULEV); super-ultra low-emission vehicle (SULEV); partial zero-emission vehicle (PZEV); and zero-emission vehicle (ZEV). In conjunction with the tiers of emission standards, the LEV II regulations provide flexibility for phasing in vehicles meeting the standards. Manufacturers are allowed to choose the standards to which each vehicle is certified provided its overall fleet meets a fleet average hydrocarbon requirement that is progressively lower with each model year. The LEV II fleet average requirements commence in the 2004 model year and apply through 2010 and beyond. In addition to the LEV II requirements, starting with the 2003 model year minimum percentages of passenger cars and the lightest light-duty trucks marketed in California by a large or intermediate volume manufacturer must be ZEVs.

Subsequent to the adoption of the LEV II program, the United States Environmental Protection Agency (U.S. EPA) adopted its own version of stringent emission standards for light-duty vehicles, known as the Tier 2 regulations. In December 2000, the Board modified the LEV II program to take advantage of some elements of the recently adopted federal Tier 2 program to ensure that only the cleanest vehicle models will continue to be sold in California.

The ARB continuously seeks to improve California’s regulations and test procedures with the goals of improving clarity, increasing uniformity with the U.S. EPA (where it is appropriate), minimizing cost (wherever possible), and anticipating and resolving regulatory issues before they pose serious problems for manufacturers. This rulemaking supports the aforementioned goals by proposing a number of changes to the LEV II regulations. These include a number of minor modifications, including some new emission standards that will facilitate the certification of clean vehicles in California while continuing to ensure that the California emission standards are the most stringent in the world.

The proposed amendments to the LEV II regulations would establish certain new emission standards as well as make some minor administrative revisions to ease the certification effort for manufacturers.

**Proposed new emission standards.** The new emission standards being proposed are:

**1. Establish a particulate matter (PM) standard for Otto-cycle vehicles.**

Currently, California requires only diesel vehicles to meet a PM emission standard, while the U.S. EPA requires both diesel-cycle and Otto-cycle (gasoline) vehicles to meet a PM standard. While the health effects of PM emissions from gasoline vehicles have not been defined at this time, staff is proposing alignment with the federal standard to provide an additional measure of protection for public health. Therefore, staff is proposing that light- and medium-duty Otto-cycle vehicles be required to meet the same PM standard required for diesel-cycle vehicles to ensure that any new direct injection gasoline engines exhibit low PM emissions.

**2. ZEV fuel-fired heater requirements.** The emission requirements for fuel-fired heaters used in ZEVs were first adopted in the original LEV I program. At that time, they were required to certify to the most stringent emission standard available, the ULEV standard. With the adoption of the LEV II regulations, the most stringent exhaust emission standard became the SULEV standard, which is 75 percent cleaner than the ULEV standard. Since allowing fuel-fired heaters used by ZEVs to emit at a level greater than a PZEV is inconsistent with the purpose of the ZEV program, staff is proposing that fuel-fired heaters certify to the SULEV standard. Furthermore, since fuel-fired heaters are not permitted to operate above 40°F ambient temperature, manufacturers would be required to meet the emission standard at 40°F – rather than at 68°F - 86°F as is now the case. The new standards would be effective beginning with model year 2005 to provide manufacturers with sufficient lead time to develop product plans.

**3. PZEV Alternative Fuel Vehicle Standards.** Currently, a natural gas or alcohol bi-fuel, flexible fuel or dual-fuel vehicle may certify to two emission standards – the lower standard when operating on the alternative fuel and the next higher emission standard when operating on gasoline (e.g., the SULEV standard on compressed natural gas and ULEV on gasoline). As part of the LEV II rulemaking, the ZEV requirement was modified to allow a manufacturer to meet a portion of its ZEV obligation by producing extremely clean partial zero-emission vehicles (PZEVs). The granting of partial ZEV credits for PZEVs is premised on the assumption that PZEVs provide emission benefits beyond those achieved by vehicles certifying to the standard SULEV standard. Therefore, staff is proposing that any bi-fuel, flexible fuel and dual-fuel vehicle that certifies to the PZEV standard must certify to the SULEV emission standard regardless of the fuel on which it is operated. If a manufacturer does not wish to earn partial ZEV credit from a bi-fuel, flexible fuel or dual-fuel vehicle certifying to the SULEV standard, then the manufacturer would still be allowed to certify to the ULEV standard when operating on gasoline.

**Proposed administrative amendments.** The proposed administrative amendments include:

**1. Establishment of a non-methane organic gas (NMOG) certification factor.** This proposal would allow a manufacturer to apply a factor of 1.04 to the measured non-methane hydrocarbons (NMHCs) in lieu of measuring carbonyls when determining compliance with the NMOG standards for gasoline and diesel vehicles. A manufacturer using the factor would also be allowed to demonstrate compliance with the formaldehyde emission standard by including a statement of compliance in their application for certification. Similar to the federal requirements, the statement must be based on previous emission tests, development tests, or other appropriate data.

**2. Extending the applicability of generic reactivity adjustment factors (RAFTs).** Compliance with the NMOG standard is determined by multiplying the measured NMOG emission level by the applicable RAF. The availability of RAFTs, therefore, provides manufacturers with an incentive to produce clean alternative fuel vehicles. Manufacturers can use either the generic RAFTs provided in the California light- and medium-duty vehicle test procedures, or generate their own test group specific RAFTs. Currently, the RAFTs contained in the California test procedures are effective only through the 2003 model year. Accordingly, staff is proposing to extend the generic RAFTs indefinitely for alternative fuels. Beginning in the 2004 model year the generic RAF for gasoline – now 0.94 – would be eliminated.

**3. Revisions to the emission offset requirements for AB 965 vehicles.** Recognizing that manufacturers may be required to limit product selection because of the stricter California emission standards, in 1981 the California legislature enacted a statute that allows manufacturers to introduce dirtier federal vehicles in California as long as their emissions are offset by cleaner California vehicles. In response to this directive, the Board adopted “Guidelines for Certification of 1983 and Subsequent Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California” (AB 965 Guidelines) in June 1982. The staff proposes amendments to these guidelines to calculate available emission credits based on each manufacturer’s fleet average NMOG level compared to the required fleet average NMOG level.

**4. Implement additional intermediate in-use compliance standards.** Even though a manufacturer must certify a vehicle to a set of 50,000 and 120,000 mile standards, the LEV II regulations establish slightly less stringent in-use standards for vehicles certifying to LEV II, ULEV II, and SULEV standards for the first three years that a new model is introduced. This was done to provide manufacturers with a temporary in-use compliance margin when they first introduce vehicles to the new standards. Currently, there are no intermediate in-use standards for light-duty trucks engineered for heavier duty cycles that have a base payload capacity of 2,500 lbs. or higher or for vehicles certified to the optional 150,000 mile standards for LEV, ULEV, or SULEV. Accordingly, staff is proposing that intermediate in-use standards be added for these

emission categories, equal in stringency to the existing intermediate in-use standards for other emission categories.

**5. Proposed revisions to the California NMOG test procedures.** Because of innovations and advancements in the measurement of automotive exhaust, the NMOG test procedures have periodically been updated to reflect these improvements. The staff is proposing a number of additional technical revisions. The most notable proposed amendments would change the maximum incremental reactivity (MIR) values for the various organic compounds found in NMOG. The proposed new values reflect the new MIR values which the ARB recently adopted in a rulemaking on consumer products.

### **AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS**

The ARB staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the potential environmental and economic impacts of the proposal, and supporting technical documentation. The staff report is entitled: "Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Amendments To The Low-Emission Vehicle Regulations, Including Particulate Standards For Gasoline Vehicles, More Stringent Emission Standards For Fuel-Fired Heaters, And Administrative Revisions."

Copies of the ISOR and full text of the proposed regulatory language, in underline and strike-out format to allow for comparison with the existing regulations, may be obtained from the ARB's Public Information Office, Environmental Services Center, 1001 "I" Street, First Floor, Sacramento, California 95814, (916) 322-2990, at least 45 days prior to the scheduled hearing (November 15, 2001).

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

Inquiries concerning the substance of the proposed regulations may be directed to the designated agency contact persons: Paul Hughes, Manager, LEV Implementation Section, Mobile Source Control Division at (626) 575-6977, or staff member Sarah Carter at (626) 575-6845.

Further, the agency representative and designated back-up contact persons to whom non-substantive inquiries concerning the proposed administrative action may be directed are Artavia Edwards, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-6070, 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.

If you are a person with a disability and desire to obtain this document in an alternative format, please contact the Air Resources Board ADA Coordinator at (916) 323-4916, or TDD (916) 324-9531, or (800) 700-8326 for TDD calls from outside the Sacramento area.

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 <http://www.arb.ca.gov/regact/levii01/levii01.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 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.

In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on representative private persons or businesses. The Executive Officer has made an initial determination that the proposed regulatory action will 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 initially determined that the proposed amendments should have minimal impacts on the creation or elimination of jobs within the State of California, minimal impacts on the creation of new businesses and the elimination of existing businesses within the State of California, and minimal impacts on the expansion of businesses currently doing business within the State of California.

While not significant, the ARB has identified the following potential cost impacts that a representative private person or business may necessarily incur in reasonable compliance with the proposed action. The businesses affected by the proposed amendments are the approximately 30 companies worldwide that manufacture California-certified light- and medium-duty vehicles. Only one motor vehicle manufacturing plant is located in California, the NUMMI facility, which is a joint venture between General Motors and Toyota. The proposed regulatory and test procedure modifications are primarily administrative changes that do not require any California vehicle model to be certified to new standards. The proposed particulate standards for Otto-cycle vehicles have already been adopted for federal Tier 2 vehicles and will not

require the development and use of new emission control technology. Furthermore, a manufacturer would be allowed to demonstrate compliance with these standards by providing a statement in its application for certification that its Otto-cycle vehicles will comply with the applicable particulate standards in lieu of testing the vehicles (this requirement is consistent with the federal Tier 2 certification requirement). The requirement that fuel-fired heaters used in ZEVs meet SULEV, rather than ULEV standards could result in negligible cost increases. Fuel-fired heaters meeting ULEV standards must already incorporate fuel control strategies to reduce cold-start emissions (i.e., emissions created when the heater first starts up). While compliance with SULEV standards may require an additional level of emission control, emissions from fuel-fired heaters are much easier to reduce than vehicle emissions because heaters operate at steady-state modes.

The cost associated with requiring bi-fuel, flexible fuel or dual-fuel PZEVs to certify to the 150,000 mile SULEV standards on both fuels should be minor. Meeting the SULEV standards is a challenge not only for gasoline, but alternative fuels as well. Since these vehicles must already meet SULEV standards using the alternative fuel, they are already equipped with a high degree of emission control that could be used to lower gasoline emissions to SULEV emission levels. Finally, the establishment of an NMOG factor for gasoline vehicles, extending the applicability of generic alternative fuel vehicle RAFs, and providing intermediate in-use compliance standards could result in cost savings for manufacturers. A detailed assessment of the economic impacts of the proposed amendments can be found in the ISOR.

The Executive Officer has also determined, pursuant to Government Code section 11346.5(a)(3)(B), that the proposed regulatory action will affect small business.

In accordance with Government Code section 11346.5(a)(11), the Executive Officer has found that the reporting requirements in the regulations and incorporated documents which apply to businesses are necessary for the health, safety, and welfare of the people of the State.

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 present comments relating to this matter orally or in writing at the hearing, and in writing or by e-mail before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received no later than **12:00 noon, November 14, 2001**, and addressed to the following:

Postal Mail is to be sent to:

Clerk of the Board  
Air Resources Board  
1001 "I" Street, 23<sup>rd</sup> Floor  
Sacramento, California 95814

Electronic mail is to be sent to: [levii01@listserv.arb.gov](mailto:levii01@listserv.arb.gov) and received at the ARB by no later than **12:00 noon, November 14, 2001.**

Facsimile submissions are to be transmitted to the Clerk of the Board at (916) 322-3928 and received at the ARB no later than **12:00 noon, November 14, 2001.**

The Board requests, but does not require, 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 ARB encourages members of the public to bring any suggestions for modification of the proposed regulatory action to the attention of staff in advance of the hearing.

### **STATUTORY AUTHORITY**

This regulatory action is proposed under that authority granted in sections 39600, 39601, 43013, 43018, 43100, 43101, 43102, 43104, and 43105 of the Health and Safety Code. This action is proposed to implement, interpret and make specific sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43105, 43106, 43107, 43204, 43205, and 43205.5 of the Health and Safety Code.

### **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 ARB may adopt the regulatory language as originally proposed or with nonsubstantial or grammatical modifications. The ARB 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 the event that such modifications are made, 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, Environmental Services Center, 1001 "I" Street, First Floor, Sacramento, California 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Michael P. Kenny  
Executive Officer

Date: September 18, 2001

*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 Web-site at [www.arb.ca.gov](http://www.arb.ca.gov).*