SUMMARY OF BOARD ITEM

ITEM # 01-9-2: 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

STAFF RECOMMENDATION: Staff recommends that the Board adopt the staff proposal.

DISCUSSION: In 1998 California adopted the second phase of its Low-Emission Vehicle Program (LEV II) for light- and medium-duty vehicles. These regulations were revised in December 2000 to take advantage of some elements of the federal Tier 2 emission standards to ensure that California has the benefit of the cleanest vehicles available. This rulemaking proposes a number of changes to the LEV II regulations to improve clarity, increase uniformity with the U.S. Environmental Protection Agency regulations where appropriate, minimize cost of compliance, and anticipate and resolve regulatory issues before they pose serious problems for manufacturers. These changes 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.

SUMMARY AND IMPACTS: Staff has determined that the emission impact from this rulemaking would be minimal. Staff believes that the cost to manufacturers would also be minimal and there would be no noticeable impact on California employment, business status or competitiveness.

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 (RAFs).** Compliance with the NMOG standard is determined by multiplying the measured NMOG emission level by the applicable RAF. The availability of RAFs, therefore, provides manufacturers with an incentive to produce clean alternative fuel vehicles. Manufacturers can use either the generic RAFs provided in the California light- and medium-duty vehicle test procedures, or generate their own test group specific RAFs. Currently, the RAFs contained in the California test procedures are effective only through the 2003 model year. Accordingly, staff is proposing to extend the generic RAFs 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 alternative considered by the agency or that has otherwise been identified and brought to the attention of 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 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, 23rd Floor
Sacramento, California 95814

Electronic mail is to be sent to: 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.

State of California
AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR RULEMAKING

PROPOSAL 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

Date of Release: September 28, 2001
Scheduled for Consideration: November 15, 2001

Mobile Source Control Division
9528 Telstar Avenue
El Monte, California 91731

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EXECUTIVE SUMMARY

Following a November 1998 hearing, the California Air Resources Board (ARB) adopted the second generation Low-Emission Vehicle program (LEV II) for light- and medium-duty vehicles. These regulations were revised in December 2000 to take advantage of some elements of the Federal Tier 2 emission standards to ensure that California has the benefit of the cleanest vehicles available.

The ARB continuously seeks to improve California's regulations and test procedures with the goals of improving clarity, increasing uniformity with the U.S. Environmental Protection Agency where 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 standards include the application of the current diesel particulate matter standards to gasoline vehicles to ensure that any new direct injection gasoline engines exhibit low particulate emissions; strengthening the emission standards for fuel-fired heaters in zero-emission vehicles and requiring testing at 40°F, a temperature better reflecting their conditions of use; and requiring bi-, flexible- and dual-fuel partial zero-emission vehicles (PZEVs) to meet the same super-ultra-low-emission standards while operating on either an alternative fuel or gasoline. Staff is also proposing some administrative amendments to ease the certification process for manufacturers. Other proposed revisions include incorporation of certain federal requirements to more closely align with the federal program; revision of the guidelines for selling federal vehicles in California; and updating the Non-Methane Organic Gas test procedures.

Staff does not anticipate any significant emission benefits from this proposal. Although some new emission standards are being proposed, they are generally designed to provide an additional measure of protection for public health. Furthermore, compliance with these new standards is not expected to require the implementation of new technology, as most vehicles are already capable of meeting them.

I. INTRODUCTION AND BACKGROUND

The Air Resources Board (ARB or Board) adopted California's second generation Low-Emission Vehicle regulations (LEV II) following a November 1998 hearing. These regulations are a continuation of the Low-Emission Vehicle (LEV I) regulations originally adopted in 1990 which were effective through the 2003 model year. The LEV II regulations increase the scope of the LEV I regulations by lowering the emission standards for all light- and medium-duty vehicles (including sport utility vehicles) beginning with the 2004 model year. 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 addition to very stringent emission standards, the LEV II regulations provide flexibility to manufacturers by allowing them to choose the standards to which each vehicle is certified provided the overall fleet meets the specified phase-in requirements according to a fleet average hydrocarbon requirement that is progressively lower with each model year. The LEV II fleet average requirements commence in 2004 and apply through 2010 and beyond. In addition to the LEV II requirements, starting in 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 U.S. EPA adopted its own version of California emission standards 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.

This staff report contains a proposal to further modify the LEV II regulations to promulgate certain new emission standards as well as propose some minor administrative modifications to ease the certification effort for manufacturers. The new emission standards being proposed are:

(1) a particulate matter standard for gasoline vehicles;
(2) requiring fuel-fired heaters used in ZEVs to meet SULEV rather than ULEV tailpipe emission standards; and
(3) requiring bi-, flexible- and dual-fuel vehicles to certify to the same emission standard on both fuels.

The proposed administrative amendments include:

(1) incorporating recent Tier 2 amendments into the LEV II regulations including the provision that manufacturers may measure non-methane hydrocarbons (NMHC) in place of non-methane organic gas (NMOG) with the use of a factor for gasoline vehicles;
(2) updating the California NMOG test procedures including the maximum incremental reactivity (MIR) values; and

(3) updating the guidelines for certification of a limited number of federal vehicles in California (vehicles certified under the Assembly Bill (AB) 965 statute).

The proposed administrative amendments are designed to ensure that the LEV II regulations continue to result in only the cleanest vehicles available being marketed in California, while relieving any unnecessary regulatory requirements on manufacturers by further aligning with the federal Tier 2 regulations.

The following is a discussion of the proposed amendments.

II. DISCUSSION OF PROPOSED REGULATORY CHANGES

A. Proposed New Emission Standards.

1. Establishing a particulate matter 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. Although data indicate that PM emissions from well-maintained gasoline vehicles are well below the proposed PM standard, concerns have been raised about the possible health effects of PM emissions from gasoline vehicles that utilize direct injection gasoline technology. While these health effects have not been defined at this time, staff is proposing alignment with the federal standard to provide an additional measure of protection of public health. Therefore, staff is proposing that light- and medium-duty Otto-cycle vehicles be required to meet the same PM standard that now applies to diesel-cycle vehicles. The proposed amendment is not expected to require the use of additional emission control technology on conventional gasoline vehicles to meet the proposed standard. However, it is unclear at this time whether direct injection gasoline technology will require additional technology to meet the proposed standard. Furthermore, because conventional gasoline vehicles emit well below the proposed PM standard, staff is also proposing that in lieu of testing for certification, a manufacturer would be allowed to use representative test data from similar technology vehicles, as permitted under the federal regulations (40 CFR section 86.1829-01(b)(1)(iii)(B)).

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 will 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 in 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). In the original LEV regulations, special consideration was given to alternative fuel vehicles because their emissions are likely to exhibit a lower ozone-forming potential than emissions from gasoline-fueled vehicles. Because of their lower ozone forming potential, alternative fuel vehicles may need less extensive emission control systems to meet a reactivity adjusted NMOG standard than would be required on gasoline. At least initially, it was expected that many alternative fuel vehicles would be designed to also run on gasoline, given the limited number of retail facilities dispensing the alternative fuel. , Requiring a bi-fuel, flexible fuel or dual-fuel vehicle to meet the same NMOG standard when operating on gasoline and on the alternative fuel could prevent the manufacturer from taking full advantage of the lower ozone-forming potential of the alternative fuel. Since the same advanced emission technologies used on gasoline-only vehicles would be needed to meet the NMOG standard when the bi-fuel, flexible fuel or dual-fuel vehicle operates on gasoline, there would be little incentive for the manufacturer to develop vehicles that use an alternative fuel. Thus the multiple level standard criterion was adopted.

As part of the LEV II rulemaking, the ZEV requirement was modified to allow a manufacturer to meet a portion of its ZEV obligation using extremely clean vehicles. The new emission category of partial zero-emission vehicle, or PZEV, basically reflects the SULEV emission standards with additional strict requirements (such as having to meet these standards at 150,000 miles instead of 120,000). A manufacturer that meets these strict requirements may qualify for partial ZEV credits that can be used to offset the ZEV requirement. 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. Within this context, 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.

B. Proposed Administrative Amendments.

In addition to the emission standards being proposed in this rulemaking, staff is also proposing minor modifications to facilitate implementation of the LEV II program.

1. Establishment of an NMOG certification factor. Prior to the adoption of the LEV I regulations in 1990, exhaust emission standards were based on NMHC emissions, which provided an adequate representation of exhaust emissions from conventional gasoline and diesel fueled vehicles. With the inception of reformulated gasoline (which contains oxygen) and standards for alternative fueled vehicles, the NMHC standard was not adequate because it did not include

oxygenated compounds (such as formaldehyde) that contribute to exhaust reactivity and which may be present in significant amounts in reformulated gasoline as well as alternative-fueled vehicles such as methanol and ethanol. To provide a more accurate comparison of the reactivity of exhaust emissions of the various vehicle/fuel systems, the individual reactivity of all measurable hydrocarbon species in an exhaust sample needed to be considered. The LEV regulations accordingly established emission standards for NMOG, which includes not only NMHC but also any carbonyls and alcohols present in the exhaust.

When the U.S. EPA adopted its Tier 2 regulations, it also required compliance with NMOG emission standards. However, the Tier 2 program allows a manufacturer certifying gasoline or diesel vehicles to demonstrate compliance with the applicable NMOG standard by measuring NMHC emissions and multiplying the measured emission level by a factor of 1.04 in lieu of measuring carbonyls (65 F.R. 6854 (February 10, 2000).) Manufacturers have requested ARB to align its test requirements with the federal Tier 2 test requirements for gasoline vehicles (California does not require carbonyl measurements for diesel vehicles). Certification data for new vehicles certified in California suggest that applying a factor of 1.04 to NMHC emissions adequately accounts for carbonyl emissions from gasoline vehicles. Therefore, staff is proposing that California's test requirements for gasoline vehicles be aligned with federal Tier 2 requirements in this respect.

In addition, the U.S. EPA allows a manufacturer of a gasoline vehicle to submit a statement of compliance with the formaldehyde standards in lieu of full testing of formaldehyde emissions from the vehicle. Staff believes that there would be no impact on air quality from this approach because (1) the manufacturer would still be liable to meet the standard in-use and (2) with today's level of technology, the formaldehyde levels from gasoline vehicle are well below the applicable standards. Therefore, staff is proposing that a manufacturer using the carbonyl factor for gasoline vehicles be allowed to demonstrate compliance with the formaldehyde emission standard by including a statement of compliance in the application for certification. Similar to the federal requirements, the manufacturer must demonstrate that the statement of compliance is supported by previous emission tests, development tests, or other appropriate data.

2. Extending the applicability of generic reactivity adjustment factors (RAFs). Provisions on the development and use of RAFs were first included in California's regulations as part of the LEV I program to provide a mechanism for equalizing the air quality impact of all vehicle/fuel systems. Because the composition of NMOG exhaust determines its ozone-forming potential, RAFs were calculated for various alternative fuels by comparing the ozone-forming potential of each of these fuels meeting a specific NMOG standard with the ozone-forming potential of a conventional gasoline vehicle meeting the same NMOG standard.[1] Compliance with the NMOG standard is determined by multiplying the measured NMOG emission level by the applicable RAF. Thus, if the NMOG emissions from a vehicle powered by an alternative fuel are less ozone reactive than emissions from a gasoline vehicle, the alternative fuel vehicle is allowed to emit a

[1] The term "conventional gasoline" means the gasoline available in 1990, when the LEV I regulations were adopted.

higher mass of NMOG than the gasoline vehicle. The availability of RAFs, therefore, provides manufacturers with an incentive to produce clean alternative fuel vehicles. Manufacturers can use either the generic RAFs provided in the California light- and medium-duty vehicle test procedures, or generate their own test group specific RAFs.

Currently, the RAFs contained in the California test procedures are effective only through the 2003 model year. Accordingly, staff is proposing that the current generic RAFs be extended indefinitely for all fuels except gasoline. Beginning in 2004 the generic RAF for gasoline vehicles would be eliminated (the current value is 0.94). Accordingly, the NMOG emissions from these gasoline vehicles would not be adjusted, except by the NMOG factor described above, when determining compliance with the applicable emission standard. This amendment is being proposed for several reasons.

First, while emission testing has been conducted using a certification gasoline containing the oxygenate methyl tertiary butyl ether (MTBE), the ARB has banned the use of MTBE in the state's gasoline starting December 31, 2002 to protect against contamination of ground and surface waters. The ARB accordingly plans to adopt new specifications for the gasoline used in certification testing which will substitute ethanol as the oxygenate in place of MTBE. If this occurs, emission testing would be required on a large number of vehicles meeting California's emission categories in order to determine an appropriate RAF for the new gasoline fuel. Yet since the oxygenate is a small fraction of gasoline, only a small change in vehicle exhaust reactivity is expected. Second, as emissions from new vehicles decrease (by 2010 the fleet average NMOG requirement for new passenger cars and light-duty trucks is 0.035 g/mi) the ozone impact from eliminating the RAF would be minimal. Third, eliminating the RAF for gasoline effectively increases the ozone stringency of current light- and medium-duty vehicle NMOG emission standards by 6 percent. Accordingly, staff believes that this proposal is as protective of ozone as the current program. The RAFs for alternative fuels are being retained because of the significant ozone benefit those fuels can provide. The provision allowing manufacturers to generate their own test group-specific RAF for gasoline vehicles would also be retained.

3. Revisions to the emission offset requirements for AB 965 vehicles. Under the provisions of the federal Clean Air Act, California is allowed to set its own emission standards provided they are at least as protective of the public health as the federal standards. Recognizing that manufacturers may be required to limit product selection because of the stricter California 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 (Stats. 1981, Ch. 1185 (AB 965).) Section 43102(b) of the California Health and Safety Code requires that the ARB establish guidelines "not later than for the 1983 and subsequent model years, which will allow a manufacturer to certify in California federally certified light-duty motor vehicles with any engine family or families when their emissions are offset by the manufacturer's California certified motor vehicles whose emissions are below the applicable California standards." 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.

At the time the AB 965 Guidelines were adopted there was only one applicable exhaust emission standard for light-duty vehicles. The existing guidelines were developed whereby a manufacturer could earn emission credits based on the certification levels[2] of its new light-duty vehicle fleet compared to the emission standard for those vehicles. The emission credits required to offset a federal vehicle were the difference between the federal certification level and the sales-weighted mean certification level of all California engine families (Calmean). Estimated credits available to offset federal vehicle emissions were updated at the end of the model year using vehicle production data and assembly-line emissions data. Subsequent revisions to the AB 965 Guidelines retained this methodology for allowing new federal vehicles that do not meet California emission standards to be sold in California.

The problem with the methodology currently used in the AB 965 Guidelines is that as vehicles age, their emissions increase. Hence, it is erroneous to assume that the difference between the certification emission level of a vehicle and the applicable emission standard for that vehicle represents actual "extra" emission benefits that could be used to offset higher-emitting vehicles. Furthermore, the "Compliance Assurance Program," or "CAP 2000," developed through a cooperative effort between ARB, USEPA, and manufacturers to streamline the in-use compliance program, and adopted by the Board as part of the LEV II program, eliminates assembly-line quality audit testing, which provided the basis for determining the actual emission credits.

The LEV program presents a unique opportunity to revise the AB 965 Guidelines to more accurately reflect actual vehicle emissions. This opportunity presents itself because of the fleet average requirements in the LEV II regulations that reduce emissions from the new vehicle fleet by requiring each manufacturer to phase-in a progressively cleaner mix of vehicles from year to year. For each model year, a manufacturer may choose the standards to which each light-duty vehicle model is certified, provided that the manufacturer's entire fleet of these vehicles meets a specified NMOG emission level. The current proposal revises the AB 965 Guidelines to calculate available emission credits based on each manufacturer's fleet average NMOG level compared to the required fleet average NMOG level.

In addition to generating credits for hydrocarbon emissions, manufacturers must also generate credits to offset any emissions of carbon monoxide (CO) and oxides of nitrogen ~~(NOx) from their AB 965 vehicles that exceed the fleet~~ average emissions. The fleet average mix of vehicles used to calculate the required NMOG emission level in the EMFAC emission inventory was also used to estimate the fleet average oxides of nitrogen (NOx) and carbon monoxide (CO) emission levels for the purpose of calculating available emission credits for AB 965 vehicles.

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[2] The term certification level refers to the actual emission value of the tested vehicle. Manufacturers often provide a significant amount of compliance margin by targeting an emission level well below the emission standard to allow for some deterioration during the vehicle's useful life.

4. Implement additional intermediate in-use compliance standards. Even though a manufacturer must certify a vehicle to a set of 50,000 mile 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. Most of the amendments to the NMOG Test Procedures being proposed in this rulemaking are highly technical and reflect advances in technology. Staff has worked to develop consensus with industry on the proposed amendments. The most notable amendments are to the MIR values[3] published in the Appendix to the test procedures. The amended values reflect the new MIR values which were recently adopted in a rulemaking for consumer products and are set forth in section 94700, title 17, California Code of Regulations. To provide consistency in the use of MIR values in reactivity-based regulations, staff is proposing that the same MIR values be used in the motor vehicle and consumer product emission control programs.

III. AIR QUALITY, ENVIRONMENTAL AND ECONOMIC IMPACTS

A. Air Quality and Environmental Impacts

Staff anticipates that there will be no significant emissions impact from this proposal because it consists primarily of administrative changes. Furthermore, the proposal that Otto-cycle vehicles meet particulate emission standards is intended to be a safeguard to ensure that emissions from these vehicles do not increase to unhealthful levels, rather than to reduce current emission levels. The requirements for fuel-fired heaters used in zero-emission vehicles apply to emissions at 40°F, well below temperatures where ozone formation is a concern. And the impact of the requirement that bi-fuel, flexible fuel, and dual-fuel vehicles meet PZEV standards on both fuels in order to be eligible to receive partial zero-emission vehicle credit will be small because of the limited number of such vehicles likely to certify to this standard.

[3] Maximum incremental reactivity (MIR) is defined as the propensity of an organic compounds to form ozone.

B. Economic Impact

The staff expects that the proposed amendments will not have a significant cost impact on directly affected persons or businesses. 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 will 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 generic alternative fuel vehicle RAFs, and providing intermediate in-use compliance standards will result in cost savings for manufacturers. There will be no noticeable impact in California employment, business status, and/or competitiveness.

1. Legal requirement. Section 11346.3 of the Government Code requires State agencies to assess the potential for adverse economic impacts on California business enterprises and individuals when proposing to adopt or amend any administrative regulation. The assessment includes a consideration of the impact of the proposed regulation on California jobs, business expansion, elimination, or creation, and the ability of California business to compete.

State agencies are required to estimate the cost or savings to any state or local agency, and school districts. The estimate is to include any nondiscretionary cost or savings to local agencies and the cost or savings in federal funding to the state.

2. Affected businesses. Any business involved in manufacturing or purchasing passenger cars, light-duty trucks or medium-duty vehicles could be affected by the proposed amendments. There are 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.

3. **Potential impact on manufacturers and consumers.** The proposed California requirements are not expected to impact automobile manufacturers significantly, since the proposed regulatory and test procedure changes are primarily administrative. The most significant economic impact to manufacturers will be a cost savings due to a reduction in testing required for gasoline vehicles to demonstrate compliance with applicable NMOG emission standards. The impact on consumers is also expected to be minimal.

4. **Potential impact on business competitiveness.** The proposed amendments would have no adverse impact on the ability of California businesses to compete with businesses in other states because we are not proposing any changes that are expected to increase vehicle cost or limit vehicle availability.

5. **Potential impact on employment.** The proposed amendments are not expected to cause a noticeable change in California employment because all but a very small portion of automobile manufacturing is conducted in other states.

6. **Potential impact on business creation, elimination or expansion.** The proposed amendments are not expected to affect business creation, elimination or expansion.

7. **Potential costs to local and state agencies.** The proposed amendments are not expected to have a fiscal impact on state and local agencies or on funding to state agencies.

IV. REGULATORY ALTERNATIVES

Staff considered the following regulatory alternative to the proposed amendments.

Do not amend current California LEV program. The majority of the proposed changes to the LEV regulations (establishment of an NMOG factor for gasoline vehicles, extending the applicability of generic RAFs for alternative fuel vehicles, addition of intermediate in-use compliance standards for certain vehicles, revisions to the AB 965 guidelines, and updates to the NMOG test procedures) are needed to simplify the testing process for vehicle manufacturers and/or revise outdated or soon-to-be-expired portions of the regulations. These changes provide cost benefits for manufacturers while maintaining the emission benefits of the current regulations. The remaining proposed regulatory changes (establishment of particulate matter standards for Otto-cycle vehicles to align then with federal requirements, requirement that fuel-fired heaters used in ZEVs meet SULEV emission levels, and requirement that bi-fuel, flexible fuel, and dual-fuel vehicles meet SULEV standards on both fuels in order to qualify as PZEVs) are needed to ensure that California continues to receive the cleanest vehicles available.

No alternative considered by the agency would be more effective in carrying out the purpose for which the regulation is proposed or would be as effective or less burdensome to affected private persons than the proposed regulation.

V. STAFF RECOMMENDATION

For the reasons stated above, staff recommends that the Board adopt the proposal set forth in this staff report.

Attachments

REFERENCES

1. Staff Report: Initial Statement of Reasons, "Proposed Amendments to California Exhaust and Evaporative Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles "LEV II" and Proposed Amendments to California Motor Vehicle Certification, Assembly Line and In-Use Test Requirements "CAP 2000"," California Air Resources Board, September 18, 1998.

2. Final Statement of Reasons, ""LEV II" and "CAP 2000" Amendments to the California Exhaust and Evaporative Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles and to the Evaporative Emission Requirements for Heavy-Duty Vehicles," California Air Resources Board, September, 1999.

APPENDIX A

PROPOSED REGULATION ORDER

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PROPOSED REGULATION ORDER

Amendments to Sections 1960.1, 1960.5, 1961, and 1962 Title 13, California Code of Regulations

Set forth below are the proposed amendments to title 13 of the California Code of Regulations. Proposed amendments are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions. Some of the editorial corrections correct printing errors in Barclays California Code of Regulations. In section 1962(c)(2)(A), changes approved by the Air Resources Board at a January 25, 2001 hearing, but not yet adopted or in effect, are shown in dotted underline to indicate additions and ***~~bold italic strikeout~~*** to indicate deletions.

§ 1960.1. Exhaust Emission Standards and Test Procedures - 1981 through 2006 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

(a) [No change]

(b) [No change]

(c) [No change]

(d) [No change]

(e)(1) [No change]

(e)(2) [No change]

(e)(3) The exhaust emissions from new 1992 through 2006 model-year "LEV I" transitional low-emission vehicles, low-emission vehicles, ultra-low-emission vehicles, and super-ultra-low-emission vehicles, including fuel-flexible and dual-fuel vehicles, shall meet all the requirements in (g)(1), and (h)(2) with the following additions:

FORMALDEHYDE EXHAUST EMISSION STANDARDS
IN THE LIGHT-DUTY AND MEDIUM-DUTY VEHICLE WEIGHT CLASSES[5,6,7]
["milligrams per mile" (or "mg/mi")]

Vehicle Type[1]	*Vehicle Weight (lbs.)[2]*	*Durability Vehicle Basis (mi)*	*Vehicle Emission Category[3]*	*Formaldehyde (mg/mi)[4,5]*
PC and	All	50,000	TLEV	15 (23)
LDT	0-3750		LEV	15 (15)
			ULEV	8 (12)
		100,000	TLEV	18
			LEV	18
			ULEV	11
LDT	3751-5750	50,000	TLEV	18 (27)
			LEV	18 (18)
			ULEV	9 (14)
		100,000	TLEV	23
			LEV	23
			ULEV	13
MDV	0-3750	50,000	LEV	15 (15)
			ULEV	8 (12)
		120,000	LEV	22
			ULEV	12
MDV	3751-5750	50,000	LEV	18 (18)
			ULEV	9 (14)
			SULEV	4 (7)
		120,000	LEV	27
			ULEV	13
			SULEV	6
MDV	5751-8500	50,000	LEV	22 (22)
			ULEV	11 (17)
			SULEV	6 (8)
		120,000	LEV	32
			ULEV	16
			SULEV	8
MDV	8501-10,000	50,000	LEV	28 (28)

			ULEV	14 (21)
			SULEV	7 (10)
		120,000	LEV	40
			ULEV	21
			SULEV	10
MDV	10,001-14,000	50,000	LEV	36 (36)
			ULEV	18 (27)
			SULEV	9 (14)
		120,000	LEV	52
			ULEV	26
			SULEV	13

[1] "PC" means passenger cars.
"LDT" means light-duty trucks.
"MDV" means medium-duty vehicles.

[2] For light-duty or medium-duty vehicles, Vehicle Weight shall mean "Loaded Vehicle Weight" (or "LVW") or "Test Weight" (or "TW"), respectively.

[3] "TLEV" means transitional low-emission vehicle.
"LEV" means low-emission vehicle.
"ULEV" means ultra-low-emissions vehicle.
"SULEV" means super-ultra-low-emission vehicle.

[4] Formaldehyde exhaust emission standards apply to vehicles certified to operate on any available fuel, including fuel-flexible and dual-fuel vehicles.

[5] The standards in parentheses are intermediate in-use compliance standards for 50,000 miles.

a. For PCs and LDTs from 0-5750 lbs. LVW, including fuel-flexible and dual-fuel vehicles, intermediate in-use compliance standards shall apply to TLEVs through the 1995 model year, and LEVs and ULEVs through the 1998 model year. In-use compliance with standards beyond 50,000 miles shall be waived through the 1995 model year for TLEVs, and through the 1998 model year for LEVs and ULEVs.

b. For MDVs from 0-14,000 lbs. TW, including fuel-flexible and dual-fuel vehicles, intermediate in-use compliance standards shall apply to LEVs, ULEVs, and SULEVs through the 1999 model year. In-use compliance with standards beyond 50,000 miles shall be waived through the 1999 model year for LEVs, ULEVs, and SULEVs.

[6] Manufacturers shall demonstrate compliance with the above standards for formaldehyde at 50° ~~degrees~~ F, according to the procedures specified in section 11k of the "California Exhaust Emission Standards and Test Procedures for 1988 through 2000 ~~and Subsequent~~ Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" as incorporated by reference in section 1960.1(k) or section E.1.4 of the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" as incorporated by reference in section 1961(d). Hybrid electric, natural gas, and diesel-fueled vehicles shall be exempt from 50° ~~degrees~~ F test requirements.

[7] In-use compliance testing shall be limited to PCs and LDTs with fewer than 75,000 miles and MDVs with fewer than 90,000 miles.

(f) [No change]

(g) [No change]

(h)(1) [No change]

(h)(2) *"LEV I" Exhaust Emission Standards for MDVs.* The exhaust emissions from new 1992 through 2006 model-year medium-duty LEV I low-emission vehicles, ultra-low-emission vehicles and super-ultra-low-emission vehicles shall not exceed:

LEV I EXHAUST EMISSION STANDARDS FOR LOW-EMISSION VEHICLES, ULTRA-LOW-EMISSION VEHICLES AND SUPER-ULTRA-LOW-EMISSION VEHICLES IN THE MEDIUM-DUTY VEHICLE WEIGHT CLASS [8,9,10,11,12,13,14,15,16]

[grams per mile (or "g/mi")]

Test Weight (lbs.)	*Durability Vehicle Basis (mi.)*	*Vehicle Emission Category[2]*	*Non-Methane Organic Gases[3,4]*	*Carbon Monoxide*	*Oxides of Nitrogen[5]*	*Particulates[6,7]*
0-3750	50,000	LEV	0.125	3.4	0.4	n/a
		ULEV	0.075	1.7	0.2	n/a
	120,000	LEV	0.180	5.0	0.6	0.08
		ULEV	0.107	2.5	0.3	0.04
3751-5750	50,000	LEV	0.160	4.4	0.4	n/a
		ULEV	0.100	4.4	0.4	n/a
		SULEV	0.050	2.2	0.2	n/a
	120,000	LEV	0.230	6.4	0.6	0.10
		ULEV	0.143	6.4	0.6	0.05
		SULEV	0.072	3.2	0.3	0.05
5751-8500	50,000	LEV	0.195	5.0	0.6	n/a
		ULEV	0.117	5.0	0.6	n/a
		SULEV	0.059	2.5	0.3	n/a
	120,000	LEV	0.280	7.3	0.9	0.12
		ULEV	0.167	7.3	0.9	0.06
		SULEV	0.084	3.7	0.45	0.06
8501-10,000	50,000	LEV	0.230	5.5	0.7	n/a
		ULEV	0.138	5.5	0.7	n/a
		SULEV	0.069	2.8	0.35	n/a
	120,000	LEV	0.330	8.1	1.0	0.12
		ULEV	0.197	8.1	1.0	0.06
		SULEV	0.100	4.1	0.5	0.06
10,001-14,000	50,000	LEV	0.300	7.0	1.0	n/a
		ULEV	0.180	7.0	1.0	n/a
		SULEV	0.09	3.5	0.5	n/a
	120,000	LEV	0.430	10.3	1.5	0.12
		ULEV	0.257	10.3	1.5	0.06
		SULEV	0.130	5.2	0.7	0.06

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1 "Test Weight" (or "TW") shall mean the average of the vehicle's curb weight and gross vehicle weight. "Non-Methane Organic Gases" (or NMOG") means the total mass of oxygenated and non-oxygenated hydrocarbon emissions.

2 "LEV" means low-emission vehicle.
"ULEV" means ultra-low-emissions vehicle.
"SULEV" means super-ultra-low-emission vehicle.

3 *Compliance with NMOG Standards*. To determine compliance with an NMOG standard, NMOG emissions shall be measured in accordance with the "California Non-Methane Organic Gas Test Procedures" adopted July 12, 1991 and last amended ~~August 5, 1999~~ [INSERT DATE OF AMENDMENT], which is incorporated herein by reference.

a. *Reactivity Adjustment.* For LEVs and ULEVs certified to operate on any available fuel other than conventional gasoline, including fuel-flexible or dual-fuel vehicles when certifying on a fuel other than gasoline, manufacturers shall multiply the NMOG exhaust certification levels by the applicable reactivity adjustment factor set forth in section 13 of the "California Exhaust Emission Standards and Test Procedures for 1988 Through 2000 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" as incorporated by reference in section 1960.1(k), or in section I.E.5. of the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" as incorporated by reference in section 1961(d), or established by the Executive Officer pursuant to Appendix VIII or section II.D. respectively of the foregoing test procedures. In addition, natural gas vehicles certifying to LEV or ULEV standards shall calculate a reactivity-adjusted methane exhaust emission value by multiplying the methane exhaust certification level by the applicable methane reactivity adjustment factor set forth in section 13 or in section I.E.5. of the above-referenced test procedures as applicable. The product of the exhaust NMOG certification levels and the reactivity adjustment factor shall be compared to the exhaust NMOG mass emission standard established for the particular vehicle emission category to determine compliance. For natural gas vehicles, the reactivity-adjusted NMOG value shall be added to the reactivity-adjusted methane value and then compared to the exhaust NMOG mass emission standards established for the particular vehicle emission category to determine compliance.

b. *Pre-1998 NOx standards.* Prior to the 1998 model year, the 50,000 mile and 120,000 mile LEV exhaust mass emission standards for NOx shall be: 0.7 and 1.0 g/mi for MDVs from 3751-5750 lbs. TW, 1.1 and 1.5 g/mi for MDVs from 5751-8500 lbs. TW, 1.3 and 1.8 g/mi for MDVs from 8501-10,000 lbs. TW, and 2.0 and 2.8 g/mi for MDVs from 10,001-14,000 lbs. TW, respectively.

Footnotes 4-16 [No change]

(i) [No change]

(j) [No change]

(k) [No change]

(l) [No change]

(m) [No change]

(n) [No change]

(o) [No Change]

(p) [No Change]

(q) [No change]

(r) [No change]

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104, and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43105, 43106, 43107, and 43204 - 43205.5, Health and Safety Code.

§ 1960.5. Certification of 1983 and Subsequent Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California.

(a) The exhaust emissions from new 1983 and subsequent model year federally certified passenger cars and light-duty trucks, subject to registration and sold and registered in this state pursuant to section 43102(b) of the California Health and Safety Code, shall not exceed the applicable federal emissions standards as determined under applicable federal test procedures.

(b) With respect to any new vehicle required to comply with the standards set forth in paragraph (a), the manufacturer's written maintenance instructions for in-use vehicles shall not require scheduled maintenance more frequently than or beyond the scope of maintenance permitted under the test procedures referenced in paragraph (a). Any failure to perform scheduled maintenance shall not excuse an emissions violation unless the failure is related to or causes the violation.

(c) The standards and procedures for certifying in California 1983 through 2002 ~~and subsequent~~ model-year federally-certified light-duty motor vehicles are set forth in "Guidelines for Certification of 1983 through 2002 ~~and Subsequent~~ Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California," adopted July 20, 1982, as last amended ~~July 12, 1991~~ [INSERT DATE OF AMENDMENT], which is incorporated herein by reference. The standards and procedures for certifying in California 2003 and subsequent model-year federally-certified light-duty motor vehicles are set forth in "Guidelines for Certification of 2003 and Subsequent Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California," adopted [INSERT DATE OF ADOPTION], ~~which is incorporated herein by reference.~~

NOTE: Authority cited: Sections 39601, 43100 and 43102, Health and Safety Code. Reference: Section 43102, Health and Safety Code.

§ 1961. Exhaust Emission Standards and Test Procedures - 2004 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

Introduction. This section 1961 contains the California "LEV II" exhaust emission standards for 2004 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles. A manufacturer must demonstrate compliance with the exhaust standards in section 1961(a) applicable to specific test groups, and with the composite phase-in requirements in section 1961(b) applicable to the manufacturer's entire fleet. Section 1961(b) also includes the manufacturer's fleet-wide composite phase-in requirements for the 2001 - 2003 model years.

Prior to the 2004 model year, a manufacturer that produces vehicles that meet the standards in section 1961(a) has the option of certifying the vehicles to those standards, in which case the vehicles will be treated as LEV II vehicles for purposes of the fleet-wide phase-in requirements. Similarly, 2004 - 2006 model-year vehicles may be certified to the "LEV I" exhaust emission standards in section 1960.1(g)(1) and (h)(2), in which case the vehicles will be treated as LEV I vehicles for purposes of the fleet-wide phase-in requirements.

A manufacturer has the option of certifying engines used in incomplete and diesel medium-duty vehicles with a gross vehicle weight rating of greater than 8,500 lbs. to the heavy-duty engine standards and test procedures set forth in title 13, CCR, sections 1956.8(g) and (h).

(a) *Exhaust Emission Standards.*

(1) *"LEV II" Exhaust Standards.* The following standards represent the maximum exhaust emissions for the intermediate and full useful life from new 2004 and subsequent model-year "LEV II" LEVs, ULEVs, and SULEVs, including fuel-flexible, bi-fuel and dual fuel vehicles when operating on the gaseous or alcohol fuel they are designed to use:

LEV II Exhaust Mass Emission Standards for New 2004 and Subsequent Model LEVs, ULEVs, and SULEVs in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes

Vehicle Type	*Durability Vehicle Basis (mi)*	*Vehicle Emission Category*	*NMOG (g/mi)*	*Carbon Monoxide (g/mi)*	*Oxides of Nitrogen (g/mi)*	*Formaldehyde (mg/mi)*	*Particulates ~~from diesel vehicles~~ (g/mi)*
All PCs; LDTs 8500 lbs. GVW or less Vehicles in this category are tested at their loaded vehicle weight	50,000	LEV	0.075	3.4	0.05	15	n/a
		LEV, Option 1	0.075	3.4	0.07	15	n/a
		ULEV	0.040	1.7	0.05	8	n/a
	120,000	LEV	0.090	4.2	0.07	18	0.01
		LEV, Option 1	0.090	4.2	0.10	18	0.01
		ULEV	0.055	2.1	0.07	11	0.01
		SULEV	0.010	1.0	0.02	4	0.01
	150,000 (Optional)	LEV	0.090	4.2	0.07	18	0.01
		LEV, Option 1	0.090	4.2	0.10	18	0.01
		ULEV	0.055	2.1	0.07	11	0.01
		SULEV	0.010	1.0	0.02	4	0.01
MDVs 8501 - 10,000 lbs. GVW Vehicles in this category are tested at their adjusted loaded vehicle weight	120,000	LEV	0.195	6.4	0.2	32	0.12
		ULEV	0.143	6.4	0.2	16	0.06
		SULEV	0.100	3.2	0.1	8	0.06
	150,000 (Optional)	LEV	0.195	6.4	0.2	32	0.12
		ULEV	0.143	6.4	0.2	16	0.06
		SULEV	0.100	3.2	0.1	8	0.06
MDVs 10,001-14,000 lbs. GVW Vehicles in this category are tested at their adjusted loaded vehicle weight	120,000	LEV	0.230	7.3	0.4	40	0.12
		ULEV	0.167	7.3	0.4	21	0.06
		SULEV	0.117	3.7	0.2	10	0.06
	150,000 (Optional)	LEV	0.230	7.3	0.4	40	0.12
		ULEV	0.167	7.3	0.4	21	0.06
		SULEV	0.117	3.7	0.2	10	0.06

(2) *Reactivity Adjustment in Determining Compliance with the NMOG Standard*

(A) The NMOG emission results from all TLEVs, LEVs, ULEVs and SULEVs certifying on a fuel other than conventional gasoline shall be numerically adjusted to establish an NMOG exhaust mass emission value equivalent. The manufacturer shall multiply measured NMOG exhaust emission results by the appropriate reactivity adjustment factor set forth in section 1961(a)(2)(B) or established in accordance with the test procedures incorporated by reference in section 1961(d). The reactivity adjustment factor represents the ratio of the NMOG specific reactivity of a low-emission vehicle designed to operate on a fuel other than conventional gasoline compared to the NMOG baseline specific reactivity of vehicles in the same vehicle emission category operated on conventional gasoline.

(B) The following reactivity adjustment factors apply ~~through the 2003 model year~~:

	Light-Duty Vehicles 0-6000 lbs. GVW			**Medium-Duty Vehicles** 6001 lbs. - 14,000 lbs. GVW	
	TLEV	LEV	ULEV	LEV	ULEV
Fuel	**Baseline Specific Reactivity** (grams ozone / gram NMOG)				
Conventional Gasoline	3.42	3.13	3.13	3.13	3.13
	Reactivity Adjustment Factors				
~~Phase 2~~ RFG (through the 2003 model year)	0.98	0.94	0.94	0.94	0.94
M85	0.41	0.41	0.41	0.41	0.41
Natural Gas	1.0	0.43	0.43	0.43	0.43
LPG	1.0	0.50	0.50	0.50	0.50
	Methane Reactivity Adjustment Factors				
Natural Gas	0.0043	0.0047	0.0047	0.0047	0.0047

(3) *NMOG Standards for Bi-Fuel, Fuel-Flexible and Dual-Fuel Vehicles Operating on Gasoline.* For fuel-flexible, bi-fuel, and dual-fuel PCs, LDTs and MDVs, compliance with the NMOG exhaust mass emission standards shall be based on exhaust emission tests both when the vehicle is operated on the gaseous or alcohol fuel it is designed to use, and when the vehicle is operated on gasoline. A manufacturer must demonstrate compliance with the applicable exhaust mass emission standards for NMOG, CO, NOx and formaldehyde set forth in the table in section 1961(a)(1) when certifying the vehicle for operation on the gaseous or alcohol fuel.

The following standards represent the maximum NMOG emissions when the vehicle is operating on gasoline. A manufacturer shall not apply a reactivity adjustment factor to the exhaust NMOG mass emission result when operating on gasoline. A manufacturer may measure

NMHC in lieu of NMOG when fuel-flexible, bi-fuel and dual-fuel vehicles are operated on gasoline, in accordance with the test procedures incorporated by reference in section 1961(d). Testing at 50°F is not required for fuel-flexible, bi-fuel and dual-fuel vehicles when operating on gasoline. The applicable CO, NOx and formaldehyde standards are set forth in section 1961(a)(1).

LEV II NMOG Standards for Bi-Fuel, Fuel-Flexible and Dual-Fuel Vehicles Operating on Gasoline (g/mi)			
Vehicle Type	*Vehicle Emission Category*	*Durability Vehicle Basis*	
		50,000 mi	*120,000 mi*
All PCs; LDTs, 0-8500 lbs. GVW	LEV	0.125	0.156
	ULEV	0.075	0.090
	SULEV	0.010	0.040
MDVs, 8501-10,000 lbs. GVW	LEV	n/a	0.230
	ULEV	n/a	0.167
	SULEV	n/a	0.117
MDVs, 10,001-14,000 lbs. GVW	LEV	n/a	0.280
	ULEV	n/a	0.195
	SULEV	n/a	0.143

(4) *50°F Exhaust Emission Standards.* All light- and medium-duty LEVs, ULEVs and SULEVs must demonstrate compliance with the following exhaust emission standards for NMOG and formaldehyde (HCHO) measured on the FTP (40 CFR, Part 86, Subpart B) conducted at a nominal test temperature of 50°F, as modified by Part II, Section C of the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" incorporated by reference in section 1961(d). The NMOG mass emission result shall be multiplied by the applicable reactivity adjustment factor, if any, prior to comparing to the applicable adjusted 50,000 mile certification standards set forth below. A manufacturer may demonstrate compliance with the NMOG and HCHO certification standards contained in this subparagraph by measuring NMHC exhaust emissions or issuing a statement of compliance for HCHO in accordance with Section D.1, subparagraph (p) and Section G.3.1.2, respectively, of the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" incorporated by reference in section 1961(d). Emissions of CO and NOx measured at 50°F shall not exceed the standards set forth in §1961(a)(1) applicable to vehicles of the same emission category and vehicle type subject to a cold soak and emission

test at 68° to 86° F. Natural gas and diesel-fueled vehicles are exempt from the 50° F test requirements.

Vehicle Weight Class	*Vehicle Emission Category (g/mi)*					
	LEV		*ULEV*		*SULEV*	
	NMOG	*HCHO*	*NMOG*	*HCHO*	*NMOG*	*HCHO*
PCs; LDTs 0-8500 lbs. GVW	0.150	0.030	0.080	0.016	0.02	0.008
MDVs 8501-10,000 lbs. GVW	0.390	0.064	0.286	0.032	0.200	0.016
MDVs 10,001-14,000 lbs. GVW	0.460	0.080	0.334	0.042	0.234	0.020

(5) *Cold CO Standard.* The following standards represent the 50,000 mile cold temperature exhaust carbon monoxide emission levels from new 2001 and subsequent model-year passenger cars, light-duty trucks, and medium-duty vehicles:

2001 AND SUBSEQUENT MODEL-YEAR COLD TEMPERATURE CARBON MONOXIDE EXHAUST EMISSIONS STANDARDS FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES
(grams per mile)

Vehicle Type	*Carbon Monoxide*
All PCs, LDTs 0-3750 lbs. LVW;	10.0
LDTs, 3751 lbs. LVW - 8500 lbs. GVW; LEV I and Tier 1 MDVs 8500 lbs. GVW and less	12.5

These standards are applicable to vehicles tested at a nominal temperature of 20°F (-7°C) in accordance with 40 CFR Part 86 Subpart C, as amended by the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" incorporated by reference in section 1961(d). Natural gas, diesel-fueled and zero-emission vehicles are exempt from these standards.

(6) *Highway NOx Standard.* The maximum emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR 600 Subpart B, which is incorporated herein by reference) shall not be greater than 1.33 times the applicable PC and LDT standards or 2.0 times the applicable MDV standards set forth in section 1961(a)(1). Both the projected emissions and the HWFET standard shall be rounded in accordance with ASTM E29-67 to the nearest 0.1 g/mi (or 0.01 g/mi for vehicles certified to the 0.05 or 0.02 g/mi NOx standards) before being compared.

(7) *Supplemental Federal Test Procedure (SFTP) Off-Cycle Emission Standards.* The SFTP exhaust emission levels from new 2004 and subsequent model LEVs, ULEVs, and SULEVs shall not exceed the standards set forth in section 1960.1(r).

(8) *Requirements for Vehicles Certified to the Optional 150,000 Mile Standards.*

(A) *Requirement to Generate Additional Fleet Average NMOG Credit.* A vehicle that is certified to the 150,000 mile standards in section 1961(a) shall generate additional NMOG fleet average credit as set forth in 1961(b)(1) or additional vehicle equivalent credits as set forth in 1961(b)(2) provided that the manufacturer extends the warranty on high cost parts to 8 years or 100,000 miles, whichever occurs first, and agrees to extend the limit on high mileage in-use testing to 105,000 miles.

(B) *Requirement to Generate a Partial ZEV Allowance.* A vehicle that is certified to the 150,000 mile SULEV standards shall also generate a partial ZEV allocation according to the criteria set forth in section C.3 of the "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," incorporated by reference in section 1962~~(e)~~."

(9) *Optional LEV II NOx Standard.* A manufacturer may certify up to 4% of its light-duty truck fleet from 3751 lbs. LVW - 8500 lbs. GVW with a maximum base payload of 2500 lbs. or more to the LEV, option 1, standard set forth in 1961(a)(1) based on projected sales of trucks in the LDT2 category. Passenger cars and light-duty trucks 0-3750 lbs. LVW are not eligible for this option.

(10) *Intermediate In-Use Compliance Standards.* For test groups certified prior to the 2007 model year, the following intermediate in-use compliance standards shall apply for the first two model years the test group is certified to the new standard. For SULEVs certified prior to the 2004 model year, the following intermediate in-use compliance SULEV standards shall apply through the 2006 model year.

Emission Category	*Durability Vehicle Basis*	*LEV II PCs and LDTs*		*LEV II MDVs 8500 - 10,000 lbs. GVW*
		NMOG	*NOx*	*NOx*
LEV/ULEV	50,000	n/a	0.07	n/a
	120,000	n/a	0.10	0.3
	150,000	n/a	0.10	0.3
LEV, Option 1	50,000	n/a	0.10	n/a
	120,000	n/a	0.14	n/a
	150,000	n/a	0.14	n/a

SULEV	120,000	0.020	0.03	0.15
	150,000	0.020	0.03	0.15

(11) *NMOG Credit for Vehicles with Zero-Evaporative Emissions.* In determining compliance of a vehicle with the applicable exhaust NMOG standard, a gram per mile NMOG factor, to be determined by the Executive Officer based on available data, shall be subtracted from the reactivity-adjusted NMOG exhaust emission results for any vehicle that has been certified to the "zero" evaporative emission standard set forth in title 13, CCR, section 1976(b)(1)(E). This credit shall not apply to a SULEV that generates a partial ZEV allowance.

(12) *NMOG Credit for Direct Ozone Reduction Technology.* A manufacturer that certifies vehicles equipped with direct ozone reduction technologies shall be eligible to receive NMOG credits that can be applied to the NMOG exhaust emissions of the vehicle when determining compliance with the standard. In order to receive credit, the manufacturer must submit the following information for each vehicle model, including, but not limited to:

~~(a)~~(A) a demonstration of the airflow rate through the direct ozone reduction device and the ozone-reducing efficiency of the device over the range of speeds encountered in the SFTP test cycle;

~~(b)~~(B) an evaluation of the durability of the device for the full useful life of the vehicle; and

~~(c)~~(C) a description of the on-board diagnostic strategy for monitoring the performance of the device in-use.

Using the above information, the Executive Officer shall determine the value of the NMOG credit based on the calculated change in the one-hour peak ozone level using an approved airshed model.

(13) *NOx Credits for Pre-2004 MDVs Certified to the LEV I LEV or ULEV Standards.* Prior to the 2004 model year, a manufacturer may earn a 0.02 g/mi per vehicle NOx credit for MDVs between 6,000-8500 lbs. GVW certified to the LEV I LEV or ULEV standards for PCs and LDTs set forth in section 1960.1(g)(1). The manufacturer may apply the credit on a per vehicle basis to the NOx emissions of LDTs between 6,000-8500 lbs. GVW certified to the PC/LDT LEV or ULEV standards in section 1961(a)(1) for the 2004 through 2008 model years.

(14) *When a Federally-Certified Vehicle Model is Required in California.*

(A) *General Requirement.* Whenever a manufacturer federally-certifies a 2004 or subsequent model-year passenger car, light-duty truck or medium-duty vehicle model to the standards for a particular emissions bin that are more stringent than the standards for an applicable California emission category, the equivalent California model may only be certified to (i) the California standards for a vehicle emissions category that are at least as stringent as the standards for the corresponding federal emissions bin, or (ii) the exhaust emission standards to which the federal model is certified. However, where the federal exhaust emission standards for the particular emissions bin and the California standards for a vehicle emissions category are

equally stringent, the California model may only be certified to either the California standards for that vehicle emissions category or more stringent California standards. The federal emission bins are those contained in Tables S04-1 and S04-2 of 40 CFR § 86.1811-04(c) as adopted February 10, 2000. The criteria for applying this requirement are set forth in Part I. Section H.1 of the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," as incorporated by reference in section 1961(d).

(B) *Exception for clean fuel fleet vehicles.* Section 1961(a)(14)(A) does not apply in the case of a federally-certified vehicle model that is only marketed to fleet operators for applications that are subject to clean fuel fleet requirements established pursuant to section 246 of the federal Clean Air Act (42 U.S.C. sec. 7586). In addition, the Executive Officer shall exclude from the requirement a federally-certified vehicle model where the manufacturer demonstrates to the Executive Officer's reasonable satisfaction that the model will primarily be sold or leased to clean fuel fleet operators for such applications, and that other sales or leases of the model will be incidental to marketing to those clean fuel fleet operators.

(C) *Opt-in for 2003 or prior model year vehicles.* A manufacturer may certify a passenger car, light-duty truck or medium-duty vehicle to federal exhaust emission standards pursuant to section 1961(a)(14)(A) prior to the 2004 model year.

(b) *Emission Standards Phase-In Requirements for Manufacturers.*

(1) *Fleet Average NMOG Requirements for Passenger Cars and Light-Duty Trucks.*

(A) The fleet average non-methane organic gas exhaust mass emission values from the passenger cars and light-duty trucks certified to the Tier 1, LEV I and LEV II standards that are produced and delivered for sale in California each model year by a manufacturer other than a small volume manufacturer shall not exceed:

FLEET AVERAGE NON-METHANE ORGANIC GAS EXHAUST MASS EMISSION REQUIREMENTS FOR LIGHT-DUTY VEHICLE WEIGHT CLASSES (50,000 mile Durability Vehicle Basis)		
Model Year	*Fleet Average NMOG*	*(grams per mile)*
	All PCs; LDTs 0-3750 lbs. LVW	*LDTs 3751 lbs. LVW - 8500 lbs. GVW*
2001	0.070	0.098
2002	0.068	0.095
2003	0.062	0.093
2004	0.053	0.085
2005	0.049	0.076
2006	0.046	0.062
2007	0.043	0.055
2008	0.040	0.050
2009	0.038	0.047
2010+	0.035	0.043

(B) *Calculation of Fleet Average NMOG Value.*

1. *Basic Calculation.*

a. Each manufacturer's PC and LDT1 fleet average NMOG value for the total number of PCs and LDT1s produced and delivered for sale in California shall be calculated as follows:

(Σ[Number of vehicles in a test group x applicable emission standard] +
Σ [Number of hybrid electric vehicles in a test group x HEV NMOG factor]) ÷
Total Number of Vehicles Produced, Including ZEVs and HEVs

b. Each manufacturer's LDT2 fleet average NMOG value for the total number of LDT2s produced and delivered for sale in California shall be calculated as follows:

(Σ[Number of vehicles in a test group x applicable emission standard] +
Σ [Number of hybrid electric vehicles in a test group x HEV NMOG factor]) ÷
Total Number of Vehicles Produced, Including ZEVs and HEVs

c. The applicable emission standards to be used in the above equations are as follows:

Model Year	*Emission Category*	*Emission Standard Value*	
		All PCs; LDTs 0-3750 lbs. LVW	*LDTs 3751-5750 lbs. LVW*
2001 and subsequent (§1960.5 "AB 965" vehicles only)	All ~~Tier 1~~	Federal Emission Standard to which Vehicle is Certified ~~0.25~~	Federal Emission Standard to which Vehicle is Certified ~~0.32~~
2001 – 2003 (§1960.1(f)(2))	Tier 1	0.25	0.32
2001 – 2006 model year vehicles certified to the "LEV I" standards in §1960.1(g)(1) (For TLEVs, 2001 – 2003 model years only)	TLEVs	0.125	0.160
	LEVs	0.075	0.100
	ULEVs	0.040	0.050
Model Year	*Emission Category*	*All PCs; LDTs 0-3750 lbs. LVW*	*LDTs 3751 lbs. LVW - 8500 lbs. GVW*
2004 and subsequent model year vehicles certified to the "LEV II" standards in §1961(a)(1)	LEVs	0.075	0.075
	ULEVs	0.040	0.040
	SULEVs	0.01	0.01
2004 and subsequent model year vehicles certified to the optional 150,000 mile "LEV II" standards for PCs and LDTs in 1961(a)(1)	LEVs	0.06	0.06
	ULEVs	0.03	0.03
	SULEVs	0.0085	0.0085

2. *HEV NMOG Factor.* The HEV NMOG factor for light-duty vehicles is calculated as follows:

LEV HEV Contribution Factor = 0.075 - [(Zero-emission VMT Factor) x 0.035]
ULEV HEV Contribution Factor = 0.040 - [(Zero-emission VMT Factor) x 0.030]

where Zero-emission VMT Factor for HEVs is determined in accordance with section 1962.

3. *Federally-Certified Vehicles.* A vehicle certified to the federal standards for a federal exhaust emissions bin in accordance with Section H.1 of the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as incorporated by reference in section 1961(d), shall use the corresponding intermediate useful life NMOG standard to which the vehicle is deemed certified in the fleet average calculation.

(C) *Requirements for Small Volume Manufacturers.*

1. In 2001 through 2006 model years, a small volume manufacturer shall not exceed a fleet average NMOG value of 0.075 g/mi for PCs and LDTs from 0-3750 lbs. LVW or 0.100 g/mi for LDTs from 3751-5750 lbs. LVW calculated in accordance with section 1961(b)(1)(B). In 2007 and subsequent model years, a small volume manufacturer shall not exceed a fleet average NMOG value of 0.075 for PCs and LDTs from 0-3750 lbs. LVW or 0.075 for LDTs from 3751 lbs. LVW - 8500 lbs. GVW calculated in accordance with section 1961(b)(1)(B).

2. If a manufacturer's average California sales exceed 4500 units of new PCs, LDTs, MDVs and heavy duty engines based on the average number of vehicles sold for the three previous consecutive model years, the manufacturer shall no longer be treated as a small volume manufacturer and shall comply with the fleet average requirements applicable to larger manufacturers as specified in section 1961(b)(1) beginning with the fourth model year after the last of the three consecutive model years.

3. If a manufacturer's average California sales fall below 4500 units of new PCs, LDTs, MDVs and heavy duty engines based on the average number of vehicles sold for the three previous consecutive model years, the manufacturer shall be treated as a small volume manufacturer and shall be subject to the requirements for small volume manufacturers beginning with the next model year.

(D) ZEVs classified as LDTs (>3750 lbs. LVW) that have been counted toward the ZEV requirement for PCs and LDTs (0-3750 lbs. LVW) as specified in section 1962 shall be included as LDT1s in the calculation of a fleet average NMOG value.

(2) *LEV II Phase-In Requirement for PCs and LDTs.* Beginning in the 2004 model year, a manufacturer, except a small volume manufacturer, shall certify a percentage of its PC and LDT fleet to the LEV II standards in section 1961(a) according to the following phase in schedule:

Model Year	*PC/LDT1 (%)*	*LDT2 (%)*
2004	25	25
2005	50	50
2006	75	75
2007	100	100

In determining compliance with the phase-in schedule, the fleet shall consist of LEV I and LEV II PCs and LDT1s for the PC/LDT1 calculation, and LEV I and LEV II LDT2s for the LDT2 calculation. LEV I MDVs are not counted in the calculation until ~~they~~ they are certified as LEV II LDT2s.

A manufacturer may use an alternative phase-in schedule to comply with these phase-in requirements as long as equivalent NOx emission reductions are achieved by the 2007 model year from each of the two categories -- PC/LDT1 and LDT2. Model year emission reductions shall be calculated by multiplying the percent of either PC/LDT1 or LDT2 vehicles meeting the LEV II standards in a given model year (based on a manufacturer's projected sales volume of vehicles in each category) by 4 for the 2004 model year, 3 for the 2005 model year, 2 for the 2006 model year and 1 for the 2007 model year. The yearly results for PCs/LDT1s shall be summed together to determine a separate cumulative total for PCs/LDT1s and the yearly results for LDT2s shall be summed together to determine a cumulative total for LDT2s. The cumulative total for each category must be equal to or exceed 500 to be considered equivalent. A manufacturer may add vehicles introduced before the 2004 model year (e.g., the percent of vehicles introduced in 2003 would be multiplied by 5) to the cumulative total.

(3) *Medium-Duty Vehicle Phase-In Requirements.*

(A) A manufacturer of MDVs, other than a small volume manufacturer, shall certify an equivalent percentage of its MDV fleet according to the following phase-in schedule:

Model Year	*Vehicles Certified to §1960.1(h)(1), (h)(2), and §1961(a)(1) (%)*		*Vehicles Certified to §1956.8(g) or (h) (%)*		
	LEV	*ULEV*	*Tier 1*	*LEV*	*ULEV*
2001	80	20	100	0	0
2002	70	30	0	100	0
2003	60	40	0	100	0
2004 +	40	60	0	0	100

(B) For the 2004 through 2006 model years, a manufacturer, other than a small volume manufacturer must phase-in at least one test group per model year to the MDV LEV II standards. All 2007 and subsequent model year MDVs, including those produced by a small volume manufacturer, are subject to the LEV II MDV standards.

(C) For the 2001 and subsequent model years, each manufacturer's MDV fleet shall be defined as the total number of California-certified MDVs produced and delivered for sale in California. The percentages shall be applied to the manufacturers' total production of California-certified medium-duty vehicles delivered for sale in California.

(D) *Requirements for Small Volume Manufacturers.* In 2001 through 2003 model years, a small volume manufacturer shall certify, produce, and deliver for sale in

California vehicles or engines certified to the MDV Tier 1 standards in a quantity equivalent to 100% of its MDV fleet. In 2004 and subsequent model years, a small volume manufacturer shall certify, produce, and deliver for sale in California vehicles or engines certified to the MDV LEV standards in a quantity equivalent to 100% of its MDV fleet.

(c) *Calculation of NMOG Credits/Debits*

(1) *Calculation of NMOG Credits for Passenger Cars and Light-Duty Trucks.* In 2001 and subsequent model years, a manufacturer that achieves fleet average NMOG values lower than the fleet average NMOG requirement for the corresponding model year shall receive credits in units of g/mi NMOG determined as:

[(Fleet Average NMOG Requirement) - (Manufacturer's Fleet Average NMOG Value)] x (Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs).

A manufacturer with 2001 and subsequent model year fleet average NMOG values greater than the fleet average requirement for the corresponding model year shall receive debits in units of g/mi NMOG equal to the amount of negative credits determined by the aforementioned equation. For the 2001 and subsequent model years, the total g/mi NMOG credits or debits earned for PCs and LDTs 0-3750 lbs. LVW, for LDTs 3751-5750 lbs. LVW and for LDTs 3751 lbs. LVW - 8500 lbs. GVW shall be summed together. The resulting amount shall constitute the g/mi NMOG credits or debits accrued by the manufacturer for the model year.

(2) *Calculation of Vehicle Equivalent NMOG Credits for Medium-Duty Vehicles.*

(A) In 2001 and subsequent model years, a manufacturer that produces and delivers for sale in California MDVs in excess of the equivalent requirements for LEVs, ULEVs and/or SULEVs certified to the exhaust emission standards set forth in section 1961(a)(1) or to the exhaust emission standards set forth in Title 13, CCR, Section 1956.8(h) shall receive "Vehicle-Equivalent Credits" (or "VECs") calculated in accordance with the following equation, where the term "produced" means produced and delivered for sale in California:

{[(No. of LEVs Produced excluding HEVs) +
(No. of LEV HEVs x HEV VEC factor for LEVs)] +
(1.20 x No. of LEVs certified to the 150,000 mile standards)} -
(Equivalent No. of LEVs Required to be Produced)} +

{[(1.4) x (No. of ULEVs Produced excluding HEVs) +
(No. of ULEV HEVs x HEV VEC factor for ULEVs)] +
(1.50 x No. of ULEVs certified to the 150,000 mile standards)} -
[(1.4) x (Equivalent No. of ULEVs Required to be Produced)]} +

{[(1.7) x (No. of SULEVs Produced excluding HEVs) +

(No. of SULEV HEVs x HEV VEC factor for SULEVs)] +
(1.75 x No. of SULEVs certified to the 150,000 mile standards)}. -
[(1.7) x [(Equivalent No. of SULEVs Required to be Produced)]} +

[(2.0) x (No. of ZEVs Certified and Produced as MDVs)].

MDVs certified prior to the 2004 model year to the LEV I LEV or ULEV standards for PCs and LDTs 0-3750 lbs. LVW set forth in section E.1 of these test procedures shall receive VECs calculated in accordance with the following equation, where the term "produced" means produced and delivered for sale in California:

[(1.6) x (No. of MDVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW excluding HEVs) +
(No. of HEVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW x HEV VEC factor for MDVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW)]+
[(1.65 x No. of MDVs certified to the 150,000 mile LEV I LEV standards for PCs and LDTs 0-3750 lbs.)] +

[(1.8) x (No. of MDVs meeting the LEV I ULEV standards for PCs and LDTs 0-3750 lbs. LVW excluding HEVs) +
(No. of HEVs meeting the LEV I ULEV standards for PCs and LDTs 0-3750 lbs. LVW x HEV VEC factor for MDVs meeting the LEV I ULEV standards for PCs and LDTs 0-3750 lbs. LVW)]+
[(1.85 x No. of MDVs certified to the 150,000 mile LEV I ULEV standards for PCs and LDTs 0-3750 lbs.)].

(B) *MDV HEV VEC factor.* The MDV HEV VEC factor is calculated as follows:

1 + [(LEV standard - ULEV standard) x (Zero-emission VMT Factor) ÷ LEV standard] for LEVs;
1 + [(ULEV standard - SULEV standard) x (Zero-emission VMT Factor) ÷ ULEV standard] for ULEVs;
1 + [(SULEV standard - ZEV standard) x (Zero-emission VMT Factor) ÷ SULEV standard] for SULEVs;
where "Zero-emission VMT Factor" for an HEV is determined in accordance with section 1962.

The HEV VEC factor for MDVs prior to model year 2004 meeting the LEV I LEV and ULEV standards for PCs and LDTs 0-3750 lbs. LVW is calculated as follows:

1 + [(MDV SULEV standard - PC LEV I LEV standard) x (Zero-emission VMT Factor) ÷PC LEV I LEV standard] for MDVs meeting the LEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW;
1 + [(MDV SULEV standard - PC ULEV standard) x (Zero-emission VMT Factor) ÷PC LEV I ULEV standard] for MDVs meeting the ULEV I LEV standards for PCs and LDTs 0-3750 lbs. LVW.

(C) A manufacturer that fails to produce and deliver for sale in California the equivalent quantity of MDVs certified to LEV, ULEV and/or SULEV exhaust emission standards, shall receive "Vehicle-Equivalent Debits" (or "VEDs") equal to the amount of negative VECs determined by the equation in section 1961(c)(2)(A).

(D) Only ZEVs certified as MDVs and not used to meet the ZEV requirement shall be included in the calculation of VECs.

(3) *Procedure for Offsetting Debits.*

(A) A manufacturer shall equalize emission debits by earning g/mi NMOG emission credits or VECs in an amount equal to the g/mi NMOG debits or VEDs, or by submitting a commensurate amount of g/mi NMOG credits or VECs to the Executive Officer that were earned previously or acquired from another manufacturer. For 2001 through 2003 and for 2007 and subsequent model years, manufacturers shall equalize emission debits by the end of the following model year. For 2004 through 2006 model years, a manufacturer shall equalize NMOG debits for PCs and LDTs and LEV II MDVs within three model years and prior to the end of the 2007 model year. If emission debits are not equalized within the specified time period, the manufacturer shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer which sells a new motor vehicle that does not meet the applicable emission standards adopted by the state board. The cause of action shall be deemed to accrue when the emission debits are not equalized by the end of the specified time period. For the purposes of Health and Safety Code section 43211, the number of passenger cars and light-duty trucks not meeting the state board's emission standards shall be determined by dividing the total amount of g/mi NMOG emission debits for the model year by the g/mi NMOG fleet average requirement for PCs and LDTs 0-3750 lbs. LVW applicable for the model year in which the debits were first incurred and the number of medium-duty vehicles not meeting the state board's emission standards shall be equal to the amount of VEDs incurred.

(B) The emission credits earned in any given model year shall retain full value through the subsequent model year. The value of any credits not used to equalize the previous model-year's debit shall be discounted by 50% at the beginning of second model year after being earned, shall be discounted to 25% of its original value if not used by the beginning of the third model year after being earned, and will have no value if not used by the beginning of the fourth model year after being earned.

(d) *Test Procedures.* The certification requirements and test procedures for determining compliance with the emission standards in this section are set forth in the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as amended ~~December 27, 2000~~ [INSERT DATE OF AMENDMENT], and the "California Non-Methane Organic Gas Test Procedures," as amended [INSERT DATE OF AMENDMENT], which are ~~is~~ incorporated herein by reference. In the case of hybrid electric vehicles, the certification requirements and test

procedures for determining compliance with the emission standards in this section are set forth in the "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," incorporated by reference in section 1962~~(e)~~.

(e) *Abbreviations.* The following abbreviations are used in this section 1961:

"ALVW" means adjusted loaded vehicle weight.
"ASTM" means American Society of Testing and Materials.
"CO" means carbon monoxide.
"FTP" means Federal Test Procedure.
"g/mi" means grams per mile.
"GVW" means gross vehicle weight.
"GVWR" means gross vehicle weight rating.
"HEV" means hybrid-electric vehicle.
"LDT" means light-duty truck.
"LDT1" means a light-duty truck with a loaded vehicle weight of 0-3750 pounds.
"LDT2" means a "LEV II" light-duty truck with a loaded vehicle weight of 3751 pounds to a gross vehicle weight of 8500 pounds or a "LEV I" light-duty truck with a loaded vehicle weight of 3751-5750 pounds.
"LEV" means low-emission vehicle.
"LPG" means liquefied petroleum gas.
"LVW" means loaded vehicle weight.
"MDV" means medium-duty vehicle.
"mg/mi" means milligrams per mile.
"NMHC" means non-methane hydrocarbons.
"Non-Methane Organic Gases" or "NMOG" means the total mass of oxygenated and non-oxygenated hydrocarbon emissions.
"NOx" means oxides of nitrogen.
"PC" means passenger car.
"SULEV" means super-ultra-low-emission vehicle.
"TLEV" means transitional low-emission vehicle.
"ULEV" means ultra-low-emission vehicle.
"VEC" means vehicle-equivalent credits.
"VED" means vehicle-equivalent debits.
"VMT" means vehicle miles traveled.
"ZEV" means zero-emission vehicle.

Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204, and 43205.5, Health and Safety Code.

§ 1962. Zero-Emission Vehicle Standards for 2003 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

(a) *ZEV Emission Standard.* The Executive Officer shall certify new 2003 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles as ZEVs if the vehicles produce zero exhaust emissions of any criteria pollutant (or precursor pollutant) under any and all possible operational modes and conditions. Incorporation of a fuel-fired heater shall not preclude a vehicle from being certified as a ZEV provided: (1) the fuel-fired heater cannot be operated at ambient temperatures above 40°F, (2) the heater is demonstrated to have zero fuel evaporative emissions under any and all possible operational modes and conditions, and (3) the emissions of any pollutant from the fuel-fired heater when operated at an ambient temperature of 40°F ~~between 68°F and 86°F~~ do not exceed the emission standard for that pollutant for a SULEV under section 1961(a)(1).

A vehicle that would meet the emission standards for a ZEV except that it uses a fuel-fired heater that can be operated at ambient temperatures above 40°F, that cannot be demonstrated to have zero fuel evaporative emissions under any and all possible operational modes and conditions, or that has emissions of any pollutant exceeding the emission standard for that pollutant for a SULEV under section 1961(a)(1), when tested at an ambient temperature of 40°F, shall be certified based on the emission level of the fuel-fired heater when tested at temperatures between 68°F to 86°F.

(b) [No change]

(c) *Partial ~~and Full~~ ZEV Allowance Vehicles (PZEVs).*

(1) [No change]

(2) *Baseline ~~Partial~~ PZEV Allowance.* In order for a vehicle to be eligible to receive a ~~partial or full~~ PZEV allowance, the manufacturer must demonstrate compliance with all of the following requirements. A qualifying vehicle will receive a baseline ~~partial~~ PZEV allowance of 0.2.

(A) Certify the vehicle to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in section 1961(a)(1) (for model years 2003 through 2006, existing SULEV intermediate compliance standards shall apply to all PZEVs). Bi-fuel, fuel-flexible and dual-fuel vehicles must certify to the applicable 150,000-mile SULEV exhaust emission standards when operating on both fuels;

[No change to sections (c)(2)(B) through the rest of section 1962.]

Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204, and 43205.5, Health and Safety Code.

AVAILABILITY OF INCORPORATED DOCUMENTS ON THE INTERNET REQUEST FOR DOCUMENTS

An electronic version of the staff report and supporting regulatory materials, including proposed amended versions of all of the test procedure and other incorporated documents listed below, can be found on ARB's website at http://www.arb.ca.gov/regact/levii01/levii01.htm. If you would like a hard copy of these documents please fill out this form and mail or fax it to:

Ms. Adrienne Carrillo
Mobile Source Control Division
9528 Telstar Avenue
El Monte, CA 91731
Fax: (626) 575-7012

____ Proposed Amendments to the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles"

____ Proposed Amendments to the "California Non-Methane Organic Gas Test Procedures"

____ Proposed Amendments to the "Guidelines for Certification of 1983 and Subsequent Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California"

____ Proposed Amendments to the "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"

____ Proposed "Guidelines for Certification of 2003 and Subsequent Model-Year Federally Certified Light-Duty Motor Vehicles for Sale in California"

Name:_____

Address:_____

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