TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO CERTIFICATION REQUIREMENTS AND PROCEDURES FOR LOW-EMISSION PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider the adoption of amendments to California regulations for certifying passenger cars, light-duty trucks, and medium-duty vehicles.

DATE: November 12, 1992

TIME: 9:30 a.m.

PLACE: County Administration Center
Supervisors Chambers, Room 310
1600 Pacific Highway
San Diego, CA

This item will be considered at a two-day meeting of the Board, which will commence at 9:30 a.m., November 12, 1992, and will continue at 8:30 a.m. on November 13, 1992. This item may not be considered until November 13, 1992. Please consult the agenda for the meeting, which will be available at least 10 days before November 12, 1992, to determine the day on which this item will be considered.

INFORMATIVE DIGEST OF PROPOSED ACTION

Sections Affected: Proposed amendments to Title 13, California Code of Regulations (CCR), section 1960.1 and "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" and "California Non-Methane Organic Gas Test Procedures," which are incorporated by reference therein, to Title 13, CCR, section 1976 and "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," which is incorporated by reference therein, and to Title 13, CCR, section 2061 and "California Assembly-Line Test Procedures for 1983 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," which is incorporated by reference therein.

Following a September 1990 public hearing, the Board adopted its low-emission vehicles and clean fuels regulations. These regulations establish stringent exhaust emission standards for passenger cars, light-duty trucks, and medium-duty vehicles. There are four progressively more stringent categories of standards for light-duty vehicles: Transitional Low-Emission Vehicles (TLEVs), Low-Emission Vehicles (LEVs), Ultra-Low-Emission Vehicles (ULEVs), and Zero-Emission Vehicles (ZEVs). Rather than mandate specific phase-in percentages for each low-emission category, the regulations use a categorized fleet averaging approach. Compliance with the fleet average requirements is determined by calculating the average non-methane organic gas (NMOG) emission standard to which a manufacturer's fleet of light-duty vehicles is certified. Manufacturers may certify to any combination of the low-emission vehicle categories, or to conventional vehicle standards, as long as the overall

fleet average requirement for the model year is met. The fleet average requirements start with the 1994 model year, and each year until 2003 the required NMOG gram per mile fleet average becomes a step more stringent.

As part of the low-emission vehicles and clean fuels rulemaking, the Board approved a process for a periodic review of the status of implementation of the regulations and for consideration of appropriate regulatory modifications. At a June 11, 1992 public meeting of the Board, the staff presented a status report on the progress being made by the industry to comply with the low-emission vehicle requirements, and several vehicle manufacturers presented their views. At the conclusion of the presentations, the Board adopted resolution 92-46, in which the Board found that the low-emission vehicle standards continue to be technologically feasible within the available lead time.

The November 12, 1992 Board hearing will be held to consider regulatory amendments proposed by staff for the low-emission vehicle regulations and the general certification requirements and procedures for light- and medium-duty vehicles. The proposed regulatory action covers a wide variety of subjects related to the certification and implementation of light- and medium-duty vehicles. A complete listing of the proposed amendments can be found in Appendix A of the Staff Report for this rulemaking. The more significant aspects of the staff proposal are described below.

Hybrid Electric Vehicles. The staff proposal would establish test procedures and requirements for certifying hybrid electric vehicles, which are designed to run on some combination of energy supplied by batteries and an auxiliary power unit (APU), which is likely to be a combustion engine. The low-emission vehicle category (i.e., TLEV, LEV, or ULEV) to which a hybrid electric vehicle can certify would be dependent on the emissions of the vehicle's auxiliary power unit. However, additional emissions credits would be granted for hybrid electric vehicles which can be driven for significant distances on battery-power alone. Determination of the battery-only range would be determined by operating the vehicle over the all-electric range test, which consists of alternating repeat federal highway and urban driving schedules. Exhaust and evaporative emission test procedures are generally similar to those for non-hybrid electric vehicles; however, the nature of hybrid electric vehicle design requires different treatment of running loss emissions. For hybrid electric vehicles, the staff proposal would require determination of the exhaust emissions due to canister purging after multiple-day diurnals. These emissions would then be added to the vehicle's running loss emissions to determine compliance with running loss emission standards.

50°F Demonstration. Existing regulations require vehicle manufacturers to demonstrate at 4000 miles that emissions of their low-emission vehicles at 50°F remain below the 50,000 mile certification standards. This requirement was added to ensure that emission control systems are properly calibrated, without employing defeat strategies, to remain effective even at lower temperatures. However, in designing the 50°F test requirements, the staff did not anticipate recent developments indicating that manufacturers will be able to certify to TLEV and LEV standards using current conventional technologies. It now appears that manufacturers may be forced to utilize advanced technologies solely for the purpose of meeting the 50°F test

requirements. Since this is not the intent of the 50°F requirement, the staff is recommending that the 50°F demonstration standards for NMOG and formaldehyde be revised. Based on data obtained from manufacturers and the staff's own testing, the staff's revised proposal would require 50°F emissions to remain below 1.75 times the 50,000 mile TLEV and LEV certification standards for NMOG and formaldehyde. The data do not justify adjustments for CO or NOx emissions. Furthermore, due to the lack of ULEV emission data at 50°F, no adjustments are proposed for ULEV emissions; adjustments for ULEVs can be considered at a future hearing if necessary.

Establishment of Reactivity Adjustment Factors. Based on the results of vehicle testing conducted this fall, the staff intends to propose reactivity adjustment factors (RAFs) for Phase 2 gasoline TLEVs and LEVs at the November hearing. Twelve TLEV-level vehicles and seven LEV-level vehicles have been procured for testing. However, due to delays in obtaining the correct Phase 2 certification fuel and the amount of testing required, the test program has not been completed as of the date of publication of this notice. Pending the receipt of additional test data, the staff is proposing *interim* RAFs of 1.00 for Phase 2 gasoline-fueled TLEVs and 0.95 for Phase 2 gasoline-fueled LEVs; modified values based on actual testing will be proposed at the Board hearing. The staff is also proposing a baseline ozone per gram value for conventional gasoline-fueled LEVs of 3.25. In addition, if the data become available by the date of the hearing, the staff will propose RAFs for compressed natural gas (CNG) and liquefied petroleum gas (LPG) TLEVs and LEVs, methanol LEVs, and ethanol TLEVs.

Methane RAF for CNG Vehicles. Because of its very low reactivity, methane is generally not regulated under the California standards and test procedures for light- and medium-duty vehicles. Additionally, mass emissions of methane are very low for conventional gasoline and diesel vehicles, which comprise the great majority of the vehicle fleet. Methane emissions from CNG vehicles, however, can be significant if the vehicles are not properly controlled. Since CNG may be used by some manufacturers to achieve the low-emission vehicle standards, a provision to limit excessive methane emissions appears to be needed. In keeping with the ozone-based nature of the NMOG standards, the staff is proposing that the Board adopt a RAF of 0.0043 for methane emissions from CNG TLEVs. (This RAF is derived by dividing the maximum incremental reactivity of methane by the ozone-forming potential per gram value of 3.42 adopted for conventional gasoline TLEVs.) The mass of methane emissions would be multiplied by the RAF and then added to the reactivity-adjusted NMOG emissions before comparing with the NMOG emission standard. This procedure would also apply to CNG-fueled LEVs and ULEVs. For CNG LEVs, the staff is proposing an interim methane RAF of 0.0045; this value will likely be modified at the hearing pending the receipt of additional data. A methane RAF for CNG ULEVs will be proposed at a future date.

As indicated above, the proposed amendments also include a number of additional changes to clarify the certification test procedures or to make their application to low-emission vehicles more practical.

AVAILABILITY OF DOCUMENTS AND CONTACT PERSON

The Board staff has prepared a Staff Report which includes the initial statement of reasons for the proposed action and a summary of the environmental impacts of the proposal, if any. Copies of the Staff Report and the full text of the proposed regulatory language may be obtained from the Board's Public Information Office, 2020 L Street, Sacramento, CA 95814, (916) 322-2990. The Board staff has compiled a record which includes all information upon which the proposal is based. This material is available for inspection upon request to the contact person identified immediately below.

Further inquiries regarding this matter should be directed to Liwen Kao, Air Resources Engineering Associate, Alternate Fuels Section at (818) 575-6832.

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred in reasonable compliance with the proposed regulations are presented below.

The Executive Officer has determined that the proposed regulatory action will not create costs or savings, as defined in Government Code section 11346.5(a)(6), to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, or other nondiscretionary savings to local agencies.

The Executive Officer has also determined that adoption of the proposed regulatory action will not have a significant adverse economic impact on small businesses.

Finally, the Executive Officer has determined that there will be no, or an insignificant, potential cost impact, as defined in Government Code section 11346.53(e), on private persons or businesses (other than small businesses) directly affected by the result of the proposed action.

In addition, before taking final action on the proposed regulatory action, the Board must determine that no alternative considered by the agency would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing. To be considered by the Board, written submissions must be addressed to and received by the Board Secretary, Air Resources Board, P. O. Box 2815, Sacramento, CA 95812, no later than 12:00 noon, November 11, 1992, or received by the Board Secretary at the hearing.

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

bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

STATUTORY AUTHORITY AND HEARING PROCEDURES

This regulatory action is proposed under that authority granted in sections 39515, 39600, 39601, 39667, 43013, 43018, 43101, 43104, 43105, 43107, and 43210 of the Health and Safety Code. This action is proposed to implement, interpret and make specific sections 39002, 39003, 39500, 39667, 43000, 43013, 43016, 43018, 43100, 43101, 43101.5, 43102, 43103, 43104, 43105, 43106, 43107, 43204, 43210, 43211 and 43212 of the Health and Safety Code.

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Title 2, Division 3, Part 1, Chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with nonsubstantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action; in such event the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted. The public may request a copy of the modified regulatory text from the Board's Public Information Office, 2020 L Street, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

James D. Boyd
Executive Officer

Date: September 15, 1992