TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER TECHNICAL STATUS AND PROPOSED REVISIONS TO MALFUNCTION AND DIAGNOSTIC SYSTEM REQUIREMENTS FOR 1994 MODEL-YEAR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM DUTY VEHICLES AND ENGINES (OBD II)

The Air Resources Board (the "Board" or "ARB") will conduct a public hearing at the time and place noted below to consider amendments to California's On-Board Diagnostic II (OBD II) requirements to clarify, ensure maximum effectiveness, and to address manufacturers' concerns regarding implementation of the regulation.

DATE: December 8, 1994

TIME: 9:30 a.m.

PLACE: Air Resources Board
Hearing Room, Lower Level
2020 "L" Street
Sacramento, CA 95814

This item will be considered at a two-day meeting of the Board, which will commence at 9:30 a.m., December 8, 1994, and may continue at 8:30 a.m., December 9, 1994. This item may not be considered until December 9, 1994. Please consult the agenda for the meeting, which will be available at least 10 days before December 8, 1994, to determine the day on which this item will be considered.

INFORMATIVE DIGEST OF PROPOSED ACTION/PLAIN ENGLISH POLICY STATEMENT OVERVIEW

Sections Affected: Proposed amendments to sections 1968.1, 2030, and 2031, Title 13, California Code of Regulations (CCR), and the certification procedures referenced in the latter two sections, "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for Motor Vehicles Certified for 1994 and Subsequent Model Years," March 11, 1993. Section 1968.1 was originally adopted by the Board on September 14, 1989. The Executive Officer has determined that the amendments may have an affect on some small businesses in the aftermarket parts industry.

The regulation requires manufacturers to implement new on-board diagnostic systems starting with the 1994 model year. These OBD systems replace systems previously required by section 1968, known as OBD I. Applicability of the OBD II requirements extends to passenger cars, light-duty trucks, and medium-duty vehicles and engines. The regulation specifically requires the implementation of monitoring strategies for catalyst efficiency, misfire detection, evaporative systems, exhaust gas recirculation (EGR) systems, fuel systems, oxygen sensors, secondary air systems, electronic emission-related powertrain components, and others. It further requires that

diagnostic information be provided in a standardized format, and that the communication link used to transmit the information be standardized throughout the industry.

In Resolution 89-77, which was adopted at the time the Board approved section 1968.1 for adoption, the Board instructed the ARB staff to provide an update within two years after the adoption of OBD II. Specifically, the staff was directed to advise the Board on the progress of manufacturers in complying with the requirements in the specified time frame and to propose amendments to the regulation deemed necessary based on industry progress and comments.

In September 1991, the ARB held a hearing on the status of OBD II compliance. At that time, it was reported that manufacturers were making significant progress in developing complying monitoring systems. However, in response to concerns raised by manufacturers regarding reliability, and a desire by staff that the regulation be modified to enhance the effectiveness of the regulation and to make the state regulation more consistent with the on-board diagnostic system then being proposed by the United States Environmental Protection Agency (U.S. EPA), the Board approved for adoption amendments to section 1968.1. In Resolution 91-42, the Board directed staff to continue monitoring research and development activities related to implementation of the on-board diagnostic system requirements for low-emission vehicles and to report back to the Board with a recommendation to modify any of the requirements if such requirements are found to be nonfeasible and/or impractical for a significant number of manufacturers, with such reports to include recommendations for further modification of the regulation.

In August 1993, upon receipt of a Petition from Ford Motor Company, the ARB considered and adopted amendments to the regulations that offered compliance relief to manufacturers which in good faith have attempted to comply with the the regulations, but which have been unable to certify a fully compliant monitoring system.

As of this date, although many manufacturers have been able to certify and have been offering for sale in California vehicles meeting the OBD II regulation, manufacturers continue to have problems in developing fully compliant monitoring systems. These problems generally are associated with implementation of enhanced monitoring requirements that are effective with the 1996 or later model years. Specifically, manufacturers have expressed concerns about the OBD II catalyst efficiency requirements for low-emission vehicle applications, and the enhanced monitoring conditions for misfire detection systems. Amendments to the regulation are proposed to address these implementation concerns while maintaining the effectiveness of the requirements. Further, additional lead time is proposed to facilitate any modifications that are necessary to ensure that the revised requirements will be met in-use.

The staff has proposed amendments to address other OBD II implementation concerns as well. Amendments are proposed to definemore specifically the OBD II tamper resistance requirements and the monitoring requirements for diesel vehicles and engines. Also, additional leadtime is proposed for full OBD II compliance on vehicles using alternate fuels. Regarding the latter, for purposes of consistency the staff has proposed an amendment to the certification procedures for

alternate fuel retrofit systems with respect to OBD II system performance. These test procedures are referenced by sections 2030 and 2031 of Title 13.

Separately, an amendment is proposed that would increase the effectiveness of OBD II systems in detecting small evaporative system leaks, requiring the detection of leaks as small as the equivalent of a 0.020 inch diameter orifice. The improved requirement would be phased in beginning with the 1998 model year through the 2000 model year.

Finally, a number of amendments are proposed to address minor implementation concerns that have been identified through the experience gained in bringing OBD II systems to production, and to further clarify the regulatory requirements.

Comparison With Similar Federal Requirements:

In February 1993, the U.S. EPA promulgated final on-board diagnostic requirements for federally certified vehicles. (40 CFR Part 86, sections 86.094-2, 86.094-17, 86.094-18(a), 86.094-21(h), 86.094-259(d), 86.094-30(f), 86.094-35(i), 86.095-30(f), 86.095-35(i); see 58 Fed.Reg 9468-9488 (February 19, 1993).) The federal OBD requirements are comparable in concept and purpose with California's OBD II regulation; however, differences exist with respect to the scope and stringency of both sets of requirements.

Under the OBD II requirements, manufacturers must implement monitoring strategies for essentially all emission control systems and emission-related components, as mentioned in the above summary. Generally, a malfunction must be indicated when component deterioration or failure causes emissions to exceed 1.5 times the vehicle's emission standards; however, even if the emission threshold would not be exceeded upon failure of an emission-related component, functional monitoring of the component is still required. The federal requirements specifically call for the monitoring of only the catalyst, the presence of engine misfire, and oxygen sensors. Other system or components need only be monitored if by malfunctioning, vehicle emissions would exceed specified tailpipe or evaporative emission thresholds.

For vehicles certified to California standards identical to the federal Tier 1 standards (0.25 grams per mile (g/mi) hydrocarbons (HC), 3.4 g/mi carbon monoxide (CO), 0.4 g/mi oxides of nitrogen (NOx)), vehicle emission levels should not be significantly different at the time a malfunction is indicated using either a California certified or federally certified OBD monitoring system (assuming the component or system would be monitored under the federal requirements). However, as vehicle emission standards are significantly reduced under the California Low-Emission Vehicle (LEV) program (Title 13, CCR, sections 1960.1), the fact that the OBD II regulation requires malfunction determinations relative to the lower standards will result in California's OBD II requirements being more stringent than those adopted by the U.S. EPA. The more stringent California regulations are authorized pursuant to the Legislature's directive in Health and Safety Code section 43018 that the ARB endeavor to achieve the maximum degree of emission reduction possible from vehicular sources in order to accomplish the attainment of the

state standards at the earliest practicable date. Specifically, section 43018 requires that the Board adopt, among other things, regulations that would result in reductions in motor vehicle exhaust and evaporative emissions, and reductions in motor vehicle in-use emissions through improvements in emission system durability and performance. The OBD II requirements have been adopted in an effort to meet this directive.

In an effort to promote consistency between the California and federal OBD requirements and to minimize unnecessary duplication or conflicts between the two regulations, the Board, in the amendments approved for adoption in 1991 (and formally adopted in July 1992), modified the OBD II catalyst monitoring requirements to be almost identical to the federal requirements for vehicles meeting the Tier I federal standards. Further, the 1992 amendments to the OBD II regulation provide that after the 1998 model year, California will accept compliance with the federal OBD requirements for vehicles not certifying to the California LEV standards but rather to the California equivalent of the Tier 1 federal standards.

Documents Incorporated by Reference:

"California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for Motor Vehicles Certified for 1994 and Subsequent Model Years," amended March 11, 1993.

Society of Automotive Engineers (SAE) Recommended Practice J1850, "Class B Data Communication Network Interface," May, 1994

SAE Recommended Practice J1930, "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms," June 1993

SAE Recommended Practice J1962, "Diagnostic Connector," June, 1992

SAE Recommended Practice J1978, "OBD II Scan Tool," June, 1994

SAE Recommended Practice J1979, "E/E Diagnostic Test Modes," June, 1994

SAE Recommended Practice J2012, "Recommended Format and Messages for Diagnostic Trouble Codes," January, 1994

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. It has further determined that it is not feasible to draft the regulation in plain English due to the

technical nature of the regulation; however, the Staff Report presents a summary of the regulation in plain English and is available as set forth above.

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 Allen Lyons, Air Resources Engineer Associate, at (818) 575-6833, 9528 Telstar Avenue, El Monte, CA 91731.

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.

With respect to producers of aftermarket components for light- and medium-duty vehicles, the Executive Officer has determined that adoption of the proposed regulatory action may have a significant adverse economic impact on businesses, including the ability of California businesses to compete with businesses in other states. Such businesses would be required to certify that components offered for sale in the state of California would not adversely impact the performance of vehicle diagnostic systems meeting the requirements of section 1968.1, Title 13, which could result in increased costs associated with the development and manufacture of aftermarket components. The Executive Officer has considered proposed alternatives that would lessen any adverse economic impact on business and invites you to submit proposals. Submissions may include the following considerations:

(i) The establishment of differing compliance or reporting requirements or timetables which take into account the resources available to businesses.

(ii) Consolidation or simplification of compliance and reporting requirements for businesses.

(iii) The use of performance standards rather than prescriptive standards.

(iv) Exemption or partial exemption from the regulatory requirements for 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 directly affected resulting from the proposed action.

In accordance with Government Code section 11346.54, the Executive Officer has determined that the proposed regulatory action should overall have a minor or positive impact on the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within California, and on the expansion of businesses currently doing business within California. An assessment of the economic impacts of the proposed regulatory action can be found in the Staff Report.

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, December 7, 1994, 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, 43006, 43013, 43018, 43101, and 43104 of the Health and Safety Code, and sections 27156 and 38395 of the Vehicle Code. This action is proposed to implement, interpret and make specific sections 39002, 39003, 39667, 43000, 43004, 43006, 43008.6, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, and 43204 of the Health and Safety Code, and sections 27156, 38391, and 38395 of the Vehicle 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: October 11, 1994