California Environmental Protection Agency

Air Resources Board

PUBLIC MEETING AGENDA

LOCATION:
Kern County Board of Supervisors
Board Chambers, 1st Floor
1115 Truxtun Avenue
Bakersfield, California 93301

TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:
http://www.arb.ca.gov/lispub/comm/bclist.php

December 7, 2006
9:00 a.m.

Item #

06-11-1: Report to the Board on a Health Update: Health Impacts of Air Pollution in the San Joaquin Valley

Pollution in the San Joaquin Valley is impacted by a number of different sources. A number of studies have examined the health impacts of air pollutants in the Valley, including those associated with the growing goods movement industry. This Health Update will focus on the latest studies on health impacts from air pollution in the San Joaquin Valley.

06-11-2: Public Meeting to Consider the Approval of New Grants under the Innovative Clean Air Technologies (ICAT) Program

In response to a public solicitation of applications, the ARB staff has received 20 project proposals that are complete and eligible for ICAT grants. The proposals have been reviewed for the quality of their innovative technologies, their potentials for reducing air pollution and for commercial application in California, their potential economic benefits for California, the quality of the proposed demonstration projects, and their values to ARB's programs. The ARB staff is recommending grants for twelve of the proposed projects.

06-11-3: Public Meeting to Update the Board on the Central California Air Quality Studies

Staff will make a presentation on the key findings from two multi-million dollar studies of particulate matter and ozone in Central California collectively known as the Central California Air Quality Studies. These studies are providing the scientific foundation for upcoming State Implementation Plans addressing the federal PM2.5 and 8-hour ozone standards. The Board will also take this opportunity to honor Board member Barbara Patrick for her service as Chair of the Policy Committee guiding these studies.

06-11-4: Consider Proposed Emergency Amendments to the Statewide Portable Equipment Registration Program (PERP) Regulation and the Airborne Toxic Control Measure (ATCM) for Diesel-Fueled Portable Engines and the Airborne Toxic Control Measure for Compression-Ignition Engines

Staff is proposing amendments to the PERP regulation that would allow additional engines into the program providing certain criteria are met.

06-8-3: CONTINUATION FROM THE SEPTEMBER 28 BOARD MEETING:
Public Hearing to Consider Proposed Amendments to the Chromium Plating Regulation

The staff is proposing amendments to the Chromium Plating ATCM to reduce the cancer risk posed by hexavalent chromium emissions. Hexavalent chromium is a human carcinogen. The proposed amendments would phase-in best available control technology to reduce hexavalent chromium emissions from chromium plating and chromic acid anodizing facilities.

06-11-5: Public Hearing to Consider Amendments to California's Emission Warranty Information Reporting and Recall Regulations and Emission Test Procedures

Staff is proposing amendments to the Emission Warranty Information Reporting and Recall regulations that determine the required corrective action by manufacturers when their warranty claims exceed a four percent failure rate for emission related components. Staff is proposing that once a true four percent failure rate is established, manufacturers will be required to either extend their warranties to 15 years or 150,000 miles for light-duty vehicles, or 10 years or 200,000 miles or 6000 hours for heavy-duty vehicles, or in some cases conduct a recall for the emission component. In all cases, the replacement part must be an improved part.

06-11-6: Public Hearing to Consider Proposed Amendments to the Voluntary Accelerated Vehicle Retirement Regulation

The proposed amendments to the Voluntary Accelerated Vehicle Retirement (VAVR) regulation would authorize the optional use of remote sensing devices and other technologies to identify high emitting vehicles as possible candidates for voluntary retirement.

06-11-7: Public Meeting to Consider Proposed Revisions to the Carl Moyer Program Guidelines: Light-Duty Vehicle Chapter

Staff is proposing updates to the Carl Moyer Program Guidelines for light-duty vehicles. These changes would add provisions for high emitter VAVR programs consistent with proposed changes to the VAVR regulation as well as add project criteria for voluntary repair of vehicle programs.

06-11-8: Report to the Board on the Allocation of $25 million for New Public Agency Low-Emission Construction Equipment

Staff will update the Board regarding the proposal for expenditure of $25 million for the purchase of low-emission construction equipment for public agencies.

CLOSED SESSION – LITIGATION

The Board will hold a closed session as authorized by Government Code section 11126(e) to confer with, and receive advice from, its legal counsel regarding the folllowing pending litigation:

Central Valley Chrysler-Jeep, Inc. et al. v. Witherspoon, U.S. District Court (E.D. Cal. – Fresno), No. CIV-F-04-6663 REC LJO.

Fresno Dodge, Inc. et. al. v. California Air Resources Board and Witherspoon, Superior Court of California (Fresno County), Case No. 04CE CG03498.

General Motors Corp. et. al. v. California Air Resources Board and Witherspoon, Superior Court of California (Fresno County), No. 05CE CG02787.

Massachusetts v. E.P.A., 415 F. 3d 50 (D.C. Circ. 2005), Certiorari granted, 126 S. Ct. 2960 (June 26, 2006.)

OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST.

Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.

OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD.

Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.

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http://www.arb.ca.gov/lispub/comm/bclist.php

IF YOU HAVE ANY QUESTIONS,
PLEASE CONTACT THE CLERK OF THE BOARD
1001 I Street, 23rd Floor, Sacramento, CA 95814

(916) 322-5594
FAX: (916) 322-3928
ARB Homepage: www.arb.ca.gov

To request special accommodation or language needs, please contact the following:

- **For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette or computer disk. Please contact ARB's Disability Coordinator at 916-323-4916 by voice or through the California Relay Services at 711, to place your request for disability services.**
- **If you are a person with limited English and would like to request interpreter services to be available at the Board meeting, please contact ARB's Bilingual Manager at 916-323-7053.**

THE AGENDA ITEMS LISTED ABOVE MAY BE CONSIDERED IN A DIFFERENT ORDER AT THE BOARD MEETING.

SMOKING IS NOT PERMITTED AT MEETINGS OF THE CALIFORNIA AIR RESOURCES BOARD

California Environmental Protection Agency

Air Resources Board

PUBLIC MEETING AGENDA

INDEX

LOCATION:
Kern County Board of Supervisors
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1115 Truxtun Avenue
Bakersfield, California 93301

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December 7, 2006
9:00 a.m.

CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC MEETING TO CONSIDER THE APPROVAL OF GRANTS UNDER THE INNOVATIVE CLEAN AIR TECHNOLOGIES (ICAT) PROGRAM

The Air Resources Board (the Board or ARB) will conduct a public meeting at the time and place noted below to consider the approval of grants under the innovative Clean Air Technologies (ICAT) program.

DATE: December 7, 2006

TIME: 9:00 a.m.

PLACE: Kern County Board of Supervisors
1115 Truxtun Avenue
Board Chambers, 1st Floor
Bakersfield, CA 93301

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 7, 2006, and may continue at 8:30 a.m., December 8, 2006. This item may not be considered until December 8, 2006. Please consult the agenda for the meeting, which will be available at least 10 days.

For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette or computer disk. Please contact ARB's Disability Coordinator at 916-323-4916 by voice or through the California Relay Services at 711, to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please contact ARB's Bilingual Manager at 916-323-7053.

The Board's ICAT program co-funds demonstrations of new technologies that can improve air quality in California and support ARB programs while helping to stimulate the state's economy. The ARB staff will recommend that the Board approve co-funding for twelve projects that were received in response to a public solicitation. These projects were selected because they address important ARB program needs, are technically sound, can reduce emissions, and can succeed commercially within a few years. The Board will consider proposed resolutions to approve co-funding for these projects at its meeting.

The ARB staff will provide an oral presentation at the meeting. The projects to be considered are the following:

Proposal Number 49, entitled "Heavy-Duty Electric Transit Bus Using Modular Lithium Battery Packs," submitted by Artium Technologies for a total amount not to exceed $290,000;

Proposal Number 81, entitled "Assessment of an Advanced Method for Measurement of the Solid Carbonaceous (Soot) Component of Mobile Source Particulate Matter," submitted by Artium Technologies, Inc. for a total amount not to exceed $200,000;

Proposal Number 15, entitled "Adaptive Low Emission Microturbine Generator for Renewable Fuels," submitted by the University of California, Irvine, for a total amount not to exceed $215,000;

Proposal Number 84, entitled "Retrofit DPF+SCR System for Diesel Harborcraft," submitted by Engine, Fuel, and Emissions Engineering, Inc., for a total amount not to exceed $151,170;

Proposal Number 8, entitled "Particulate Measurement (PM) Devices, submitted by Environmental Systems Products Holdings, Inc. for a total amount not to exceed $250,000;

Proposal Number 86, entitled "Retrofit SCR for NOx Emission Reduction Using Crystalline Matrix Storage for Ammonia," submitted by Extengine Transport Systems, LLC, for a total amount not to exceed $157,000;

Proposal Number 46, entitled "Mobile Off-Road Retrofit SCRT Demonstration Project," submitted by Johnson Matthey, Inc., for a total amount not to exceed $70,000;

Proposal Number 65, entitled "Development, Demonstration, & Commercialization of a 0.20 g/hp-hr NOx Natural Gas Engine," submitted by Cummins Westport, for a total amount not to exceed $250,000.

Proposal Number 106, entitled "Development and Demonstration of a Low Emissions 4-stroke Outboard Marine Engine Utilizing Catalyst Technology," submitted by Mercury Marine, for a total amount not to exceed $475,000.

Proposal Number 12, entitled "Laser Strip: A Portable Hand Held Laser Stripping Device for Reducing VOC, Toxic and Particulate Emissions," submitted by the Institute for Research and Technical Assistance (IRTA), for a total amount not to exceed $200,059.

Proposal Number 58, entitled "Mobile NOx and PM Aftertreatment System Field Trial," submitted by NxtGen Emission Controls Inc., for a total amount not to exceed $200,000.

Proposal Number 99, entitled "Maximus Stop-Fill Unit Demonstration," submitted by the ADEPT Group, Inc., for a total amount not to exceed $150,200.

Interested members of the public may also present comments orally or in writing at the meeting, and in writing or by email before the meeting. To be considered by the Board, written comments submissions not physically submitted at the meeting must be received **no later than 12:00 noon, December 6, 2006,** and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal : http://www.arb.ca.gov/lispub/comm/bclist.php

Facsimile submittal: (916) 322-3928

The Board requests, but does not require 30 copies of any written submission. Also, the ARB requests that written and email statements be filed at least 10 days prior to the meeting so that ARB staff and Board members have time to fully consider each comment. Further inquiries regarding this matter should be directed Kevin Cleary at 916-323-1505 or kcleary@arb.ca.gov.

CALIFORNIA AIR RESOURCES BOARD

Michael W. Schaub

for Catherine Witherspoon
Executive Officer

Date: November 21, 2006

NOTICE OF POSTPONEMENT

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE HEXAVALENT CHROMIUM AIRBORNE TOXIC CONTROL MEASURE FOR CHROME PLATING AND CHROMIC ACID ANODIZING OPERATIONS

The Air Resources Board (the Board or ARB) will conduct a continuation of a public hearing at the time and place noted below to consider adopting amendments to the existing Hexavalent Chromium Airborne Toxic Control Measure (ATCM) for Chrome Plating and Chromic Acid Anodizing Operations (Chromium Plating ATCM). This item was originally heard at the September 28, 2006 board hearing and was continued to the November 16, 2006 Board Hearing. Please be advised the item will not be heard at the November 16, 2006 Board hearing and is being postponed to our December 7, 2006 Board hearing at the date, time, and place listed below.

DATE: December 7, 2006

TIME: 9:00 a.m.

PLACE: Kern County Board of Supervisors
1115 Truxtun Avenue
Board Chambers, 1st Floor
Bakersfield, CA 93301

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 7, 2006, and may continue at 8:30 a.m., December 8, 2006. This item may not be considered until December 8, 2006. Please consult the agenda for the meeting, which will be available at least 10 days before December 7, 2006, to determine the day on which this item will be considered.

For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette, or computer disk. Please contact ARB's Disability Coordinator at (916) 323-4916 by voice or through the California Relay Services at 711, to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please contact ARB's Bilingual Manager at (916) 323-7053.

THE CONTINUED HEARING

The continued hearing will be conducted as described in the original notice, except that written submissions must be addressed to and received by the Clerk of the Board as described below. All comments submitted for the September 28, 2006, hearing will remain part of the rulemaking record. The original notice, the ISOR and all subsequent regulatory documents, including the FSOR when completed, are or will be available on the ARB Internet site for this rulemaking at

www.arb.ca.gov/regact/chrom06/chrome06.htm and are available as described in the original notice.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by email 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, December 6, 2006**, and addressed to the following:

Postal mail is to be sent to:

Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Facsimile submittal: (916) 322-3928

The Board requests but does not require 30 copies of any written statement be submitted and that all written statements be filed at least ten days prior to the hearing so that ARB staff and Board Members have time to fully consider each comment. 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.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons, Carla Takemoto, Manager of the Technical Evaluation Section, at (916) 324-8028 or by email at ctakemot@arb.ca.gov, or Shobna Sahni, Air Pollution Specialist, at (626) 575-7039 or by email at spandhoh@arb.ca.gov.

CALIFORNIA AIR RESOURCES BOARD

Catherine Witherspoon
Executive Officer

Date: November 8, 2006

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO CALIFORNIA'S EMISSION WARRANTY INFORMATION REPORTING AND RECALL REGULATIONS AND EMISSION TEST PROCEDURES

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 Emission Warranty Information Reporting (EWIR) and recall regulations and emission test procedures. The proposed amendments would revise, clarify and make specific vehicle and engine manufacturers' responsibilities regarding the reporting of emission-related warranty activities and required corrective action for systemic emission-control defects identified through the EWIR Program.

DATE: December 7, 2006

TIME: 9:00 a.m.

PLACE: Kern County Board of Supervisors
Board Chambers
1115 Truxtun Avenue,1st Floor
Bakersfield, CA 93301

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 7, 2006, and may continue at 8:30 a.m., December 8, 2006. This item may not be considered until December 8, 2006. Please consult the agenda for the meeting, which will be available at least 10 days before December 7, 2006, to determine the day on which this item will be considered.

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INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed amendments to title 13, California Code of Regulations (CCR), sections 1958(c), 2111, 2122, 2136 and 2141; adoption of new article 5, "Procedures for Reporting Failures of Emission-Related Equipment and Required Corrective Action," with new sections 2166-2174, in title 13, CCR, division 3, chapter 2; and proposed amendments to the following title 13 regulations and the documents incorporated therein: section 1961(d) and the "California Exhaust Emission Standards And Test Procedures For 2001 And Subsequent Model Passenger Cars, Light-Duty Trucks And Medium-Duty Vehicles," section 1956.8(b) and the "California Exhaust

Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles," section 1956.8(d) and the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines," section 1976(c) and the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," and section 1978(b) and the incorporated "California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles."

Background: California Health and Safety Code (H & S Code) section 43105 authorizes ARB to order a recall or other corrective action for violations of its emission standards or test procedures. Under this same authority, ARB has wide discretion to determine the facts constituting compliance with these emission standards and test procedures, to fashion corrective action, including recalls and other remedies, for noncompliance, and to adopt procedures for making these determinations. H & S Code section 43106 requires that production vehicles or engines must in all material respects be substantially the same as the certification test vehicles manufacturer use to obtain ARB's certification.

In 1982, the Board adopted regulations that established ARB's first in-use vehicle recall program. The regulations were intended to reduce vehicular emissions by: (1) ensuring that noncompliant vehicles are identified, recalled, and repaired to meet the applicable emission standards and comply with the test procedures in customer use; and (2) encouraging manufacturers to improve the design and durability of emission control components to avoid the expense and adverse publicity of a recall.

In 1988, as an expansion to the 1982 in-use program, ARB adopted the Emissions Warranty Information Reporting (EWIR) regulations (title 13, CCR, sections 2141-2149) for tracking emission-control component defects affecting on-road vehicles. The EWIR regulations require manufacturers to review all emission-related warranty claims on a quarterly basis to determine the number of repairs or replacements made for each component. Each manufacturer must report warranty activity that exceeds a one percent level and has additional reporting requirements when a component's warranty claim rate exceeds four percent on an engine family or test group basis. When an emission-control component's EWIR rate exceeds a true four percent level, the defect is considered to be systemic in nature. Should in-use vehicles or engines exhibit a systemic defect and the manufacturer's EWIR submittals acknowledge that fact, the staff considers the situation to be a violation of test procedure requirements and possibly emission standards. The warranty reporting regulations apply to all on-road 1990 and newer model-year passenger cars, light-, medium-, and heavy-duty trucks, California-certified engines used in such vehicles, and motorcycles.

In some cases, usually involving relatively small vehicle populations or simple defects, in which manufacturers have reported valid warranty claims in excess of four percent for an emission control device manufacturers have agreed to correct the situation by recalling the affected vehicles and installing more durable emission control devices. In other cases manufacturers have agreed to extend the emission control warranties on

the components in question. In many other cases, however no corrective action has occurred. In two notable cases that involved large vehicle populations and more complex defects, Daimler-Chrysler Corporation and Toyota Motor Corporation claimed (over ARB's objection) that despite evidence of a pervasive defect in the emission control components or systems of their vehicles, the ARB was not authorized to order that the defect be corrected since the affected vehicles allegedly did not exceed emission standards, on average for all vehicles, over their useful lives.

The Toyota case was litigated and an administrative law judge upheld Toyota's claim. As a result, Toyota did not correct the defects ARB had determined to exist in the on-board diagnostic (OBD) systems in over 300,000 of its vehicles in California. In response, the Board amended the OBD regulations to enhance their enforceability so that should a similar OBD defect occur in the future, corrective action would result.

The Daimler-Chrysler case involved dozens of models, sold over several years, many of whose catalytic converter substrates disintegrated in use. Despite ample evidence that the catalyst design was defective and that catalysts were failing in-use, ARB was not able to show that for each individual model the catalyst failure would result in the subject vehicles exceeding emission standards, on average, during the vehicles' useful life. The result was a 2005 settlement agreement in which Daimler-Chrysler agreed, among other things, to remedy only 27 percent of the vehicles that contained the catalyst that ARB had determined to be defective. Had the proposed amendments discussed below been in place, staff believes most of the Chrysler vehicles involved in that matter would have undergone corrective action and that corrective action would have been implemented in many other cases where high warranty claims rates occurred.

Proposed Amendments: Based on the Board's statutory authority and its experience in the implementation and administration of the EWIR regulations, the staff has identified three aspects of the existing regulation that need improvement, specifically: (1) the proof required to demonstrate violations of ARB's emission standards or test procedures, (2) the corrective actions available to ARB to address the violations and, (3) the way emissions warranty information is reported to ARB. The proposed amendments target these aspects of the current regulations and, if adopted, will result in corrective action to more vehicles that have defective emission control devices or systems, thereby reducing emissions.

After it adopted the EWIR regulations, the Board adopted regulations (title 13, CCR, sections 1968.1-1968.5) requiring OBD systems on most new vehicles sold in the state. These requirements offer ways of determining vehicles' compliance with emission standards and test procedure requirements that were not taken into account when the EWIR regulations were originally adopted. The proposal would capitalize on the ability of the now mature OBD program to detect failing components, prompt drivers to seek repairs and ensure that vehicles with systemic emission control defects are corrected by the vehicle manufacturers in a more timely and effective manner than is occurring under the current regulations. The staff's proposal would also streamline administration and

reduce program reporting. The staff also proposes to link directly the exceedances of emissions warranty reporting levels with ARB's durability certification test procedures. The proposed amendments would take effect with the 2010 model year.

(1) Proof of Violations: Staff proposes a change in the proof necessary for determining if a group of vehicles is in violation of emission standards or test procedures. Under staff's proposal, once a group of vehicles exceeds a valid warranty claim rate threshold of four percent or 50 vehicles, whichever is greater, ("warranty claims threshold") it would be considered to be in violation of test procedures and possibly emission standards and the manufacturer would be required to implement a recall and/or other corrective action, as specified. The existing standard that a class or category of vehicles must exceed an emission standard on average over its useful life would be eliminated.

(2) Corrective action: Under the staff's proposal, if the warranty claims threshold is exceeded for an exhaust after-treatment device, the Executive Officer may order a recall and/or other corrective action, including an extended warranty, but recall would be the remedy that would be considered first. If the warranty claims threshold is exceeded for emissions components other than exhaust after-treatment devices, the Executive Officer may also order a recall and/or other corrective action, including an extended warranty, but the extended warranty would be the remedy that would be considered first. For vehicles with malfunctioning on-board computers, vehicles not equipped with OBD, or vehicles equipped with OBD systems that do not function properly, a recall and/or corrective action, including an extended warranty, would be required when the warranty claims threshold is exceeded for any emissions component, with the recall remedy being considered first. All replacement parts would be required to be of improved quality and durability. In some cases, extended warranties could be required for periods beyond the affected vehicles' useful lives. The proposed amendments would make it clear that manufacturers may request hearings when recalls are ordered, and that the record would be limited to the information generated in the emissions warranty reports and any other information required by the Executive Officer up to the date of the recall order. Consistent with statute, under the staff's proposal hearings would not be available when other types of corrective action besides recall are ordered, but parties would retain all rights to challenge such orders in court.

(3) Reporting: The proposal would increase the threshold for which an EWIR is required from one percent to four percent or 50 claims (whichever is greater) for all model vehicles subject to reporting requirements. Follow up EWIR reports would be required on an annual basis, rather than quarterly. When the unverified warranty claims rate reaches ten percent, a Supplemental Emissions Warranty Information Report (SEWIR) would be required. The SEWIR replaces the FIR, which currently is issued when an unverified claims rate exceeds four percent. The SEWIR would determine the valid claims rate, and if above four percent would trigger the corrective action process. The FIR report would no longer be required.

COMPARABLE FEDERAL REGULATIONS

Current California emissions warranty reporting requirements are more stringent and comprehensive than their federal counterparts. (See, generally 40 C.F.R. Part 85, in particular 40 C.F.R. sections section 85.1901 and 85.1903.) Federal law requires a onetime report – the emissions defect information report (EDIR) – describing the defect, the vehicles it affects and its impact on emissions. California law calls for similar information to the EDIR, but requires the manufacturer to file follow-up reports for escalating failure rates – the three progressive reports (EWIR, FIR and EIR) which are discussed above. Unlike federal law, California law explicitly ties the warranty information to the recall process, requiring the ARB to evaluate the need for a recall after the submission of the EIR. (title 13, CCR, section 2148.) Federal law has a different, potentially less stringent standard for ordering vehicle recalls than California does. Federal law allows a recall when a substantial number of vehicles do not conform to emission standards (42 U.S.C. section 7541(c)), while California regulations require a demonstration that a class or category of vehicles contains a defect that will cause the vehicles on average to exceed emission standards over their useful lives. In 1990, U.S. Environmental Protection Agency formally found that ARB's emissions warranty reporting and recall regulations were within the scope of previous waivers of federal preemption. (55 Fed. Reg. 28823 (July 13, 1990).)

Although they are somewhat different, the two reporting regimes and the two recall standards have been comparably effective in prompting recalls where manufacturers have agreed to assume responsibility for correcting emissions related defects – but both the federal and state regulations have had limited success where manufacturers object to and contest the recalls, especially in complex cases. If adopted, the proposed amendments would modify and streamline California's requirements for defect reporting. These requirements would still be more extensive than the comparable federal requirements. The proposed amendments would also provide additional grounds for requiring a vehicle recall or other corrective action to remedy systemic defects revealed in emissions warranty reporting which could be proven without the resource intensive emissions testing that is required under current federal law and California regulations. This might lead to the implementation of more recalls or remedial actions when high rates of warranty failures are reported, than would be the case under current California or federal law in this area.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

The Board staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the environmental and economic impacts of the proposal. The report is entitled: "Staff Report: Initial Statement of Reasons for the Proposed Rulemaking – Public Hearing to Amend California's Emission Warranty Information Reporting and Recall Regulations and Emission Test Procedures."

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on the ARB's website listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, California 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing on December 7, 2006.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on the ARB's website listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons: Mr. Tom Valencia, Air Pollution Specialist, Field Inspection and Testing Section, at (626) 575-6726, or tvalenci@arb.ca.gov, or Mr. Tony Dickerson, Air Resources Engineer, Field Inspection and Testing Section, at (626) 459-4350 or tdickers@arb.ca.gov.

Further, the agency representative and designated back-up contact person to whom non-substantive inquiries concerning the proposed administrative action may be directed is Alexa Malik, Regulations Coordinator, (916) 322-4011. 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.

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 www.arb.ca.gov/regact/recall06/recall06.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 by public agencies and private persons and businesses in reasonable compliance with the proposed regulations are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action will create costs to the ARB. The ARB is expected to incur ongoing costs of approximately $200,000 per year for two additional staff to implement the regulation and enforce compliance. Costs would not be created to any other state agency, or in federal funding to the state. The regulation will not create 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 cost or savings to state or local agencies.

The businesses to which the proposed requirements are addressed and for which compliance would be required are manufacturers of California motor vehicles. There

are presently 35 domestic and foreign corporations that manufacture California-certified passenger cars, light-duty trucks, and medium-duty gasoline and diesel fueled vehicles that would be subject to the proposed amendments, 20 heavy-duty engine manufacturers, and over 60 motorcycle manufacturers. Only one motor vehicle manufacturing plant (NUMMI) is located in California.

In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on representative private persons or businesses. Costs to the manufacturers should be reduced by the significantly minimized reporting requirement. Because manufacturers are fully expected, and required, to comply with the regulations, enforcement costs to manufacturers should also be negligible. However, to the extent the regulations increase the number of corrective actions implemented, costs to those manufacturers that have produced vehicles with defective components may increase. Staff estimates that the industry wide cost will be roughly equivalent to current costs, however.

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. Again, any cost impacts are expected to be slight, absorbable or positive.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. Any impact on businesses in California is expected to be slight, absorbable or positive. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulatory action will not affect small businesses because the cost impacts are expected to be slight, absorbable or positive.

In accordance with Government Code sections 11346.3(c) and 11346.5(a)(11), the Executive Officer has found that the reporting requirements of the regulation which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the board or that has otherwise been identified and brought to the attention of the board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by email 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, December 6, 2006**, and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Facsimile submittal: (916) 322-3928

The Board requests but does not require that 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 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 REFERENCES

This regulatory action is proposed under that authority granted in Health and Safety Code, sections 39600, 39601, and 43105. This action is proposed to implement, interpret and make specific sections Health and Safety Code sections 43000, 43009.5, 43018, 43101, 43104, 43105, 43106, 43107 and 43204-43205.5.

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 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 ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Catherine Witherspoon
Executive Officer

Date: October 10, 2006

State of California
AIR RESOURCES BOARD

STAFF REPORT: Initial Statement of Reasons
For Proposed Rulemaking

PUBLIC HEARING TO CONSIDER AMENDMENTS TO CALIFORNIA'S EMISSION WARRANTY INFORMATION REPORTING AND RECALL REGULATIONS AND EMISSION TEST PROCEDURES

Date of Release: October 20, 2006
Scheduled for Consideration: December 7, 2006

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EXECUTIVE SUMMARY

California Health and Safety Code (H & S Code) Sections 43105 and 43106 authorize the California Air Resources Board (ARB or "Board") to require manufacturers to comply with emission standards and test procedure requirements as part of the new vehicle or engine certification process. Health and Safety Code (H & S Code) section 43105 authorizes ARB to order a recall or other corrective action for violations of its emission standards or test procedures. Under this same authority, ARB has wide discretion to determine the facts constituting compliance with these emission standards and test procedures, to fashion corrective action, including recalls and other remedies, for noncompliance, and to adopt procedures for making these determinations. H & S Code section 43106 requires that production vehicles or engines must in all material respects be substantially the same as the test vehicles manufacturers use to obtain ARB's certification.

The current Emission Warranty Information Reporting (EWIR) and Recall regulations require manufacturers to review all emission-related warranty claims on a quarterly basis to determine the number of repairs or replacements made for each component. Each manufacturer must report warranty activity that exceeds a one percent level and has additional reporting requirements when a component's warranty claim rate exceeds four percent on an engine family or test group basis. When an emission-control component's EWIR rate exceeds a valid four percent level, the defect is considered to be systemic in nature. Should in-use vehicles or engines exhibit a systemic defect and the manufacturer's EWIR submittals acknowledge that fact, the staff considers the situation to be a violation of test procedure requirements and possibly emission standards prohibited by H & S Code Sections 43105 and 43106.

Based on the Board's statutory authority and its experience in the implementation and administration of the EWIR and Recall regulations, the staff has identified three aspects of the existing regulations that need improvement, specifically: (1) the proof required to demonstrate violations of ARB's emission standards or test procedures, (2) the corrective actions available to ARB to address the violations and, (3) the way emissions warranty information is reported to ARB. The proposed amendments target these aspects of the current regulations and, if adopted, will result in corrective action to more vehicles that have defective emission control devices or systems, thereby reducing emissions. The proposal would incorporate the ability of on-board diagnostic (OBD) systems to detect failing components and ensure that vehicles with systemic emission control defects are corrected by the vehicle manufacturers in a timely and more effective manner than is occurring with the current regulations. The staff proposal will also streamline program administration and reduce manufacturer reporting. The staff is proposing that the following amendments would take effect with the 2010 model-year.

1. Proof of Violations
   Staff is proposing that once a group of vehicles exceeds a valid warranty claim rate threshold of four percent or 50 claims (an unscreened ten percent warranty claim rate or 100 claims), whichever is greater, it would be considered to be a systemic defect and a violation of test procedures and possibly emission standards. The manufacturer would be required to implement a recall and/or other corrective action, as specified.

2. Corrective Action
   A manufacturer would be required to provide corrective action whenever it is determined that a systemic defect is present in a specific emission-control component. Depending on the type of the defective emission-control component and whether or not OBD is able to detect the problem, corrective action would be either the recall of all affected vehicles or the extension of the emission warranty for that specific component. All replacement parts in any corrective action would be of improved quality and durability.

3. Reporting Requirements
   The threshold for which an Emission Warranty Information Report (EWIR) is required would be increased from one percent to four percent or 50 claims (whichever is greater) for all model vehicles subject to reporting requirements. Follow up EWIR reports would be required on an annual basis, rather than quarterly. When the unscreened warranty claims rate reaches ten percent (presumed to represent a valid four percent rate), a Supplemental Emissions Warranty Information Report (SEWIR) would be required, unless the manufacturer agrees to immediately perform corrective action. The SEWIR replaces the Field Information Report (FIR), which currently is issued when an unscreened claims rate exceeds four percent. The SEWIR would determine the valid claims rate, and if above a four percent warranty claim rate would trigger the corrective action process. The currently required Emissions Information Report (EIR) would no longer be required.

The proposed revisions to the regulation will reduce emissions to the extent that it allows corrective action to be performed that under the current regulation may not occur. For example, in a recent Daimler-Chrysler Corporation enforcement case involving disintegrating catalysts, staff believes more defective catalysts would have been replaced had these amendments been in effect. Because the rate at which future corrective action is appropriate can not be predicted, we have not attempted to quantify the emission reductions resulting from the revisions. However, the primary intent of the in use regulations is to ensure the benefits envisioned by the vehicle and engine emission standards are ultimately obtained.

Cost to the manufacturers should be reduced by the significantly minimized reporting requirement. However, to the extent the regulations increase the number of corrective actions implemented, costs to those manufacturers that have produced vehicles with defective components will increase. However, staff estimates the industry wide cost will be roughly equivalent to today's cost.

The proposed amendments to the EWIR and Recall regulations and associated emission test procedures will result in corrective action to more vehicles that have defective emission control components and in the reduction of manufacturer reporting requirements. The ARB staff recommends that the Board adopt the proposed amendments to Sections 1958, 1956.8, 1961, 1976, 1978, 2112, 2122, 2136, 2141 and new article 5, sections 2166-2174, title 13, CCR, set forth in the proposed Regulation Order in Appendix A. The ARB staff also recommends that the Board adopt the proposed amendments to the test procedures as set forth in Appendix B in order to clearly link the durability demonstration of the certification procedures and the in-use program requirements.

State of California
AIR RESOURCES BOARD

STAFF REPORT: Initial Statement of Reasons
For Proposed Rulemaking

PUBLIC HEARING TO CONSIDER AMENDMENTS TO CALIFORNIA'S EMISSION WARRANTY INFORMATION REPORTING AND RECALL REGULATIONS AND EMISSION TEST PROCEDURES

Date of Release: October 20, 2006
Scheduled for Consideration: December 07, 2006

I. Introduction

This report describes the California Air Resources Board (ARB or "Board") staff's proposed amendments to the Recall and Emission Warranty Information Reporting (EWIR) Regulations contained in the California Code of Regulations (CCR), title 13, Sections 2111, 2112, 2122, 2123, 2135 and 2141-2149, and also, the emission test procedures CCR, title 13, Sections 1956.8, 1958, 1961, 1976 and 1978. The amendments create a new article 5, sections 2166-2174, in title 13, CCR that would replace the current regulations but is aimed at clarifying, streamlining, refining, and enhancing the existing program. One goal of the original regulations was to ensure, pursuant to the applicable test procedures, the durability of emission-control components installed by vehicle and engine manufacturers and provide corrective action when components fail to perform properly in use. The proposed amendments will increase the effectiveness of the program, and reduce administrative costs.

Section 43105 of the California Health and Safety Code (H & S Code) states that, if a manufacturer of motor vehicles or engines certified for sale in this state violates emissions standards or test procedures, and has failed to take corrective action, which may include recall of the vehicles or engines, those vehicles or engines in vehicles may not be offered for sale, sold or registered in this state. It also states the procedures for determining, and the facts constituting, compliance or failure of compliance shall be established by the state board. The manufacturer is also afforded the right to a public hearing to present their objections to the necessity for, or the scope of, any required recall. Staff considers "test procedures" to include all certification requirements [e.g., on-board diagnostic (OBD) system approval, actual exhaust and evaporative emissions testing to show compliance, durability demonstration of

the emission control systems for the certified useful-life period, warranty and warranty reporting requirements, etc.]. Any violation of either emission standards or test-procedure requirements would constitute a violation of H & S Code 43105.

H & S Code Section 43106 requires manufacturers to produce vehicles or engines that are ..."in all material respects, substantially the same in construction as the [certification] test motor vehicle or engine ...." When a significant number of the same emission-control component fails in customer use (and within the certified useful life period), it is clear that production vehicles do not satisfy this statutory requirement since production vehicles are exhibiting problems that the certification's durability demonstration vehicle(s) did not experience. When a component's failure rate exceeds a valid four percent, the ARB considers the problem to be systemic in nature, and appropriate corrective action, which may include recall, is required. This failure rate is also indicative of the fact that the production vehicles are somehow not substantially similar to the vehicles that the manufacturer tested to obtain ARB's certification.

II. History of the Program

In December of 1982, the Board adopted regulations which established the in-use vehicle recall program. The regulations were intended to reduce manufacturer-related excess emissions by: (1) ensuring that noncompliant vehicles are identified, recalled and repaired to meet the applicable emission standards and comply with the test procedures in customer use; and (2) encourage manufacturers to improve emission control designs and durability to avoid the expense and adverse publicity of recall. The program provided for ARB testing of emissions from properly maintained in-use vehicles to determine whether they comply with emission standards during the useful life period. Once noncompliance was identified in a substantial number of vehicles or engines, a manufacturer may perform a voluntary recall. If a manufacturer is unwilling to implement a voluntary recall, the ARB can order the manufacturer to recall the noncompliant vehicles. Under the initial recall program, manufacturers were also required to report to the ARB known emission-related failures and what is being done to remedy them.

During the early years of the program, the ARB staff identified problem areas in the regulations that resulted in low capture rates, delays in recall implementation, and inconsistent reporting of failed emission-related components, among others. In 1988 the staff proposed and the Board adopted amendments to the in-use recall regulations to improve the efficiency and intent of the program and created the emission warranty reporting program. After consideration of the proposals and witness testimony in September of 1988, the Board directed the staff to discuss potential modifications with industry and return to the Board in November with a final proposal. After

meeting with industry and conducting a public workshop, the staff proposed changes to their original recommendations that included (1) linking recalls based on component failures to emission standard exceedances instead of excess emissions, and (2) withdrawing a provision which linked new vehicle/engine certification to in-use failures. These two actions are related to staff's current proposed modifications.

The first modification, linking the recalls to component failures that lead to exceedance of the emission standards, allowed the manufacturers to test properly maintained in-use vehicles with the defective emission component to demonstrate that emissions standards are not exceeded. It also allowed the use of an engineering analysis or tests on laboratory vehicles or engines, when appropriate, to demonstrate the effect of the failure in lieu of vehicle emission testing. The intention was that no recall would be required if the individual vehicles or engines projected emissions met the standards within the useful life. This provision has been misinterpreted and used to support manufacturer's claims that no corrective action is required unless it can be shown that an entire group of similar vehicles exceeds an emission standard, on average.

The second modification withdrew staff's proposal to link certification test procedures to in-use failures. Initially staff proposed that a substantial number of in-use failures would constitute a violation of the certification test procedures, which in turn subject the engine family to a recall. In 1988 it was believed that this provision would no longer be necessary since the recalls would be based on exceedance of the standards instead of an increase in emissions considered to be a violation of test procedures. Staff now feels this link must be established to clearly incorporate the responsibility of the manufacturer to assure component durability for the useful life of the vehicles or engines during the certification process.

The current warranty reporting regulations apply to all on-road 1990 and newer model-year passenger cars, light-, medium-, and heavy-duty trucks, California-certified engines used in such vehicles, and motorcycles. The warranty reporting procedures are a mechanism for identifying, tracking and causing the repair of vehicles with defective emission-control components caused by poor design, materials or workmanship. Manufacturers are required to track warranty claims submitted by their dealers. When the claims rate for a warranted part (or emission-control component) reaches a specified rate, the manufacturer must review its warranty data for that component to determine if the warranty activity indicates that a valid "defect" exists. When it is determined that a defect exists, the manufacturer must evaluate the facts and quantify the emissions impact of the defect and, if necessary take action to correct the problem. Corrective action typically involves a recall of a group of vehicles that use the defective component. Manufacturers must report to ARB at various stages of this process.

The first step in the warranty reporting process requires that a manufacturer submit an Emission Warranty Information Report (EWIR) whenever it determines that an emission-control component for a given engine family or test group reaches an unscreened[1] one percent or 25 component replacement rate (whichever is greater). A manufacturer must continue to analyze warranty claims and report to ARB on a quarterly basis. When the warranty claims for an emission-control component reach an unscreened four percent or 50 component replacement rate (whichever is greater), the manufacturer must submit a Field Information Report (FIR).

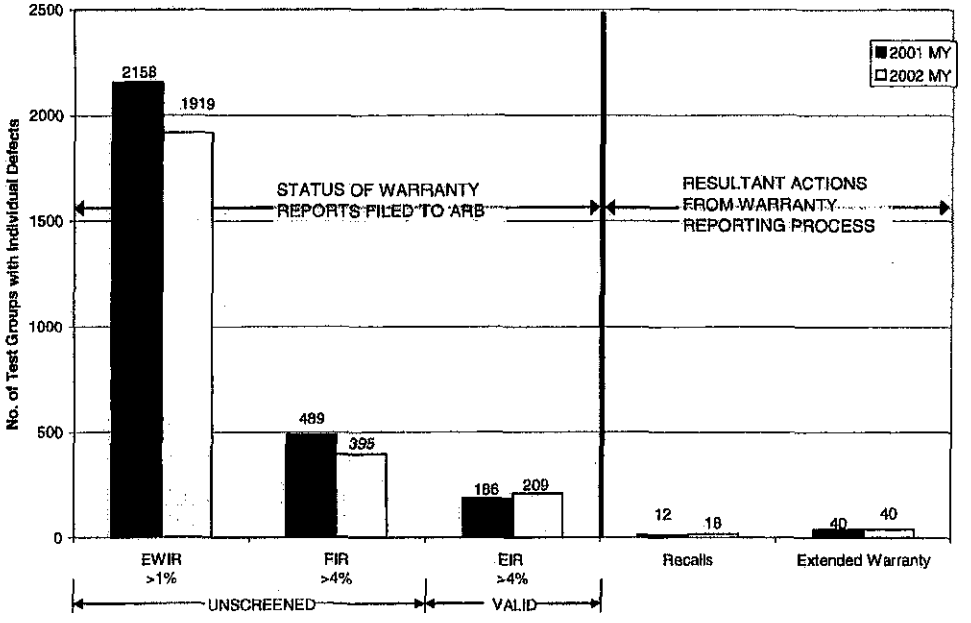
The FIR contains the warranty repair rate with any invalid data removed. If this validated failure rate is less than four percent, the manufacturer must determine and report the date when the projected replacement rate is expected to reach four percent. If the manufacturer determines that a valid defect exists (now considered to be "systemic" in nature), the manufacturer is required to submit an Emissions Information Report (EIR) to quantify the emissions impact of the defect and, if necessary, determine what action is necessary to correct the problem. Corrective action has either been a recall or in some cases an extended warranty for the failing component.

III. Warranty Reporting History and Data Analysis

Figure 1 shows a historical representation of the warranty reports filed for the 2001 and 2002 model year vehicles. These years were used to show overall warranty reporting activity because the reporting obligations are nearly complete and the data represents typical reporting and corrective action efforts taken by manufacturers.

[1] Unscreened – The tabulation of dealership emission warranty service records for emission-related components as they apply to individual engine families or test groups without purging or modifying the data.

Figure 1- Historical Emission Warranty Reporting Data
Based on Current Program 2001-2002 MY Reports



The data show that 186 and 209 emission components for the 2001 and 2002 model years, respectively, exceeded a valid four percent warranty claim rate (indicating a systemic defect) and the manufacturers submitted EIRs. However, only about 28 percent of these defective components resulted in corrective action. In most cases where corrective action was not taken, manufacturers argued that the defective emission component would not cause an emission standard to be exceeded, or that the OBD light would cause the owner to seek repair (under the manufacturers' applicable emissions warranty for a while, and at the owner's expense if the failure were to occur after the end of the warranty period). The typical emissions warranty for passenger cars, light- and medium-duty vehicles is three years or 50,000 miles for most components, or seven years or 70,000 miles for certain high cost parts. Staff is also aware that some manufacturers did not submit EIRs when the FIR indicated a valid four percent failure rate.

This evidence reflects a weakness of the current regulations and their inability to remedy defective components, either by recall or other corrective action. Two recent examples, discussed in section IV, illustrate this problem. In a Toyota case which went to trial, over 300,000 vehicles with evaporative emissions monitors that the ARB staff determined to be defective were allowed to remain on the road uncorrected, and a Chrysler recall resulted in only a small percentage of the vehicles containing catalysts the ARB staff believed to be defective to be corrected by the company.

IV. Impacts – Why Do We Need a Change?

A. Overview

ARB's emission warranty reporting and recall regulations have prompted a number of recalls of defective components. Nevertheless, over time manufacturers have exploited weaknesses in the regulations to avoid taking corrective action for some defective components. These weaknesses stem from regulatory provisions that have been interpreted to require the ARB in a contested recall to undertake time-consuming, resource-intensive testing to prove that each known class or category of vehicles with a pervasive emission component failure will exceed quantitative emissions standards on average over the useful life. Especially in cases that involve large vehicle populations or component failures that occur gradually, this standard is unrealistic, frustrates addressing known defects and effectively prevents recalls in situations where they are warranted. Under the current regulations, the potential expense of conducting emission testing to support a contested recall may alone deter the ARB from ordering one.

The current regulations authorize recalls as the sole means of addressing failures of emissions components, and do not explicitly provide for other types of corrective action such as extended warranties. In many situations an extended warranty can be effective in assuring defective components are replaced. Manufacturers have voluntarily agreed to extend warranties in many cases, as shown in Figure 1, however ARB can not order a manufacturer to extend a warranty.

In addition, the current regulations were adopted before the Board adopted the on-board diagnostic regulations and do not reflect the ability of OBD systems to demonstrate when component failures occur and test procedures have been violated. When combined with a warranty, OBD can be effective in ensuring owners replace defective emission components.

B. Specific Cases and Potential Impacts

Discussed below are two "real world" cases involving known emission-control defects that, in staff's opinion, did not result in proper corrective action. They are the driving factors for staff's proposal.

<u>Daimler-Chrysler Corporation OBD Catalyst Case</u>

Through its EWIR program, the ARB determined that some 151,000 Daimler-Chrysler Corporation (DCC) 1996 through 1999 model-year light-duty trucks were equipped with catalytic converters with internal substrates that would begin to rattle, ultimately fall apart and exit through the exhaust pipe. Some individual engine family warranty claim rates exceeded 72 percent,

clearly indicating a systemic problem. Individual light-duty trucks exhibited hydrocarbon emission levels more than three times the applicable standard. DCC would not agree to recall all of the affected light-duty trucks.

Faced with the burden of testing 30 individual engine families to show an emissions exceedance, on average, for each family, the ARB instead entered into a settlement agreement with DCC that corrected some, but not all, of the light-duty trucks in question. Of the 151,000 trucks with EWIR rates greater than four percent, only about 41,000 (27%) were recalled under the agreement. The staff believes that more than 100,000 DCC light-duty trucks are operating in California with potentially defective catalytic converters. Also, the OBD system on some of these trucks failed to detect the disintegrated catalysts.

To provide a sense of the potential emission impact of the failure to recall the 100,000 DCC trucks with defectively designed catalytic converters, staff has analyzed a best case and a worst case scenario. In the best case scenario, we assumed the catalysts cracked but did not fully disintegrate. Some of the vehicles ARB tested were in this condition, and data showed a 0.18 gram per mile NOx increase compared to a vehicle with a normal catalyst. Note in this case the vehicle with the cracked catalyst did not exceed the emission standard, even though it had higher emissions. We assumed only 20 percent of the affected catalysts had cracked catalysts, and the rest would not deteriorate over their remaining life of 8 years. In the worst case scenario, we assumed the catalyst would continue to deteriorate to 1.7 times the emission standards (i.e., just below the OBD threshold of 1.75 times the emission standards). Assuming that 72 percent of the vehicles experienced this amount of catalyst deterioration (equal to the worst performing engine family that used the defective catalyst, with a remaining vehicle life of 8 years) the results of this failure would increase by a factor of 48 times the total non-methane hydrocarbons (NMHC) plus oxides of nitrogen (NOx) as compared to the first scenario causing a significant excess emissions impact on air quality. The following table contains the results.

Table 1
Potential Smog-Forming Emission Increases
Due to DCC Defective Catalysts
100,000 Light Duty Trucks

Catalyst Scenario	ROG Emission Increase per Vehicle: g/mi	NOx Emission Increase per Vehicle: g/mi	Exceeds standards?	Assumed % of fleet with defective catalysts	NMHC Cumulative emission increase: tons/year	NOx Cumulative emission increase: tons/year
Cracks	0.002	0.183	NO	20%	0.59	54.4
Deteriorates	1.7 * STD (0.762)	1.7 * STD (1.67)	YES	72%	837.1	1783.4

As shown in the table, the emission increase of these trucks, which account for only 0.04 percent of the on-road fleet of light duty vehicles, are significant in both the best and worst case scenarios.

Toyota Motor Corporation OBD Evaporative Diagnostics Case

In 1998, the ARB ordered the recall of more than 330,000 Toyota Motor Corporation 1996 through 1998 model-year passenger cars and light-duty trucks due to an identified defect with the evaporative emission leak-check monitor of the vehicles' OBD system. The recall was contested by Toyota and ultimately brought before an administrative law judge to determine if the recall was justified. In his ruling that was based on current regulatory language, the judge determined that an exceedance of the applicable emissions standards must to be demonstrated by the ARB to allow the recall order to be enforceable.

The ruling resulted in more than 300,000 Toyota vehicles operating in California today with what staff believes to be defective OBD systems. Regardless of whether or not the ARB demonstrated that emission standards were exceeded on average, without the proper recall repairs, these vehicles will not identify a leak in the evaporative emission control system of individual vehicles. The owners will not be notified by the OBD's malfunction indicator light that their vehicles are emitting excess emissions and the problem will not be detected during a Smog Check inspection. As a result of this recall case, the Board, in a subsequent action, adopted regulations that augment staff's ability to pursue corrective action for OBD-specific failures without demonstrating the affected vehicles on average exceed an emission standard. The staff's proposal will accomplish the same objective for the emission warranty reporting and recall program.

V. Legal Analysis

A. How The Warranty Reporting and Recall Regulations Work Now

Currently, exceeding emissions warranty reporting levels in a particular product line starts an ARB Executive Officer (EO) inquiry into whether a recall is appropriate. "An engine family, test group or a subgroup shall be subject to a recall when the number of failures of a specific emission-related component exceeds the failure levels" in emission information warranty reports set forth in title 13 CCR section 2143. This happened, for example, in the DCC case mentioned above, making them subject to recall, unless the EO "determines that a recall is unnecessary pursuant to the criteria set forth in Section 2148(a) and 2148(b)" (13 CCR section 2143.) . "Subject to recall" means that the vehicles may be recalled by the EO based on this warranty information, provided the EO makes the findings required by section 2123(a), but the

manufacturer may challenge the EO's recall order by requesting a hearing. Exceeding the current warranty reporting thresholds is one piece of evidence that would be considered in such a hearing.

The warranty reporting regulations (sections 2141-2148) offer an opportunity to require manufacturers to submit data about the emissions consequences of failing components, but in practice obtaining this information has been difficult given the number of reports filed, limited staff and resources to review them, lack of cooperation by manufacturers and limited consequences for manufacturers providing incomplete information.

The EO is obligated to review the emission information reports and other relevant information before ordering a recall. Section 2148(a) requires the EO to consider a number of criteria in deciding whether to issue a recall order (e.g., validity of data, emission impact of failure on individual engines, increased tampering, and performance). If the manufacturer demonstrates to the EO's satisfaction that the failure is limited to a "less-than-substantial" percentage of vehicles and does not represent a "pervasive defect . . . likely to affect a substantial number" of vehicles but is likely to be corrected under warranty, then no recall shall be required. Section 2148(b).

If, however, the EO determines that a recall may be warranted, the EO may issue a recall order if he or she can make the findings the regulation requires. These findings are that, "a substantial number of a class or category of vehicles or engines produced by that manufacturer, although properly maintained and used, contain a failure in an emission-related component which, if uncorrected, may result in the vehicles' or engines' failure to meet applicable standards over their useful lives; or whenever a class or category of vehicles or engines within their useful lives, on average, do not conform to the standards . . ." Section 2123 (a). If the EO makes these findings, the manufacturer must be notified that the EO has determined that a recall is warranted. Section 2149. The EO may base the determination on "warranty information reports, field information reports, enforcement testing results, or any other information". Section 2123(a).

These findings form the elements of the case that the EO has to address to prevail in the event that a manufacturer requests a hearing to contest the EO's recall order under section 2124. When the EO makes the findings, exceedance of the emission standards is presumed, unless the manufacturer provides evidence that it tested properly maintained vehicles containing the defect according to the regulation's requirements and the vehicles pass. Section 2147. The manufacturer may elect to provide this rebuttal evidence when the recall order is issued, or later if the manufacturer requests a public hearing to challenge the EO's finding of nonconformity and the necessity for or the scope of any ordered recall. Section 2124. This is what occurred in the Toyota case.

At the hearing, the manufacturer (and the EO) may offer evidence about the emissions impact of the alleged defect and this becomes the pivotal issue in deciding whether the EO's recall order will be upheld. Health and Safety Code section 43105 provides that vehicles may be recalled for violations of emission standards or test procedures. In the Toyota recall case the judge held that ARB had to show a violation of the emission standards to get even an OBD recall.

In-use vehicle enforcement test procedures provide a way of proving the emissions impact of an alleged defect. These procedures require that the EO obtain 10 properly maintained vehicles in the suspect engine family, test group or subgroup (Section 2137) and test them according to the requirements of section 2139. If three or more vehicles fail, the EO must inform the manufacturer, which is required to submit an emissions information report (EIR). The vehicles are subject to recall, pending the EO's review of the report. If, however, the tests under section 2139 indicate that the average emissions of the test vehicles exceed the standards for any pollutant, the EO may order a recall, unless the manufacturer submits an influenced recall plan. Section 2140. In practice the expense of conducting this kind of testing, especially in cases involving large vehicle populations or components that fail over time, has been a major deterrent to ordering a recall at all.

In cases involving large vehicle populations or components that fail gradually, it is virtually certain that manufacturers will request hearings and contest the EO's recall order rather than implementing a recall, given the stakes involved. The current regulations also encourage manufacturers to wait and present the emissions testing to support their rebuttal case in the hearing, not before. This is what occurred in the Toyota recall hearing. The current regulations make it also likely that manufacturers will do extensive testing to rebut the presumption of emissions exceedance. In the DCC case, despite the pervasive nature of the problems plaguing the catalysts on the affected vehicles, the amount of emission testing that the current regulations would have required if a recall had been ordered effectively prevented the pursuit of that remedy. And, the current regulations provide for no remedy other than recall, despite the fact that the statutes authorize other types of corrective action.

B. ARB's Authority to Order Recalls or Corrective Action

Health and Safety Code Section 43105 provides:

"No new motor vehicle, new motor vehicle engine, or motor vehicle with a new motor vehicle engine required pursuant to this part to meet the emission standards established pursuant to Section 43101 shall be sold to the ultimate purchaser, offered or delivered for sale to the ultimate purchaser, or registered

in this state *if the manufacturer has violated emission standards or test procedures and has failed to take corrective action, which may include recall of vehicles or engines, specified by the state board in accordance with regulations of the state board.* If a manufacturer contests the necessity for, or the scope of, a recall of vehicles or engines ordered pursuant to this section and so advises the state board, the state board shall not require such recall unless it first affords the manufacturer the opportunity, at a public hearing, to present evidence in support of the manufacturer's objections. If a vehicle or engine is recalled pursuant to this section, the manufacturer shall make all necessary corrections specified by the state board without charge to the registered owner of the vehicle or vehicle with such engine or, at the manufacturer's election, reimburse the registered owner for the cost of making such necessary corrections. *The procedures for determining, and the facts constituting, compliance or failure of compliance shall be established by the state board.*" Emphasis added.

Health and Safety Code section 43105 gives ARB a great deal of authority to order a recall or other corrective action for violations of its emission standards or test procedures. Along with this authority, section 43105 gives ARB wide discretion to determine the facts constituting compliance with emission standards and test procedures, to fashion remedies for noncompliance and to adopt procedures for making these determinations. The proposed amendments all fall within section 43105's grant of authority, and within the authority bestowed by the other statutes discussed below as well.

Warranty reporting thresholds are linked to vehicle durability and can also be considered test procedures, the violation of which would entitle ARB to order recall or other corrective action. The Health and Safety Code contains no definition of the term "test procedures" comparable to the definition it provides for "emission standards", but the language of sections 43104 and 43105 suggests that "test procedures" means the test procedures that manufacturers must conduct to obtain ARB's certification to sell their products in California. Health and Safety Code section 43104 provides, in pertinent part:

> "For the certification of new motor vehicles or new motor vehicle engines, the state board shall adopt, by regulation, test procedures and any other procedures necessary to determine whether the vehicles or engines are in compliance with the emissions standards established pursuant to Section 43101. "

The staff proposes to make the warranty reporting thresholds part of existing test procedures, providing solid grounds for the ARB to order recall or other corrective action when a warranty reporting threshold is violated.

Health and Safety Code section 39027 defines "emission standards" as "specified limitations on the discharge of air contaminants into the atmosphere". The staff believes that many warranty claims are made because owners are prompted to seek repairs by their vehicles' OBD systems. OBD systems use malfunction criteria based on numeric multiples of various certification emission standards and are themselves numerical, quantifiable emission standard under Health and Safety Code sections 39027[2]. This lends further statutory support for the staff's proposal.

The staff also believes that the proposed amendments find support in Health and Safety Code section 43106, which provides:

> "Each new motor vehicle or engine required pursuant to this part to meet the emission standards established pursuant to Section 43101 shall be, in all material respects, substantially the same in construction as the test motor vehicle or engine, as the case may be, which has been certified by the state board in accordance with this article. However, changes with respect to new motor vehicles or engines previously certified may be made if such changes do not increase emissions above the standards under which those motor vehicles or engines, as the case may be, were certified and are made in accordance with procedures specified by the state board."

At the time of certification, manufacturers test prototype vehicles to demonstrate that their emissions control components will be durable and last for the useful life of the vehicle. When emissions components then fail at the rate of four percent or 50 in use, the staff believes that this is strong evidence that the production vehicles are not, in all material respects, substantially the same in construction as the test vehicles, and are in violation of Health and Safety Code section 43106 and test procedures.

There are several other sources of statutory authority to adopt the proposed amendments to the warranty/recall regulations. For example, Health and Safety Code section 39600 bestows broad authority on the ARB to "do such acts as may be necessary for the proper execution of the powers and duties granted to, and imposed upon, the state board by

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[2] For example, exhaust after-treatment devices play a critical role in reducing emissions (often by themselves reducing emissions by over 95 percent) and a failure identified by the OBD system such cases indicates an exceedance of the emission standard by 1.75 times.

this division and by any other provision of law." Health and Safety Code section 39601 requires the ARB to adopt regulations to carry out the duties that section 39600 bestows.

The staff's proposal establishes, on the whole, test procedures and standards to determine compliance with the test procedures and possibly emission standards ARB has adopted or will adopt. This provides a basis of authority for the staff's proposal similar (but not identical) to the authority that supports ARB's 2003 amendments to the OBD recall regulations:

> "The adopted OBD II regulation, title 13, CCR sections 1968.1, and the proposed regulation for 2004 and subsequent model year vehicles, title 13, CCR section 1968.2, establish both emission standards and test procedures for certification to those standards. The ARB expressly adopted title 13, CCR section 1968.1 pursuant to authority granted by the Legislature to adopt and implement emission standards and test procedures under the Health and Safety Code. Likewise, the staff is proposing that section 1968.2, title 13, CCR be adopted pursuant to the same authority. In so acting the Board has not, and will not have, exceeded its authority under the statute. The existing and proposed regulations clearly establish quantitative emission standards for most, if not all, of the major monitoring systems (e.g., detection of malfunctions before emissions exceed 1.5 times the applicable tailpipe emission standard). These malfunction criteria establish specified limitations on the discharge of air contaminants into the atmosphere and thus meet the definition of "emission standards" as defined at section 39027 of the Health and Safety Code." (Staff Report: Initial Statement of Reasons for Proposed Rulemaking, "Technical Status and Revisions to Malfunction and Diagnostic System Requirements for 2004 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBDII)" ("OBDII ISOR", p. 72.)

The staff's proposal would establish the warranty reporting levels as part of the certification test procedures, the violation of which would entitle the Executive Officer to order a recall or other corrective action, just as the violation of the requirements of the OBD regulations authorize a recall or other corrective action also.

The rationales advanced for the OBD recall regulations are discussed further below because they relate to the warranty/recall proposal in several other ways, but first some of the other sources of statutory authority for the proposal are listed here.

Health and Safety Code section 43013(a) provides:

"The state board may adopt and implement motor vehicle emission standards, in-use performance standards, and motor vehicle fuel specifications for the control of air contaminants and sources of air pollution which the state board has found to be necessary, cost-effective, and technologically feasible, to carry out the purposes of this division, unless preempted by federal law."

Health and Safety Code section 43018 provides, in pertinent part:

"(a) The state board shall endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of the state standards at the earliest practicable date.

(b) Not later than January 1, 1992, the state board shall take whatever actions are necessary, cost-effective, and technologically feasible in order to achieve, not later than December 31, 2000, a reduction in the actual emissions of reactive organic gases of at least 55 percent, a reduction in emissions of oxides of nitrogen of at least 15 percent from motor vehicles. These reductions in emissions shall be calculated with respect to the 1987 baseline year. The state board also shall take action to achieve the maximum feasible reductions in particulates, carbon monoxide, and toxic air contaminants from vehicular sources.

(c) In carrying out this section, the state board shall adopt standards and regulations which will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel, including, but not limited to, all of the following:

(1) Reductions in motor vehicle exhaust and evaporative emissions.

(2) Reductions in emissions from in-use emissions from motor vehicles through improvements in emission system durability and performance.

(3) Requiring the purchase of low-emission vehicles by state fleet operators.

(4) Specification of vehicular fuel composition."

Also see Health and Safety Code sections 43101 and 43102.

C. The OBD II Recall Regulations

Issues of authority arose when the Board adopted amendments to the OBD II recall procedures, title 13 CCR sections 1968.1-1968.5. In the staff report for that regulation the staff discussed several rationales for adopting the OBDII regulations that apply here as well. First is that failure of an emission-related part should be grounds for a recall, irrespective of whether the failure causes a quantifiable increase in tailpipe or evaporative emissions of the entire group of affected vehicles:

> "the proposed regulation would clarify that in ordering a recall of a nonconforming OBD II system, the Executive Officer would not need to demonstrate that the nonconforming system directly causes a quantifiable increase in the tailpipe or evaporative emissions of the entire group of affected vehicles nor would a manufacturer be able to overcome the recall by making such a showing. The recall of an effectively nonfunctional monitoring system is necessary because the existence of such a noncomplying system effectively defeats the purposes and objectives of the OBD program and potentially undermines the emission reduction benefits that have been projected from adopted motor vehicle emission reduction programs. It has been the long-standing position of the ARB that it is necessary to repair or replace such nonconforming systems because they are not capable of detecting future malfunctions of the vehicle's emission control systems and that this would likely lead to future emission increases." OBD Recall ISOR pp. 78-79.

Second is that while it is inherently speculative to forecast the future emissions consequences of failed emissions components that fail over time it is beyond dispute that as motor vehicles age and accumulate high mileage, their emission control systems deteriorate and increasingly malfunction, causing emissions from motor vehicles to increase, and for these reasons, the ARB needs to be able to order recalls on the basis of failing emissions-related components, not just on the basis of average emissions exceedances in an affected vehicle group:

"As stated, it is beyond dispute that as motor vehicles age and accumulate high mileage, their emission control systems deteriorate and increasingly malfunction, causing emissions from motor vehicles to increase. The ARB adopted the OBD II requirements to address this problem and, specifically, to provide assurance that when malfunctions in emission control systems do occur, they will be expeditiously discovered and repaired. To properly perform these objectives, the OBD II system itself must be functional and capable of detecting malfunctions when they occur. To minimize potential emission increases in future years, it is imperative that the identified, effectively nonfunctional OBD II systems be recalled and repaired at the time noncompliance of the systems is discovered. No one knows or can accurately predict how well emission control systems of different manufacturers will work 10, 20, or more years from now. This is especially true when vehicles are being required to meet increasingly stringent emission standards, requiring new and complex technologies to be utilized.

Contrary to the contentions of the automobile manufacturers, any forecasting of future compliance with tailpipe and evaporative emissions standards would be much more difficult to do in the case of an OBD II nonconformity than in the case of failed emission related component. In the latter case, the manufacturer knows specifically what emission-related component has failed (and the manner in which it has failed) and can conduct in-use emission testing of the vehicle fleet with the known failed part. In the case of the nonconforming OBD II system, the only thing known is that the OBD II monitor is not working. At the time of such failure, neither the Executive Officer nor the manufacturer knows what emission-related part or combination of parts might fail in the immediate or distant future without illumination of the MIL. Such an evaluation, which entails the ability to accurately predict which part(s) will fail, in what manner, at what failure rate, and at what point in the vehicle's life, would be, at best, extremely speculative. As stated before, appropriate remedial action should be based solely on compliance (or lack of) with the OBD II requirements. The ability of the Executive Officer to order appropriate remedies, including recall, irrespective of a finding of direct emissions consequences, is also necessary so that California can continue to meet its obligations under the federal CAA that the states incorporate OBD checks as part of their inspection and maintenance (I/M) programs. This has been an objective of the OBD II regulation since its inception." (OBD ISOR pp. 79-80.)

Based on its experience, the staff believes that it is also inherently speculative to forecast future compliance in the case of emissions related components.

Third is that properly operating emissions components are crucial to the success of OBD and I/M programs:

> "To protect the benefits of an OBD-based I/M check, it is *imperative that functional and viable OBD II systems are installed* in all certified vehicles. To assure that they are, it is necessary to assure that all OBD II systems that are found to be effectively nonfunctional be recalled and repaired, irrespective of whether one can make a showing that the vehicles, equipped with such *nonfunctioning systems, on average comply with applicable* tailpipe certification standards." (OBD II ISOR p. 81.)

The OBD II ISOR contains this final summary of the authority issue:

> "In summary, given that the OBD II regulation establishes both emission standards and test procedures that are required for certification of new motor vehicles, the ARB has undisputed authority under Health and Safety Code section 43105 to adopt the OBD II-specific enforcement regulation. Beyond this express grant of authority, Health and Safety Code, section 39600 further entrusts the ARB with general powers to do such acts as may be necessary for the proper execution of the powers and duties granted to it under Health and Safety Code. The ARB adopted the OBD II regulation pursuant to the powers and duties granted to the ARB under Health and Safety Code sections 43013(a), 43018, 43101 and 43104. Accordingly, under its general powers, the ARB is authorized to adopt all necessary enforcement regulations to assure compliance with the OBD II requirements." (OBD II ISOR pp. 91-92)

VI. How Staff Proposes to Change The Program

A. Overview

In 2003, the Board adopted amendments to the OBD regulations (title 13 CCR sections 1968.1-1968.5) to improve their enforceability. Based on its experience administering the emissions warranty reporting and recall programs, the staff proposes to amend the emissions warranty and recall regulations to improve their enforceability, streamline the warranty reporting regulations, simplify the grounds for recall, provide for other corrective action (including extended warranties) and clarify that hearings are available only when the EO orders a recall. As discussed in more detail below, the Board

adopted the OBD program after it adopted the warranty reporting and recall regulations. The staff's proposal would utilize the power of OBD systems to detect violations of emissions standards and test procedures in use and integrate the OBD program with the emissions warranty reporting and recall programs, something the staff believes is long overdue. The proposed amendments would link the emissions warranty reporting and recall programs to ARB's durability test procedures in a meaningful way.

The staff's experience indicates that improvements to the current regulations should be made in the areas of warranty defect reporting and in the grounds upon which recalls or other corrective actions (such as extended warranties) may be ordered when warranty defect rates reach levels that indicate pervasive problems with emissions components exist, four percent or 50 claims, whichever is greater. Based on this experience, the staff believes that the improvements it is proposing and other proposed improvements such as clarifying when hearings are available consistent with Health and Safety Code section 43105 would increase the likelihood that failing emissions components will be corrected and excess emissions attributable to them will be avoided. The staff believes that it does not serve the goals of the ARB's motor vehicle emissions control program to allow, as the current regulations do, manufacturers to avoid correcting emissions components that fail in significant number in use by showing that the affected vehicles will not on average violate numerical emission standards over their useful lives. The staff believes that when emissions components fail in significant numbers in use it is very likely that excess emissions will occur and, further, that it is reasonable for manufacturers to be required to correct these components, or at least to extend the emissions warranty applicable to them so that consumers, warned of the failures by their vehicles' on-board diagnostic systems, will be able to have the failing components repaired or replaced under warranty. The proposed amendments would accomplish these goals.

After the Board adopted the emissions warranty reporting and recall regulations in 1988, it adopted the on-board diagnostic (OBD) regulations and amended them several times, most recently in 2003. The OBD systems have matured over time and the OBD program has proven to be quite effective, but it has not been integrated into the warranty reporting and recall programs. The staff believes that it is time to utilize in the emissions warranty and recall programs the ability of OBD systems to detect failing emissions components and alert drivers to their presence. OBD systems and the warranty claims they generate can provide data that demonstrates when a pervasive problem with emissions control components exists. OBD systems also employ malfunction criteria that indicate when individual vehicles violate emission standards. The proposed amendments would capitalize on these powerful abilities of OBD systems to improve the emissions warranty reporting and recall regulations by integrating the emissions warranty reporting, recall and OBD programs. The staff proposes to do this by establishing that when defects reported in the

warranty process reach a level of four percent or 50 (whichever is greater) in any engine family or test group, the Executive Officer may order that the affected vehicle population be recalled or subjected to corrective action.

The proposed amendments would establish that excess warranty claims rates are violations of the durability requirements of ARB's test procedures. The proposed amendments would link the test procedures' durability requirements with actual component durability as demonstrated by emissions warranty data and OBD detection capabilities. By forging this link, the proposed amendments would integrate a number of ARB programs: the test procedures, emission standards, emissions warranty reporting, recalls and the OBD program. OBD detection of failing emissions components can demonstrate violations of emissions standards and/or test procedures. The proposed corrective action would include recall or requiring manufacturers to extend warranties for failing emissions control components to specified periods during which time OBD may warn additional owners to take their vehicles in to have the failing components repaired. It should be noted that any replacement part utilized in any corrective action shall be of improved quality and durability.

Since the thrust of the warranty reporting threshold is the durability of vehicles' emission control systems, the durability portion of the test procedures is an entirely appropriate place to forge a link between the proposed warranty reporting and recall amendments and the test procedures. Durability provisions exist in ARB's test procedures.[3] It is here where the proposed regulations would establish a link between the test procedures and the proposed warranty reporting thresholds by amending these sections to include a provision that incorporates the warranty reporting threshold, requiring that at certification, manufacturers must present data proving that its emission related components will not fail in use at rates higher than the warranty reporting threshold and providing that exceeding the warranty thresholds would entitle the ARB to order recall or other corrective action on the grounds that the exceedance is a violation of the test procedures. This would make it clear that since violating the warranty reporting threshold would constitute a violation of the test procedures it would be grounds for ordering a recall or other corrective action.

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[3] See: section 1961(d) and the "California Exhaust Emission Standards And Test Procedures For 2001 And Subsequent Model Passenger Cars, Light-Duty Trucks And Medium-Duty Vehicles," section 1956.8(b) and the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines," section 1956.8(c) and the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles," section 1976(c) and the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," and section 1978(b) and the incorporated "California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles.

B. Specific Changes

1. Proof of Violations

Staff is proposing to establish that a violation exists and corrective action is triggered when the valid component failure rate exceeds four percent as based on a manufacturer's EWIR reports. The corrective action, whether an extended warranty or recall, will be determined by whether or not the component is an exhaust after-treatment device and/or is OBD monitored as listed in the corrective action section below. Thus, the current proposal would clarify that a demonstration that the emissions on average for the entire group exceed an emission standard is not required to take corrective action.

As mentioned previously, Health and Safety Code Section 43106 requires manufacturers to produce a vehicle or engine that is "all materials respects, substantially the same in construction as the [certification] test motor vehicle or engine...". Below is an excerpt from the California Passenger cars, Light-Duty Trucks, and Medium-Duty Vehicles test procedures which incorporates by references Title 40, Code of Federal Regulations (CFR), §86.1823-01(e). This section lays out requirements for the vehicle's, and in this section particularly the emission component's durability requirements.

> §86.1823-01 (e) *Emission component durability.* The manufacturer shall use good engineering judgment to determine that all emission-related components are designed to operate properly for the full useful life of the vehicles in actual use.

When a significant number of emission-related components fail in customer service, this is evidence that production vehicles do not satisfy this requirement since a component, which did not fail during certification testing, is now failing at an unacceptable rate within the vehicle's useful life. The ARB believes that the failure of emission-related components is a unique situation and cannot be held to a typical in-use noncompliance decision by simply averaging emission exceedances over the useful life.

Using the authority cited in H & S Code Sections 43105 and 43106, the intent of the adopted emission warranty and recall regulations, and the intent of the emission certification test procedures, it is clear that ARB must ensure the durability of the emission control systems, at minimum, for the full useful life of the vehicles and engines. Therefore to make clear the link between the warranty regulations and the test procedures, staff is proposing adding language to the test procedures that states when in-use warranty reporting indicates a systemic defect exceeding four percent it constitutes a violation of the test procedures, e.g., for light duty vehicles:

> §86.1823-01 October 6, 2000. Amend as follows: Add the following sentence to the first paragraph: Beginning with 2010 model-year vehicles or engines, at the time of certification manufacturers shall demonstrate that the emission control devices on their vehicles or engines will not exceed a valid failure rate of four percent or 50 claims, whichever is greater, in an engine family, test group or subgroup over the useful life of the vehicles or engines they are installed in. If any emission control device fails at this rate, that constitutes a violation of these test procedures and it entitles the Executive Officer of the Air Resources Board to require that the vehicles or engines they are installed in be recalled or subjected to corrective action as set forth in title 13 CCR, Division 3, Chapter 2, Article 5, sections 2166 through 2174,

Staff believes adding the requirement in the test procedures will ensure the manufacturer understands its obligations during the certification process to accurately represent the durability of emission control components.

2. Corrective Action

Manufacturers will continue to be required to perform corrective action for identifiable emission-related component defects. The staff expects that recall will be required in a number of situations, such as when it is determined that an exhaust after-treatment device or OBD computer has a systemic defect. Exhaust after-treatment devices are of critical importance in maintaining the lowest possible emission levels and they are monitored by the OBD system. When the OBD system detects an exhaust after-treatment device conversion efficiency problem and the MIL is illuminated, an exceedance of the emissions standards is present at 1.75 times. However, as exhibited in the DCC scenarios, the excess emissions can be very high even before the OBD MIL is illuminated. The on-board computer also plays a critical role in the operation of many emissions control systems, including the OBD system.

The staff expects that the principle corrective action in many situations will be extended warranty coverage. The ARB will allow manufacturers to extend warranties to address defects. With today's technology, the OBD system can detect an emission-related component defect and therefore alert owners to the problem. Regardless of the type of corrective action, any replacement parts must be of improved quality and durability to ensure that the corrective action effort adequately addresses the problem.

While the staff believes that any extension to the emission warranty period to adequately address a systemic defect emission-control component should be equivalent to the entire on-road life of all affected vehicles, it is necessary and reasonable to limit the manufacturers' responsibility. Therefore, staff is proposing that the extension to the emission warranty period for

passenger cars, light- and medium-duty vehicles will be limited to 15 years or 150,000 miles, whichever first occurs. This is equivalent to the emissions warranty period that manufacturers currently utilize for partial zero-emission vehicles (PZEV) and staff believes that manufacturers already design emission-control components to operate effectively for that period of time and mileage. Heavy-duty vehicles and engines used in such vehicles that are determined to contain systemic defects will be required to extend the warranty to 10 years, 200,000 miles, or 6,000 hours, whichever first occurs.

The proposed amendments would make it clear that manufacturers may request hearings when recalls are ordered, and that the record would be limited to the information generated in the emissions warranty reports and any other information required by the Executive Officer up to the date of the recall order. Consistent with statute, under the staff's proposal hearings would not be available when other types of corrective action besides recall are ordered, but parties would retain all rights to challenge such orders in court.

3. Reporting Changes

EWIR Changes

Staff has determined that quarterly EWIR submissions, while helpful for determining trends for certain emission-control component failures, are not absolutely necessary for the effective administration of the EWIR program. Staff also believes that the requirement to submit an EWIR at one percent or 25 claims (whichever is greater) is excessive since many of these components have been shown to never reach a valid four percent failure rate and trigger the consideration for corrective action. In fact, of some 3,700 emission-control components in EWIRs submitted each quarter, only about 32 percent or 1,200 components have reached the four percent trigger level. The staff proposes the following amendments to the EWIR provisions.

- Beginning with the 2010 model-year vehicles or engines, manufacturers shall file an EWIR on an annual basis when the cumulative number of unscreened warranty claims for a specific emission-related component replacement or repair represents at least four percent or 50 claims (whichever is greater) of the vehicles or engines of a California–certified engine family or test group.
- When the cumulative number of unscreened warranty claims for a specific emission-related component replacement or repair represents at least ten percent or 100 claims (whichever is greater) of the vehicles or engines of a California–certified engine family or test group, the manufacturer shall determine if a valid four percent or 50 defects exists. The manufacturer shall include these findings as a supplemental EWIR (SEWIR) report or may elect to proceed immediately to corrective action. The SEWIR will be required quarterly

until such time as the ARB determines the report or corrective action is not necessary for that component. If the SEWIR indicates that the systemic defect is less than a valid four percent failure rate, the manufacturer must continue to monitor their data and file a SEWIR on a quarterly basis. This cycle will continue until corrective action is taken, until warranty reporting is no longer required, or the ARB waives the reporting requirement.

FIR Changes

The proposed amendments will eliminate the need for an FIR report for the warranty reporting process.

EIR Changes

The proposed amendments will eliminate the need for an EIR report for the warranty reporting process.

Shown below is a chart comparing the current regulations with the proposed regulations based on actual warranty reporting data taken from 2001-2002 model-year warranty reports.

Figure 2- Current vs Proposed Reporting Requirements Based on 2001-2002 MY Data

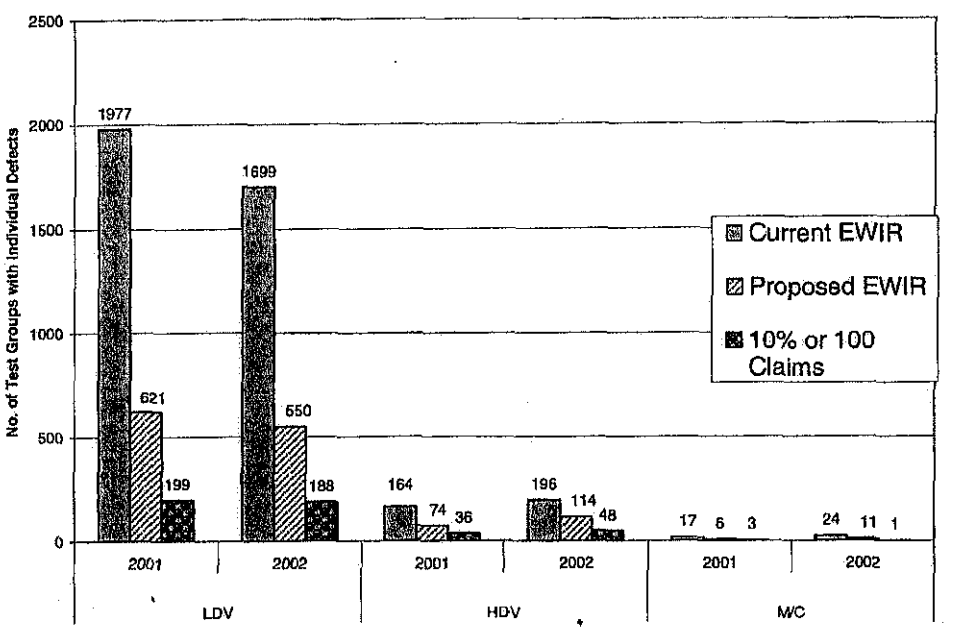


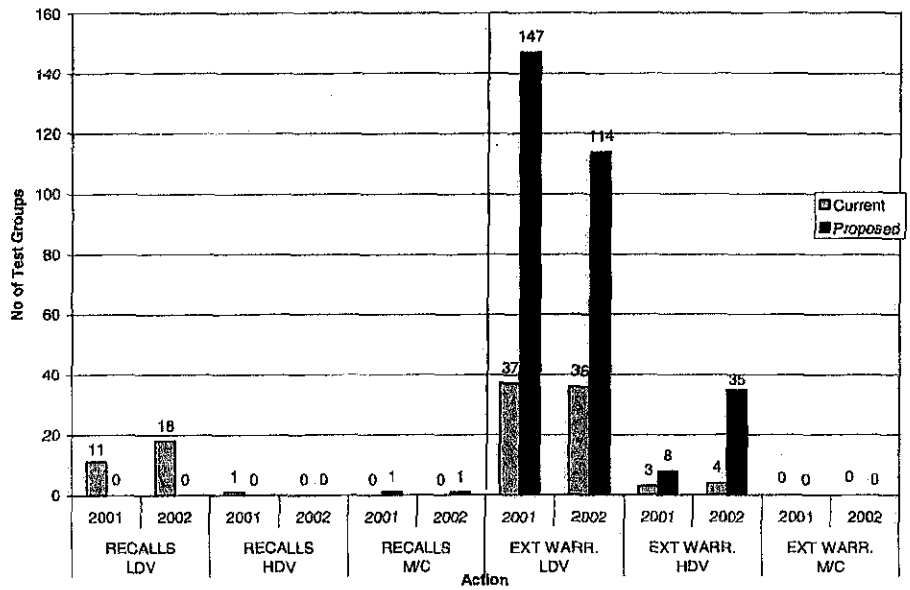
Figure 2 illustrates the amount of reporting that has occurred under the current regulation by vehicle category, and how this may change if the proposed regulation is adopted. Notable is the large number of EWIRs (reports indicating the warranty rate has exceeded one percent) resulting from the current regulations, and the much smaller number of cases where unscreened warranty rates exceed four percent. By increasing the threshold for initial reporting from one percent to four percent, the proposed regulations will reduce the average number of EWIRs by about 66 percent.

Under the new proposal, the validation of unscreened warranty claims will not be required until the EWIR rate reaches ten percent. Unscreened warranty claim rates that are ten percent or greater nearly always result in a valid four percent failure level, and this triggers the process of determining appropriate corrective action. Once the EWIR is filed, the manufacturers must continue to monitor their warranty data on a quarterly basis. When the unscreened claim rate reaches ten percent or 100 claims (whichever is greater), the manufacturer shall provide corrective action for the defective component or provide a SEWIR if the defect rate has not reached a valid four percent failure level.

4. Summary of Changes

Figure 3 shows how the proposed regulations would have affected corrective actions for the 2001-2002 model year vehicles by vehicle category had they been in place at that time:

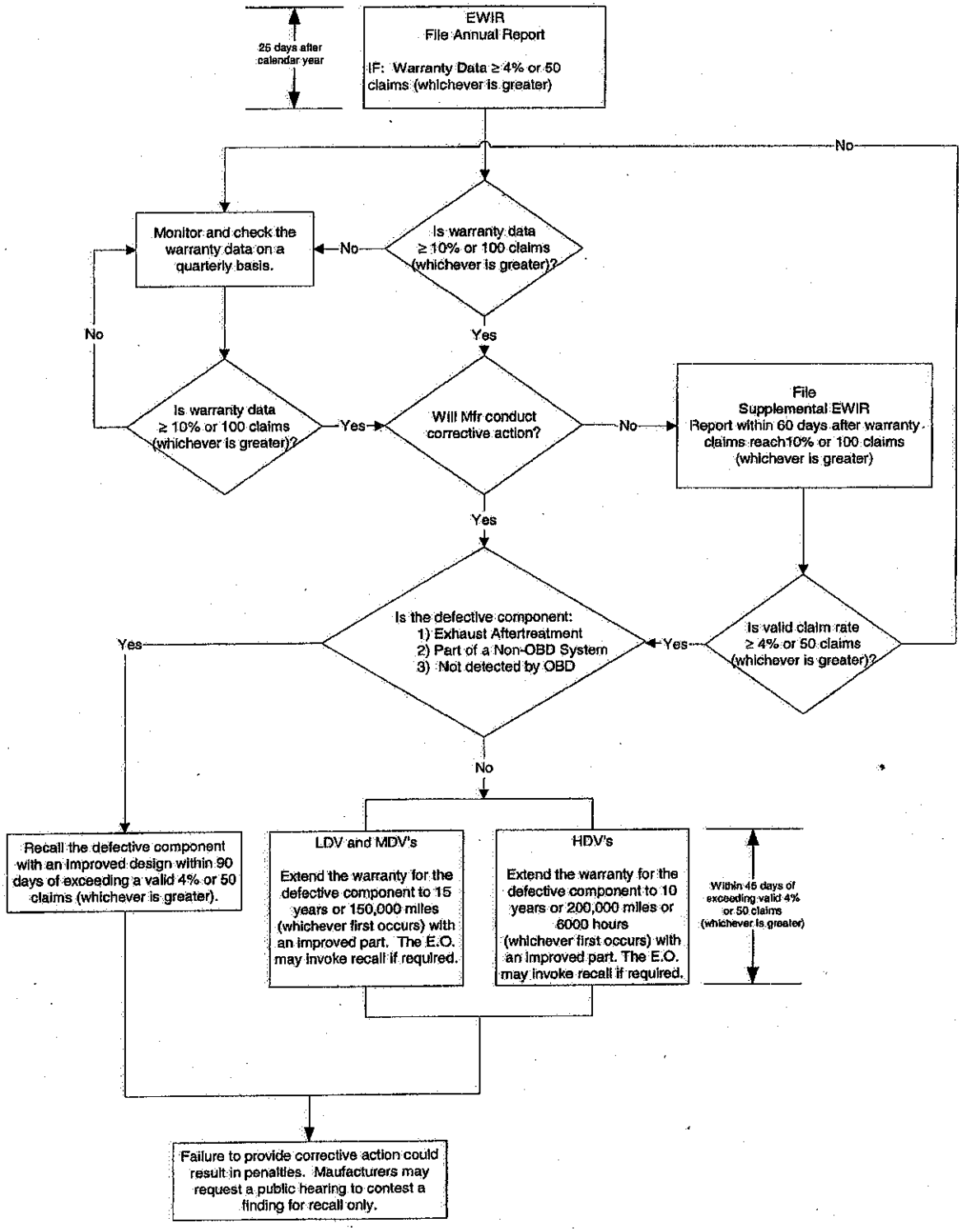
Figure 3 - Current vs Proposed Corrective Action Based on 2001-2002 MY Warranty Data



Overall, the number of recall actions would have been reduced by over 93 percent because most of the parts reported to be defective did not involve exhaust after-treatment devices. The number of extended warranties would probably triple, replacing most recalls and causing corrective action for components manufacturers argued would not cause emission exceedances, on average.

Staff's proposed flow of reporting changes and corrective action requirements are shown in Figure 4.

Figure 4
Proposed Warranty Reporting and Corrective Action Requirements



VII. Issues of Controversy

A. Legal Authority

Staff expects most of the controversy to center around the Board's authority to require the corrective actions outlined in this proposal for components that do not cause an exceedance of emission standards on average. Staff believes that there is ample legal authority to support the proposal, as discussed in Sections V and VI, above. As we saw in the DCC and Toyota cases, while staff believed that there were emission impacts from the defects, since the ARB did not have the resources to tie the defects to the current emission exceedance requirement, it could not require that the defects be corrected, which left many vehicles in-use today with excess emissions. Industry's position is that staff's proposal actually creates a level of consumer protection of which the ARB has no authority to impose. Staff disagrees and believes that the proposed modifications would protect the integrity and intent of the certification and in-use programs and ultimately protect the emission benefits expected from the new vehicle and engine standards.

Extended warranties are also an expected area of controversy. Health and Safety Code sections 43204-43205.5 basically provide that manufacturers must warrant that the vehicles they manufacture are "designed, built and equipped so as to conform, at the time of sale, with the applicable emission standards" and "free from defects in materials and workmanship" which cause them to "fail to conform with applicable emission standards" for their useful lives. Clearly, if it were basing its proposal solely on these provisions, ARB would not have authority to require that manufacturers extend warranties on failing emissions related parts beyond the useful lives of the vehicles they are found in. The reason is simple—because these provisions do not authorize warranty coverage beyond the periods prescribed in the statutes.

The inquiry does not end there, however. Health and Safety Code section 43105 prohibits manufacturers from selling vehicles in California "if the manufacturer has violated emission standards or test procedures *and has failed to take corrective action, which may include recall of vehicles or engines, specified by the state board in accordance with regulations of the state board.*" Emphasis supplied. This means that in the case of violations of the test procedures or emission standards the ARB may require by regulation other kinds of relief in the form of corrective action, not just recall. Furthermore, the Health and Safety Code does not define or limit the term "corrective action". This, coupled with the fact that Health and Safety Code section 43105 provides that in the case of violations of the test procedures or the emission standards the ARB has wide discretion ("The procedures for determining, and the facts constituting, compliance or failure of compliance shall be established by the state board.") indicate that ARB does have the authority to require that warranties on failing emissions related part must be extended beyond the

useful lives of the vehicles they are installed in. Extended warranties for failing emission control components is simply one type of corrective action, one made particularly effective because of the ability of OBD systems to detect malfunctions and warn owners to seek repairs. Again, the authority for doing this is not located in Health and Safety Code sections 43204-43205.5 which provide the authority for requiring the basic emissions warranty, but in Health and Safety Code section 43105 that provides the ARB with wide discretion to require recalls or other corrective action in the event of violations of emission standards or test procedures.

Under the proposed regulations, warranty extensions would be required where component failures exceeded the warranty reporting threshold, linked to the test procedures, entitling the ARB to order corrective action, in this case an extended warranty. It is also notable that Health and Safety Code sections 43204-43205.5 do not place any limitations, explicit or otherwise, on ARB's authority to order corrective action under Health and Safety Code section 43105. Similarly, given ARB's wide discretion in this area, there is no legal impediment to requiring manufacturers to recall the affected vehicles or provide extended warranties for them. One factual rationale for doing this is similar to the one advanced in the OBD recall rulemaking—that projecting failure rates and future emission of failing components is highly speculative, but it is certain that emissions components fail more frequently as they age. When OBD systems detect these future failures of components that have systemically failed during the vehicles' useful lives, they should be remedied, either by recall or other corrective action such as extended warranty.

B. Independent Service Facilities Warranty Station Designation

The independent service and repair industry and aftermarket parts manufacturers' associations have requested that the proposed amendments include the provision that would allow their members to apply and be qualified as "warranty repair stations" as defined in title 13, CCR, Section 2035. The proposed amendments should not have an impact on the independent service and repair industry and aftermarket parts manufacturers since the proposal deals with relatively new vehicles and engines that are most commonly serviced at new car dealerships. The proposed recall and/or extended warranty requirements are strategies utilized by the ARB for many years. Only those emission-control components that are determined to be systemic defects, and corrective action is the vehicle or engine manufacturer's responsibility, would be affected. Staff feels the amount or work redirected from independent facilities will be minimal and therefore does not warrant the regulatory change.

VIII. Air Quality, Environmental, and Economic Impacts

The proposed amendments will have a positive impact on air quality by ensuring that California-certified vehicles or engines that have been identified to contain systemic emission-control components defects are subjected to effective corrective action. Through improved reporting, failure analysis, and effective emission repair work, the amendments will help ensure that the emission benefits attributed to California's stringent exhaust and evaporative emission standards will be fully realized in-use.

A. Environmental Justice

State law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (Senate Bill 115, Solis; Stats 1999, Ch. 690; Government Code § 65040.12(c)). The Board has established a framework for incorporating environmental justice into the ARB's programs consistent with the directives of State law. The policies developed apply to all communities in California, but recognize that environmental justice issues have been raised more in the context of low income and minority communities, which sometimes experience higher exposures to some pollutants as a result of the cumulative impacts of air pollution from multiple mobile, commercial, industrial, areawide, and other sources.

Over the past twenty years, the ARB, local air districts, and federal air pollution control programs have made substantial progress towards improving the air quality in California. However, some communities continue to experience higher exposures than others as a result of the cumulative impacts of air pollution from multiple mobile and stationary sources and thus may suffer a disproportionate level of adverse health effects.

The emission reductions resulting from adoption of the proposed regulatory revisions will potentially affect all vehicles, and thus emission reductions will occur statewide. To the extent that communities have a disproportionate population of older cars, the benefit of the extended warranty may provide relatively greater air quality benefit to these communities.

B. Economic Impacts

The Administrative Procedures Act requires that, in proposing to adopt or amend any administrative regulation, state agencies shall assess the potential for adverse economic impacts on California business enterprises and individuals, including the ability of California businesses to compete with businesses in other states, and fiscal impacts on state and local agencies. Below is staff's assessment of the economic impacts of this proposal.

C. Cost to State Agencies

The implementation of these regulations in 2010 is expected to result in additional corrective actions compared to the current regulations. If overall reliability of components does not improve compared to today, it will require up to two additional ARB staff to ensure proper corrective actions are taken at a cost to the ARB of approximately $200,000 per year.

The proposed amendments are not expected to create additional costs to any other state agency, local district, or school district, including any federally funded state agency or program.

D. Costs to Engine and Motor Vehicle Manufacturers

The businesses to which the proposed requirements are addressed and for which compliance would be required are manufacturers of California motor vehicles. There are presently 34 domestic and foreign corporations that manufacture California-certified passenger cars, light-duty trucks, and medium-duty gasoline and diesel fueled vehicles that would be subject to the proposed amendments. Only one motor vehicle manufacturing plant (NUMMI) is located in California. For motor vehicle manufacturers to comply with the proposed regulatory action, the costs are expected to be negligible. Moreover, manufacturers are expected to comply with all applicable laws. For manufacturers that continue to produce vehicles or engines with defective components, recall and/or warranty costs will increase. The amount cannot be quantified at this time. Manufacturers will experience some savings in decreased warranty reporting costs.

E. Potential Impacts on Other Businesses

The proposed amendments should have minimal impact on the independent service and repair industry and aftermarket parts manufacturers since the proposal deals with relatively new vehicles and engines that are still within their certified useful life period. The proposed recall and/or extended warranty requirements are strategies utilized by the ARB for many years. Only those emission-control components that are determined to have systemic defects would be affected by the extended warranty.

F. Potential Impact on Business Competitiveness

The proposed amendments are expected to have no effect on the ability of California businesses to compete with businesses in other states.

G. Potential Impact on Employment

Staff does not believe the regulatory proposal would result in the loss of jobs. It may create additional jobs in California, based on the need to perform the additional recall or extended warranty work.

H. Regulatory Alternatives

One regulatory alternative would be to not adopt the proposed amendments. Staff believes that this would be unacceptable. The current status of the regulations has allowed several obvious violations of the intentions of the in use regulations as well as the certification test procedures and likely resulted in increased emissions, such as the DCC and Toyota cases. This approach of status quo would not strengthen and make clear the ARB's authority to ensure complying and durable emission control systems that ultimately meet the State's emissions goals. Staff does not consider this a viable option to protect the State's air quality benefits expected from the on road emission regulations.

Staff has determined that no feasible alternative considered would be more effective in carrying out the purpose of the proposed amendments. No alternative would be as effective as or less burdensome to affected private persons than the proposed amendments to the regulations.

IX. Summary and Staff Recommendation

California has enacted some of the most stringent emission requirements for passenger cars, light- and medium-duty vehicles, heavy-duty vehicles and engines used in such vehicles, and motorcycles. Without the assurance that those vehicles or engines will be equipped with emission-control components that are both effective and durable for the certified useful life periods, the envisioned health benefits to Californians will not be fully realized.

Systemic defects involving emission-control components are routinely identified on relatively new vehicles sold in California each year. The current regulations whose objective is to implement corrective action for failing components are not doing the job they were designed to do. Therefore, staff has developed proposed revisions to these regulations that would result in more defective emission-control components being repaired or replaced. The proposed revisions will also reduce the amount of reporting required of vehicle and engine manufacturers. Staff recommends the Board adopt the proposed amendments to California's emission warranty information reporting and recall regulations and test procedures.

References

1) Staff Report: Initial Statement of Reasons (ISOR) for the Proposed Rulemaking – Public Hearing to Consider Amendments to the Regulations Concerning Reporting Failures of Emissions-Related Components, In-Use Vehicle Recall, In-Use Vehicle Enforcement Test and Certification Test Procedures Applicable to Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles, Motorcycles and Modifier-Certified New Motor Vehicles. September 8, 1988.

2) Supplemental Staff Report: Continuation of Public Hearing to Consider Amendments to the Regulations Concerning Reporting Failures of Emissions-Related Components, In-Use Vehicle Recall, In-Use Vehicle Enforcement Test and Certification Test Procedures Applicable to Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles, Motorcycles and Modifier-Certified New Motor Vehicles. November 18, 1988.

3) Staff Report: Initial Statement of Reasons (ISOR): Technical Status and Revisions to Malfunction and Diagnostic System Requirements for 2004 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD II), March 8, 2002.

4) Settlement Agreement, Daimler-Chrysler Corporation/Air Resources Board, April 8, 2005.

5) Office of Administrative Law Decision, Case Number 519, Toyota Motor Corporation/Air Resources Board, February 22, 2002.

6) 2006 Edition of the California Air Pollution Control Laws

7) California Code of Regulations (CCR), Title 13, Sections 1956.8, 1958, 1961, 1976 and 1977. Sections 2112, 2123 and 2141-2149.

8) ARB Emission Warranty System Database.

9) Staff Excel File: "ARB Chrysler Testing Data.xls" dated 8/11/04.

Appendix A.
Proposed Regulations Changes

Appendix B.
Emission Test Procedures Changes

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER ADOPTION OF AMENDMENTS TO THE AIR RESOURCES BOARD'S VOLUNTARY ACCELERATED VEHICLE RETIREMENT REGULATION

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider adoption of amendments to the existing Voluntary Accelerated Vehicle Retirement (VAVR) regulation. The proposed amendments include using remote sensing devices as an additional means of identifying higher emitting vehicles as possible candidates for voluntary retirement, providing appropriate credit for identified high-emitting vehicles, and clarifying existing regulatory language. These regulatory amendments are proposed to be considered in conjunction with proposed non-regulatory revisions to the Carl Moyer Program Guidelines: Light-Duty Vehicle Chapter, which are scheduled for consideration at the same public hearing and are subject to a separate notice.

DATE: December 7, 2006

TIME: 9:00 a.m.

PLACE: Kern County Board of Supervisors
1115 Truxtun Avenue
Board Chambers, 1st Floor
Bakersfield, CA 93301

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 7, 2006, and may continue at 8:30 a.m., December 8, 2006. This item may not be considered until December 8, 2006. Please consult the agenda for the meeting, which will be available at least 10 days before December 7, 2006, to determine the day on which this item will be considered.

For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette, or computer disk. Please contact ARB's Disability Coordinator at (916) 323-4916 by voice or through California Relay Services at 711, to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please contact ARB's Bilingual Manager at (916) 323-7053.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed amendments to title 13, California Code of Regulations, sections 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, Appendix A, Appendix B, Appendix C and Appendix D. Proposed repeal of section 2611.

Background: Vehicle scrapping or Voluntary Accelerated Vehicle Retirement (VAVR) programs were first introduced in California in the early 1990s. The goal of such programs is to retire older, more polluting vehicles earlier in their expected lifetimes, thereby eliminating the emissions associated with their operation. Real emission reductions are achieved by ensuring that qualified vehicles are still fully operational and have useful lives remaining at the time they are scrapped. A vehicle accepted into the program is retired by crushing it so that it and its parts are rendered unusable.

VAVR programs are strictly voluntary programs overseen by ARB and administered by local air districts. Typically, private enterprise operators work under contract with a district and are responsible for evaluating, approving, and disposing of qualified light-duty vehicles. To qualify for a VAVR program, a vehicle must meet registration, functionality, and equipment eligibility criteria. To accommodate car collectors and others with interest in vehicles offered for retirement, VAVR programs provide the public with an opportunity to purchase vehicles in whole or in part before the vehicles are retired.

California Health and Safety Code sections 44100-44122 established the framework for VAVR programs and required ARB to adopt a regulation governing VAVR that included provisions for market-based, privately-operated VAVR enterprises and the generation of emission reduction credits. The Board adopted VAVR regulations in 1998 and later amended these regulations in 2002. These regulations appear at title 13 California Code of Regulations (CCR) sections 2600-2611.

Legislative changes enacted with the signing of Assembly Bill 923 (Firebaugh, 2004) provided for additional funding of VAVR projects through the Carl Moyer Program. In response to those changes, the Board first adopted project criteria for light-duty vehicle programs, including VAVR programs, in the 2005 revision to the Carl Moyer Program Guidelines. At that time, the Board approved guidelines for conventional VAVR programs operated in accordance with ARB's existing regulations for VAVR.

There is growing interest in using remote sensing devices to identify higher emitting vehicles for potential participation in VAVR programs. A number of studies have shown that remote sensing devices can be effective tools for this purpose. Remote sensing devices typically use infrared and/or ultraviolet spectroscopy to measure the concentrations of air pollutants in the exhaust of passing vehicles as they are driven. As a first step toward incorporating this tool into the Carl Moyer Program, the 2005 Guidelines authorized a remote sensing pilot program, the "High-Emitting Vehicle Identification, Repair, and Scrapping Program" to be run by the South Coast Air Quality Management District.

Description of the Proposed Regulatory Action: The proposed amendments to the 2002 VAVR regulation would authorize the optional use of remote sensing devices and other technologies to identify high emitting vehicles as possible candidates for voluntary retirement. These regulatory amendments are proposed to be considered in conjunction with closely related non-regulatory amendments to the Carl Moyer Program

Guidelines. Other changes to the regulation are proposed to improve clarity, correct errors, and to delete obsolete provisions.

The effect of these changes would be to expand opportunities for implementing high emitter VAVR programs. In such programs, the highest emitting vehicles in the fleet would be identified via remote sensing devices or other methods and the owners of these vehicles would be contacted and offered an opportunity to voluntarily retire their vehicles. The proposed changes to the VAVR regulation specify the framework for running a high emitter VAVR program and allow for calculating emission reductions that reflect the high-emitting nature of qualified vehicles. The proposed changes will leave in place existing provisions for conventional VAVR programs. This allows Districts the flexibility to continue to operate the current simpler program while providing opportunities to expand if so desired.

Specific proposed changes to the VAVR regulation are as follows:

- Section 2608 is proposed to be revised to allow for the generation of additional emission reduction credits for the voluntary retirement of high emitting vehicles.

- Section 2610 is proposed to be revised to authorize the optional use of remote sensing devices and other ARB-approved methods to identify high emitting vehicles. The proposed language would replace original section 2610, which referenced a pilot program that has been completed.

- Section 2611 is proposed for deletion because the provisions of that section depended on funding for Measure M1 of the 1994 State Implementation Plan that will not be forthcoming.

- Other provisions are proposed for revision to improve clarity, correct grammatical and organizational errors, and to increase consistency within the regulation.

COMPARABLE FEDERAL REGULATIONS

U.S. EPA has published a document, "Guidance for the Implementation of Accelerated Retirement of Vehicles Programs," but has not promulgated formal regulations for this program.

AVAILABILITY OF DOCUMENTS AND AGENCT CONTACT PERSONS

The ARB staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the Proposed Amendments to the Voluntary Accelerated Vehicle Retirement Regulation (Staff Report) for the proposed regulatory action, which includes a summary of the environmental and economic impacts of the proposal. The ISOR is entitled "Staff Report: Initial Statement of Reasons for Rulemaking-Proposed Amendments to the Air Resources Board's Regulations for Voluntary Accelerated Light-Duty Vehicle Retirement."

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on the ARB's web site listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing on December 7, 2006.

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

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons; John Kato, Manager of the Innovative Strategies Section, at (916) 322-2891 or by e-mail at jkato@arb.ca.gov, Andrew Panson, Staff Air Pollution Specialist, at (916) 323-2881 or by e-mail at apanson@arb.ca.gov, or Tom Roemer, Air Pollution Specialist, at (916) 322-1520 or by e-mail at troemer@arb.ca.gov.

Further, the agency representative and designated back-up contact person to whom non-substantive inquiries concerning the proposed administrative action may be directed is Alexa Malik, Regulations Coordinator, (916) 322-4011, or Lori Andreoni, Clerk of the Board, at 322-5594. 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.

This notice, the ISOR, and all subsequent regulatory documents, including the Final Statement of Reasons, when completed, are available on the ARB Internet site for this rulemaking at www.arb.ca.gov/regact/vavr06/vavr06.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 by public agencies, private persons, and businesses in reasonable compliance with the proposed regulations are presented below.

The ARB Executive Officer has determined that the proposed regulatory action will not create costs or savings, as defined in Government Code section 11346.5(a)(5) and 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 non discretionary savings to local agencies.

Participation in the VAVR regulations is purely voluntary. Businesses, individuals and districts will not participate in VAVR programs unless it is economically beneficial for them to do so. By purchasing credits generated under VAVR programs, businesses may delay having to install more expensive air pollution control equipment or

implementing more costly process modifications. Accordingly, the economic impacts of the proposed regulatory action are expected to be positive. In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on representative private persons or businesses. The ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

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 determined that the proposed regulatory action will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action 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 not affect small businesses because this is a change to a regulation that is voluntary with respect to small businesses and there are no mandated requirements and no associated impacts.

In accordance with Government Code sections 11346.3(c) and 11346.5(a)(11), the Executive Officer has found that the reporting requirements of the regulation that apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

Before taking final action on the proposed regulatory action, the Board must determine that no alternative considered by the Board or that has otherwise been identified and brought to the attention of the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by e-mail before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received **no later than 12:00 noon, December 6, 2006**, and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Facsimile submittal: (916) 322-3928

The Board requests but does not require that 30 copies of any written statement be submitted and that all written statements be filed at least ten 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 to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

STATUTORY AUTHORITY AND REFERENCES

This regulatory action is proposed under that authority granted in Health and Safety Code, sections 39600 and 39601, 44101 and 44102. This action is proposed to implement, interpret and make specific Health and Safety Code sections 39002, 39003, 42400, 42400.1, 42400.2, 42400.3, 42400.4, 42400.5, 42400.6, 42401, 42402, 42402.1, 42402.2, 42402.3, 42402.5, 42403, 43000, 43013, 43016, 44101, 44102, 44103, 44105, 44106, 44107, 44109, 44120, and 44121.

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 Board may adopt the regulatory language as originally proposed, or with non substantial 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 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, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Catherine Witherspoon
Executive Officer

Date: October 10, 2006

CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC MEETING TO ADOPT REVISIONS TO THE CARL MOYER INCENTIVE PROGRAM GUILDELINES: LIGHT-DUTY VEHICLE CHAPTER

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider revisions to the Carl Moyer Incentive Program Guidelines: Light-Duty Vehicle Chapter. Consideration of the proposed revisions is tied directly to the proposed amendments to the Voluntary Accelerated Vehicle Retirement (VAVR) regulation, which is also scheduled for consideration at the same public hearing and is the subject of a separate notice. The proposed revisions to the VAVR regulation include adding criteria for the Voluntary Repair of Light-Duty Vehicles (VRV).

DATE: December 7, 2006

TIME: 9:00 a.m.

PLACE: Kern County Board of Supervisors
1115 Truxtun Avenue
Board Chambers, 1st Floor
Bakersfield, CA 93301

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 7, 2006, and may continue to 8:30 a.m., December 8, 2006. This item may not be considered until December 8, 2006. Please consult the agenda for the meeting, which will be available at least ten days before December 7, 2006, to determine the day on which this item will be considered.

For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette, or computer disk. Please contact ARB's Disability Coordinator at (916) 323-4916 by voice or through California Relay Services at 711 to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please contact ARB's Bilingual Manager at (916) 323-7053.

Background:

The Carl Moyer Memorial Air Quality Standards Attainment Program funds projects that voluntarily reduce air emissions. Established in 1999 by sections 44275 through 44299.1 of the California Health and Safety Code (HSC), its purpose is to obtain early emission reductions (those that are not currently required by statute or regulation) in order to help California attain health-based ambient air quality standards and meet its air quality obligations under the State Implementation Plan. The Carl Moyer Program provides grants to local air districts for disbursal to applicants to fund the incremental cost of lower-emission vehicles, engines, and equipment. In essence, the Carl Moyer

Program buys critical emission benefits that California needs to attain state standards and to meet federal air quality deadlines.

The Carl Moyer Program is implemented through guidelines, criteria, and protocols adopted by ARB. The Board approved the last revisions to the Carl Moyer Program Guidelines in December 2005. In conjunction with proposed amendments to the VAVR regulation, it is necessary to revise the Carl Moyer Program Guidelines to reflect the proposed new provisions and emission information. If adopted by the Board, these proposed regulatory revisions will affect Carl Moyer Program projects.

Voluntary Accelerated Vehicle Retirement programs were first introduced in California in the early 1990s. The goal of such programs is to retire older, more polluting vehicles earlier than the end of their expected lifetime, thereby eliminating the emissions associated with their continued operation. VAVR programs are strictly voluntary programs overseen by ARB and administered by local air districts. To qualify for a VAVR program, a vehicle must meet registration, functionality, and equipment eligibility criteria. To accommodate car collectors and others with interest in vehicles offered for retirement, VAVR programs provide the public with an opportunity to purchase vehicles in whole or in part before the vehicles are retired.

The Health and Safety Code (sections 44100-44122) required ARB to adopt a regulation governing VAVR that included provisions for market-based, privately-operated, VAVR enterprises and the generation of emission reduction credits. The Board adopted VAVR regulations in 1998 at title 13 California Code of Regulations (CCR) sections 2600-2611 and amended them in 2002.

Light-duty vehicle projects became eligible for Carl Moyer Program funding as a result of legislative changes enacted in 2004 (Assembly Bill 923; see HSC sections 44229(b)(1) and (4) and section 44281(a)(5)). The Board first adopted project criteria for light-duty vehicle programs in the 2005 revision to the Carl Moyer Program Guidelines. At that time, the Board approved guidelines for conventional VAVR programs operated in accordance with ARB's existing regulations for VAVR. ARB deferred the development of the Voluntary Repair of Light-duty Vehicles (VRV) guidelines until 2006 to allow time to fully evaluate the challenges of operating vehicle repair programs.

From March 2006 through September 2006, ARB staff held a series of public workshops to gather public comments regarding the proposed additions of criteria for the VRV as well as for the amendments to the VAVR regulation. ARB staff also worked closely with the air districts during development of the criteria and guidelines to facilitate flexibility with district programmatic needs. These guidelines are exempt from the Administrative Procedure Act (Government Code section 11340, et seq.) and instead are subject to specific adoption procedures specified in HSC section 44287, which directs ARB to allow the public 45 days to comment on any proposed revisions to the Carl Moyer Program before they may be adopted by the Board. The staff's proposed

revisions were made available to the public on October 20, 2006 and will be considered by the Board at the time and place listed above.

Proposed Revisions:

As part of the VAVR program, ARB staff is proposing criteria for inclusion of VRV programs in the Carl Moyer Program as an additional option for reducing emissions from high emitting vehicles. The proposed amendments to the 2002 VAVR regulation would authorize the optional use of remote sensing devices and other technologies to identify high emitting vehicles as possible candidates for voluntary retirement. These regulatory amendments will be considered in conjunction with closely related amendments to the Carl Moyer Program Guidelines. In such programs, the highest emitting vehicles in the fleet would be identified via remote sensing devices or other methods and the owners of these vehicles would be contacted and offered an opportunity to voluntarily retire their vehicles. The proposed changes to the VAVR regulation specify the framework for running a high emitter VAVR/VRV program and provide for calculating emission reductions that reflect the high-emitting nature of qualified vehicles. The proposed changes will leave in place existing provisions for conventional VAVR programs, where the emissions of the retired vehicle are assumed to reflect the average emissions of vehicles of the same model year. The changes will also establish the guidelines for inclusion of VRV under the VAVR regulation to further accelerate early emissions reductions from the light-duty vehicle fleet.

Key Elements of the VRV: Vehicle repair projects must achieve surplus emission reductions to receive funding under the Carl Moyer Program. Vehicle owners routinely pay for repairs on their own vehicles. Simply shifting the cost of repairs from the owner to the State does not, in and of itself, result in surplus emission reductions. Surplus emission reductions are achieved only by: (1) funding repairs that would not have occurred otherwise; and (2) accelerating repairs so they occur earlier than they would have otherwise. Distinguishing repairs that would only occur with State funding from those that would have happened in the absence of the Carl Moyer Program ("anyways reductions") is a challenge. Staff is proposing project criteria that attempt to prevent funding these "anyways reductions," and is proposing that districts evaluate their VRV plans to ensure their programs would prevent funding repairs which would have occurred in absence of the program.

Critical to the success of vehicle repair projects is ensuring that emission control system failures are correctly diagnosed and repaired so that real emission reductions are achieved. Staff is proposing project criteria requiring systematic diagnosis and repair in accordance with standard industry protocols to ensure that vehicles are correctly and efficiently repaired.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

The proposed revisions to the Carl Moyer Program Guidelines will be presented by ARB staff at the Board meeting. Copies of the proposed revised chapter of the Guidelines

may be accessed on the ARB's web site: http://www.arb.ca.gov/msprog/moyer/moyer.htm, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Resources Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing on December 7, 2006.

Further inquiries concerning this matter may be directed to the designated agency contact persons: John Kato, Manager of the Innovative Strategies Section, at (916) 322-2891 or by e-mail at jkato@arb.ca.gov; Andrew Panson, Staff Air Pollution Specialist, at (916) 323-2881 or by e-mail at apanson@arb.ca.gov; or Tom Roemer, Air Pollution Specialist, at (916) 322-1520 or by e-mail at troemer@arb.ca.gov.

SUBMITTAL OF COMMENTS

Interested persons 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, December 6, 2006**, and addressed to the following:

Postal mail:	Clerk of the Board, Air Resources Board 1001 I Street, Sacramento, California 95814
Electronic submittal:	http://www.arb.ca.gov/lispub/comm/bclist.php
Facsimile submittal:	(916) 322-3928

The Board requests but does not require that 30 copies of any written statement be submitted and that all written statements be filed at least ten 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 to the attention of staff in advance of the hearing any suggestions for modification of the proposed action.

The public may request a copy of the modified regulatory text from the ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814,
(916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Catherine Witherspoon
Executive Officer

Date: October 10, 2006

THE CARL MOYER PROGRAM GUIDELINES

Proposed 2006 Revision to Project Criteria for Light-Duty Vehicles

Release Date: October 20, 2006
Meeting Date: December 7, 2006

California Environmental Protection Agency

Air Resources Board

JOINT SUMMARY REPORT: VOLUNTARY ACCELERATED VEHICLE RETIREMENT AND VOLUNTARY REPAIR OF VEHICLES

At the December 7, 2006 Air Resources Board (ARB or Board) meeting, the Board will consider two separate, but closely related proposals concerning incentive programs aimed at reducing emissions from light-duty motor vehicles. These proposals would expand opportunities for voluntary accelerated vehicle retirement (VAVR or vehicle scrapping) and establish new guidance for voluntary repair of vehicles (VRV). Requirements for incentive programs are generally contained within guidelines, such as the Carl Moyer Program Guidelines. However, requirements for VAVR programs are unique because they are also contained in regulations. Therefore, two separate, but consistent proposals are necessary. Proposed revisions to the ARB's VAVR regulation would impact only VAVR. Proposed revisions to the ARB's Carl Moyer Program Guidelines would impact both VAVR and VRV. Because the reports prepared to support each proposal only address portions of the overall program, staff has prepared this joint summary report to briefly describe its overall proposal for expanding light-duty vehicle incentive program opportunities.

Background

Light-duty vehicles include passenger cars and light-duty trucks such as pick-up trucks, sport utility vehicles (SUVs), and vans. In 2005, the estimated number of light-duty vehicles in California was over 21 million. These vehicles emit nearly 600 tons per day each of reactive organic gases (ROG) and oxides of nitrogen (NOx) statewide, making them major contributors to California's air pollution. Older, light-duty vehicles (pre-1990 model years) account for 56 percent of the ROG and 41 percent of the NOx emissions from all light-duty vehicles in 2005 despite accounting for only 19 percent of the vehicle population and less than 13 percent of the vehicle miles traveled (VMT). Generally, these older vehicles emit more pollutants because of less stringent emission standards and increased wear and tear emission control components. Even well maintained, older vehicles tend to be higher emitting than newer ones because they lack advanced emission controls.

Incentive-base vehicle retirement or repair programs offer a cost-effective means to immediately reduce emissions from older vehicles. They offer the best way to address emissions from the pre-1976 model year vehicles that are exempt from Smog Check.

Incentive Programs for Light-Duty Vehicles

The role of incentive programs as part of California's air quality strategy has increased over the past decade with the creation of, and more recent expansion of, the Carl Moyer Program. The program originally focused on reducing NOx emissions from diesel engines. However, the scope has expanded to include other emission sources, and particulate matter and ROG are now include as covered pollutants. Light-duty vehicle projects were added to the Carl Moyer Program with changes signed into law in 2004.

With the new funding opportunities, there is renewed interest in expanding the role of light-duty vehicle programs as a part of California's clean air strategy.

The ARB has identified two types of light-duty vehicle incentive projects that are eligible for funding: voluntary retirement programs (VAVR) and voluntary repair programs (VRV). Both programs have the potential to decrease excess emissions from older, high emitting vehicles. These programs may be run independently from one another, but some districts may find it beneficial to run VAVR and VRV programs in coordination, so vehicle owners have the option of choosing between vehicle repair and retirement.

Introduction to VAVR

VAVR or car scrap programs provide financial incentives to encourage vehicle owners to retire older, more polluting vehicles earlier than they would have otherwise. The ARB already has a regulation and guidance in place for VAVR programs.

The ARB adopted a regulation in 1998 that governs the operation of VAVR operations in California based on principles laid out in State law. The regulation was updated once in 2002. The regulation provides for privately-operated VAVR enterprises to purchase and retire eligible vehicles in order to generate emission reduction credits. These credits may be retired for a clean air benefit or used by businesses and industries as an alternative compliance option. The regulation assures that the emission reductions generated from accelerated retirement are real, surplus, quantifiable, and enforceable. Prior to acceptance into the program, candidate vehicles must meet registration, functional, and equipment eligibility criteria to ensure that they are fully operational vehicles that would not otherwise have been immediately retired. The current Carl Moyer Program Guidelines include project criteria for basic VAVR programs.

In conjunction with the expanded funding opportunities, a broad range of stakeholders have expressed a strong interest in incorporating the optional use of advanced technologies such as remote sensing to identify the highest emitting vehicles for possible participation in retirement or repair programs. Stakeholders have also requested that VAVR programs be permitted to generate extra emission reduction credits for retiring these high emitting vehicles. Remote sensing devices (RSD) use spectroscopy to measure the concentrations of air pollutants in vehicle's exhaust stream while the vehicle is on the roadway. Staff's proposed regulatory and guidance changes would allow the optional use of RSD or other technologies to identify high emitting vehicles. This would provide local jurisdictions additional flexibility to design programs tailored to meet local air quality challenges.

Introduction to VRV

VRV programs reduce emissions by paying for emission-related repairs on vehicles. Because vehicle owners routinely pay for repairs on their own vehicles, simply shifting the cost of repairs from the owner to the State does not, in and of itself, result in surplus emission reductions. Surplus emission reductions are achieved by funding repairs that

would not have occurred otherwise or by accelerating repairs so they occur earlier than they would have otherwise.

California's Smog Check program requires that vehicles be emission tested biennially. Vehicle's whose emissions exceed the Smog Check emission standards must be repairs to passing levels prior to being reregistered. Emission-related repairs required by the Smog Check program would not be surplus. However, identifying high emitting vehicles in between Smog Checks via RSD or other technologies and funding accelerated emission-related repairs would result in surplus emission reductions. ARB staff envisions that VRV programs would incorporate an element to identify high emitting vehicles whose owners could be contacted for voluntary participation.

The ARB does not currently have guidance in place for VRV programs. Staff's proposal would establish Carl Moyer Program Guidelines governing VRV programs.

Summary of ARB Proposals for VAVR Programs

The following summarize the main provisions of ARB staff's proposals for expanding VAVR program opportunities. If the Board adopts ARB staff's proposed changes, two types of VAVR programs would be allowed under the regulation which we refer to as "conventional VAVR programs" and "high emitter VAVR programs," respectively.

In conventional VAVR programs, any older vehicle may be retired provided it meets the minimum eligibility requirements. Emission reductions are achieved because these older vehicles, even ones that meet their Smog Check standards, emit more pollutants than the newer vehicles that replace them upon retirement. Vehicles retired in these programs are typically 20 to 25 years old. A well maintained 20-25 year old vehicle emits on average 3 to 4 times as much as the average vehicle on the road. In high emitter VAVR programs, RSD or other technologies are used to identify the highest emitting vehicles in the fleet for possible voluntary participation. These vehicles can have emissions more than 10 times greater than an average vehicle. By targeting only the highest emitting vehicles, the programs can achieve extra emission reductions relative to conventional VAVR programs. However, these programs are more expensive to operate. Districts interesting in running VAVR programs would have the option of choosing which type of program to operate.

Framework for High Emitter VAVR Programs: ARB staff is proposing to modify the VAVR regulation to allow the optional use of RSD other technologies to identify high emitting vehicles for participation in VAVR. The proposed revisions would authorize the generation of extra emission reduction credits for the retirement of vehicles identified as high emitters. The proposed regulation would provide a broad framework governing these programs instead of providing prescriptive requirements. Because these are voluntary programs, ARB staff wanted to provide as much flexibility as possible for local entities to design the programs that fit best for their local air quality problems. To ensure that programs are technically sound, ARB staff is proposing that a plan detailing how the program would run be submitted to ARB for approval in advance of starting a

high emitter VAVR program. The proposed regulation specifies the elements that must be contained in the plan to ensure that a proposed program would be technically sound.

Emission Reductions from Retiring High Emitting Vehicles: Vehicles retired through high emitter VAVR programs would be eligible to receive extra emission reductions relative to those retired in conventional VAVR programs. For conventional VAVR programs, the regulation does not require that the retired vehicle's emissions be measured, so the emission reductions are based on the average emissions the each model year vehicle. This approach does not work for vehicles identified as the highest emitting ones in the fleet. ARB staff is proposing a recommended new calculation methodology for high emitter VAVR programs in the revisions to the Carl Moyer Guidelines. Because no VAVR programs specifically targeting the highest emitting vehicles, there are limited "real world" data upon which to base the calculation methodology at this time.

Stakeholders have voiced the concern that a "one size fits all" approach may not work because it may not reflect unique elements of district programs. ARB staff is proposing a calculation methodology, relying on a confirmatory Smog Check test to establish the retired vehicle's emissions, that would work in most cases, but would allow modifications as necessary to reflect district programs, subject to ARB approval.

Vehicle Registration Requirement: ARB staff is proposing to change the vehicle registration requirement in the VAVR regulation from 120 days to 24 months to be consistent with the enabling legislation.

Emission Reduction Tables for Conventional VAVR Programs: Staff is proposing that emission reduction look-up tables for conventional VAVR programs be replaced with the underlying calculation methodology described in the staff report for the 1998 adoption of the regulation. This would allow emission reductions for future years to be calculated without needing to revise the regulation.

Clarifying Changes to VAVR Regulation: ARB staff is proposing to reorganize some of regulatory language to clarify and improve the readability of the regulation. ARB staff is also proposing to remove two sections of the regulation that are no longer applicable.

Carl Moyer Program Guidelines for Cost-Effectiveness: ARB staff is proposing criteria for calculating the cost-effectiveness of VAVR programs funded via the Carl Moyer Program. These would specify how districts allocate the costs of running RSD-based programs.

Summary of ARB Proposals for VRV Programs

Because vehicle owners routinely pay for repairs on their own vehicles, surplus emission reductions are achieved only by funding repairs that would not have occurred otherwise or accelerating repairs so they occur earlier than they would have otherwise.

Distinguishing repairs that would only occur with State funding from those that would have happened in the absence of funding is a challenge.

Vehicle Eligibility: To ensure that emission reductions are surplus, vehicles must be outside of their biennial Smog Check window. Only vehicles identified through RSD, high emitter profile, or equivalent program would be eligible. Vehicles would be given a confirmatory Smog Check test to verify that they are high emitting and establish their emissions. Vehicles would also need to meet functional and registration requirements.

Repair Requirement: Ensuring that emission control system failures are correctly diagnosed and repaired so real emission reductions are achieved is critical to the success of repair projects. Staff is proposing project criteria requiring systematic diagnosis and repair in accordance with standard industry protocols to ensure that vehicles are correctly and efficiently repaired. To make sure repairs are durable, they must bring emissions below the Smog Check pass/fail emission standards in order to be creditable. This requirement aims to prevent partial repairs that may be short lived.

Program Design: During the development of these guidelines, air district representatives encouraged ARB to provide flexibility for districts to develop specialized programs to address unique, local circumstances. District staff also voiced concerns that if the program criteria are too prescriptive, districts may be limited in designing programs. ARB staff agrees that districts need flexibility in designing programs provided they incorporate sufficient controls to ensure the emission reductions are real, quantifiable, enforceable, and surplus. Staff is proposing that districts submit VRV project plans for ARB approval that would describe how the program would run.

Calculating Emission Reductions: ARB staff is proposing that emission reductions be based on the difference in emissions between pre-repair and post-repair Smog Check tests. Staff is also proposing a one year credit life for repairs to avoid double counting the emission benefits of the Smog Check program. On average, vehicles are one year away from their next biennial Smog Check test. High emitting vehicles identified between Smog Checks and repaired in these voluntary programs would have needed to be repaired after failing their next biennial Smog Check test.

Cost-Effectiveness: ARB staff is proposing criteria for calculating the cost-effectiveness of VRV programs funding using Carl Moyer Program funds. These would specify how districts allocate the costs of running RSD-based programs and how to account for funds spent to diagnose and attempt repairs not resulting in emission reductions.

Conclusion

ARB staff is proposing comprehensive changes to both the VAVR regulation and Carl Moyer Program Guidelines to utilize current technology to identify high emitting vehicles for retirement or repair. The proposed changes allow significant flexibility for districts to design their own targeted programs while providing sufficient oversight to ensure that projects achieve real, surplus, quantifiable, enforceable reductions.

Chapter Eleven

LIGHT-DUTY VEHICLES

This chapter addresses the project criteria for on-road, light-duty vehicle projects. The chapter contains a brief overview of the light-duty vehicle emission inventory, current engine emission standards, available control technologies, potential projects eligible for funding, and emission reduction and cost-effectiveness calculations. If the Air Resources Board (ARB) approves this proposed revision, it would replace the existing Chapter XI of the Carl Moyer Program Guidelines in its entirety.

I. Introduction

Light-duty vehicles include passenger cars, pick-up trucks, sport utility vehicles (SUVs), and vans. In 2005, the estimated number of light-duty vehicles in California was over 21 million vehicles. Although emissions from light-duty vehicles are decreasing with the implementation of stricter emission control standards, light-duty vehicles are still major contributors to California's air pollution, and incentive programs offer a way to reduce emission from the existing fleet.

II. Emissions

The oxides of nitrogen (NOx), reactive organic gas (ROG), and particulate matter (PM10) emissions from the light-duty fleet are shown in Table 11-1.

Table 11-1
Statewide Emissions from On-Road Light-Duty Vehicles
(tons per day)

	Population	NOx	ROG	PM10
2005	21,500,000	574	583	29
2010	23,700,000	388	405	32

Source: ARB 2006 Almanac Emission Projection Data (http://www.arb.ca.gov/ei/emissiondata.htm)

Older, light-duty vehicles (pre-1990 model years) account for 56 percent of the ROG and 41 percent of the NOx emissions from all light-duty vehicles in 2005 despite accounting for only 19 percent of the vehicle population and less than 13 percent of the vehicle miles traveled (VMT). Generally, these older vehicles emit more pollutants because of less stringent emission standards and increased wear and tear on drive train and emission control components. Even well maintained, older vehicles tend to be higher emitting than newer ones because they lack advanced emission controls.

III. Regulatory Requirements

California's emission controls for light-duty vehicles date back to the 1960s. New control technologies and cleaner fuels have enabled more restrictive emission standards over the years.

Since the 1990s, the Low Emission Vehicle (LEV) regulations have been the cornerstone of the ARB's program to reduce emissions from light-duty vehicles. The LEV program, implemented in 1994, established four tiers of low emission standards and provided manufacturers with the option of certifying their vehicles to any mix of these standards as long as they complied with an average non-methane organic gas annual fleet requirement. The fleet average requirement gradually decreased each year between 1994 and 2003, resulting in the introduction of a greater number of cleaner vehicles each proceeding model year. The LEV II regulation set even more stringent, declining fleet average emission requirements for 2004 through 2010 and lowered the NOx emission standards. As a result of the ARB's LEV program, a new 2005 model year car is on average 99 percent cleaner than an uncontrolled car.

California also has requirements to ensure vehicles' emission control systems continue to work throughout their lives. Under the Smog Check program, vehicles are tested biennially to ensure that they stay clean as they age. A Smog Check includes a tailpipe emissions test and a visual inspection of the emission control system. For vehicles equipped with on-board diagnostic (OBD II) systems (model years 1996 and later), the inspection also includes a check of the malfunction indicator light to ensure that no problems have been detected with the vehicle's emission control system.

IV. Potential Projects: Voluntary Accelerated Vehicle Retirement and Voluntary Repair of Vehicles

Light-duty vehicle projects were added to the Carl Moyer Program with legislative changes signed into law in 2004 (AB 923). The ARB has identified two types of light-duty vehicle projects that are eligible for funding under the Carl Moyer Program: voluntary accelerated vehicle retirement (VAVR or vehicle scrapping) and voluntary repair of vehicles (VRV). Both programs can reduce excess emissions from older, high emitting vehicles. Some districts may choose to run only a VAVR program or only a VRV program; others may choose to run VAVR and VRV programs in coordination, so vehicle owners have the option of choosing between vehicle repair and retirement.

The ARB adopted project criteria for VAVR programs in the 2005 Carl Moyer Program Guidelines [ARB 2005]. This proposed revision would expand vehicle scrapping opportunities by adding criteria for the optional use of remote sensing devices (RSD) or other technologies to identify high emitting vehicles for participation in VAVR programs and establishing project criteria for VRV programs for the first time.

RSD typically uses infrared and/or ultraviolet spectroscopy to measure the concentrations of air pollutants in vehicle exhaust while the vehicle is in use on the roadway. Concentrations of ROG, NOx, and CO are recorded along with a photo of the license plate. Studies have shown that RSD can be an effective tool in identifying high emitting vehicles, so there is interest in incorporating its use into VAVR and VRV [BAR, 2001; U.S. EPA; Stedman, 1994; and Stedman].

A. VAVR Background

The goal of VAVR programs is to retire older, more polluting vehicles earlier than their expected lifetime, thereby eliminating the emissions associated with their operation. VAVR programs are strictly voluntary programs overseen by the ARB and administered by local air districts. Private enterprise operators are contracted by the district and are responsible for evaluating, approving, and disposing of qualified light-duty vehicles. Real emission reductions can be achieved as vehicles are still fully operational and have a useful life remaining. Therefore, to qualify for a VAVR program, a vehicle must meet registration, functionality, and equipment eligibility criteria. To accommodate car collectors and others with potential interest in vehicles offered for retirement, VAVR programs provide the public with an opportunity to purchase vehicles in whole or in part before the vehicle is retired. Vehicles accepted into the program must be retired by crushing the vehicle to such a degree that it and its parts are rendered unusable.

The California Health and Safety Code (sections 44100-44122, in part) establishes the framework for VAVR programs. As required in State law, the ARB has adopt a regulation governing VAVR that includes market-based, privately-operated VAVR enterprises and the generation of emission reduction credits. [ARB, 1998 and ARB, 2001]. Revisions to the VAVR regulation, being considered concurrently with these proposed Carl Moyer Program revisions, would provide for the optional use of technologies to identify high emitting vehicles [ARB, 2006].

In addition to district administered VAVR programs, BAR's Smog Check Program includes a voluntary vehicle retirement element. As part of BAR's Consumer Assistance Program, owners of qualifying vehicles that fail the biennial Smog Check are given the option of voluntarily retiring their vehicle rather than repairing it. District run VAVR programs complement BAR's Smog Check Program. District programs generate emission reductions that are surplus to those obtained through the Smog Check. BAR's program covers vehicles that have failed their biennial Smog Check while the district programs cover vehicles that have passed their biennial Smog Check or are between biennial inspections (i.e., "off-cycle" from Smog Check).

If the Board adopts ARB staff's proposed changes to VAVR regulation, two types of VAVR programs would be allowed which we refer to as "conventional VAVR programs" and "high emitter VAVR programs," respectively. In conventional VAVR programs, any older vehicle may be retired provided it meets the minimum eligibility requirements. Emission reductions are achieved because these older vehicles, even ones that meet their Smog Check standards, emit more pollutants than the newer vehicles that replace them upon retirement. To estimate the emission reductions, the retired vehicle's emissions are not directly measured, so it is assumed that the retired vehicle produces the average emissions of its model. In addition, because a replacement vehicle's emissions are not measured and the vehicle chosen as a replacement is not specified, it is assumed that the replacement vehicle produces the emissions of a "fleet average" vehicle. The Carl Moyer Program Guidelines include a look up table which lists emission reductions by model year of vehicle retired.

In high emitter VAVR programs, RSD or other technologies are used to identify the highest emitting vehicles in the fleet for possible participation. By targeting only the highest emitting vehicles, the programs can achieve extra emission reductions relative to conventional VAVR programs. The conventional VAVR emission reduction tables cannot be used to estimate the reductions for this type of program because the tables do not reflect the fact that only the highest emitting vehicles would be targeted for voluntary participation. The proposed Carl Moyer Program Guidelines provide a new method for calculating the emission reductions for high emitter VAVR programs.

Districts interesting in running VAVR programs with Carl Moyer Program funds would have the option of choosing which type of program to operate.

B. VRV Background

Funding voluntary emission related repairs can reduce emissions from the existing fleet. Vehicle repair projects must achieve surplus emission reductions to receive funding under the Carl Moyer Program. Vehicle owners routinely pay for repairs on their own vehicles. Simply shifting the cost of repairs from the owner to the State does not, in and of itself, result in surplus emission reductions. Surplus emission reductions are achieved only by funding repairs that would not have occurred otherwise or by accelerating repairs so they occur earlier than they would have otherwise. Distinguishing repairs that would only occur with State funding from those that would have happened in the absence of funding ("anyways reductions") is a challenge. To ensure emission reductions are surplus to the Smog Check program, vehicles must be outside of their biennial Smog Check window in order to participate.

It is also important that incentive-based repair programs do not discourage vehicle owners from keeping up with routine vehicle maintenance. Only vehicles identified through remote sensing, high emitter profile, or equivalent program would be eligible for VRV under staff's proposal. VRV programs would not be open to "walk ins" (i.e, vehicles not identified as possible high emitters) because this would create a disincentive for people to keep up with routine vehicle maintenance.

Also critical to the success of vehicle repair projects is ensuring that emission control system failures are correctly diagnosed and repaired so that real emission reductions are achieved. Staff is proposing project criteria requiring systematic diagnosis and repair in accordance with standard industry protocols to ensure that vehicles are correctly and efficiently repaired.

During the development of these guidelines, some stakeholders suggested that State-funded voluntary repair programs be available only to low income vehicle owners because they are least financially able, and therefore least likely, to make the repairs in absence of State funding. ARB staff acknowledges this concern. However, it's been ARB policy with respect to the Carl Moyer Program to provide a broader level of guidance sufficient to ensure that emission reductions are real, quantifiable,

enforceable, and surplus. The ARB leaves decisions on how Carl Moyer Program funds should be distributed to the air districts administering the program at the local level. ARB staff agrees that this is an issue that air districts should consider as they design VRV programs.

C. Key New Elements: Light-Duty Vehicle Carl Moyer Program Projects

The following section provides background on the new elements staff is proposing to add in the proposed revisions to the Carl Moyer Program Guidelines for light-duty vehicle programs. The main additions included:

- Provisions for high emitter VAVR programs which would utilize technologies such as RSD to identify possible high emitting vehicles.
- A method to calculate the extra emission reductions for retiring vehicles identified as high emitters.
- Project criteria for VRV programs.

1. Identifying High Emitting Vehicles for VAVR or VRV

High emitter VAVR or VRV programs would incorporate RSD, high emitter profiles, or equivalent technologies to identify candidate vehicles. ARB staff propose that these technologies be used as screening tools. Emission reduction estimates would not be based on these measurements. Instead, the vehicle's emissions would be based on a confirmatory Smog Check test which would be used to establish the vehicle's baseline emissions. At this time, ARB staff does not believe that a split second RSD measurement is quantitatively reflective of a vehicle's emissions over a driving cycle.

To be eligible for high emitter VAVR or VRV, an identified vehicle's confirmatory Smog Check test would need to exceed the pass/fail emission standard (cutpoint) for the model year and vehicle class. For the purposes of this program, a high emitting vehicle is defined as one that fails the Smog Check test. Vehicles whose emissions are below the pass/fail emission standard could still be voluntarily retired and receive the emission reductions for conventional VAVR programs. For vehicles that are not testable on the acceleration simulation mode (ASM) testing equipment, a two speed idle (TSI) Smog Check may be substituted.

2. Calculating Emission Benefits of High Emitter VAVR

ARB staff proposes using the same fundamental approach to estimate the reductions of retiring high emitting vehicles that is used for conventional VAVR. However, the input variables would be different, reflecting the fact that the retired vehicle has been identified as a high emitting vehicle and its emissions have been measured. Unlike conventional VAVR which assumes retired vehicles pass Smog Check, high emitting vehicles identified off-cycle would presumably fail their next Smog Check. Consequently, the emission rate of the retired vehicle would change over the credit life. It would be higher before the vehicle's next biennial Smog Check, but after the

Smog Check, its emissions would be lower because it would have had to be repaired in order to stay on the road.

For the first year of the three year credit life, a retired vehicle's baseline emissions would be equal to the confirmatory Smog Check ASM reading converted to a federal test procedure (FTP) based gram per mile emission rate using conversion equations developed from the *2004 Evaluation of the California Enhanced Inspection and Maintenance (Smog Check) Program.* [ARB/BAR, 2004; ARB/BAR, 2005]

For years two and three of the credit life, its emissions would have been lower because, had it not been retired, it would have presumably failed its Smog Check and been repaired to pass Smog Check. ARB staff proposes that the retired vehicle's baseline emissions for years two and three be equal to the Smog Check pass/fail emission cutpoint pollutant concentrations for the vehicle class and model year, converted to an FTP based gram per mile emission rate. This approach assumes retired vehicles are one year away, on average, from their next biennial Smog Check. Some vehicles may fail the Smog Check test for only one pollutant. If a vehicle's emissions at time of retirement were below the Smog Check pass/fail cutpoint for a pollutant, the emissions for that pollutant would be equal to its measured emissions at the time of retirement because the Smog Check program would not have forced any reduction of the passing pollutant.

ARB staff proposes using the average VMT of the model year vehicle retired as with conventional VAVR. Staff considered the alternative of estimating an individual vehicle's VMT based on the difference in odometer reading between its last two Smog Checks. This approach was suggested when the VAVR regulation was last updated in 2002. At that time, ARB staff concluded that the Smog Check odometer data were not sufficiently reliable because a portion of these data are inaccurate. However, as part of the flexibility being provided in the guidelines, districts would have the option of using actual mileage if that proves feasible in the fleet of vehicles being retired.

Emissions of the replacement vehicle would be equal to the average emissions of the light-duty fleet, and the VMT of the replacement vehicle would be equal to that of the retired vehicle as with conventional VAVR. This reflects the fact that owners are not required to document how they replace the vehicles they retire. However, some air districts and other stakeholders have expressed interest in allowing programs which provide additional incentives for owners who document that they have purchased a vehicle certified to ARB's LEV or cleaner emission standard. ARB staff's proposal would allow this. In this case, the replacement vehicle's emission rate would be the average emission rate of a LEV-certified vehicle of the model year purchased, based on ARB's motor vehicle emission model.

3. Repair Requirements

A guiding principle for the vehicle repair requirements is that vehicles must be systematically diagnosed and repaired by licensed Smog Check technicians

accordance with accepted industry protocols and all laws and regulations governing automotive repair to ensure that repairs are durable and real emission reductions are achieved. Systematic diagnosis and repair are the key to successful repair programs. Quick and inexpensive repairs which temporarily mask more serious problems do not result in long lasting emission reductions.

ARB staff has based its proposed repair criteria on the protocols used in BAR's Consumer Assistance Program. The ARB encourages air districts pay careful consideration to the need for systematic diagnosis and repair protocols as they develop contracts with the Smog Check stations to perform the testing, diagnosis, and repair services. The contracts should include the appropriate detail in the scope of work to ensure that stations follow systematic diagnosis and repair protocols.

4. Evaporative Emission Reductions

RSD does not measure evaporative emissions, and high emitter profiles do not predict the likelihood of evaporative Smog Check failures. Vehicles identified as high exhaust emitters do not necessarily have high evaporative emissions as well. ARB staff is providing districts the option of including an evaporative emission element in their higher emitter VAVR or VRV programs. Districts may conduct evaporative emission testing of vehicles identified as exhaust high emitters if they choose.

One challenge associated with testing vehicles' fuel evaporative systems is that the test equipment is still under development. BAR is in the process of developing regulations to add a low pressure fuel evaporative test to the Smog Check program, but at this time, no equipment has been certified by BAR. However, several manufacturers' equipment are undergoing certification. Staff proposes that only equipment that has been submitted for certification be used in programs that test for evaporative emissions. If vehicles fail the low pressure evaporative, they would be eligible for extra evaporative emission reduction credits if retired or could receive repairs of evaporative controls.

Calculating the emission reductions associated with retiring or repairing vehicles identified as evaporative high emitters presents a challenge because the low pressure evaporative testing equipment does not directly measure a mass-based emission rate. Consequently, the emission benefits cannot be measured directly. Staff is proposing to base the emission reductions on pilot studies by the ARB and others that quantified in the laboratory the benefits of repairing vehicles which failed the low pressure evaporative test. (See *Environmental Impacts of Implementing A Low Pressure Evaporative Test in the California Smog Check Program*, released November 29, 2005, http://www.arb.ca.gov/msprog/smogcheck/evap_report.pdf.) [ARB, 2005] The report presents baseline evaporative emission rates and average control factors for repairs from which ARB staff estimated an average emission reduction.

During the final workshop on these proposal revisions, one commenter suggested that vehicles identified as "liquid leakers" during the confirmatory Smog Check test should also qualify for extra emission reductions if retired or if those leaks are repaired. ARB

staff agrees, but has not yet developed a proposed method for calculating benefits. ARB staff will work with air districts to appropriately quantify these emission reductions if they are a part of a district's VAVR or VRV program.

5. PM Emission Reductions

Identification of PM high emitters would not be a standard part of VAVR or VRV programs. RSD and high emitter profiles have not been demonstrated as tools to identify PM high emitters, and vehicles identified as having high ROG or NOx exhaust emissions do not necessarily produce high PM emissions as well. The ARB supports the goal of reducing PM emissions from the light-duty fleet and is funding research into measuring PM emissions in light-duty vehicles. A further challenge in quantifying PM emissions is that the Smog Check ASM test does not measure PM.

ARB staff acknowledges that the South Coast AQMD will attempt to evaluate methods for identifying and quantifying PM high emitters as part of its high emitter retirement and repair program. ARB staff supports assigning extra PM emission reductions for retirement or repair once a viable, technologically supportable method of quantifying PM benefits is demonstrated.

The proposed guidelines include broad provisions for PM high emitter programs. If a district program attempts to include a PM component, the program plan must specify the procedure/analytical approach that would be used to measure PM. The plan must also outline how the district intends to evaluate and validate that its proposed method of measure PM emissions in the field correlates with scientifically accepted methods of measuring PM emissions in the laboratory. However, because of the uncertainties in measuring PM, districts may not rely on the extra emission reductions from retiring PM high emitters to show that the program is cost-effective at this time.

6. Credit Life

The current VAVR program uses a three year credit life. Surveys conducted since the regulation was adopted in 1998 support the three year credit life. These surveys conducted in the Bay Area and South Coast indicate that owners estimated their vehicles would have lasted on average 3-3.5 years if they had not been retired. The South Coast data are from the 1999 time frame. However, Bay Area survey data are available from as recently as 2004-2005. Some have argued that regional differences may support a longer credit life. On the other hand, a high emitting vehicle may actually have a shorter life due to its need for potentially costly repairs. At this time, ARB staff does not have data that would support changing the credit life.

For VRV projects, ARB staff is proposing a one year credit life because, on average, vehicles are one year away for their next biennial Smog Check. To ensure that emission reductions are surplus to the Smog Check program, the credit life of the repair is the period of time between the repair and the vehicle's next scheduled Smog Check.

At that time, the Smog Check program would have forced the reductions to occur, so they would no longer be surplus.

The one year credit life for repairs would be an exception from the three year minimum project life in the Carl Moyer Program, reflecting the unique nature of vehicle repair projects. ARB has set a three year minimum project life for other source categories to ensure emission reductions are surplus, particularly for projects funded in advance of regulatory compliance deadlines where engine owners know they will need to repower or replace their equipment. Vehicle repair is unique because, in absence of being identified via RSD or other technology, motorists may not know their vehicles need repairs until the time of their next Smog Check. By accelerating repairs a year before the Smog Check program would have required them, surplus reductions are achieved.

7. Cost-Effectiveness for High Emitter VAVR and VRV

For the Carl Moyer Program, the ARB considers program costs to be those directly related to repowering, replacing, or retrofitting an engine. All other costs are considered administrative. Administrative funds are not included in the program cost-effectiveness calculations, but must be accounted for relative to the administrative limits associated with each funding source.

ARB staff is proposing that the costs directly related to identifying potential high emitting vehicles and the costs to repair or retire vehicles be considered program-related. These include the actual costs of remote sensing measurements; the costs of the Smog Check tests required to confirm candidate vehicles' emissions; and the cost of diagnosing vehicles for repairs. ARB staff considers funds spent on outreach, contacting potential participants, data analysis, and development of data analysis tools such as databases to be administrative costs.

Evaluating the cost-effectiveness presents unique challenges not seen in other Carl Moyer Program source categories. For all other categories, potential grant recipients submit applications in advance. During the application period, each project is evaluated to ensure that it meets the Carl Moyer Guidelines' project criteria and cost-effectiveness limits. Projects that are identified as cost-effective may then be eligible to receive funding. For VAVR and VRV, a different dynamic exists.

The nature of these voluntary programs does not allow an opportunity to fully assess the cost-effectiveness during an application period. Costs are incurred up front to identify and diagnose high emitting vehicles. However, the benefits cannot be fully estimated in advance because they depend on the participation rate and the mix of vehicles retired or repaired. The cost-effectiveness can only be calculated after the fact.

In addition, the nature of repair programs may lead to stranded costs that do not result in emission reductions. A Smog Check technician must take time to diagnose a vehicle to assess whether it is a good candidate for repair. Technicians may find that some vehicles are either not repairable or would be prohibitively expensive to repair. While no

emission reductions would be achieved from these vehicles, funds would be expended in conducting the diagnosis. These stranded costs must be accounted for.

ARB staff is proposing that the costs to identify high emitting vehicles and diagnose them be distributed across the successfully repaired vehicles and that the VAVR and the VRV programs, in their entirety, would need to meet the Carl Moyer Program cost-effectiveness limit. This proposal reflects the unique nature of these programs and should not be considered a precedent applicable to other source categories. Cost-effectiveness for all other source categories would continue to be fully evaluated in advance on an engine by engine basis.

8. Flexibility in Program Design

Air district representatives have encouraged the ARB to provide flexibility for districts to develop specialized programs to address unique, local circumstances. They've noted that districts may be overly limited in designing programs that if the program criteria are too prescriptive. ARB staff agrees that districts need flexibility provided they incorporate sufficient controls to ensure the emission reductions are real, quantifiable, enforceable, and surplus. ARB staff has attempted to incorporate this flexibility into the guidelines.

In particular, some stakeholders have voiced the concern that a "one size fits all" approach may not work for the calculation methodology. ARB staff is proposing a calculation methodology that would work in most cases. However, if a district implements a narrowly focused program, the variables specified in ARB's guidance may not be appropriate to reflect the district's program. ARB staff is also proposing that districts would have the option of proposing modifications to the calculation methodology, where necessary, to reflect unique elements of their program. Any proposed modifications must be included in the district's program plan. The onus would be on the district to document that the proposed modifications are technically sound and justified. The district would need ARB approval to use an alternative methodology.

V. Project Criteria for VAVR and VRV

This section provides the project criteria for VAVR and VRV funded through the Carl Moyer Program. Unless noted, the criteria apply to both VAVR and VRV. VAVR programs must also comply with all provisions of the regulations found in Title 13 California Code of Regulations, Division 3, Chapter 13, Article 1, section 2601 et seq.

These criteria provide districts with the minimum qualifications for the Carl Moyer Program. Districts retain the authority to impose additional requirements to address local concerns.

A. General Requirements

- Emission reductions obtained through Carl Moyer Program projects must not be required by any federal, state, or local regulation; memorandum of

agreement/understanding with a regulatory agency; settlement agreement; mitigation requirement; or other legal mandate.

- Projects must meet a cost-effectiveness of $14,300 per weighed ton of NOx + ROG + combustion PM10 reduced calculated in accordance with the cost-effectiveness methodology discussed in this chapter.

- No emission reductions generated by the Carl Moyer Program shall be used as marketable emission reduction credits or to offset any emission reduction obligation of any person or entity.

- Potential projects that fall outside of these criteria may be considered on a case-by-case basis if evidence provided to the ARB suggests potential surplus, real, quantifiable, and enforceable emission reduction benefits.

- Air districts must consult with ARB staff to determine eligibility of all projects considered for funding on case-by-case basis. All projects considered on a case-by-case basis must receive ARB approval prior to receiving program funding.

- Programs utilizing funding under the Carl Moyer Program shall comply with all applicable provisions of the Carl Moyer Program Guidelines including "Administration of the Carl Moyer Program."

B. Vehicle Eligibility Requirements

- Participation shall be entirely voluntary for vehicle owners.

- The vehicle must be a gasoline-powered passenger car or light-duty truck up to 8,500 pounds gross vehicle weight.

- The vehicle must be currently registered with the Department of Motor Vehicles (DMV) as an operating vehicle and must have been registered for at least 24 consecutive months prior to the final date of the sale to a VAVR enterprise or the date of repair to an address, or addresses, within the district in which the VAVR enterprise is operated. Smog Checks must be performed as required by the DMV in order for the vehicle to be considered registered.

  1. A vehicle may also be eligible if the owner of the vehicle placed the vehicle in planned non-operational status per Vehicle Code section 4604, et seq., for a total of 2 months during the continuous 24 month registration period, occurring at least 3 months prior to the date of sale to the VAVR enterprise or the date of repair.

  2. A vehicle may also be eligible if the registration has lapsed for a period not to exceed 180 days during the previous 24 months and all appropriate registration fees and late penalties have been paid to the DMV, provided that the vehicle is

registered for at least 90 days immediately prior to its date of sale to a VAVR enterprise or date of repair.

- The vehicle to be retired shall be driven to the VAVR enterprise purchase site or VRV repair station under its own power.

- The vehicle to be retired shall not be operating under a Smog Check repair cost or economic hardship waiver.

- Vehicles whose emission control systems have been tampered with, as defined in Title 16 California Code of Regulations, Division 33, Chapter 1, Article 5.5, section 3340.41.5, are not eligible until such tampering has been completely corrected.

Additional Requirements for VAVR Programs Only

- If a vehicle volunteered for retirement is within 60 days of its next required Smog Check inspection, the vehicle shall pass the Smog Check inspection without receiving a repair cost waiver or economic hardship extension prior to acceptance by a VAVR enterprise operator.

- If a vehicle volunteered for retirement is within 61-90 days of its next required Smog Check inspection, the district shall verify that the vehicle has not failed a Smog Check inspection during this time frame.

- The vehicle shall pass functional and equipment eligibility inspections as specified in the ARB's VAVR regulation.

Additional Requirements for High Emitter VAVR or VRV Programs Only

- Only vehicles identified as potential high emitting through a technology such as RSD or a high emitter profile database approved by the ARB and operated in accordance with the VAVR regulations found in Title 13 California Code of Regulations, Division 3, Chapter 13, Article 1, section 2601 et seq. are potentially eligible for VRV or to receive extra emission reduction credit for VAVR.

- A vehicle must receive a confirmatory Smog Check ASM test to establish its baseline emissions. To be eligible for VRV or to receive extra emission reduction credit for VAVR, a vehicle's ASM test must exceed the pass/fail emission standard for the model year and vehicle class as defined in Title 16, Division 33, Chapter 1, Article 5.5, Section 3340.42 of the California Code of Regulations. The emission standards are listed on BAR's web site at: http://www.smogcheck.ca.gov/ftp/pdfdocs/asm_ph43.pdf.

  - Vehicles not testable under the ASM test may be given a TSI Smog Check test to determine eligibility.

- If the vehicle's emissions are below the pass/fail emission standards, the vehicle is not considered an high emitting vehicle. These vehicles could still be voluntarily retired and receive the emission reductions for conventional VAVR but do not quality for VRV.

- For pre-1974 model years, the pass/fail emission standards for the 1974 model may be used for purposes of qualifying vehicles for the program.

- The Smog Check test must be conducted by a BAR-licensed technician and must be conducted in accordance with BAR regulations and procedures.

Additional Requirements for VRV Programs Only

- All repairs must be completed at least 91 days in advance of the vehicle's next biennial Smog Check.

- Vehicles covered under their manufacturer's warranty period are not eligible. Warranty requirements are found in Title 13 California Code of Regulations, Division 3, Chapter 1, Article 6, section 2035 et seq. and Article 1, section 1961.

  - Manufacturer warranties generally cover vehicles for a period of 3 years or 50,000 miles whichever first occurs, with high-priced parts covered for a period of 7 years or 70,000 miles whichever first occurs.

  - For 2004 model year and newer vehicles certified to optional 150,000 mile emission standards, the high-priced part warranty is extended to 8 years or 100,000 miles whichever first occurs.

- Vehicles registered to a non-profit organization, fleet, or business are not eligible.

- A vehicle may only be repaired once in its lifetime through a VRV program.

C. Program Plan Requirements

- A district shall submit a program plan to the ARB for approval prior to initiating a VAVR or VRV program.

- The district must receive written approval of the plan from the ARB's Executive Officer (EO) prior to implementing a VAVR or VRV program.

- The program must follow the plan, and any substantive changes must be pre-approved by the EO.

- A district's program plan must at a minimum include:

1. The name, title, and telephone number of the district contact for the program.

2. An evaluation of environmental justice considerations including, but not limited to, outreach addressing community needs.
3. An estimate of the number of vehicles that may be retired and/or repaired and an estimate of the cost-effectiveness of the program along with all assumptions and calculations that were used to derive the estimate (recognizing that the ultimate cost-effectiveness will depend on the mix of vehicles actually retired/repaired).
4. A copy of the contract with the VAVR enterprise operations, repair stations, and any other contractor(s) who will be responsible for running the program.
5. A description of the methods that will be used and a timetable for monitoring and auditing enterprise operations and/or repair stations.
6. A copy of the statement of certification that a VAVR enterprise operator has demonstrated compliance with all applicable provisions of the VAVR regulation.
7. The methodology and sample records for verifying that a vehicle is eligible for inclusion in the VAVR program including confirmation of compliance with any Smog Check requirements.
8. The protocol for informing the public of the availability of eligible vehicles for sale (applies to VAVR programs only).
9. A sample of the records that will be required of the VAVR enterprise operator and/or repair stations.
10. A description of elements of the district program that are more strict than minimum requirements listed in the guidance, if applicable.

<u>Additional Requirements for High Emitter VAVR and VRV Programs Only</u>

- The plan must also include:

    1. A detailed description of the operation of the technology including but not limited to set up, typical operation, location and location criteria, calibration, and maintenance.
    2. A detailed description of the type and model of all equipment and software used to identify high emitting vehicles.
    3. A copy of the standard operating procedures or protocols for that technology including maintenance of the technology including equipment and software.
    4. The specific criteria to be used in the application of the technology to identify a high emitting vehicle.
    5. Documentation that personnel who will be operating the technology are trained and qualified for such operation.
    6. A detailed description of the methodology that will be used to calculate extra emission reductions, including any deviations from ARB's recommended method.
    7. If a district intends to include an evaporative testing element in its program, the plan must specify the test equipment.
    8. If a district intends to include a PM testing element in its program, the plan must specify the test equipment and test protocol.
    9. A scope of work for the business(es) that will be performing the vehicle testing and repairs including the general diagnosis and repair protocols to ensure cost-effective and durable repairs (for VRV programs only).

10. An itemized breakdown of estimated project costs including, but not limited to, the funds allocated to: identifying high emitting vehicles (e.g. RSD data collection costs); vehicle retirement including the number of vehicles to be retired; the funds allocated to vehicle repair and the number of vehicles to be repaired; data analysis; and outreach to and solicitation of vehicles owners.

D. Recordkeeping and Reporting

- For each vehicle retired or repaired, the district shall retain records of the following information. This information must be included in the annual report to the ARB:

1. Vehicle Identification Number (VIN).
2. Vehicle license plate number.
3. Vehicle model year.
4. Vehicle odometer reading.
5. Vehicle make and model.
6. Name, address, and phone number of legal vehicle owner(s).
7. Name and business address of the VAVR enterprise operator or of the business conducting the repair.
8. Emission reduction claimed.
9. Date of purchase of vehicle by enterprise operator. [VAVR only]
10. Date of vehicle retirement. [VAVR only]
11. Amount paid for each repair and nature of each repair. [VRV only]
12. Date of repair. [VRV only]
13. Pre and post-repair Smog Check test results [VRV only]
14. Data identifying vehicle as potential high emitting vehicle for VAVR or VRV participation. [High Emitter VAVR or VRV only]
15. Confirmatory Smog Check test results and date of Smog Check test. [High Emitter VAVR or VRV only]

- For VAVR programs, the VAVR enterprise operator must maintain the following records. The records are <u>not</u> required to be part of the annual report, but must be available for review, if requested:

1. Reproduction of California Certificate of Title and registration, as signed-off by the seller at time of final sale to the VAVR enterprise.
2. Reproduction of the applicable certificate of functional and equipment eligibility;
3. Reproduction of the applicable Notice to Dismantler (DMV Registration 42 form).
4. Reproduction of written documentation from the DMV verifying that a vehicle meets the vehicle registration requirements of the ARB's VAVR regulations.
5. If the retired vehicle was within 60 days of its next required Smog Check inspection, a reproduction of documentation that the vehicle passed its Smog Check inspection.

- Districts and enterprise operators shall retain these records for the life of the project plus an additional 3 years.

E. Calculating Emission Reductions

1. Conventional VAVR Program Emission Reductions

- Emission reductions from VAVR programs shall be calculated in accordance with the methodology specified in the ARB's VAVR regulations. Emission reductions, by model year of vehicle retired, are shown in Table 11-2 (at the end of the chapter).

- The project life for a vehicle retirement project is 3 years.

2. High Emitting VAVR Program Emission Reductions

The emission reductions for high emitting VAVR programs are calculated as follows:

$$\text{Emission Reductions} = [ER_{retired} * VMT_{retired} - ER_{replacement} * VMT_{replacement}] * Life_{retired}$$

Where:
$ER_{retired}$ = Emission rate of retired vehicle
$VMT_{retired}$ = Vehicle miles traveled of retired vehicle
$ER_{replacement}$ = Emission rate of replacement vehicle
$VMT_{replacement}$ = Vehicle miles traveled of replacement vehicle
$Life_{retired}$ = The remaining life of the retired vehicle

a. Exhaust Emissions of Retired Vehicle

- For year 1 of the 3 year project life, the baseline ROG_{ex}, NOx, and CO emission rates are equal to the pollutant concentrations measured in the confirmatory ASM Smog Check test converted to an FTP-based gram per mile emission rate using the conversion listed in Table 11-3 (at the end of the chapter).

  - For vehicles exempt from Smog Check (pre-1976 model years), the emissions measured at time of retirement are the baseline emissions for the full 3 year credit life.

- For years 2 and 3 of the 3 year project life, the baseline ROG_{ex}, NOx, and CO emission rates are equal to the lesser of the two following values:

  - The Smog Check pass/fail emission cutpoint pollutant concentrations for the model year and vehicle class converted to an FTP based gram per mile emission rate using the conversion equations in Table 11-3.

  - The pollutant concentration measured in the ASM test at the time of retirement, converted to an FTP based gram per mile emission rate using the conversion equations used in Table 11-3.

- The VMT is the average VMT of the vehicle's model year based on the ARB's motor vehicle emission model. The average VMT for each model year is listed in Table 11-4 (at the end of the chapter).

b. Exhaust Emissions for the Replacement Vehicle

- If the vehicle owner is not required to document how the retired vehicle is replaced, the replacement vehicle emissions are assumed to equal fleet average emission rate calculated using ARB's motor vehicle emission model.

For vehicles retired in 2007, the replacement vehicle emission rates are:

ROG Exhaust g/mile	ROG Evap Running Loss g/mile	ROG Evap Hot Soak g/trip	ROG Evap Diurnal+Resting g/day/vehicle	CO Exhaust g/mile	NOx Exhaust g/mile	PM10 Exhaust g/mile
0.344	0.248	0.296	1.85	6.20	0.573	0.015

For vehicles retired in 2008, the replacement vehicle emission rates are:

ROG Exhaust g/mile	ROG Evap Running Loss g/mile	ROG Evap Hot Soak g/trip	ROG Evap Diurnal+Resting g/day/vehicle	CO Exhaust g/mile	NOx Exhaust g/mile	PM10 Exhaust g/mile
0.310	0.232	0.285	1.77	5.69	0.542	0.016

Note: Emission rates calculated using EMFAC Working Draft 2B (June 2006). Numbers are subject to change pending final version of emission inventory model.

- If a VAVR program is set up to provide extra incentives for the purchase of LEV-certified or cleaner replacement vehicle and if the owner documents that the replacement vehicle is certified to a LEV or cleaner emission standard as defined in the ARB's LEV regulations (Title 13, Division 3, Chapter 1, Article 1, Sections 1960.1 and 1961 of the California Code of Regulations), the replacement vehicle emissions are assumed to equal the average emission rate of a vehicle certified to the LEV emission standard for the model year purchased as a replacement, based on ARB's emission model.

For vehicles retired in 2007, the replacement LEV emission rates by model year are:

LEV Model Year	ROG Exhaust g/mile	ROG Evap Running Loss g/mile	ROG Evap Hot Soak g/trip	ROG Evap Diurnal+Resting g/day/vehicle	CO Exhaust g/mile	NOx Exhaust g/mile	PM10 Exhaust g/mile
1997	0.108	0.084	0.151	0.651	3.979	0.354	0.019
1998	0.102	0.073	0.130	0.566	3.843	0.347	0.018
1999	0.097	0.062	0.109	0.495	3.679	0.334	0.016
2000	0.092	0.050	0.086	0.412	3.494	0.321	0.015
2001	0.086	0.036	0.063	0.325	3.269	0.305	0.013
2002	0.081	0.028	0.046	0.267	3.057	0.305	0.012
2003	0.071	0.023	0.035	0.224	2.659	0.270	0.010

For vehicles retired in 2008, the replacement LEV emission rates by model year are:

LEV Model Year	ROG Exhaust g/mile	ROG Evap Running Loss g/mile	ROG Evap Hot Soak g/trip	ROG Evap Diurnal+Resting g/day/vehicle	CO Exhaust g/mile	NOx Exhaust g/mile	PM10 Exhaust g/mile
1997	0.112	0.095	0.173	0.725	4.094	0.358	0.021
1998	0.106	0.084	0.151	0.645	3.976	0.354	0.020
1999	0.101	0.074	0.130	0.568	3.821	0.342	0.018
2000	0.096	0.062	0.109	0.494	3.658	0.329	0.016
2001	0.091	0.050	0.086	0.408	3.466	0.315	0.014
2002	0.088	0.036	0.062	0.324	3.321	0.322	0.014
2003	0.081	0.029	0.046	0.269	3.033	0.301	0.012
2004	0.053	0.023	0.035	0.224	1.989	0.185	0.011

Note: Emission rates calculated using EMFAC Working Draft 2B (June 2006). Numbers are subject to change pending final version of emission inventory model.

- The VMT of the replacement vehicle is equal to the VMT of the retired vehicle.

c. Evaporative Emission Reductions

- Evaporative emission reductions are calculated using the methodology for conventional VAVR programs if no evaporative testing is conducted on the retired vehicle. The reductions, based on the retired vehicle's model year, are listed in Table 11-2.

- Districts may, at their option, conduct evaporative testing on vehicles identified as exhaust high emitting vehicles to determine whether they are evaporative high emitting vehicles as well.

  - Low pressure fuel evaporative testing must be conducted using equipment that has been submitted to BAR for certification.

  - Evaporative testing must be conducted in accordance with the manufacturers standard operating procedures and the protocols for low pressure fuel evaporative testing developed by BAR.

  - Only vehicles that fail the low pressure fuel evaporative test are eligible to receive extra emission reductions as a high evaporative emitter.

  - For vehicles identified as high evaporative emitters, the emission reductions for retirement are equal to the evaporative emission reductions for conventional VAVR listed in Table 11-2 plus the average emission reductions for repairing evaporative system failures estimated by ARB staff in its evaluation of the low pressure evaporative test, 14.5 pounds of ROG per vehicle per year.

d. Particulate Matter Emission Reductions

- PM exhaust emission reductions are calculated using the methodology for conventional VAVR programs. The reductions are based on the retired vehicle's model year and are found in Table 11-2.

- If a viable method to measure and correlate PM emissions from vehicles is demonstrated and validated, districts have the option of measuring the PM emissions of vehicles identified as possible high emitters and quantifying the extra emission reductions of retiring PM high emitting vehicles, subject to ARB approval.

- If a district intends to attempt to identify and quantify emission reductions from retiring PM high emitting vehicles, the district's program plan must specify the analytical approach that would be used to measure PM emissions.

3. VRV Emission Reductions

- Emission benefits are calculated from the difference between the pre and post-repair Smog Check test where the post-repair test is a full test, not a "fast pass" test.

- The pre and post repair Smog Check testing should be as close to the time of repair as possible.

- To calculate pre- and post-repair emission rates, the pollutant concentrations measured in the ASM test are converted to an FTP based gram per mile emission rate using the conversion equations listed in Table 11-3.

- The VMT is the average VMT of the vehicle's model year based on the ARB's motor vehicle emission model. Average VMT for each model year is listed in Table 11-4.

- The life of the emission credit for exhaust and evaporative repairs is one year.

- The mass emission reduction is equal to the gram per mile emission reduction multiplied by the VMT multiplied by the one year credit life.

Emission Reductions = $[ER_{pre\text{-}repair} - ER_{post\text{-}repair}]$* VMT * Life

Where:	$ER_{pre\text{-}repair}$	=	Emission rate of vehicle prior to repair, based on pre-repair Smog Check converted to gram per mile rate using ASM-FTP conversion
	$ER_{post\text{-}repair}$	=	Emission rate of vehicle after repair, based on post-repair Smog Check converted to gram per mile rate using ASM-FTP conversion
	VMT	=	Vehicle miles traveled of vehicle
	Life	=	Life of repair = 1 year

- For vehicles identified as high evaporative emitters via the low pressure evaporative test and repaired, emission reductions are equal the average emission reductions for repairing evaporative system failures estimated by ARB staff in its evaluation of the low pressure evaporative test, 14.5 pounds of ROG per vehicle per year.

4. Modifications to Calculation Methodology for VAVR and VRV

- Air districts retain the option of proposing modifications to the calculation methodology, where necessary, to reflect unique elements of their program. Districts must provide technical justifications to support any proposed modifications to the default methodology in their program plan. The district must receive written approval from ARB to use a modified methodology.

  - If a district receives approval to use a modified calculation methodology, emission reductions for all vehicles retired or repaired must be calculated in accordance with that approved methodology.

F. Cost-Effectiveness Calculations

- Cost-effectiveness must be calculated in accordance with the methodology described in Appendix C of *The Carl Moyer Program Guidelines – Approved Revision 2005.*

- State funds used to pay for the administrative costs of VAVR and VRV programs are not included in the cost-effectiveness calculations, but must be accounted for relative to the administrative limits associated with each funding source. Administrative costs include funds spent on outreach, contacting potential participants, data analysis, and development of data analysis tools such as databases.

<u>Additional Requirements for High Emitter VAVR and VRV Programs Only</u>

- The district must include the State or DMV funds expended on program-related costs to identify and retire/repair high emitting vehicles in the cost-effectiveness calculations.

  - Program-related costs are the costs directly linked to conducting RSD measurements, Smog Check tests, diagnosing vehicles, and the costs to retire vehicles or repair vehicles.

  - Broad programmatic costs (e.g. the cost of RSD) which cannot be attributed to retiring a specific vehicle shall be distributed proportionally across each vehicle repaired or retired.

  - All State funds used to pay for diagnosing and attempting to repair vehicles that are ultimately deemed unrepairable or are unsuccessful in lowering emissions

below the Smog Check emission standards must also be included into the cost-effectiveness calculations. These costs shall be distributed across each vehicle successfully repaired.

- The program cost-effectiveness shall be calculated separately for VAVR and VRV programs and for each year of program funding. The results shall be reported in a district's annual and final report for that year of funding.

- If the district has a cap on the amount it pays for repairs, vehicle owners may contribute their own funds to pay for repairs that exceed the district cap. Funds contributed by vehicle owners are not included in the cost-effectiveness calculation.

G. Offering Vehicles/Parts to the Public (applies to VAVR only)

- The enterprise operator must inform the district of the vehicles that are ready for dismantling.

- The district must provide a detailed description of the vehicle to interested parties including collectors and enthusiasts.

- The enterprise operator must wait a minimum of 10 days before submitting a Notice to Dismantle to the DMV.

- If an interested person contacts the enterprise operator, the enterprise operator must hold the vehicle for an additional, minimum of 7 days.

- Non-emission-related and non-drive train parts from the vehicle may be sold at the sole discretion of the enterprise operator.

- Engine, emission-related parts, transmission, and drive train parts must be removed from the vehicle and destroyed after the 10 day waiting period but prior to offering the remaining parts for sale. (Emission-related and drive train parts are defined in the VAVR regulation.)

- If a vehicle or its emission-related or drive train parts are sold instead of retired, no emission reductions will be generated, and Carl Moyer Program funds may to be used for retiring the vehicle.

H. Repair Requirements (applies to VRV only)

- Vehicles must only be diagnosed and repaired by Smog Check technicians licensed by BAR at Smog Check stations licensed by BAR.

- The Smog Check technicians and Smog Check stations must comply with all California laws and regulations governing automotive repair.

- The legal owner of the vehicle must provide written approval in advance authorizing the diagnosis and all repairs. The owner must be provided a final invoice detailing the cost of parts, labor, and tax for the repair in accordance with the Automotive Repair Act.

- Only emission-related repairs are fundable through a VRV program.

- Stations and technicians must follow a systematic diagnostic approach, in accordance with standard industry protocols, that obtains relevant data about the engine and emission control system on the vehicle, based on the type of emission-related Smog Check failure.

  - The systematic approach includes a diagnostic routine that provides sufficient data to diagnose and repair emission failures in a cost-effective and efficient manner. Data may include, but, are not limited to, compression readings, leak down percentages, intake manifold vacuum readings, scan tool data, condition of grounds, other electrical connections along with wiring, oxygen sensor testing, and other industry accepted factory testing procedures. Diagnostic and repair procedures specified by the vehicle manufacturer should take precedence over generic procedures.

  - The diagnosis must ensure the vehicle's engine is in good mechanical condition before performing repairs. This should include an inspection of basic engine operation (i.e., fuel control, individual cylinder contribution, cylinder seal, internal engine noises, oil burning, etc.) and a comprehensive visual inspection. All defects must be noted.

  - Diagnostic strategies must have the goal of maximum emission reductions for repair funds spent. Technicians must not perform diagnostic strategies and repairs that would result in short term emission reductions or minimal reductions.

- The technician must document all serviceable and defective emission related parts and systems found during the diagnosis and repair process and must provide the documentation to the district. The district must retain a copy. ARB recommends that districts provide a standardized diagnostic form to aid technicians in recording basic diagnostic information.

  - An example of a standardized diagnostic form, from BAR's training course for Smog Check technicians, is provided in Figure 11-1 (at the end of the chapter).

  - It may not be necessary to fill out the diagnostic data form completely because all the tests listed may not be appropriate for every vehicle.

  - The diagnostic form should be considered a guide, not a list of the complete diagnosis required. The ARB recognizes that each vehicles diagnosis is unique. Other tests may be required to completely diagnose emission failures.

- If the technician discovers tampering during the pre-repair test or during the diagnosis, the technician must stop performing the test, diagnosis, or repair, and contact the district to inform them of the tampering. Tampered vehicles are not eligible for participation into a VRV until such tampering has been completely corrected.

- If repairs involve replacing a vehicle's catalytic converter, the replacement must be compliant with the provisions of the ARB's OBD II regulation, that is, the replacement must be an OBD II compliant catalyst.

- To receive emission credit under the Carl Moyer Program, the repair of the vehicle must bring the vehicle's emissions into compliance with the Smog Check emissions standards for the model year and vehicle class. Repairs that leave a vehicle's emissions greater than the ASM emissions standards are not creditable.

- The invoice for the repair must clearly detail each repair and associated cost, in accordance with all applicable automotive repair laws and regulations, before the invoice is paid. The invoice must include all repairs performed on the vehicle.

- The district must designate a qualified staff person or third party unaffiliated with the Smog Check station to handle complaints or disagreements that may arise between the vehicle owner and the repair station. The contact information for that person must be made available to all vehicle owners who participate in the program.

  - The district should maintain a record of disputes and their resolution for use in evaluating and improving the program.

Evaporative Repairs

- Districts may, at their option, conduct evaporative testing on vehicles identified as potential exhaust high emitting vehicles and brought in for repairs.

- Low pressure fuel evaporative testing must be conducted using equipment that has been submitted to BAR for certification. Stations must follow testing and repair procedures prescribed in policy or regulations adopted by BAR.

- Evaporative testing must be conducted in accordance with the manufacturer's standard operating procedures and the protocols for low pressure fuel evaporative testing developed by BAR.

- Only vehicles that fail the low pressure fuel evaporative test are eligible for evaporative repairs.

- Evaporative repairs must bring the vehicle's emissions into compliance with the low pressure fuel evaporative test to be creditable.

Particulate Matter Repairs

- If a viable method to measure PM emissions from vehicles is demonstrated, districts have the option of measuring the PM emissions of vehicles identified as possible high emitters and quantifying the emission reductions of repairing PM high emitting vehicles, subject to ARB approval.

- If a district intends to attempt to identify and quantify emission reductions from repairing PM high emitting vehicles, the district's VRV program plan must specify the analytical approach that would be used to measure and quantify PM emissions.

Table 11-2

Voluntary Accelerated Light-Duty Vehicle Retirement Program
Emission Reductions for Calendar Year 2007

Total Pounds Per Vehicle Over 3 Year Credit Life

	Emission Reductions (pounds) – 3 Year Credit Life					
Model Year	**TotalROG***	**NOx**	**CO**	**PM10**	**ROG exh**	**ROG evap**
65 and earlier	506	158	2,999	0.74	279	227
66	472	152	2,771	0.81	239	233
67	479	154	2,823	0.77	243	236
68	487	159	2,889	0.83	249	239
69	498	163	2,967	0.99	255	243
70	431	167	3,056	1.04	261	170
71	436	169	3,053	1.13	270	166
72	442	172	3,059	1.06	279	163
73	448	173	3,070	0.97	284	165
74	386	152	2,821	1.20	264	122
75	320	137	2,656	1.03	207	113
76	215	110	2,246	0.75	104	111
77	173	93	2,203	0.63	90	83
78	177	92	2,191	0.88	91	86
79	161	82	1,455	0.86	77	84
80	124	74	1,211	0.69	59	65
81	105	56	934	1.16	45	59
82	102	59	920	1.04	44	58
83	92	62	795	0.91	34	58
84	99	62	752	0.93	32	67
85	92	57	490	0.86	24	68
86	89	57	446	0.89	23	66
87	80	55	407	0.80	22	58
88	72	55	371	0.77	22	50
89	51	44	424	0.71	24	27
90	49	34	450	0.68	25	24
91	44	35	438	0.63	25	19
92	42	36	434	0.60	25	17
93	32	34	253	0.55	18	14
94	19	22	40	0.49	7	12

* Includes exhaust and evaporative emissions

Source: Calculated using EMFAC Working Draft 2B (June 2006). Numbers are subject to change pending final version of emission inventory model. Assumes average 1965 through 2007 vehicle as replacement vehicle for vehicles retired in calendar year 2007.

Table 11-2 (continued)

Voluntary Accelerated Light-Duty Vehicle Retirement Program
Emission Reductions for Calendar Year 2008
Total Pounds Per Vehicle Over 3 Year Credit Life

	Emission Reductions (pounds) – 3 Year Credit Life					
Model Year	**TotalROG***	**NOx**	**CO**	**PM10**	**ROG exh**	**ROG evap**
65 and earlier	503	159	2,993	0.73	278	226
66	470	152	2,760	0.69	240	230
67	478	155	2,812	0.70	244	234
68	487	159	2,879	0.72	250	237
69	497	163	2,956	0.75	257	240
70	431	167	3,047	1.23	263	168
71	439	170	3,047	0.84	272	167
72	443	171	3,050	0.88	281	162
73	450	173	3,063	0.79	285	165
74	388	155	2,835	1.39	267	122
75	324	143	2,686	0.98	210	114
76	212	109	2,209	0.79	103	110
77	171	92	2,160	0.67	88	83
78	173	92	2,144	0.66	89	85
79	160	82	1,436	0.91	76	84
80	122	74	1,195	0.74	58	64
81	104	56	928	1.00	45	59
82	102	60	912	0.92	43	58
83	93	63	791	0.84	34	58
84	100	63	751	0.84	32	68
85	95	57	499	0.89	25	70
86	94	58	466	0.90	24	70
87	85	57	428	0.83	24	62
88	77	56	395	0.80	23	54
89	56	45	445	0.77	25	31
90	54	36	470	0.76	26	28
91	49	37	460	0.72	27	22
92	47	38	456	0.66	27	20
93	37	36	278	0.60	20	18
94	25	25	73	0.56	10	15

* Includes exhaust and evaporative emissions

Source: Calculated using EMFAC Working Draft 2B (June 2006). Numbers are subject to change pending final version of emission inventory model. Assumes average 1965 through 2008 vehicle as replacement vehicle for vehicles retired in calendar year 2008.

Table 11-3
ASM-FTP Correlation Equations[1]

Pre-1990 Model Year Correlation Equations

```
FTP_HC = 1.2648 * exp( - 4.67052
                + 0.46382 * hc_term
                + 0.09452 * co_term
                + 0.03577 * no_term
                + 0.57829 * wt_term
                - 0.06326 * my_term
                + 0.20932 * trk)

FTP_CO = 1.2281 * exp( - 2.65939
                + 0.08030 * hc_term
                + 0.32408 * co_term
                + 0.03324 * co_term**2
                + 0.05589 * no_term
                + 0.61969 * wt_term
                - 0.05339 * my_term
                + 0.31869 * trk)

FTP_NOX = 1.0810 * exp( - 5.73623
                + 0.06145 * hc_term
                - 0.02089 * co_term**2
                + 0.44703 * no_term
                + 0.04710 * no_term**2
                + 0.72928 * wt_term
                - 0.02559 * my_term
                - 0.00109 * my_term**2
                + 0.10580 * trk)
```

where:
hc_term = ln((ASM1_HC*ASM2_HC)^.5) - 3.72989
co_term = ln((ASM1_CO*ASM2_CO)^.5) + 2.07246
no_term = ln((ASM1_NO*ASM2_NO)^.5) - 5.83534
MY_Term = model_year - 1982.71
wt_term = ln(vehicle_weight in pounds)
TRK = 0 if vehicle is a passenger car and 1 if vehicle is a light-duty truck

[1] Conversion equations developed by Eastern Research Group and Sierra Research and used in the ARB and BAR's *2004 Evaluation of the California Enhanced Inspection and Maintenance (Smog Check) Program.*

1990 and Newer Model Year Correlation Equations

```
FTP_HC = 1.1754 * exp( - 6.32723
                + 0.24549 * hc_term
                + 0.09376 * hc_term**2
                + 0.06653 * no_term
                + 0.01206 * no_term**2
                + 0.56581 * wt_term
                - 0.10438 * my_term
                - 0.00564 * my_term**2
                + 0.24477 * trk) ;

FTP_CO = 1.2055 * exp(  0.90704
                + 0.04418 * hc_term**2
                + 0.17796 * co_term
                + 0.08789 * no_term
                + 0.01483 * no_term**2
                - 0.12753 * my_term
                - 0.00681 * my_term**2
                + 0.37580 * trk) ;

FTP_NOX = 1.1056 * exp( - 6.51660
                + 0.25586 * no_term
                + 0.04326 * no_term**2
                + 0.65599 * wt_term
                - 0.09092 * my_term
                - 0.00998 * my_term**2
                + 0.24958 * trk)
```

where:
hc_term = ln (ASM1_HC*ASM2_HC)^.5) - 2.32393 ;
co_term = ln (ASM1_CO*ASM2_CO)^.5) + 3.45963 ;
no_term = ln (ASM1_NO*ASM2_NO)^.5) - 3.71310 ;
MY_Term = model_year - 1993.69;
wt_term = ln(vehicle_weight in pounds)
TRK = 0 if vehicle is a passenger car and 1 if vehicle is a light-duty truck

For cases in which the HC or NO ASM scores are zero, they are set to 1 ppm; for cases in which the CO ASM score is zero, it is set to 0.01%.

Definitions:
FTP_HC = Estimated hydrocarbon FTP emission rate in grams per mile
FTP_CO = Estimated CO FTP emission rate in grams per mile
FTP_NO = Estimated NOx FTP emission rate in grams per mile
ASM1_HC = Measured ASM 5015 mode hydrocarbon concentration in ppm
ASM2_HC = Measured ASM 2525 mode hydrocarbon concentration in ppm
ASM1_CO = Measured ASM 5015 mode CO concentration in percent
ASM2_CO = Measured ASM 2525 mode hydrocarbon concentration in percent
ASM1_NO = Measured ASM 5015 mode NOx concentration in ppm
ASM2_NO = Measured ASM 2525 mode NOx concentration in ppm

Table 11-4
Average Vehicle Miles Traveled by Model Year

Model Year	Annual VMT* in 2007	Annual VMT* in 2008
1965 and older	5,173	5,118
1966	5,250	5,164
1967	5,350	5,264
1968	5,485	5,400
1969	5,635	5,550
1970	5,786	5,698
1971	5,910	5,823
1972	6,048	5,955
1973	6,132	6,039
1974	6,163	6,068
1975	6,312	6,212
1976	6,376	6,269
1977	6,475	6,364
1978	6,544	6,433
1979	6,636	6,520
1980	6,701	6,586
1981	6,794	6,676
1982	6,893	6,771
1983	6,998	6,870
1984	7,172	7,042
1985	7,306	7,168
1986	7,497	7,360
1987	7,600	7,456
1988	7,763	7,615
1989	7,943	7,787
1990	8,108	7,942
1991	8,317	8,143
1992	8,538	8,346
1993	8,787	8,582
1994	9,022	8,801
1995	9,252	9,010
1996	9,540	9,280
1997	9,834	9,552
1998	10,176	9,866
1999	10,546	10,205
2000	10,912	10,529
2001	11,328	10,897
2002	11,824	11,324
2003	12,411	11,819
2004	13,150	12,426
2005	13,983	13,064
2006		13,999

*Average vehicle VMT calculated using EMFAC Working Draft 2B (June 2006). Numbers are subject to change pending final version of emission inventory model.

Figure 11-1
Sample Diagnostic Data Form[2]

DIAGNOSTIC DATA FORM

The following chart is designed to assist the CAP station technician in the diagnosis and repair of failing CAP vehicles. Each vehicle and its emission failure(s) are unique and may require further tests than those listed below. Not all vehicles may require these tests.

Factory test procedures take precedence over any generic test.

WRITE YES (Y), NO (N) OR READING/EXPLAINATION. DO NOT CHECK

CAP ID#	Year / Make / Model	Vehicle License #	Technician #	Date
			Work order #	

Confirm basic engine condition:

Engine condition: any smoking, knocking, head gasket leaks or any other degraded engine condition(s)? _____

(*As needed*) compression test, cylinder balance test, leak down test results (whichever test was appropriate)

#1 _____ #2 _____ #3 _____ #4 _____ #5 _____ #6 _____ #7 _____ #8 _____

Base timing _____ Total timing advance _____ Coolant Temp _____ Vacuum readings _____

Ignition system: overall condition, are there any misfires? (HC failures) What is the specific component of the ignition system that needs to be replaced / repaired? List below

_____

Fuel pressure within specs? Y/N _____ results _____

Air Injection System (if applicable) Is AIS functioning correctly? Y/N _____ if no, why _____

EGR system (if applicable) Is system functioning correctly? Y/N _____ Is valve getting vacuum? Y/N _____

Does engine stumble/die when valve is manually raised? Y/N _____ Is EGR valve defective? Y/N _____

Is system restricted? Y/N: _____ Is system plugged? Y/N _____ Other: _____

Are there any Factory Technical Service Bulletins (TSBs), recalls/warranties related to the emission failure? _____

Are there any Diagnostic Trouble Code(s) stored? If yes, are they emission related? If yes, record code(s) _____

If vehicle is OBDI did you clear the codes and did they return? If vehicle is OBDII what is recorded in "Freeze Frame Data"?

Is vehicle failing for monitors? _____

Oxygen Sensor: Low Voltage: _____mV High Voltage: _____mV Rise time: _____mS

NOTE: min/max/rate of change measured while artificially manipulating air/fuel mixture full rich & full lean.

Average voltage: _____ Is O2 sensor functioning correctly? _____

Is vehicle in fuel control? Y/N _____ If no is O2 biased? Rich Y/N _____ Lean Y/N _____

Will computer respond to an artificial O2 signal? Y/N, if no, why?

_____

What are fuel trim numbers under test conditions? _____

Cross-reference the failed emission(s) with the related failed test.

Final Diagnosis / What component(s) or system(s) need to be repaired or replaced and why

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CATALYTIC CONVERTER DIAGNOSTIC ROUTINE

Factory diagnostic/testing procedures take precedence over generic tests.

Cat tests are valid or useful to the extent the vehicle is in fuel control. CAT tests require certain conditions be created by upstream systems in order to be valid. Fuel control is not just a varying O2S and/or fuel metering device. Fuel control is defined as the vehicle's ability to control fuel in response to the O2S input signal keeping the air/fuel ratio at 14.7 to 1 (stoichiometric). CAT replacement is generally the last repair approved.

Do not request a CAT with other repairs associated with its efficiency.

DO NOT REQUEST A CAT ON A VEHICLE THAT IS NOT IN FUEL CONTROL.

RECORD ON THE WORK ORDER "THE VEHICLE IS IN FUEL CONTROL".

O2 snap test	CO2 cranking test	Pre CAT / Post CAT (intrusive test)	Factory specific temperature test
O2% ____ %	HC: _____ ppm	Pre CAT: _____ Post CAT: _____	temp in _____ temp out _____
	CO2: _____	CAT efficiency: _____%	

Two CAT tests are more conclusive than one. A generic temperature test alone is not acceptable. Temperature tests are best used to confirm another test. An intrusive test is an optional test to confirm the effectiveness of the reduction portion of the catalyst.

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[2] Sample diagnostic form from BAR's training course to licensed Smog Check technicians. Not all fields may be relevant for district VRV program. Districts may design their own forms if they choose.

VI. References

ARB, 1998. Air Resources Board, Proposed Regulations for Voluntary Accelerated Light-Duty Vehicle Retirement Enterprises, October 23, 1998.

ARB, 2001. Air Resources Board, Proposed Amendments to Air Resources Board Voluntary Accelerated Vehicle Retirement Regulations – Minimize the Differences Between ARB and BAR VAVR Regulation and Allow Parts Recycling and Resale of Non-Emission-Related and Non-Drive Train Parts, November 30, 2001.

ARB, 2005. Air Resources Board, Environmental Impacts of Implementing A Low Pressure Evaporative Test in the California Smog Check Program, November 29, 2005.

ARB, 2006. Proposed Amendments to the Air Resources Board's Regulations for Voluntary Accelerated Light-Duty Vehicle Retirement Enterprises, October 20, 2006.

ARB/BAR, 2004, Technical Support Document for Evaluation of the California Enhanced Vehicle Inspection and Maintenance (Smog Check) Program: April 2004 Draft Report to the Inspection and Maintenance Review Committee, June 2004.

ARB/BAR, 2005, April 2004 Evaluation of the California Enhanced Vehicle Inspection and Maintenance (Smog Check) Program: Report to the Legislature, September 2005.

BAR, 2001. Bureau of Automotive Repair, Remote Sensing Device High Emitter Identification with Confirmatory Roadside Inspection, Final Report 2001-06, August 30, 2001.

Stedman. Donald H. Stedman and Gary A. Bishop, Department of Chemistry and Biochemistry, University of Denver, Colorado, Emissions-Based Mobile Source Inventory Methods.

Stedman, 1994. Donald H. Stedman, On-Road Remote Sensing of CO and HC Emissions in California, February 1994, ARB Contract No. A032-093.

U.S. EPA. Julian W. Jones, C. Ted Ripberger, and Niranjan Vescio, U.S. Environmental Protection Agency, Office of Research and Development, FINAL REPORT An Investigation of Remote Sensing Devices for Chemical Characterization of Motor Vehicle Exhaust.

State of California
AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR RULEMAKING

PROPOSED AMENDMENTS TO THE AIR RESOURCES BOARD'S REGULATIONS FOR VOLUNTARY ACCELERATED LIGHT-DUTY VEHICLE RETIREMENT

Date of Release: October 20, 2006
Scheduled for Consideration: December 7, 2006

Joint Summary Report: Voluntary Accelerated Vehicle Retirement and Voluntary Repair of Vehicles

At the December 7, 2006 Air Resources Board (ARB or Board) meeting, the Board will consider two separate, but closely related proposals concerning incentive programs aimed at reducing emissions from light-duty motor vehicles. These proposals would expand opportunities for voluntary accelerated vehicle retirement (VAVR) and establish new guidance for voluntary repair of vehicles (VRV). Requirements for incentive programs are generally contained within guidelines, such as the Carl Moyer Program Guidelines. However, requirements for VAVR programs are unique because they are also contained in regulations. Therefore, two separate, but consistent proposals are necessary. Proposed revisions to the ARB's VAVR regulation would impact only VAVR. Proposed revisions to the ARB's Carl Moyer Program Guidelines would impact both VAVR and VRV. Because the reports prepared to support each proposal only address portions of the overall program, staff has prepared this joint summary report to briefly describe its overall proposal for expanding light-duty vehicle incentive program opportunities.

Background

Light-duty vehicles include passenger cars and light-duty trucks such as pick-up trucks, sport utility vehicles (SUVs), and vans. In 2005, the estimated number of light-duty vehicles in California was over 21 million. These vehicles emit nearly 600 tons per day each of reactive organic gases (ROG) and oxides of nitrogen (NOx) statewide, making them major contributors to California's air pollution. Older, light-duty vehicles (pre-1990 model years) account for 56 percent of the ROG and 41 percent of the NOx emissions from all light-duty vehicles in 2005 despite accounting for only 19 percent of the vehicle population and less than 13 percent of the vehicle miles traveled (VMT). Generally, these older vehicles emit more pollutants because of less stringent emission standards and increased wear and tear of emission control components. Even well maintained, older vehicles tend to be higher emitting than newer ones because they lack advanced emission controls.

Incentive-based vehicle retirement or repair programs offer a cost-effective means to immediately reduce emissions from older vehicles. They offer the best way to address emissions from the pre-1976 model year vehicles that are exempt from Smog Check.

Incentive Programs for Light-Duty Vehicles

The role of incentive programs as part of California's air quality strategy has increased over the past decade with the creation of, and more recent expansion of, the Carl Moyer Program. The program originally focused on reducing NOx emissions from diesel engines. However, the scope has expanded to include other emission sources, and particulate matter and ROG are now include as covered pollutants. Light-duty vehicle projects were added to the Carl Moyer Program with changes signed into law in 2004.

With the new funding opportunities, there is renewed interest in expanding the role of light-duty vehicle programs as a part of California's clean air strategy.

The ARB has identified two types of light-duty vehicle incentive projects that are eligible for funding: voluntary retirement programs (VAVR) and voluntary repair programs (VRV). Both programs have the potential to decrease excess emissions from older, high emitting vehicles. These programs may be run independently from one another, but some districts may find it beneficial to run VAVR and VRV programs in coordination, so vehicle owners have the option of choosing between vehicle repair and retirement.

Introduction to VAVR

VAVR or car scrap programs provide financial incentives to encourage vehicle owners to retire older, more polluting vehicles earlier than they would have otherwise. The ARB already has a regulation and guidance in place for VAVR programs.

The ARB adopted a regulation in 1998 that governs the operation of VAVR operations in California based on principles laid out in State law. The regulation was updated once in 2002. The regulation provides for privately-operated VAVR enterprises to purchase and retire eligible vehicles in order to generate emission reduction credits. These credits may be retired for a clean air benefit or used by businesses and industries as an alternative compliance option. The regulation assures that the emission reductions generated from accelerated retirement are real, surplus, quantifiable, and enforceable. Prior to acceptance into the program, candidate vehicles must meet registration, functional, and equipment eligibility criteria to ensure that they are fully operational vehicles that would not otherwise have been immediately retired. The current Carl Moyer Program Guidelines include project criteria for basic VAVR programs.

In conjunction with the expanded funding opportunities, a broad range of stakeholders have expressed a strong interest in incorporating the optional use of advanced technologies such as remote sensing to identify the highest emitting vehicles for possible participation in retirement or repair programs. Stakeholders have also requested that VAVR programs be permitted to generate extra emission reduction credits for retiring these high emitting vehicles. Remote sensing devices (RSD) use spectroscopy to measure the concentrations of air pollutants in vehicle's exhaust stream while the vehicle is on the roadway. Staff's proposed regulatory and guidance changes would allow the optional use of RSD or other technologies to identify high emitting vehicles. This would provide local jurisdictions additional flexibility to design programs tailored to meet local air quality challenges.

Introduction to VRV

VRV programs reduce emissions by paying for emission-related repairs on vehicles. Because vehicle owners routinely pay for repairs on their own vehicles, simply shifting the cost of repairs from the owner to the State does not, in and of itself, result in surplus emission reductions. Surplus emission reductions are achieved by funding repairs that

would not have occurred otherwise or by accelerating repairs so they occur earlier than they would have otherwise.

California's Smog Check program requires that vehicles be emission tested biennially. Vehicle's whose emissions exceed the Smog Check emission standards must be repaired to passing levels prior to being reregistered. Emission-related repairs required by the Smog Check program would not be surplus. However, identifying high emitting vehicles in between Smog Checks via RSD or other technologies and funding accelerated emission-related repairs would result in surplus emission reductions. ARB staff envisions that VRV programs would incorporate an element to identify high emitting vehicles whose owners could be contacted for voluntary participation.

The ARB does not currently have guidance in place for VRV programs. Staff's proposal would establish Carl Moyer Program Guidelines governing VRV programs.

Summary of ARB Proposals for VAVR Programs

The following summarizes the main provisions of ARB staff's proposals for expanding VAVR program opportunities. If the Board adopts ARB staff's proposed changes, two types of VAVR programs would be allowed under the regulation which we refer to as "conventional VAVR programs" and "high emitter VAVR programs," respectively.

In conventional VAVR programs, any older vehicle may be retired provided it meets the minimum eligibility requirements. Emission reductions are achieved because these older vehicles, even ones that meet their Smog Check standards, emit more pollutants than the newer vehicles that replace them upon retirement. Vehicles retired in these programs are typically 20 to 25 years old. A well maintained 20-25 year old vehicle emits on average 3 to 4 times as much as the average vehicle on the road. In high emitter VAVR programs, RSD or other technologies are used to identify the highest emitting vehicles in the fleet for possible voluntary participation. These vehicles can have emissions more than 10 times greater than an average vehicle. By targeting only the highest emitting vehicles, the programs can achieve extra emission reductions relative to conventional VAVR programs. However, these programs are more expensive to operate. Districts interesting in running VAVR programs would have the option of choosing which type of program to operate.

Framework for High Emitter VAVR Programs: ARB staff is proposing to modify the VAVR regulation to allow the optional use of RSD or other technologies to identify high emitting vehicles for participation in VAVR. The proposed revisions would authorize the generation of extra emission reduction credits for the retirement of vehicles identified as high emitters. The proposed regulation would provide a broad framework governing these programs instead of providing prescriptive requirements. Because these are voluntary programs, ARB staff wants to provide as much flexibility as possible for local entities to design the programs that fit best for their local air quality problems. To ensure that programs are technically sound, ARB staff is proposing that a plan detailing how the program would run be submitted to the ARB for approval in advance of starting

a high emitter VAVR program. The proposed regulation specifies the elements that must be contained in the plan to ensure that a proposed program would be technically sound.

Emission Reductions from Retiring High Emitting Vehicles: Vehicles retired through high emitter VAVR programs would be eligible to receive extra emission reductions relative to those retired in conventional VAVR programs. For conventional VAVR programs, the regulation does not require that the retired vehicle's emissions be measured, so the emission reductions are based on the average emissions the each model year vehicle. This approach does not work for vehicles identified as the highest emitting ones in the fleet. ARB staff is proposing a new calculation methodology for high emitter VAVR programs in the revisions to the Carl Moyer Guidelines. Because no VAVR programs specifically targeting the highest emitting vehicles are currently in operation, there are limited "real world" data upon which to base the calculation methodology at this time.

Stakeholders have voiced the concern that a "one size fits all" approach may not work because it may not reflect unique elements of district programs. ARB staff is proposing a calculation methodology, relying on a confirmatory Smog Check test to establish the retired vehicle's emissions. Modifications to the methodology to reflect unique features of district programs would be allowed, subject to ARB approval.

Vehicle Registration Requirement: Under the existing VAVR regulation, vehicles are required to be registered for at least 120 days prior to retirement. The registration requirement is in place to ensure that only vehicles actually being used are accepted into VAVR programs. ARB staff is proposing to change the vehicle registration requirement in the VAVR regulation from 120 days to 24 months to be consistent with the enabling legislation (Health and Safety Code Section 44094).

Emission Reduction Tables for Conventional VAVR Programs: Staff is proposing that emission reduction look-up tables for conventional VAVR programs be replaced with the underlying calculation methodology described in the staff report for the 1998 adoption of the regulation. This would allow emission reductions for future years to be calculated without needing to revise the regulation.

Clarifying Changes to VAVR Regulation: ARB staff is proposing to reorganize some of regulatory language to clarify and improve the readability of the regulation. ARB staff is also proposing to remove two sections of the regulation that are no longer applicable.

Carl Moyer Program Guidelines for Cost-Effectiveness: ARB staff is proposing criteria for calculating the cost-effectiveness of VAVR programs funded via the Carl Moyer Program. These would specify how districts allocate the costs of running RSD-based programs.

Summary of ARB Proposals for VRV Programs

Because vehicle owners routinely pay for repairs on their own vehicles, surplus emission reductions are achieved only by funding repairs that would not have occurred otherwise or accelerating repairs so they occur earlier than they would have otherwise. Distinguishing repairs that would only occur with State funding from those that would have happened in the absence of funding is a challenge.

Vehicle Eligibility: To ensure that emission reductions are surplus, vehicles must be outside of their biennial Smog Check window. Only vehicles identified through RSD, high emitter profile, or equivalent program would be eligible. Vehicles would be given a confirmatory Smog Check test to verify that they are high emitting and establish their emissions. Vehicles would also need to meet functional and registration requirements.

Repair Requirement: Ensuring that emission control system failures are correctly diagnosed and repaired so real emission reductions are achieved is critical to the success of repair projects. Staff is proposing project criteria requiring systematic diagnosis and repair in accordance with standard industry protocols to ensure that vehicles are correctly and efficiently repaired. To make sure repairs are durable, they must bring emissions below the Smog Check pass/fail emission standards in order to be creditable. This requirement aims to prevent partial repairs that may be short lived.

Program Design: During the development of these guidelines, air district representatives encouraged ARB to provide flexibility for districts to develop specialized programs to address unique, local circumstances. District staff also voiced concerns that if the program criteria are too prescriptive, districts may be limited in designing programs. ARB staff agrees that districts need flexibility in designing programs provided they incorporate sufficient controls to ensure the emission reductions are real, quantifiable, enforceable, and surplus. Staff is proposing that districts submit VRV project plans for ARB approval that would describe how the program would run.

Calculating Emission Reductions: ARB staff is proposing that emission reductions be based on the difference in emissions between pre-repair and post-repair Smog Check tests. Staff is also proposing a one year credit life for repairs to avoid double counting the emission benefits of the Smog Check program. On average, vehicles are one year away from their next biennial Smog Check test. High emitting vehicles identified between Smog Checks and repaired in these voluntary programs would have needed to be repaired after failing their next biennial Smog Check test.

Cost-Effectiveness: ARB staff is proposing criteria for calculating the cost-effectiveness of VRV programs funded using Carl Moyer Program funds. These would specify how districts allocate the costs of running RSD-based programs and how to account for funds spent to diagnose and attempt repairs not resulting in emission reductions.

Conclusion

ARB staff is proposing comprehensive changes to both the VAVR regulation and Carl Moyer Program Guidelines to utilize current technology to identify high emitting vehicles for retirement or repair. The proposed changes allow significant flexibility for districts to design their own targeted programs while providing sufficient oversight to ensure that projects achieve real, surplus, quantifiable, enforceable reductions.

Staff Report: Initial Statement of Reasons for Rulemaking

Proposed Amendments to the Air Resources Board's Regulations for Voluntary Accelerated Light-Duty Vehicle Retirement

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Executive Summary

Air pollution is a serious problem for California. Over 90 percent of Californians live in areas that have unhealthful air at times. Air pollution has been tied to serious health impacts. Studies have linked particulate pollution to premature death in the elderly and other vulnerable populations. Research also shows that children exposed to unhealthful levels of ozone, or smog, suffer decreased lung function growth and increased asthma.

Light-duty voluntary accelerated vehicle retirement (VAVR or car scrap) programs provide an opportunity to reduce the emissions which contribute to air pollution by offering financial incentives to encourage vehicle owners to retire older, more polluting vehicles earlier than they would have otherwise. Voluntary vehicle retirement programs are a part of California's strategy to achieve clean air.

The Air Resources Board (ARB) adopted regulations in 1998 that govern the operation of VAVR programs in California in accordance with guiding principles laid out in State law. These regulations were updated in 2002. The ARB's regulations provide for privately-operated, market-based VAVR enterprises to purchase and retire eligible vehicles in order to generate mobile source emission reduction credits. These credits may be retired for a clean air benefit or used by businesses and industries as an alternative compliance option. The ARB regulations assure that the emission reductions generated from accelerated vehicle retirement are real, surplus, quantifiable, and enforceable. Prior to acceptance into the program, candidate vehicles must meet registration and functional and equipment eligibility criteria to ensure that they are fully operational and would not otherwise have been immediately retired. To accommodate car collectors and others with potential interest in vehicles offered for retirement, the regulations require that VAVR programs provide the public with an opportunity to purchase vehicles in whole or in part before the vehicle is retired.

Although there has been interest in vehicle retirement since these programs were first introduced in California in the early 1990s, lack of funding has stood in the way of large scale implementation of retirement programs. However, legislative changes signed into law in 2004 expand the Carl Moyer Program, provide an ongoing funding source of up to $140 million annually, and allow vehicle retirement programs to be included in the funding if air districts choose. With new funding opportunities, there is renewed interest in expanding the role of vehicle retirement as a part of California's clean air strategy.

In conjunction with the expanded funding opportunities, a broad range of stakeholders have expressed a strong interest in incorporating advanced technologies, such as remote sensing devices (RSD), to identify high emitting vehicles for possible participation as an optional element in retirement programs. This would provide local jurisdictions additional flexibility to design programs tailored to meet local air quality challenges. Staff's proposed changes include modification to the regulation to allow the optional use of RSD or other technologies to identify high emitting vehicles.

Some districts may choose to administer programs where eligibility is determined by vehicle age, where any vehicle older than a particular age may be retired provided it meets the eligibility requirements specified in the regulation. These are the programs that have typically been operated in California. We refer to these a "conventional VAVR programs." Others may choose to administer programs using RSD or other technologies and only offer participation to owners of the highest emitting vehicles, regardless of vehicle age. We refer to these a "high emitter VAVR programs." The current regulation already accommodates conventional VAVR programs. The proposed changes will accommodate programs that target high emitting vehicles for VAVR.

Summary of Proposed Changes

Provisions for High Emitter VAVR Programs: ARB staff is proposing to modify the VAVR regulation to allow the optional use of RSD or other technologies to identify high emitting vehicles for participation in VAVR. The proposed revisions would authorize the generation of extra emission reduction credits for the retirement of vehicles identified as high emitters. The proposed regulation would provide a broad framework governing these programs instead of providing prescriptive requirements. Because these are voluntary programs, ARB staff wanted to provide as much flexibility as possible for local entities to design the programs that fit best for their local air quality problems. To ensure that programs are technically sound, ARB staff is proposing that a plan detailing how the program would run be submitted to ARB for approval in advance of starting a high emitter VAVR program. The proposed regulation specifies the elements that must be contained in the plan to ensure that a proposed program would be technically sound.

Vehicle Registration Requirement: Under the existing VAVR regulation, vehicles are required to be registered for at least 120 days prior to retirement. The registration requirement is in place to ensure that only vehicles actually being used are accepted into VAVR programs. ARB staff is proposing to change the vehicle registration requirement in the VAVR regulation from 120 days to 24 months to be consistent with the enabling legislation (Health and Safety Code Section 44094).

Emission Reduction Tables for Conventional VAVR Programs: When the Board adopted the VAVR regulation in 1998, the methodology for calculating emission reductions for conventional VAVR programs was described in the staff report. The regulation includes emission reduction look-up tables based on that methodology. For ease of program implementation, ARB staff is proposing to replace the tables currently in the regulation with the underlying methodology from the 1998 staff report, so emission reductions for future years can be calculated without revising the regulation.

Clarifying Changes: ARB staff is proposing to reorganize some of regulatory language to clarify and improve the readability of the regulation. ARB staff is also proposing to remove two sections of the regulation that are no longer applicable.

Staff Recommendation

The proposed changes to the VAVR regulation expand the opportunities to reduce air pollution through the retirement of a wider range of older, more polluting vehicles and from high emitting vehicles. Additionally, the proposed changes provide the flexibility requested by some stakeholders and increases the safeguards requested by others to ensure that programs are administered and operated in an effective manner and that emission reductions are real, surplus, quantifiable, and enforceable. ARB staff recommends that the Board adopt the proposed changes to the VAVR regulation.

I. Introduction

Light-duty voluntary accelerated vehicle retirement (VAVR or car scrap) programs provide financial incentives to encourage vehicle owners to retire older, more polluting vehicles earlier than they would have otherwise, thereby reducing emissions. Voluntary vehicle retirement programs are a part of California's overall strategy to achieve clean air. These programs were first introduced to California in the early 1990s and have garnered renewed interest with recent legislative changes that provide additional funding sources for VAVR programs.

The Air Resources Board (ARB) first adopted the regulation governing the operation of light-duty VAVR programs in 1998 as directed under State law. ARB staff is proposing revisions to the VAVR regulation that would complement the existing regulation by providing additional flexibility. The proposed changes would allow the optional use of remote sensing or other technologies to identify high emitting vehicles and solicit the owner's participation in a VAVR program. This would provide local air districts additional options to craft programs to meet local air quality challenges.

A. Emissions from Light-Duty Vehicles

Light-duty vehicles include passenger cars and light-duty trucks such as pick-up trucks, sport utility vehicles (SUVs), and vans. In 2005, the estimated number of light-duty vehicles in California was over 21 million. This number is expected to increase to over 23 million vehicles by 2010. Light-duty vehicles are major contributors to California's air pollution problem. The oxides of nitrogen (NOx), reactive organic gas (ROG), and particulate matter (PM10) emissions from the light-duty fleet are shown in Table 1.

Table 1
Statewide Emissions from On-Road Light-Duty Vehicles
(tons per day)

Year	Population	NOx	ROG	PM10
2005	21,500,000	574	583	29
2010	23,700,000	388	405	32

Source: ARB 2006 Almanac Emission Projection Data (http://www.arb.ca.gov/ei/emissiondata.htm)

Although emissions from light-duty vehicles are decreasing with the implementation of stricter emission control standards, light-duty vehicles still contribute about half of the smog producing emissions from all on-road vehicles. Reducing emissions from the existing light-duty fleet is an important part of California's strategy to meet the health-based ambient air quality standards.

According to the ARB's emission inventory, older, light-duty vehicles (pre-1990 model years) account for 56 percent of the ROG and 41 percent of the NOx emissions from all light-duty vehicles in 2005 despite accounting for only 19 percent of the vehicle population and less than 13 percent of the vehicle miles traveled (VMT). Generally, these older vehicles emit more pollutants because of less stringent emission standards

and increased wear and tear on emission control components. As a result, older vehicles tend to be major contributors to air pollution in California.

Incentive-based vehicle retirement programs offer a cost-effective means of immediately reducing emissions from older vehicles. In fact, these programs are one of the few ways to immediately reduce emissions from older vehicles, and the best way to address emissions from the pre-1976 model year vehicles that are exempt from California's Smog Check program.

B. VAVR Background

The goal of VAVR programs is to provide financial incentives to encourage vehicle owners to retire their older, more polluting vehicles sooner than would have occurred naturally, thereby eliminating the emissions associated with their operation. VAVR programs in California are strictly voluntary. They are overseen by the ARB and administered by local air districts. In addition to district administered VAVR programs, the Bureau of Automotive Repair (BAR) operates a vehicle retirement program as part of the Smog Check's Consumer Assistance Program. The district-administered and BAR programs are designed to complement one another. The provisions governing VAVR programs are established in State laws and ARB regulations, as described below.

1. Legislative and Regulatory History of VAVR

California's interest in vehicle retirement (or car scrap) programs has grown since programs were first introduced in the early 1990s. In the 1994 State Implementation Plan (SIP), the ARB included a commitment, known as measure M1, to voluntarily scrap over 75,000 vehicles a year in the South Coast. The inclusion of a vehicle retirement measure in the SIP was followed by the adoption of the State law – Senate Bill (SB) 501 (Statutes of 1995, Calderon) – and the ARB regulations which establish the framework for VAVR programs in California.

SB 501 (Statutes of 1995, Calderon)

Legislation signed in 1995, (SB 501) added sections 44100 et seq., Article 10, to the California Health and Safety Code which provide the legislative framework for VAVR programs in California. This Bill was backed by a business and industry coalition that advocated adding the scrap measure to the 1994 SIP. Article 10 required the ARB to adopt regulations to govern light-duty retirement programs statewide which would include market-based, privately-operated VAVR enterprises and the generation of emission reduction credits. It also directed the ARB to operate a pilot program to assess the cost and emission reduction benefits of scrap programs. Large scale funding never materialized preventing the operation of the large-scale scrap program or purchase of emission reductions from scrapped vehicles as envisioned by SIP Measure M1 and the Legislature. Measure M1 was subsequently removed from the SIP.

1998 VAVR Regulation

In 1998, as required by statute, the ARB adopted regulations governing VAVR programs. [ARB, 1998] These regulations provide for privately-operated, market-based VAVR enterprises to purchase and retire eligible vehicles in order to generate mobile source emission reduction credits. These credits may be retired for a clean air benefit, or used by businesses and industries as an alternative compliance option. Local air districts that allow mobile source emission reduction credits to be generated from scrap programs must use ARB's regulations.

The ARB regulations assure that the emission reductions generated from accelerated vehicle retirement are real, surplus, quantifiable, and enforceable. The regulations are intended to ensure that the scrapped vehicles were fully operational and would not otherwise have been immediately retired. This is critical because millions of vehicles are naturally scrapped every year as they reach the end of their useful life. Without appropriate regulations, VAVR programs would be paying for what would have happened anyway. Toward this goal, scrapped vehicles must meet a registration requirement and pass a functional and equipment eligibility inspection.

VAVR enterprises participating in district vehicle retirement programs must notify the local air district of their intention to commence operations and demonstrate their ability to comply with the regulatory provisions. Local air districts are responsible for approving and issuing emission reduction credits generated from VAVR enterprises. Under the regulation, local districts can initiate any enforcement or remedial action necessary against noncompliant enterprises.

To accommodate car collectors and others with potential interest in vehicles offered for retirement, VAVR programs provide the public with an opportunity to purchase vehicles before the vehicle is retired. Vehicles accepted into the program must be dismantled to such a degree that it and its parts are rendered unusable.

The ARB Pilot Program

As directed under State law, the ARB conducted a pilot program from November 1998 to November 1999 in Southern California. [Sierra Research, 2000] One thousand and one vehicles were scrapped with a $500 cash incentive paid for each vehicle. The pilot program confirmed that almost all motorists who scrap a vehicle replace that vehicle with a newer, cleaner car. The scrapped vehicles ranged from about 9 to 34 years old, with the average being about 18 years old. Follow-up surveys found that about 60 percent of vehicle sellers purchased a replacement vehicle, and about one-third replaced the scrapped vehicle with another vehicle they already owned. The remainder, about seven percent, turned to alternative transportation modes such as transit, bicycle, or carpooling.

The average replacement vehicle, regardless of whether it was purchased or already in the household, was about 10 years old – or about 8 years newer than the average

scrapped vehicle. Because the average car on the road is about 10 years old, vehicle sellers replaced their scrapped vehicles with vehicles that are about average in age.

While the results of the pilot program were encouraging, funding limitations at the time did not permit expansion of the program to achieve the emission reductions called for in the 1994 SIP.

2002 Revisions to VAVR Regulation

The ARB approved minor revisions to the VAVR regulations in 2002 that largely align the vehicle eligibility criteria with the eligibility criteria for the vehicle retirement component of BAR's Smog Check Consumer Assistance Program. [ARB, 2001] The 2002 revisions also provided for the recovery of non-emission control related parts from vehicles prior to their destruction which addressed concerns of car collectors over the availability of replacement parts for older vehicles.

Assembly Bill (AB) 923 (Statutes of 2004, Firebaugh)

Legislative changes to the Carl Moyer Program, enacted with the signing of AB 923 (Firebaugh, 2004), added light-duty vehicle projects to the list of allowable projects and provided additional means of funding VAVR programs to reduce NOx, ROG, and PM10 emissions. In 2005, the ARB adopted revisions to the Carl Moyer Program Guidelines, in part to address these legislative changes. The 2005 revisions included project criteria for conventional VAVR programs, consistent with the provisions of the VAVR regulation. [ARB, 2006]

With the new funding opportunities, there is potential to expand the role of vehicle retirement as a part of California's clean air strategy. Several air districts have recently initiated VAVR programs using funding authorized under AB 923, and others are considering starting programs.

2. VAVR Programs in California

This section discusses the vehicle retirement programs in California, including district programs operated under the ARB regulations and BAR's Smog Check Consumer Assistance Program. These programs are also described in the ARB's 2004 *Report to the California Legislature: Accelerated Light-Duty Vehicle Retirement Program.* [ARB, 2004]

Local Air District Programs

To date, four local air districts have operated VAVR programs under ARB's regulations – the Bay Area Air Quality Management District (AQMD), San Diego Air Pollution Control District (APCD), Santa Barbara APCD, and South Coast AQMD. The program in the San Diego APCD has ended, but programs continue to operate in the other three districts. About 5,000 vehicles a year are scrapped in these programs. [ARB, 2004] In

these programs, participants are paid $500 between $800 to retire their vehicles. Most vehicles retired are between 20 and 25 years old and are assumed to have average emissions for their age.

In three of the four districts, the light-duty vehicle scrap program depends on district funds. These districts retire all of the emission benefits for clean air. In contrast, the South Coast program generates marketable emission reduction credits. These credits are discounted by 17 percent to provide a clean air benefit, and can then be purchased by businesses to comply with certain South Coast AQMD rules.

The cost-effectiveness of district VAVR programs varies depending upon the age of the scrapped vehicles. Based on the most recent data self reported by the local air districts, the district scrap programs provide emission reductions at a cost of approximately $1.50 to $4.50 a pound of ozone precursors (ROG + NOx). [ARB, 2004] These values are not directly comparable to traditional Carl Moyer Program cost-effectiveness values because some districts included administrative and overhead costs in their estimates.

In 2006, the South Coast AQMD is starting a "Light Duty Vehicle Remote Sensing, Repair, and Scrapping Program" funded under the provisions of AB 923, which would retire the emission benefits for clean air. This program is described in Section D, below.

Bureau of Automotive Repair Consumer Assistance Program

In addition to district VAVR programs, the BAR Smog Check Program includes a voluntary vehicle retirement element. [BAR, 2006} As part of BAR's Consumer Assistance Program, owners of qualifying vehicles that fail the biennial inspection are given the option of voluntarily retiring their vehicle rather than repairing it. BAR offers $1,000 in exchange for the vehicle. This program provides a safety valve for motorists with failing vehicles who may have had difficulty affording repairs or deemed repair too costly. The BAR program retired about 15,000 vehicles in fiscal year 2005-2006 and expects to expand the number to about 18,000 annually in 2006-2007.

C. Introduction to Remote Sensing

Studies have shown that remote sensing can be used as an effective tool in identifying the highest emitting vehicles operating on the roadways. [ESP, 2003] [Lawson, 1996] Consequently, there is interest in using remote sensing as a tool to identify high emitting vehicles whose owners may be contacted for voluntary participation in vehicle retirement or repair programs. A focus of the proposed changes to the VAVR regulation is to incorporate the optional use of remote sensing and other technologies to identify high emitting vehicles for voluntary participation in retirement programs.

Remote sensing devices (RSD) are analytical instruments that use spectroscopy to measure the concentrations of air pollutants in vehicle's exhaust stream while the vehicle is on the roadway. [BAR, 2003] A photograph of the vehicle's license plate is also recorded, so that measured emissions can be matched to a particular vehicle.

Typically, a beam of infrared and/or ultraviolet light is sent across a vehicle's pathway and is reflected back into light detectors. When more of the light beam is absorbed by the vehicle's exhaust, the instrument will indicate a higher concentration of the air pollution. The measurement takes less than one half second and provides a snapshot in time of how the vehicle is operating under the road and operating conditions where the measurement takes place.

Several parameters affect the quality of RSD readings, so care must be taken when designing RSD programs in selecting site locations that offer the best potential to produce valid measurements. [Bishop & Stedman, 2006] [Wenzel, 2005] Road width, the distance between one vehicle and another, the height of the tailpipe, and weather conditions all potentially affect the results. Additionally, the driving characteristics of the vehicle play an important role in whether or not a measurement is valid. To increase the chances of a valid measurement, the vehicle must be operating within a limited accelerating or decelerating range during the measurement.

Although RSD can be used to identify high emitting vehicles, ARB staff does not believe that the technology has developed to the point where a split second RSD measurement of a vehicle's exhaust can quantitatively represent its average emissions over a full driving cycle such as the federal test procedure (FTP). For that reason, ARB staff believes RSD measurements should be used as screening tools to identify possible high emitting vehicles for participation in retirement or repair programs. In the guidance for calculating the emission benefits for retiring or repairing high emitting vehicles, staff is proposing that vehicles identified via RSD or other technologies receive confirmatory Smog Check tests to estimate their emissions.

The costs of running RSD programs can vary greatly depending on the scope and intent of the program. Sampling locations and times must be selected to ensure a representative sample of the fleet is observed. Some vehicles may drive by RSD locations many times and other vehicles may seldom or never drive by. So, in practice, the number of unique vehicle readings will generally be much less than the total number of records collected because some vehicles may be seen over and over again. To provide an example of potential costs, the South Coast AQMD is budgeting on the order of $900,000 to obtain about 3 million valid RSD records which would yield about 1 million unique vehicle measurements for its program.

D. South Coast Air Quality Management District Light Duty Vehicle Remote Sensing, Repair, and Scrapping Program

The South Coast AQMD (District) is developing a "Light Duty Vehicle Remote Sensing, Repair, and Scrapping Program" funded under the provisions of AB 923. This program will be the first vehicle retirement program in California to incorporate the use of remote sensing. The District plans to identify high emitting vehicles using RSD supplemented with information in BAR's Smog Check database and the District's smoking vehicle database. The District will then contact vehicle owners to solicit their voluntary

participation. Eligible vehicles would receive either free or reduced emission-related repairs or be paid to voluntarily retire their vehicles.

The District's Governing Board has approved up to $4 million for the project. The District expects to collect about 3 million valid RSD records which would yield about 1 million unique vehicle measurements. The District plans to contact owners of the vehicles with the top 1 or 2 percent of the highest emissions and expects to repair or retire several thousand vehicles. The exact number is dependent on the degree of voluntary participation which is difficult to predict for a first of its kind program. The District plans to offer up to $500 per vehicle for repairs or $1,000 for retirement. An additional $1,000 would be offered to low income vehicle owners who replace their retired vehicle with one certified to a LEV or cleaner emission standard. The District expects the program to be operational in Fall 2006 and to run for about a year.

The District has selected several contractors to operate the program. Environmental Systems Products (ESP) will operate the remote sensing and high emitter identification element of the program. The Foundation for California Community Colleges (FCCC) will perform vehicle testing, diagnostic, and repair work as well as solicit participants. Pick Your Part will run the vehicle retirement element of the program.

In additional to identifying vehicles via RSD, the District will attempt to incorporate PM and evaporative emission measurements into the program. RSD does not directly measure either of these pollutants. The District proposes to use a new PM measurement device to measure PM emissions and identify high emitters. Also, the District plans to use the low pressure evaporative emission testing units currently being developed by BAR for the Smog Check program to identify vehicles with high evaporative emissions.

ARB staff is working with District staff in developing the program. As the first RSD-based retirement and repair program, it should provide valuable data that will help shape future programs.

II. Development of Proposed Revisions to VAVR Regulation

This section provides some background on how staff developed the proposed revisions to the VAVR regulation – describing the need for proposed modifications, goals and guiding principles, and the public outreach that was part of the regulatory development process.

A. Need for Proposed Modifications

The current VAVR regulation defines how a VAVR program must be operated and how emission reduction credits are quantified. The regulation does not require that a candidate vehicle's emissions be measured prior to retirement to estimate emission reduction credits. All retired vehicles are assumed to have the average emissions of its model year. The regulation includes a look up table of emission reductions by model

year based on the calendar year in which the vehicle is retired. The approach was endorsed by the Board when it adopted the regulation in 1998.

A broad range of stakeholders have expressed a strong interest in incorporating technologies such as RSD to identify the highest emitting vehicles for possible voluntary participation in retirement programs. Consistently, stakeholders have also requested that VAVR programs be permitted to generate extra emission reduction credits for retiring these high emitting vehicles.

The current regulation does not prohibit the use of RSD or other technologies to identify high emitting vehicles; it is silent on the issue. However, in practical terms, the regulation does not accommodate these approaches because it does not provide for the generation of extra emission reductions for retiring high emitting vehicles.

ARB staff agrees that revisions to the regulation are needed and is proposing to amend the VAVR regulation to authorize the use of RSD to identify high emitting vehicles and allow the generation of extra emission reduction credits for the retirement of these vehicles. Additionally, staff is proposing to allow other technologies such as high emitter profiles that can identify high emitting vehicles.

B. Goals for Proposed Regulatory Changes

In developing the proposed regulation, ARB staff focused on accomplishing four goals:

- Ensure consistency with the enabling legislation (Accelerated Light-Duty Vehicle Retirement Program, Health and Safety Code section 44100 et seq);
- Expand VAVR programs to include the use of technologies to identify high emitting vehicles for extra emission reduction credits;
- Increase flexibility to administer and operate VAVR programs while ensuring that emission reductions are real, surplus, quantifiable, and enforceable; and
- Improve the clarity and readability of the regulation.

C. Public Outreach

ARB staff conducted three workshops in support of the proposed VAVR regulatory revisions. [VAVR, 2006] In addition to addressing proposals to incorporate the identification of high emitting vehicles into VAVR programs, the workshops also addressed staff's related proposals for Carl Moyer Program Guidelines governing voluntary repair of vehicles programs. Notices of each workshop were sent to list serves established for the VAVR program and for the Carl Moyer Program. ARB also sent notices to Carl Moyer Program contacts at each local air district. In order to reach the largest audiences, workshops were webcasted when technically feasible.

Additionally, handouts and staff's presentations were made available in advance of the workshops to permit interested parties enough time to review the information.

At the first workshop in March 2006, ARB staff provided background on the rule making process, the current VAVR regulation, and the Carl Moyer Program. Staff also broadly discussed the goals of the proposed revisions and the questions which needed to be addressed. At the second workshop in June 2006, ARB presented draft regulatory and guidance concepts. During the third and final workshop held in August 2006, staff presented draft regulatory and guidance language. Staff encouraged stakeholders to provide verbal comments during each workshop and written comments after each workshop. Between each workshop, ARB staff considered the comments received and incorporated them into its proposals where appropriate.

Throughout the regulatory development process, ARB staff worked directly with stakeholders to refine its approaches and to respond to the concerns that were raised. During this process, staff met or communicated with representatives from the South Coast AQMD, San Joaquin Valley Air Pollution Control District, BAR, Specialty Equipment Market Association, the Clean Air Dialogue Working Group of the California Environmental Dialogue, Eastern Research Group, and ESP.

Not all concerns and alternative approaches proposed by stakeholders could be addressed in the regulation, as one approach sometimes was in direct opposition to another. Staff endeavored to craft a regulation that addressed as many issues as possible while retaining the goal of maintaining a balance between flexibility and the requirement that emission reductions from vehicle retirement be real, surplus, quantifiable, and enforceable.

III. Proposed Regulatory Changes

Staff's proposed changes to the regulations fall into several main categories:

- Establishing provisions for operating VAVR program that would use remote sensing or other technologies to identify high emitting vehicles for voluntarily participation.
- Revising the vehicle registration requirement from 120 days to 24 months to be consistent with State law.
- Revising the format of the emission reduction calculation for conventional VAVR programs to replace the emission reduction tables with the underlying formulas.
- Clarifying changes intended to improve the readability of the regulation and remove sections that are no longer relevant.

The proposed changes are described below along with staff's rationale for its proposals. *Appendix A contains the proposed regulation order. Appendix B provides the section by* section narrative details of the proposed changes to the regulatory language.

If the Board adopts staff's proposed changes, two types of VAVR programs would be allowed under the regulation. These are referred to in this document as "conventional VAVR programs" and "high emitter VAVR programs," respectively. Districts interesting in running VAVR programs would have the option of choosing which type of program to operate. Conventional VAVR programs are already authorized in the existing regulation and have been operated since the ARB first adopted the VAVR regulation. In these programs, any older vehicle may be retired provided it meets the minimum eligibility requirements. Emission reductions are achieved because these older vehicles, even ones that meet their Smog Check standards, emit more pollutants than the newer vehicles that replace them. Vehicles retired in these programs are typically 20 to 25 years old. A well maintained 20-25 year old vehicle emits on average 3 to 4 times as much as the average vehicle on the road.

In high emitter VAVR programs, remote sensing or other technologies are used to identify the highest emitting vehicles in the fleet for possible voluntary participation. These vehicles can have emissions more than 10 times greater than an average vehicle. By targeting only the highest emitting vehicles, the programs can achieve extra emission reductions relative to conventional VAVR programs. However, these programs are more expensive to operate. The South Coast's Light Duty Vehicle Remote Sensing, Repair, and Scrapping Program would be the first high emitter VAVR program.

A. Provisions for High Emitter VAVR Programs

ARB staff is proposing to modify the regulation to allow the optional use of remote sensing or other technologies to identify high emitting vehicles for participation in VAVR. The proposed revisions would authorize the generation of extra emission reduction credits for the retirement of vehicles identified as high emitters. Instead of providing prescriptive requirements for how high emitter VAVR programs must be run, the proposed regulation would provide a broader framework governing these programs. Because these are voluntary programs, ARB staff wanted to provide flexibility for local entities to design the programs that fit best for their local air quality problems.

The proposed regulation would not specify only one technology to identify high emitting vehicles. Instead the regulation specifies broad criteria for the approaches used to identify vehicles. They must be based on scientifically established technologies and must be able to identify the vehicles most likely to fail Smog Check. Programs could use RSD. Another approach would be using high emitting vehicle profiles. These predict the likelihood that a vehicle would fail its next Smog Checks based on parameters such as model year, vehicle make and model, and the vehicle's past Smog Check history. Staff wants to leave these decisions to those designing programs at the local level instead of prescribing one approach. This would also allow VAVR programs to evolve as new technologies become available or as current ones are refined without requiring regulatory revisions.

At the same time, safeguards must be built into the governing regulations to ensure that programs are technically sound and produce emission reductions that are real, surplus, quantifiable, and enforceable. To address this, ARB staff is proposing that a detailed plan detailing how the program would run be submitted to the ARB for approval in advance of starting a high emitter VAVR program. The proposed regulation specifies the elements that must be contained in the plan to ensure that a proposed program would be technically sound. These include, but are not limited to, descriptions of: how the high emitting vehicle VAVR program would be administered; the technology that would be used to identify high emitting vehicles; how that technology would be operated (such as standard operating procedures); and the criteria that would be used to select high emitting vehicles for voluntary participation.

The provisions for high emitter vehicle programs are contained in Sections 2608 (Emission Reduction Credits) and 2610 (Identification of High Emitting Vehicles) of the proposed regulation. See Appendices A and B for more detail.

Vehicles retired through high emitter VAVR programs would be eligible to generate extra emission reduction credits relative to those retired in conventional programs. For conventional VAVR programs, the regulation does not require that the retired vehicle's emissions be measured, so the emission reductions are based on the average emissions for each model year. A different calculation methodology is needed for high emitter VAVR programs which recognize that vehicles identified as high emitters would not have the average emissions of their model year.

VAVR program plans would need to include the calculation methodology that would be used to estimate emission benefits. ARB staff is proposing to place a recommended calculation methodology for estimating the emission reductions for high emitter VAVR programs in updates to the Carl Moyer Program Guidelines being considered concurrently with the proposed revision to the VAVR regulation. More details can be found in the ARB report, *The Carl Moyer Program Guidelines: Proposed 2006 Revision to Project Criteria for Light-Duty Vehicles,* dated October 20, 2006.

In the proposed guidelines, vehicles identified as possible high emitters would be given a confirmatory Smog Check test to establish their emissions. For the purposes of VAVR programs, a high emitting vehicle is defined as one that fails the confirmatory Smog Check test. Vehicles whose emissions are below the pass/fail Smog Check emission standard would not be considered a high emitting vehicles and would not be eligible for extra emission reductions. These vehicles could still be voluntarily retired and receive the emission reductions for conventional VAVR programs.

The proposed calculation approach provides one year of credit at the high emitter level, but the credit for remaining life would be lower, reflecting the fact that these vehicles would have failed their next Smog Check and been repaired had they remained on the road.

Although the focus of this report is the proposed revisions to the VAVR regulation, it should be noted that there is also interest in using these technologies to identify vehicles for voluntary repair programs. In its related guidelines for voluntary repair programs, ARB staff is proposing that possible high emitting be identified following the proposed provisions of the VAVR regulation.

Stakeholder input: Throughout the development of the proposed regulatory changes, stakeholders have divided into two distinct factions regarding the approaches to modifications. One faction requests that specific requirements be included in the regulations that detail how technologies must be applied. These stakeholders prefer that the regulation specify detailed parameters for the operation of RSD and that other technologies should not be allowed unless detailed parameters for their operation are specified. Further, the regulation should set strict limits on their scope of use. The other faction seeks greater flexibility in designing programs so that local concerns could be addressed. These stakeholders caution against taking "one-size-fits-all" approach.

Because these are voluntary programs and high emitter VAVR programs are still in the pilot, ARB staff wanted to provide as much flexibility as possible for local entities to design the programs that fit best for their local air quality problems and avoid being overly prescriptive. Staff recognized that specifying exactly how a program must operate might stifle these local programs' ability to evolve and to achieve real emission reductions. However, ARB staff was aware of the need to provide specific guidelines for administering and operating VAVR programs. To this end, ARB staff has provided significant flexibility in the regulation but will require that any proposed alternative approach be described in detail and technically justified in the program plan. The plan must be reviewed and approved by the ARB prior to implementing the program.

A few stakeholders have argued that high emitting vehicle retirement programs should be treated as a separate entity and that these programs fall outside the VAVR regulation. ARB staff does not agree; the enabling legislation clearly contemplates the use of technologies to identify high emitting vehicles in VAVR programs. Health and Safety Code Section 44109 states:

> The program shall include appropriate means to solicit vehicle owners, including mass mailings, media advertising, news coverage, and direct mail to owners of candidate vehicles, and may include high-emitting vehicles based on smog check or remote sensing or high-emitter profile information.

ARB staff believes that the guiding principles in the enabling legislation apply to all VAVR programs, including those aimed at retiring high emitting vehicles and that a single regulation is appropriate. The VAVR regulation contains provisions to ensure that emission reductions are real, surplus, quantifiable, and enforceable.

B. Vehicle Registration Requirement

When the VAVR regulation was first adopted in 1998, vehicles were required to have been registered for at least 24 months within the district in which the VAVR program operated. [ARB, 1998] In the 2002 regulatory revisions, this requirement was reduced from 24 months to 120 days to simplify program administration. [ARB, 2001] This change was made in error as it is in conflict with the enabling legislation for VAVR programs which specifies a 24 month registration requirement [Health and Safety Code Section 44094(a)]. Staff is proposing to return the registration requirement to 24 months, with provisions for short term lapses in registration or non operational status, matching the original requirements from the 1998 version of the regulation.

Stakeholder input: During regulatory development, some stakeholders requested that the regulation allow for the retirement of unregistered vehicles and/or tampered vehicles. ARB staff does not agree. Staff believes that including these vehicles in VAVR programs would include an unreasonable risk of fraud and that the program should not be set up to reward those who fail to comply with State laws and regulations governing vehicle registration and tampering. The enabling legislation specifically addresses this issue. Health and Safety Code Section 44106 states:

> The program shall include provisions for monitoring and preventing all forms of tampering or other forms of cheating, and shall effectively address "avoidance vehicles" such as nonregistered vehicles and vehicles lacking a sufficient inspection and maintenance history. If fraud is detected, the program shall include provisions for suspending all new transactions with the entity suspected of fraud until problems are corrected and revaluing all credits used to meet the emissions reduction requirements. Contracts with authorized entities shall include remedies in cases of fraud.

ARB staff recognizes the need to reduce emissions from all high emitting vehicles, including vehicles that have been tampered or are not registered, and staff will work with stakeholders to find the appropriate ways address these sources of emissions. However, the inclusion of unregistered vehicles or uncorrected, tampered vehicles in VAVR programs is beyond the scope and authority of this regulation.

C. *Emission Reduction Calculations for Conventional VAVR Programs*

When the Board adopted the VAVR regulation in 1998, the methodology for calculating emission reductions for conventional VAVR programs was described in the staff report. [ARB, 1998] The regulation included emission reduction look up tables based on that methodology. These tables are in Appendix B of the current VAVR regulation. The tables contain the emission reductions by model year for vehicles retired in a particular calendar year. This approach presents some challenges for program implementation moving into the future because the regulation currently only includes reduction tables for past calendar years. The tables must be recalculated for each new calendar year.

To prevent a situation where the regulation needs to be revised simply to update the emission reduction tables, ARB staff is proposing to replace the tables currently in the VAVR regulation with the underlying methodology from the 1998 staff report. This proposed change would not alter the calculation methodology. With this proposed change, the regulation would contain the formulas for calculating the emission benefits, and ARB staff would prepare a table of emission benefits for each new calendar year, and make the table publicly available via ARB's web site prior to the start of the calendar year. This would provide a central location for all districts, VAVR enterprise operators, and other stakeholders to find the emission benefits tables.

Table B-1 in Appendix B of this report presents the emission reductions for vehicles retired calendar years 2007 and 2008, calculated using the methodology outlined in the proposed regulation.

D. Additional Clarifying Changes

ARB staff is proposing to reorganize some of regulatory language to clarify and improve the readability of the regulation. Each of these proposed changes is described in greater detail in Appendix B to this report.

The proposed changes would reorder certain text within the regulation in order to consolidate related requirements and responsibilities. For example, Section 2609 of the regulation contains records and auditing provisions. Staff felt that some of the text within that section fit better under the Section 2602 (District Responsibility) or Section 2604 (Enterprise Operator Requirements) of the regulation because it related more directly to the responsibilities of air districts or VAVR enterprise operators. Staff is proposing to deleted that text from Section 2609 and move it to Sections 2602 and 2604.

Staff is also proposing minor spelling, grammatical, and organizational alterations throughout the regulation to improve clarity and internal consistency. For example, certain terms that do not appear in the regulation would be removed from the definitions section, and the definitions would be reordered to appear in alphabetical order. With the reordering of the text, the appendices to the regulation would appear in different order in the regulatory text, so staff is proposing to reorder the appendices to the regulation accordingly.

ARB staff is also proposing to remove two sections of the regulation that are no longer applicable. Section 2610 (Pilot Program) specifies the requirements for a pilot program conducted in 1998 and 1999. Because the pilot program has been completed, the section is no longer needed. Under staff's proposal, Section 2610 (Pilot Program) would be deleted in its entirety. A proposed new Section 2610 (Identification of High Emitting Vehicles) would contain the provisions governing high emitter VAVR programs described earlier in this report.

Section 2611 (Procurement of Credits for SIP Measure M1) specifies procedures for procuring emission credits to fulfill the car scrap measure in the 1994 SIP. Because funding never materialize for the measure and it has subsequently been removed from the SIP, the section is no longer needed in the regulation. Under staff's proposal, Section 2611 (Procurement of Credits for SIP Measure M1) would be deleted.

Staff is also proposing to revise Appendix A to the regulation, the Vehicle Functional and Equipment Eligibility Inspection Form. This form is used to document that vehicles have been inspected and comply with the vehicle eligibility requirements in Section 2603. When the regulation was last revised in 2002, some of the vehicle eligibility requirements were changed. However, the Vehicle Functional and Equipment Eligibility Inspection Form in Appendix A of the regulation was not updated to match the revised regulatory requirements. These proposed changes would update the form, so it reflects the requirements of Section 2603.

IV. Environmental and Economic Impacts

A. Air Quality

Emission reductions from retiring vehicles are real in that the regulation ensures vehicles are retired early. In addition, safeguards have also been included in the regulation to ensure emission reductions are surplus to BAR's Consumer Assistance Program. Vehicle retirement programs in California are strictly voluntary. The proposed regulatory changes do not require anyone to retire their vehicles and do not require any districts or enterprise operators to run VAVR programs. However, the proposed changes provide additional flexibility in designing programs in response to stakeholder interest in expanding VAVR opportunities. Consequently, we expect the proposed changes would lead to an expansion of VAVR programs in California which would result in additional emission benefits.

The number of VAVR programs and the number of vehicle owners who take advantage of these new opportunities to voluntarily retire their vehicles are not known at this time, so staff cannot estimate the exact air quality benefits. However, staff believes that real and surplus emission reductions of ROG, NOx, and PM will result from the expanded VAVR programs.

To provide an illustration of the magnitude of potential benefits, ARB staff has estimated the emission reductions that might be achieved in a high emitter VAVR program relative to a conventional VAVR program. Typical vehicles retired in conventional programs are between 20 and 25 years old. ARB staff used the emission reductions from retiring 22 year old vehicles (model year 1985 vehicles retired in 2007) shown in Table B-1 in Appendix B to provide an example of the benefits from a conventional program. The emission benefits of retiring 1,000 of these vehicles is shown in Table 2.

Without any "real world" data from high emitter programs, it is more of a challenge to estimate the benefits from these programs because staff does not yet know exactly how

high emitting the vehicles retired will be. To provide an order of magnitude estimate, ARB staff assumed a retired vehicle might be a model year 1985 vehicle with emissions at five times the Smog Check pass/fail emission standard concentrations. ARB staff used the calculation methodology from *The Carl Moyer Program Guidelines: Proposed 2006 Revision to Project Criteria for Light-Duty Vehicles* to estimate the emission reductions from retiring such a vehicle. This methodology accounts for the benefits of the Smog Check program to avoid double counting benefits. This example does not include any extra emission reductions from retiring vehicles which are high evaporative emitters. The emission benefits of retiring 1,000 of these high emitting vehicles is shown in Table 2.

Table 2
Comparison of Sample High Emitter and Conventional VAVR Programs

	ROG Benefits (total tons over 3 years)*	**NOx Benefits** (total tons over 3 years)*
Conventional VAVR Retirement of 1,000 average model year 1985 vehicles	46	29
High Emitter VAVR Retirement of 1,000 high emitting model year 1985 vehicles	110	67

*Credit life for VAVR is 3 years.

In the example shown, the benefits from the high emitter program are about two and a half times that of the conventional program. Some vehicle may be even higher emitting than this example and provide more reductions if retired; others may provide less. As noted in the section on the South Coast AQMD's high emitter retirement and repair program, the District will incorporate evaporative emission measurements into the program. This may provide even greater emission reductions than shown in this example. Once the South Coast program is up and running, staff should be able to provide a better comparison of the emission benefits of conventional and high emitter VAVR programs.

B. Economic

All VAVR programs are voluntary for air districts, businesses, and vehicle owners, and a positive economical impact is created. Vehicle owners and businesses will not participate in VAVR programs if it is not economically beneficial. Businesses including auto dismantlers and companies that operate equipment that identify potential high emitting vehicles that participate in VAVR programs will see an increase in business. Potentially, a low number of new jobs may be created due to this increase. Owners of older, more polluting vehicles will benefit in that a new market will be created for their vehicles. An eligible vehicle with a useful life that may have had little resale value would have a cash value as a result of the vehicle's retirement. In turn, newer vehicles may be purchased in part by the incentive received from retiring a vehicle. Individuals and

businesses selling the newer vehicles may benefit slightly by an expanded market for their vehicles.

Businesses that participate in VAVR programs in which marketable mobile source emission reduction credits are generated will benefit by the marketing and sale of these credits. Businesses that purchase these credits may benefit by delaying more costly capital expenditures for air pollution control equipment.

C. Environmental Justice

The ARB is committed to integrating environmental justice in all of its activities. On December 13, 2001, the Board approved "Policies and Actions for Environmental Justice," which formally established a framework for incorporating Environmental Justice into the ARB's programs, consistent with the directives of State law. Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. These policies apply to all communities in California, but recognize that environmental justice issues have been raised more in the context of low-income and minority communities.

The proposed regulatory changes are consistent with the ARB's environmental justice policy. ARB staff has encouraged those who administer and/or operate VAVR programs to consider including safeguards in VAVR programs to ensure that those who are economically challenged are encouraged to participate. As the environmental justice challenges can be unique, depending on location within the state, ARB staff is proposing to allow a great deal of flexibility and allow environmental justice issues to be addressed taking local concerns into consideration, but all VAVR program plans must include a description of how environmental justice issues will be addressed.

V. Alternatives

Staff has considered alternatives to the proposed VAVR regulation. The first alternative is to make no changes. If this alternative was chosen, remote sensing devices and other technologies could still be used to identify high emitting vehicles. Nothing in the current regulation prevents the use of these technologies. However, the current regulation does not authorize the generation of extra emission reduction credits, so districts or enterprise operators would not be able to claim the actual emission reductions achieved. This would stifle the development of these programs by making it difficult, if not impossible, to show that they are cost-effective. The extra expense of operating a program to identify high emitting vehicles could not be offset with an accurate reflection of the corresponding additional reduction in emissions. In addition, if there were no revisions to the current regulation, the regulation would not be consistent with the requirements of the authorizing legislation with respect to vehicle registration requirements.

ARB staff also considered more prescriptive requirements that would limit the application of technologies to identify potential high emitting vehicles and to mandate how emissions were to be calculated. This approach would be contrary to many of the stakeholders' interests but consistent with the wishes of some. Staff concluded that, because VAVR programs are strictly voluntary and that detailed plans are required before a high emitting vehicle VAVR program can be implemented, enough safeguards were in place to allow a degree of flexibility. In this way, local concerns regarding the type of technology that could be used and the best methods for calculating emission reductions could be addressed in proposed VAVR program plans.

Ultimately, ARB staff chose a balance between flexibility and providing specific requirement on the administration and operation of VAVR programs. It was staff's belief that this approach provided the greatest potential for emission reductions and provided safeguards to ensure that these reductions were real, surplus, quantifiable, and enforceable.

VI. Conclusions and Recommendation

The proposed changes to the VAVR regulation expand the opportunities to reduce air pollution from the retirement of a wider range of older, more polluting vehicles and from high emitting vehicles. Additionally, the proposed changes provide the flexibility requested by some stakeholders and increases the safeguards requested by others to ensure that programs are administered and operated in an effective manner and that emission reductions are real, surplus, quantifiable, and enforceable.

ARB staff recommends that the Board adopt the proposed changes to the VAVR regulation.

VII. References

1. ARB, 1998. Air Resources Board, Proposed Regulations for Voluntary Accelerated Light-Duty Vehicle Retirement Enterprises, October 23, 1998. [http://www.arb.ca.gov/regact/scrap/isor.pdf]

2. ARB, 2001. Air Resources Board, Proposed Amendments to Air Resources Board Voluntary Accelerated Vehicle Retirement Regulations – Minimize the Differences Between ARB and BAR VAVR Regulation and Allow Parts Recycling and Resale of Non-Emission-Related and Non-Drive Train Parts, November 30, 2001. [http://www.arb.ca.gov/regact/vavr/isor.pdf]

3. ARB, 2004. Air Resources Board, Report to the California Legislature: Accelerated Light-Duty Vehicle Retirement Program, July 2004.

4. ARB, 2006. Air Resources Board, The Carl Moyer Program Guidelines: Approved Revision 2005, January 6, 2006.

5. BAR, 2003. Smog Check Program Fact Sheet, Remote Sensing Devices Fact Sheet, Bureau of Automotive Repair, November 2003.

6. BAR, 2006. Smog Check Program Fact Sheet, Consumer Assistance Program, Bureau of Automotive Repair, August 2006.

7. Bishop & Stedman, 2006. On-Road Remote Sensing of Automobile Emissions in west Los Angeles: Year 4, October 2005, University of Denver, April 2006

8. ESP, 2003. Virginia Remote Sensing Device Study – Final Report, Virginia Department of Environmental Quality, ESP, February 2003

9. Lawson, 1996. Program for the Use of Remote Sensing Devices to Detect High-Emitting Vehicles, Final Report, Desert Research Institute, April 16, 1996.

10. Sierra Research, 2000. Sierra Research, Operation of a Pilot Program for Voluntary Accelerated Retirement of Light-Duty Vehicles in the South Coast Air Basin, prepared for Air Resources Board, September 22, 2000.

11. VAVR, 2006. Voluntary Accelerated Vehicle Retirement Programs, August 21, 2006, http://www.arb.ca.gov/msprog/avrp/avrp.htm.

12. Wenzel, 2005. Use of California Remote Sensing Pilot Project data for on-road fleet and emissions characterization, and evaluation of the Enhanced Smog Check program, Tom Wenzel, Easter Research Group, September 2005.

Appendix A:

Proposed Regulation Order

PROPOSED REGULATION ORDER: VOLUNTARY ACCELERATED LIGHT-DUTY VEHICLE RETIREMENT ENTERPRISES

Amend the following sections existing Sections 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610 and 2611 within Chapter 13 – Voluntary Accelerated Vehicle Retirement Enterprises, Article 1 – Voluntary Accelerated Light-Duty Vehicle Retirement Enterprises, title 13, California Code of Regulations (CCR) to read as follows:

Title 13, California Code of Regulations, Chapter 13, Article 1, Sections 2601 – 2610~~1~~

Section 2601 - Definitions

Section 2602 - District Responsibility

Section 2603 - Vehicle Eligibility

Section 2604 - ~~Voluntary Accelerated Vehicle Retirement~~ Enterprise Operator Requirements

Section 2605 - Offering Vehicles to the Public

Section 2606 - Parts Recycling and Resale

Section 2607 - Advertising

Section 2608 - Emission Reduction Credits

Section 2609 - Records~~,~~ and Auditing~~, and Enforcement~~

Section 2610 - ~~Pilot Program~~Identification of High Emitting Vehicles

~~Section 2611 Procurement of Credits for SIP Measure M1~~

Appendix A ~~to Article 1~~ ~~Certification of~~ Vehicle Functional and Equipment Eligibility Inspection Form

Appendix B ~~to Article 1~~ ~~Voluntary Accelerated Light-Duty Vehicle Retirement Program Emission Reductions~~Emission/Drive Train-Related Parts List

Appendix C ~~to Article 1~~ ~~Emission/Drive Train-Related Parts List~~Quality Control Checklist

Appendix D ~~to Article 1~~ ~~Quality Control Checklist~~Calculation of Default Emission Reductions

Title 13, California Code of Regulations
Division 3, Air Resources Board
Chapter 13, Voluntary Accelerated Vehicle Retirement Enterprises
Article 1, Voluntary Accelerated Light-Duty Vehicle Retirement Enterprises

§2601 Definitions:
(a) "voluntary accelerated vehicle retirement" ("VAVR") means the use of cash payments or other incentives to encourage a vehicle owner to voluntarily retire his or her vehicle from service earlier than otherwise would have occurred;
(b) "Inspection and Maintenance Program" ("I/M") or "Smog Check" means the motor vehicle inspection program established by the Health and Safety Code section 44000, et seq.;
(c) "enterprise operator" means a person who conducts a voluntary accelerated vehicle retirement enterprise according to these regulations. The enterprise operator purchases vehicles, arranges for a vehicle's permanent removal from operation, and receives any emission reduction credit generated thereby;
(d) "dismantler" means the person or business, defined and licensed according to the requirements of the California Vehicle Code §220, §221, §11500, et seq., and other business codes and the regulations of the Department of Motor Vehicles, who dismantles or otherwise removes from service those vehicles obtained as part of a voluntary accelerated vehicle retirement enterprise;
(e) "emission reduction credit" means a credit representing the amount of emission reductions from accelerated retirement of vehicles, which can be applied to the *emission reduction obligations of another source or to air quality attainment goals.* VAVR enterprises can generate emission reduction credits that may be sold on the open market;
(f) "pilot program" means a limited VAVR enterprise to be conducted under contract to the Air Resources Board ("ARB" or "Board"), *to be completed no later than two (2) years* following adoption of these regulations, with the intent of assessing the effectiveness of such enterprises and of these regulations;
(g) "SIP" means the State Implementation Plan for ozone attainment, approved by the Board in 1994 and as subsequently amended;
(h) "measure M1" means the mobile source control measure of the SIP that calls for utilizing VAVR enterprises in the South Coast Air Basin for the purpose of achieving needed emission reductions;
(i) "NOx" means oxides of nitrogen, NO and NO2, measured as NO2, emitted in automotive exhaust;
(j) "CO" means carbon monoxide, as emitted in automotive exhaust;
(k) "PM" means *particulate matter, as emitted in automotive exhaust;*
(l) "ROG" means reactive organic gases, as emitted in both automotive exhaust and evaporative emissions;
(m) "district" means local air quality management district or air pollution control district that has responsibility for administering VAVR enterprises within its jurisdiction;
(n) "Executive Officer" means the Executive Officer of the Air Resources Board;

~~(o) "collector-interest vehicle" means any vehicle purchased by a car collector or car enthusiast primarily for its historic or esthetic value, rather than primarily as a means of transportation;~~
~~(p) "gross polluter" means a vehicle failing required emissions testing with emission levels in the gross polluter category, and which has not been repaired and subsequently retested to show its emission levels have been brought into compliance. This includes vehicles registered and operating under the authority of a repair cost waiver or economic hardship extension;~~
~~(q) "high emitter" means a vehicle failing required emissions testing with emission levels in the high emitter category, and which has not been repaired and subsequently retested to show its emission levels have been brought into compliance. This includes vehicles registered and operating under the authority of a repair cost waiver or economic hardship extension;~~
~~(r) "emissions related part" means any automotive part, which affects any regulated emissions from a motor vehicle that is subject to California or federal emissions standards. This includes, but is not limited to, those parts specified in the "Emissions-Related Parts List," adopted by the State Board on November 4, 1977, as last amended June 1, 1990.~~
~~(s) "drive train parts" are all parts associated with the drive train such as engine, drive mechanism, transmission, differential, axles and brakes.~~
"CO" means carbon monoxide, as emitted in vehicle exhaust.
(b) "Collector-interest vehicle" means any vehicle purchased by a collector or enthusiast primarily for its historic or esthetic value, rather than primarily as a means of transportation.
(c) "Day" means any week or weekend day including all holidays.
(d) "Dismantle" means to punch, crush, stamp, hammer, shred, or otherwise render permanently and irreversibly incapable of functioning as originally intended, any vehicle or vehicle part.
(e) "Dismantler" means the person or business, defined and licensed according to the requirements of California Vehicle Code §220, §221, §11500, et seq., and other business codes and the regulations of the Department of Motor Vehicles (DMV), who dismantles or otherwise removes from service those vehicles obtained as part of a Voluntary Accelerated Vehicle Retirement (VAVR) enterprise.
(f) "District" means a local air quality management district or air pollution control district, as defined by California Health and Safety Code, Part 3, Section 40000 et seq., that has responsibility for administering VAVR enterprises within its jurisdiction.
(g) "Drive train parts" means all parts associated with the drive train such as engine, drive mechanism, transmission, differential, axles and brakes.
(h) "Emission reduction credit" means the amount of emission reductions from the accelerated retirement of vehicles, that can be applied to the emission reduction obligations of another source or to air quality attainment goals.
(i) "Emissions-related part" means any vehicle part which affects any regulated emissions from a vehicle that is subject to California or federal emissions standards and includes, but is not limited to, those parts specified in the "Emissions-Related Parts List," adopted by the State Board on November 4, 1977, as last amended.

(j) "Enterprise operator" means a person, who conducts a voluntary accelerated vehicle retirement enterprise according to these regulations, purchases vehicles, arranges for a vehicle's permanent removal from operation, and receives any emission reduction credit generated.
(k) "Executive Officer" means the Executive Officer of the Air Resources Board (ARB).
(l) "High Emitting Vehicle" means a vehicle that is identified as one that is emitting pollution in excess of emission standards pursuant to Title 16, Division 33, Article 5.5, Section 3340.42 of the California Code of Regulations.
(m) "NOx" means oxides of nitrogen, NO and NO2, measured as NO2, emitted in vehicle exhaust.
(n) "PM" means particulate matter, as emitted in vehicle exhaust.
(o) "Remote sensing device (RSD)" means a device or devices that measure one or any combination of CO, NOx, and ROG concentrations in the exhaust of an on-road vehicle through infrared, ultraviolet, or other ARB-approved technology.
(p) "ROG" means reactive organic gases, as emitted in both vehicle exhaust and evaporative emissions.
(q) "Smog Check" means the motor vehicle inspection and maintenance program established by California Health and Safety Code Section 44000, et seq.
(r) "Useful life" means the physical condition of a vehicle proposed for retirement such that the vehicle passes the functional and equipment eligibility inspections, as defined in Section 2603 of this regulation, and has passed the last scheduled Smog Check.
(s) "VAVR enterprise" means a privately owned and/or operated business by an enterprise operator.
(t) "Voluntary accelerated vehicle retirement" or "VAVR" means a program in which cash payments or other incentives are offered to a vehicle owner to voluntarily retire their older, more polluting vehicle that is operational and still has a useful life.

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44081, 44090, 44100, 44101, 44102, 44103, 44105 and 44122, Health and Safety Code.

§2602 District Responsibility
(a) Within six (6) months of the date of adoption of these regulations, each district allowing the operation of VAVR enterprises ~~within its jurisdiction~~ shall implement and enforce these regulations~~;~~.
(b) ~~All operators of VAVR enterprises shall comply with district rules and these regulations;~~
~~(c)~~ Each participating district shall ~~have responsibility~~, with ARB oversight:~~;~~
(1) A~~for~~ administering and auditing VAVR enterprises ~~conducted within its jurisdiction~~;
(2) Administer and monitor the use of credits generated by VAVR enterprises operated under these regulations
~~(d)~~ In accordance with all state, federal, and local laws, rules, and regulations;~~;~~

(3)~~each participating district shall administer and monitor the use of credits generated by enterprises operated under these regulations and shall, with ARB oversight, c~~Certify or reject the accuracy and validity of any credits generated, as required; and
(4) ~~Each participating district will r~~Retain the records received according to Section~~subparagraphs~~ §26089(b~~a~~)(2) ~~and (3)~~ for a period not less than the life of the related credits~~;~~.
(c~~e~~) Each participating district shall ~~be responsible for~~ verify~~ing~~ that any vehicle accepted for participation in a VAVR enterprise within sixty-one to ninety (61 - 90) days of its next required Smog Check inspection has not failed the Smog Check inspection during this time frame.
(d) District approval to generate emission reduction credits shall be revoked if a VAVR enterprise operator demonstrates a recurrent pattern of accepting vehicles that do not meet the eligibility requirements pursuant to Section 2603 or if a VAVR enterprise operator violates any part of Section 2609(a).

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100 and 44101, Health and Safety Code.

§2603 Vehicle Eligibility
(a) To be eligible for generation of emission reduction credits through a VAVR enterprise, a vehicle shall meet the following criteria:
(1) It shall be voluntarily sold to the enterprise operator for a price mutually agreed between the vehicle seller and the enterprise operator;
(2) It shall be currently registered with the ~~Department of Motor Vehicles~~ as an operable vehicle~~,~~ and shall have been so registered for at least 24 months~~120 days~~ prior to the final date of sale to the VAVR enterprise~~,~~ to an address or addresses within the district in which the VAVR enterprise is being operated~~.~~;
(A) Smog Checks must have been performed as required by the ~~Department of Motor Vehicles~~ in order for the vehicle to be considered registered;
~~(A) If a vehicle owner has sold a vehicle to an enterprise operator within the previous twelve (12) months, any subsequent vehicles offered to the same enterprise operator must have been registered continuously to that owner for the previous twenty-four (24) month period, in addition to meeting all other requirements of this section;~~
(B) A vehicle may also be eligible if the owner of the vehicle placed the vehicle in planned non-operational status per Vehicle Code Section 4604, et seq., for a total of two (2) or fewer months during the continuous twenty-four (24) months registration period and occurring at least three (3) months prior to the date of sale to the VAVR enterprise operator;
(C) A vehicle may also be eligible if the registration has lapsed for less than 181 days during the previous twenty-four (24) months and all appropriate registration fees and late penalties have been paid to the DMV, provided that the vehicle is registered for at least ninety (90) days immediately prior to its date of sale to a VAVR enterprise operator; and
(D~~B~~) Determination of an individual vehicle's registration history shall be based on:

1. ~~r~~Registration data for that vehicle obtained from ~~Department of Motor Vehicles~~ records and
2. If ~~(A)~~D.1 provides inconclusive results for an individual vehicle, then copies of the applicable vehicle registration certificates may be used;
(3) It shall be a passenger car or a light-duty truck that includes, but is not limited to, a pick-up truck, sports utility vehicle (SUV), or van up to 8,500 pounds gross vehicular weight rating;
(4) ~~It shall be driven to the purchase site under its own power;~~
~~(5)~~ It shall not be operating under a Smog Check repair cost waiver or economic hardship extension;
(5~~6~~) If a vehicle volunteered for retirement is within sixty (60) days of its next required Smog Check inspection, ~~the following criteria must be met~~:
~~(A) The~~ vehicle shall pass the Smog Check inspection without receiving a repair cost waiver or economic hardship extension prior to acceptance by a VAVR enterprise operator;
(6~~B~~) Owners of vehicles requiring Smog Check inspections pursuant to Section~~§~~ 2603(a)(6~~5~~) shall be required to submit documentation issued by a Bureau of Automotive Repair (BAR) licensed Smog Check technician~~station~~ demonstrating compliance with Section~~§~~ 2603(a)(5~~6~~)~~(A). The documentation shall be submitted~~ to the person performing the functional and equipment eligibility inspection ~~pursuant to §2603(b).~~; and
(7) Vehicles that are tampered, pursuant to Section 3340.41.5 of Title 16, Division 33, Article 5.5 of the California Code of Regulations, shall not be eligible for acceptance into a VAVR program.
(b) Each vehicle shall pass a functional and equipment eligibility inspection performed by the VAVR enterprise operator or other ARB-approved inspector (inspector), conducted on-site at the VAVR enterprise location and. ~~The following elements~~ shall ~~be~~ included ~~in~~ the following~~inspection~~:
(1) The candidate vehicle must have been driven to the inspection site under its own power. If an inspector has knowledge that a vehicle was towed or pushed for any portion of the trip to the inspection site, then the inspector shall not approve the vehicle for eligibility in a VAVR program;
(2) The inspector shall inspect the vehicle to ensure it meets the following equipment eligibility requirements and shall reject the vehicle for emission reduction credit generation if the vehicle fails any of these requirements:~~;~~
(A) All doors shall be present and in place~~.~~;
(B) The hood shall be present and in place;
(C) The dashboard shall be in place;
(D) Windshield shall be present and in place;
(E) The driver's seat must be present and in place;
(F) Interior pedals shall be operational;
(G) One bumper and all side and/or quarter panels shall be present and in place;~~.~~
(H) Vehicle driveability must not be affected by any body, steering, or suspension damage;~~.~~
(I) Exhaust system shall be present and in place;~~.~~
(J~~H~~) One headlight, one taillight, and one brake light shall be present and in place;

(K~~I~~) One side window glass shall be present and in place; and
(L~~J~~)The requirements of Section§ 2603(a)~~(5) and §2603(a)(6)~~ regarding Smog Check status have been met; and
(3) The inspector shall complete the following functional eligibility inspection~~,~~ and shall reject the vehicle for credit generation if the vehicle fails to complete the following test: Insert key, vehicle engine shall start using keyed ignition system. In addition to the keyed ignition switch, ignition or fuel kill switch may be activated if required to start engine. The vehicle must start readily through ordinary means without the use of starting fluids or external booster batteries. The vehicle shall be driven forward for a minimum of 25 feet under its own power. The vehicle shall be driven in reverse for a minimum of 25 feet under its own power;
(4) Upon satisfactory completion of the inspection, the inspector shallwill issue a certificate of functional and equipment eligibility~~.~~, as specified in Appendix A to this Article,
~~(A) master copy of the certificate of functional and equipment eligibility is included in the document~~ "~~Voluntary Accelerated~~ Vehicle ~~Retirement Certificate of~~ Functional and Equipment Eligibility Inspection Form"~~, as specified in Appendix A to this Article 1~~;
(5) Vehicles failing the requirements pursuant to Section §2603(b)(~~1~~2) ~~and §2603(b)~~(3), may be re-tested by the inspector for compliance with these requirements and issued a certificate of ~~functional and~~ equipment eligibility at any time after modifications have been made to the vehicle to correct all deficiencies ~~provided the vehicle has traveled a minimum of 50 miles subsequent to the failure determination. Vehicles with inoperable vehicle odometers must be fixed prior to conducting this test.~~; and
(6) Vehicles failing the requirements pursuant to Sections §2603(b)(12) *and (3) may* be re-tested by the inspector for compliance with these requirements and issued a certificate of functional ~~and equipment~~ eligibility provided inoperable vehicle odometers are fixed prior to conducting this test, the vehicle has traveled a minimum of 50 miles subsequent to the failure determination, and the vehicle passes the functional eligibility inspection ~~at any time after modifications have been made to the vehicle;~~.
(c) Districts may adopt vehicle functional and equipment eligibility inspection requirements that are more stringent than those specified in Section §2603(b) but. ~~In doing so, districts~~ may not omit or weaken any of the required functional or equipment ~~tests; they may only add additional tests or adopt a more stringent version of a specified test~~.

NOTE: Authority cited: Sections 39600, 39601, 44101, and 44102, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44102, 44103 and 44107, Health and Safety Code.

§2604 VAVR Enterprise Operator Requirements
(a) All owners and operators of VAVR enterprises shall comply with all applicable district rules and these regulations.
(b) The enterprise operator shall either:

(1) Bbe an auto dismantler, licensed according to the requirements of the California Vehicle Code and other business codes and the regulations of the ~~Department of Motor Vehicles~~, for the purpose of vehicle disposal after purchase~~,~~ or~~:~~
(2) Hhave a binding agreement with a duly authorized auto dismantler~~,~~ for the purpose of vehicle disposal after purchase.~~;~~
(c~~b~~) At least thirty (30) days prior to commencing operations as a ~~VAVRvoluntary accelerated vehicle retirement~~ enterprise operationer~~,~~ the operator shall notify the local district, in writing, of the intent to conduct such operations;
(1) The notification shall be submitted as~~on forms~~ specified by the~~a~~ district and shall contain information demonstrating the ability of the enterprise operator to comply with all provisions of this regulation~~rule~~;~~,~~
(2) This information shall include, but is not limited to, enterprise operator name and business address, licensed auto dismantler name and business address, anticipated initiation date and duration of vehicle retirement operation, ~~and~~ time of vehicle intake;~~,~~ and
(3) The auto dismantler shall include a written statement ~~from the auto dismantler~~ under penalty of perjury certifying compliance with:
(A) Llocal water conservation regulations;~~,~~
(B) Sstate, county, and city energy and hazardous materials response regulations;~~, and~~
(C) Llocal water agency soil, surface, and ground water contamination regulations;~~,~~ and
(D) Aany other information requested in applicable district rules.~~;~~
(d~~2~~) The local district shall have the right to refuse permission to generate emission reduction credits through VAVR~~voluntary accelerated vehicle retirement~~ to any requesting enterprise operator deemed by the local district as not meeting the requirements of these regulations or any applicable district rules.~~;~~
(e~~3~~) The district may assess an application fee to cover the costs of this approval process.~~;~~
(f~~e~~) The enterprise operator shall ~~be required to~~ contract with an ARB-approved inspection entity~~,~~ to provide inspector services to perform the vehicle functional and equipment eligibility inspection specified in section Section §2603(b) on-site at VAVR enterprise locations, if the VAVR enterprise operator is unable to or chooses not to perform this function.~~;~~
(g~~d~~) For eacha vehicle purchased as part of a VAVR enterprise and whose accelerated retirement creates emission reductions to be used as the basis for generating emission reduction credits, the enterprise operator shall:
(1) Vverify that the vehicle meets the vehicle registration eligibility requirements of Section §2603(a)~~(2)~~; and
(2) Oobtain from the vehicle owner the certificate of functional and equipment eligibility issued per Section §2603(b).~~;~~
(h~~e~~) At time of final sale of a vehicle to the VAVR enterprise, the enterprise operator shall verify that the person delivering the vehicle for sale is the legal owner or an authorized representative of the legal owner, properly empowered to complete the sale.~~;~~
(i~~f~~) The enterprise operator shall provide to the district, by the 5th day of each month, a list of all vehicles accepted for participation into a VAVR enterprise that are within sixty-one to ninety days (61-90) of their next required Smog Check inspection for the purpose of district compliance with Section §2602(c~~e~~). Information to be provided for each

vehicle includes, but is not limited to, vehicle identification number (VIN); vehicle license plate number; and vehicle make, model, and model year.;
(j) Violation of any provision of these regulations by any entity contracted to a district to conduct a VAVR enterprise, including falsification of any information or data, shall constitute a citable violation making the violator subject to all applicable penalties specified in the California Health and Safety Code.
(k) Violation of any provision of Section 2603 by a VAVR enterprise operator or its subcontractors shall result in the issuance of a Notice of Violation(s).

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44102, 44103, 44105, 44107 and 44120 Health and Safety Code.

§2605 Offering Vehicles to the Public
(a) There shall be a minimum period of ten (10) days between the day the VAVR enterprise operator provides a description of a vehicle to the local district and the day a ~~Department of Motor Vehicles~~ Registration 42 form (Notice to Dismantler) is transmitted to the ~~Department of Motor Vehicles~~ for the vehicle. During this period, if any person contacts the enterprise operator and indicates an interest in purchasing the vehicle, the enterprise operator shall hold the vehicle for a minimum of an additional seven (7) days. During this extended waiting period, the enterprise operator shall arrange for the interested party to examine the vehicle and, if appropriate, negotiate the sale of the vehicle or any of its parts. Notwithstanding the foregoing, nothing in this section places the enterprise operator under any obligation to hold the vehicle for an interested party that has missed two or more prior appointments to examine any vehicle, or sell the vehicle or any of its parts if a mutually acceptable price cannot be negotiated.
(1)The enterprise operator will submit to the local district a description of the vehicle including, at a minimum, the vehicle make, model year, and first eight characters of the VIN. The district will, in turn, make this information available to an appropriate segment of the public. The intent is to allow interested third parties, including car collector enthusiasts and those interested in affordable transportation, an opportunity to examine the car and to negotiate with the enterprise operator the purchase of the vehicle or any of its parts according to ~~Title 13, California Code of Regulations, Chapter 13, Article 1,~~ Section 2606.
(2) Entire vehicles and/or parts may be sold prior to entry into the program; however, no emission reduction credits shall be granted for any vehicle resold to the public in this manner according to ~~Title 13, California Code of Regulations, Chapter 13, Article 1,~~ Section 2606.

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44102, 44103, 44105, 44107, 44109 and 44120, Health and Safety Code.

§2606 Parts Recycling and Resale

(a) On vehicles used for the generation of emission reduction credits, parts recycling and resale is limited to non-emission-related and non-drive train parts per the List of Emission-Drive Train Related Parts List shown in Appendix BC to Article 1 – Emission/Drive Train-Related Parts List;
(1) Parts recycling is at the sole discretion of the VAVR enterprise operator, subject to the limitations included herein.;
(b) After the ten-day waiting period (and additional seven-days if appointment for inspection is made) and prior to offering non-emission and non-drive train parts for resale, the engine, emission-related parts, transmission, and drive train parts must be removed from a vehicle used for the generation of emission reduction credits and destroyed by the enterprise operator, or the enterprise operator's duly contracted dismantler:
(1) For the purpose of this regulation, a part will be considered destroyed when it has been punched, crushed, shredded or otherwise rendered permanently and irreversibly incapable of functioning as originally intended;
(2) A checklist is provided in Appendix CD to Article 1 – Quality Control Checklist with a list of emission-related and drive train parts ~~that has check boxes for recording the status of parts, i.e., "removed" and "destroyed";~~
~~(A) The VAVR Enterprise Operator must complete the checklist by adding check marks in the appropriate columns as the emission-related and drive train parts are removed and destroyed;~~
~~(B) For a part that appears on the checklist, but is not in the original design of the vehicle, the VAVR Enterprise Operator must enter "N/A" for "not applicable" in lieu of a check mark~~;
(3) After all emission-related and drive train parts are removed and destroyed, a quality control inspector (designated by the VAVR eEnterprise oOperator) must perform an inspection of the non-emission-related and non-drive train parts as well as the vehicle body;
(4) Upon verification by the quality control inspector that no emission-related parts or drive train parts have been exchanged with the non-emission-related, and non-drive train parts, the quality control inspector must sign the checklist; and
(5) After the quality control inspector signs the check list, the dismantler may place the remaining non-emission parts, non-drive train parts and vehicle body in yard to be available for sale to public;.
(c) If the VAVR eEnterprise oOperator does not recover parts from a vehicle, then the entire vehicle must be dismantled~~crushed~~ within 90 days of acquisition by the operator;
(1) No parts may be removed, for sale or reuse, from any dismantled, ~~crushed~~ retired vehicle for the purpose of generating emission reduction credits. The only allowable use for any ~~crushed~~ retired vehicle is as a source of scrap metal and other scrap material;
(2) An enterprise operator may separate ferrous and non-ferrous metals from a dismantled~~crushed~~ retired vehicle to sell as a source of scrap metal only; and
(3) An enterprise operator may sell tires and batteries from a dismantled~~crushed~~ retired vehicle to an intermediary tire/battery recycler only.
(A) All facilities generating or receiving waste tires must use the services of a registered tire hauler/recycler and.

(B) Battery recyclers must be registered and licensed by the State of California to handle batteries.;
(d) No emission reduction credits or other compensation with public funds shall be granted for any vehicle from which emission-related or drive train parts have been sold.;
(e) All activities associated with retiring vehicles, including but not limited to the disposal of vehicle fluids and vehicle components, shall comply with:
(1) Llocal water conservation regulations;,
(2) Sstate, county, and city energy and hazardous materials response regulations;, and
(3) Llocal water agency soil, surface, and ground water contamination regulations;.
(f) Local districts are required to perform audits of all parts recycling and resale activities.;

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44102, 44103, 44105, 44107 and 44120 Health and Safety Code.

§2607 Advertising
(a) Any advertising conducted by an enterprise operator for the purpose of recruiting vehicle owners to sell their cars into a VAVR enterprise shall not contain any language stating that the VAVR enterprise is anything but voluntary for the consumer or that the VAVR enterprise is affiliated with or is operated by the State of California;
(1) Any contracts or agreements between a vehicle seller and an enterprise operator relating to the sale of a vehicle to a VAVR enterprise shall not contain any language stating that the VAVR enterprise is anything but voluntary for the consumer or that the VAVR enterprise is affiliated with or is operated by the State of California.;
(b) Any enterprise operator requesting the Department of Motor Vehicles to send notices to vehicle owners as prospective VAVR participants, pursuant to Health and Safety Code Section §44103, shall meet the following requirements:
(1) Prominently display the disclaimer statement as follows: "This voluntary accelerated vehicle retirement enterprise is conducted by a private operator under the auspices of the State of California and your local air pollution control district/air quality management district. It is not operated by the State of California. State funds are not used for the purchase of vehicles. Depending on location and other factors, resulting Eemission reduction credits may be purchased by the Sstate forto result directly in air quality improvements. Your participation is entirely voluntary." and
(2) Provide the Department of Motor Vehicles with adequate criteria for selecting as notice recipients those registered vehicle owners who own the desired target vehicles. Such criteriawhich may consist of the desired vehicle makes, models, model years, geographical locales, or any other criteria deemed acceptable or necessary by the Department of Motor Vehicles.;

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44102, 44103, 44105, 44107 and 44109, Health and Safety Code.

§2608 Emission Reduction Credits

(a) VAVR enterprise operators may generate emission reduction credits that can be sold on the open market.

(b) VAVR enterprise operators may not make emission reduction credits available for purchase until they are approved and issued by the district.

(c) Districts shall not approve and issue emission reduction credits unless a VAVR enterprise operator demonstrates compliance with all applicable provisions in this regulation.

(d) Each district shall be responsible for approving and issuing emission reduction credits generated to VAVR enterprise operators, based on data supplied by each enterprise operator pursuant to Sections 2609.

(e) A district shall not approve and issue emission reduction credits for any vehicle retired within sixty-one to ninety (61-90) days of its next required Smog Check inspection until it has verified that the vehicle did not fail its Smog Check inspection during that time frame pursuant to Section 2602(c). Emission reduction credits shall not be issued for any vehicle failing its Smog Check inspection during the sixty-one to ninety (61 - 90) day time frame.

(f) The default lifetime of emission reduction credits is three (3) years;

(1) The maximum credit amount shall be no greater than the calculated emission reduction on which the credit is based;

(2) Districts may apply a discount factor to credits calculated under these regulations, consistent with applicable district and Board credit rules and programs; and

(3) Credit usage shall be in accordance with all federal, state, and local laws and regulations in effect at time of usage.

(g) Emission reduction credits shall be generated ~~under these regulations~~ by~~for~~ the retirement of any vehicle for reductions ~~of emissions~~ of NOx, ROG, CO_2, and PM~~, as provided in this section.~~ where t~~T~~he magnitude of the credit for each ~~of these~~ pollutants~~, as generated by the accelerated retirement of an individual vehicle,~~ shall be determined by the methodology described in Appendix D to this Article, "Calculation of Default Emission Reduction Credit."~~based on emission reduction data contained in the document entitled "Voluntary Accelerated Light-Duty Vehicle Retirement Program Emission Reductions" as specified in Appendix B to this Article 1;~~

~~(1) The maximum credit amount shall be no greater than the calculated emission reduction on which the credit is based. Districts may apply a discount factor to credits calculated under these regulations, consistent with applicable district and Board credit rules and programs;~~

~~(2) Credit usage shall be in accordance with all federal, state and local laws and regulations in effect at time of usage;~~

~~(3) The life of emission reduction credits as generated by the accelerated retirement of an individual vehicle is three (3) years;~~

(h) Extra emission reduction credits may be generated by the retirement of any high emitting vehicle for reductions of NOx, ROG, and PM when retired in accordance with Section 2610;

(1) The detailed methodology that will be used to calculate extra emission reductions shall be submitted in a high emitting vehicle VAVR plan, as required by Section 2610(f), by the district or enterprise operator to the ARB for approval;
(2) The methodology for calculating extra emission reductions shall be consistent with the methodologies recommended by the ARB;
(3) The ARB shall publish the methodologies for calculating extra emission reductions in a publicly available program guideline;
(4) Any calculation of extra emission reductions that is not consistent with the methodology recommended by the ARB shall include a detailed and complete technical justification for the changes and differences;
(5) The ARB shall evaluate the methodology for calculating extra emission reductions within sixty (60) days of receipt using the following criteria:
(A) The methodology must clearly show how emissions are estimated from the raw data or initial measurements through the final emission rate in pounds per year;
(B) The methodology shall include all equations used to estimate the final emission rate, clearly define assumptions and constants, and include references for the derivation of any uncommon equations that are used;
(C) The methodology shall contain an example calculation showing how the final emission rate was calculated from the raw data or initial measurement; and
(D) The methodology must verify that emission reductions are real, surplus, quantifiable, and enforceable; and
(6) A detailed and complete technical justification for any other proposed change from the requirements of Section 2608 shall be provided with the high emitting vehicle VAVR plan.

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44102, 44121 and 44122, Health and Safety Code.

§2609 Records~~,~~ and Auditing~~, and Enforcement~~
(a) Districts and enterprise operators shall meet t~~T~~he following records and auditing requirements ~~for records, auditing, and enforcement shall be met.~~:
(b~~1~~) An enterprise operator shall ~~be responsible for~~ maintain~~ing~~ and store~~ing~~ the following information for each vehicle dismantled and used to~~removed from operation for the purpose of~~ generate~~ing~~ emission reduction credits:
(1~~A~~) Vehicle Identification Number (VIN);
(2~~B~~) Vehicle license plate number;
(3~~C~~) Vehicle model year;
(4~~D~~) Vehicle odometer reading;
(5~~E~~) Vehicle make and model;
(6~~F~~) Name, address, and phone number of legal owner selling vehicle to the enterprise operator;
(7~~G~~) Name, address, and phone number of registered owner if different from (b~~F~~)(6);

(8H) Name and business address of inspector conducting the vehicle's eligibility inspection, if the VAVR enterprise operator contracts with an ARB-approved inspection entity to perform the vehicle functional and equipment eligibility inspection;
(9I) Date of purchase of vehicle by the enterprise operator;
(10J) Date of vehicle retirement;
(11K) The emission reduction amount claimed pursuant toper Section §2608;
(12L) Reproductions of California Certificate of Title and registration, as signed-off by the seller at time of final sale to the VAVR enterprise;
(13M) Reproduction of the applicable certificate of functional and equipment eligibility;
(14N) Reproduction of the applicable Notice to Dismantler (report of vehicle to be dismantled and notice of acquisition.) (California Department of Motor Vehicles Registration 42 form);
(15O) Reproduction of written documentation from the California Department of Motor Vehicles verifying that a vehicle meets the requirements of Section §2603(a)(2);
(16P) If applicable, reproduction of documentation issued pursuant to Section §2603(a)(6)(B); and
(17Q) Any other pertinent data requested by the district.;
(c2) Upon request of the district, the data contained in records required in Section §2609(ba)(1)(A) through (K) shall be transmitted to the district in an electronic database format, to be determined by mutually agreedment upon between the district and the enterprise operator, in lieu of paper copies.;
(d3) The enterprise operator shallwill maintain copies of the information listed in Section §2609(ba)(1)(A) through (Q) for a minimum period of time commensurate with the life of the emission reduction credits generated from each vehicle pursuant to Section §2608, and shall make those records available to the ARB or the district upon request.;
(e4) Each district shall be responsible for approving and issuing emission reduction credits generated in accordance with §2608 to VAVR enterprise operators, based on data supplied by each enterprise operator pursuant to §2609(a)(1), §2609(a)(2), and §2609(a)(3). Districts shall not approve and issue emission reduction credits unless a VAVR enterprise operator demonstrates compliance with all applicable provisions in this regulation;
(5) A district shall not approve and issue emission reduction credits for any vehicle retired within sixty-one to ninety (61-90) days of its next required Smog Check inspection until it has verified that the vehicle did not fail its Smog Check inspection during that time frame pursuant to §2602(f). Emission reduction credits shall not be issued for any vehicle failing its Smog Check inspection during the sixty-one to ninety (61—90) day time frame.
(6) VAVR enterprise operators may not make emission reduction credits available for purchase until they are approved and issued by the district.
(7) The district shouldmay conduct announced and unannounced audits and on-site inspections of VAVR enterprise operations to ensure that enterprises are being operated according to all applicable rules and regulations;.
(1) The district shall report the results of any such audits and inspections to the Executive Officer, and shall notify any non-compliant enterprise operator of the nature of the violation, and shall initiate any enforcement or remedial action necessary; and

(2A) Enterprise operators and their subcontractors shall allow the district to conduct announced and unannounced audits and inspections and shall cooperate fully ~~in such situations;~~.

~~(B) Violation of any provision of these regulations, including falsification of any information or data, shall constitute a citable violation making the violator subject to all applicable penalties specified in the California Health and Safety Code. In addition, violation of any provision of §2603 by a VAVR enterprise operator or its subcontractors shall result in the issuance of a Notice of Violation(s). District approval to generate emission reduction credits shall be revoked if a VAVR enterprise operator demonstrates a recurrent pattern of accepting vehicles that do not meet the eligibility requirements pursuant to §2603 or if a VAVR enterprise operator violates §2609(a)(6);~~

NOTE: Authority cited: Sections 39600, 39601 and 44101, Health and Safety Code. Reference: Sections 39002, 39003, 42400, 42400.1, 42400.2, 42400.3, 42400.4, 42400.5, 42400.6, 42401, 42402, 42402.1, 42402.2, 42402.3, 42402.5, 42403, 43000, 43013, 43016, 44100, 44101, 44102, 44103, 44104.5, 44105, 44106 and 44107, Health and Safety Code.

§2610 ~~Pilot Program~~

~~(a) Plan to Guide Execution of Pilot Program, Assess Results and Formulate Recommendations:~~

~~(1) The Board will contract with an interested party to conduct a pilot program in the South Coast Air Basin, to be completed no later than two (2) years after adoption of these regulations;~~

~~(2) The pilot program will be designed to test the efficacy of these regulations with regards to the goals of SIP measure M1 and VAVR for credit operations in general;~~

~~(3) The pilot program will determine a baseline of the current population of vehicles by model year and market value and the current turnover rate of vehicles, and other factors that may be essential to assessing the effectiveness, cost-effectiveness, and market impacts of VAVR enterprises;~~

~~(4) The Board will publish a report at the end of each calendar year for which the pilot program is operated. This report will include:~~

~~(A) The number of vehicles retired, by model year.~~

~~(B) The measured emissions of any retired vehicles tested during the report period;~~

~~(C) Costs of the vehicles in terms of amounts paid to sellers, and the cost-effectiveness of voluntary accelerated vehicle retirement expressed in dollars per ton of emissions reduced.~~

~~(D) Administrative and testing costs for the program.~~

~~(E) Assessments of the replacement vehicles or replacement travel by model year or emission levels, as determined from interviews, questionnaires, diaries, analyses of vehicle registrations in the study region, or other methods as appropriate.~~

~~(F) Assessments of the net emission benefits of voluntary accelerated vehicle retirement in the year reported, considering the retired vehicles, the replacement vehicles, and other effects of the program on the mix of vehicles and use of vehicles in the geographical area of the program, including in-migration of other vehicles into the~~

~~area and any tendencies to increased market value of used vehicles and prolonged useful life of existing vehicles, if any.~~
~~(G) Assessments of whether the M-1 strategy of the 1994 SIP can reasonably be expected to yield the required emission reductions.~~
~~(H) Assessments of typical retired vehicle operating condition, historical mileage, and other relevant vehicle data;~~
Identification of High Emitting Vehicles
(a) Remote sensing devices (RSD) and other ARB-approved technologies, including but not limited to databases such as a high emitter profile or smoking vehicles, may be used to identify potential high emitting vehicles for voluntary entry into a VAVR program and to generate extra emission reduction credit.
(1) The technology must be a common, scientifically established technology;
(2) The technology must identify ROG, NOx, PM, and/or CO emissions from potential high emitting vehicles; and
(3) The technology must identify vehicles whose emissions will most likely exceed the ASM Emission Standards and Gross Polluter Standards pursuant to Title 16, Division 33, Article 5.5, Section 3340.42 of the California Code of Regulations.
(b) The use of these technologies in a VAVR program is entirely optional.
(c) A high emitting vehicle VAVR program using these technologies shall comply with all applicable requirements of these regulations.
(d) All equipment and software associated with the technology shall be calibrated, operated, and maintained in accordance with the latest, approved manufacturer's standard operating procedures or other ARB-approved equivalent documentation for that technology.
(e) Any extra emission reduction credit generated by the voluntary retirement of a high emitting vehicle shall be calculated according to the requirements of Section 2608(h).
(f) A detailed plan to operate a high emitting vehicle VAVR program shall be submitted to the ARB for approval and shall not be implemented until written approval to proceed is received from the Executive Officer of the ARB.
(g) The plan shall contain, at a minimum, the following elements:
(1) A detailed description of the type and model of all equipment and software used to identify high emitting vehicles;
(2) A detailed description of the operation of the technology including but not limited to set up, typical operation, location and location criteria, calibration, and maintenance;
(3) A copy of the standard operating procedures or protocols for that technology including maintenance of the technology including equipment and software;
(4) The specific criteria to be used in the application of the technology to identify a high emitting vehicle;
(5) A detailed description of the methodology that will be used to calculate extra emission reduction credits including an example calculation pursuant to Section 2608;
(6) Documentation that personnel who will be operating the technology are trained and qualified for such operation;
(7) A description of how the high emitting vehicle VAVR program will be administered and operated in compliance with all applicable requirements of this regulation; and
(8) A detailed description of any anticipated deviations from the standard operating procedures or protocols of the technology, as required by this Section, and the

recommended methodology for calculating extra emission reduction credits, as specified in Section 2608(h).
(h) The ARB shall evaluate the plan according to the following criteria. The plan shall:
(1) Be complete;
(2) Meet all of the requirements listed in Sections 2610(a), (c), and (d);
(3) Fully address all elements listed in Section 2610(g);
(4) Be approved, signed, and dated by a management-level official who has the authority to approve the plan; and
(5) Be approved for implementation by the ARB within sixty (60) days or returned to the submitter within sixty (60) days for revision.

NOTE: Authority cited: Sections 39600, 39601, 44101 and 44104.5, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 44100, 44101, 44104.5 and 44105, Health and Safety Code.

~~§2611. Procurement of Credits for SIP Measure M1~~
~~(a) The purchase of emission reduction credits by the State of California is dependent on funding allocated for the purpose of achieving the emission reduction goals of measure M1 of the 1994 SIP for ozone attainment;~~
~~(1) As funding becomes available, the ARB shall develop and initiate a process for procuring available emission reduction credits. Available emission reduction credits will be purchased by the State of California from enterprise operators meeting all the requirements of this regulation and applicable district rules through an approved state contracting procedure, such as the issuance of an Invitation for Bid;~~
~~(2) All emission reduction credits purchased by the State of California shall be retired to meet the emission reduction goals of measure M1.~~

~~NOTE: Authority cited: Sections 39600 and 39601, 44101 and 44104, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013 44100, 44101 and 44104, Health and Safety Code.~~

Appendix A

~~Voluntary Accelerated Vehicle Retirement Certificate of Functional and Equipment Eligibility Inspection Form~~

~~California Air Resources Board~~

VEHICLE FUNCTIONAL AND EQUIPMENT ELIGIBILITY INSPECTION FORM

CERTIFICATE OF VEHICLE FUNCTIONAL AND EQUIPMENT ELIGIBILITY
Inspection Checklist

Owner(s) Information — **If applicable:**
Legal Owner Name: _____ Legal Owner Name2: _____

Legal Owner Address: _____ Legal Owner Address2: _____

Vehicle Information
Vehicle Identification Number (VIN) _____

Vehicle License Plate Number _____

Vehicle Make: _____ Model: _____

Vehicle Model Year: _____ Color: _____

Odometer Reading: _____ (owner estimate if odometer not functional)

Circle appropriate answer (Y=Yes; N= No; N/A = Not Applicable)
Vehicle identified as an **Unrepaired Gross-Polluter** or **High-Emitter** in BAR Smog Check database — Y N

Due for Smog Check test within 90 days — Y N — Registration Exp. _____

Proof of Smog Check Compliance Attached — Y N — Date Smogged: _____ (If within 90 days of required Smog Check)
(Attach copy of Vehicle Inspection Report if vehicle within 90 days of required Smog Check)

Vehicle meets Smog Check status requirements: **PASS** **FAIL**

If **PASS**, complete vehicle equipment and functional eligibility tests on next pages

Additional Comments, if any: _____

NOTE: VEHICLE IS INELIGIBLE FOR PARTICIPATION IF IDENTIFIED AS AN UNREPAIRED GROSS-POLLUTER OR HIGH-EMITTER, IS CURRENTLY OPERATING UNDER A SMOG CHECK REPAIR COST WAIVER OR ECONOMIC HARDSHIP EXTENSION, OR HAS NOT PASSED THE SMOG CHECK TEST IF WITHIN 90 DAYS OF NEXT REQUIRED SMOG CHECK.

EQUIPMENT INSPECTION I
(FAILURE OF ANY ITEM DISQUALIFIES VEHICLE)

O.K. Fail

___ ___ All passenger doors present; 1 door/passenger compartment operable

___ ___ Trunk lid remains closed; no add-on devices

___ ___ Hood opens/remains securely closed; no add-on devices

___ ___ Dashboard gauges/ warning lights present

___ ___ Windshield wipers present and operational

___ ___ Windshield/Rear window present and do not contain holes; no add-on devices

___ ___ Driver's seat secure; not supported by add-on devices

___ ___ Brake, clutch, gas pedals present

___ ___ No frame or severe body damage (bumpers, fenders, side & quarter panels, exhaust system present)

___ ___ No holes into floorboard or passenger compartment

___ ___ Head lights, tail lights, and brake lights ALL operational (burned out bulbs will not cause disqualification if operability of systems can be verified

___ ___ Driver's side window and opposing side window present

___ ___ Rear side windows (or functional replacements) present

EQUIPMENT INSPECTION II
(FAILURE OF ANY TWO ITEMS DISQUALIFIES VEHICLE)

O.K. Fail

___ ___ Turn signals present and operational

___ ___ Driver's side window and opposing side window operational

___ ___ Rear and side mirrors present

___ ___ Interior door panels present and secure

___ ___ No holes in OTHER BODY LOCATIONS that exceed 2" in length at widest point

FUNCTIONAL INSPECTION TESTS (FAILURE OF ANY ITEM DISQUALIFIES VEHICLE)

O.K.	Fail		O.K.	Fail	
____	____	Starts with key in ignition switch	____	____	Idles for 10 seconds unassisted (in Park)
____	____	Drives forward and reverse for a minimum of 25 feet	____	____	Idles for 10 seconds unassisted (in Drive)
____	____	Acceleration test (O.K. if less than 5.5 seconds)			

Vehicle shall be disqualified if any of the following occurs during the functional tests above:

1) Engine shuts down subsequent to keyed ignition start.
2) Vehicle whines, grinds, clanks, or emits knocking noises or noises from engine backfire.
3) The brake pedal drops to the floor when the inspector attempts to stop vehicle.

Inspector Statement of Vehicle Equipment and Functional Eligibility

"I have inspected this vehicle according to the requirements of California Code of Regulations, Title 13, §2603(b). To the best of my knowledge, this vehicle is currently operated on a routine basis, and I have found it to meet the equipment and functional eligibility requirements for participation in the voluntary accelerated vehicle retirement programs described in California Code of Regulations, Title 13, Section 2600, et seq."

Print and Sign Name: _____ Date _____

(Inspector)

Inspector Identification Number _____

Vehicle Owner Statement of Acceptance of Eligibility

"I acknowledge receipt of this certificate of vehicle functional and equipment eligibility. I agree not to alter the vehicle's components, equipment configuration or functional status from what was presented to the inspector on this date. I acknowledge that vehicle registration requirements must be met and verified prior to final acceptance of my vehicle by an accelerated vehicle retirement enterprise."

Signed _____ Date _____

(Owner)

Inspector Statement of Vehicle Ineligibility

"I have inspected this vehicle according to the requirements of California Code of Regulations, Title 13, Section 2603(b). I have found it does not meet the requirements for participation in the

~~voluntary accelerated vehicle retirement programs described in California Code of Regulations, Title 13, Section 2600 et seq."~~

~~Print and Sign Name: _____ Date _____~~

~~(Inspector)~~

~~Inspector Identification Number _____~~

VEHICLE FUNCTIONAL AND EQUIPMENT ELIGIBILITY INSPECTION FORM

Legal Owner: _____ Address: _____

City: _____ Zip: _____

VIN: _____ License Number: _____

Make: _____ Model: _____

Model Year: _____ Odometer Reading: _____

VEHICLE QUALIFICATION

Vehicle within 61-90 days of next scheduled Smog Check:	[] yes	[] no	2602(c)
If yes, vehicle failed next scheduled Smog Check:	[] yes*	[] no	
Vehicle registered in District for at least 24 months:	[] yes	[] no*	2603(a)(2)
Vehicle on BAR repair cost waiver	[] yes*	[] no	2603(a)(4)
Vehicle on BAR economic hardship extension	[] yes*	[] no	2603(a)(4)
Vehicle within 60 days of next scheduled Smog Check:	[] yes	[] no	2603(a)(5)
If yes, vehicle passed next scheduled Smog Check:	[] yes	[] no*	
The vehicle has been tampered with:	[] yes*	[] no	2603(a)(7)
The vehicle has been driven to the inspection site	[] yes	[] no*	2603(b)(1)

* Vehicle is not qualified for the VAVR program.

EQUIPMENT ELIGIBILITY — The following shall be present and in place: — 2603(b)(3)

All doors	[] yes	[] no*	Hood	[] yes	[] no*
Dashboard	[] yes	[] no*	Driver's seat	[] yes	[] no*
One bumper	[] yes	[] no*	All side and/or quarter panels	[] yes	[] no*
Exhaust system	[] yes	[] no*	One headlight	[] yes	[] no*
One taillight	[] yes	[] no*	One brake light	[] yes	[] no*
One side window	[] yes	[] no*	Interior pedals operational	[] yes	[] no*

FUNCTIONAL ELIGIBILITY — The following shall be completed: — 2603(b)(4)

Vehicle starts using keyed ignition	[] yes	[] no*
Vehicle starts without the use of starting fluids or external battery	[] yes	[] no*
Vehicle driven forward for a minimum of 25 feet	[] yes	[] no*
Vehicle driven in reverse for a minimum of 25 feet	[] yes	[] no*

* Vehicle is not eligible for the VAVR program.

INSPECTOR CERTIFICATION: (Check correct boxes.) I certify that this vehicle has ([] passed [] not passed) both the functional and equipment eligibility inspections and ([] is [] is not) eligible for acceptance into the VAVR program pursuant to California Code of Regulations, Title 13, Sections 2602 and 2603.

Printed Name: _____ Date: _____

Signed: _____

The following should be completed if the vehicle is eligible for acceptance into a VAVR program.

OWNER ACCEPTANCE: I accept receipt of this CERTIFICATION of eligibility into a VAVR program. I agree not to alter the vehicle's equipment or functionality from that presented to the inspector. I agree to maintain the vehicle's condition and registration until the vehicle is retired.

Printed Name: _____ Date: _____

Signed: _____

Appendix BC

EMISSION/DRIVE TRAIN-RELATED PARTS LIST

State of California
Air Resources Board

Emission-Drive Train Related Parts List

Adopted November 4, 1977
Amended May, 1981
Amended June 1, 1990

The following list of components are examples of emission related parts as defined in Section 1900 (b) (3), Chapter 3, Title 13, California Code of Regulations.

I. Carburetion and Air Induction System

A. Air Induction System:

1. Temperature sensor elements
2. Vacuum motor for air control
3. Hot air duct & stove
4. Air filter housing & element
5. Turbocharger or supercharger
6. Intercooler

B. Emission Calibrated Carburetors:

1. Metering jets
2. Metering rods
3. Needle and seat
4. Power valve
5. Float circuit
6. Vacuum break
7. Choke mechanism
8. Throttle-control solenoid
9. Deceleration valve
10. Dashpot
11. Idle stop solenoid, anti-dieseling assembly
12. Accelerating pump
13. Altitude compensator

C. Mechanical Fuel Injection:

1. Pressure regulator
2. Fuel injection pump
3. Fuel injector

4. Throttle-position compensator
5. Engine speed compensator
6. Engine temperature compensator
7. Altitude cut-off valve
8. Deceleration cut-off valve
9. Cold-start valve

D. Continuous Fuel Injection:

1. Fuel pump
2. Pressure accumulator
3. Fuel filter
4. Fuel distributor
5. Fuel injections
6. Air-flow sensor
7. Throttle-position compensator
8. Warm-running compensator
9. Pneumatic overrun compensator
10. Cold-start valve

E. Electronic Fuel Injection:

1. Pressure regulator
2. Fuel distribution manifold
3. Fuel injectors
4. Electronic control unit
5. Engine speed sensor
6. Engine temperature sensor
7. Throttle-position sensor
8. Altitude/manifold-pressure sensor
9. Cold-start valve

F. Air Fuel Ratio Control:

1. Frequency valve
2. Oxygen sensor
3. Electronic control unit

G. Intake Manifold

II. Ignition

A. Distributor

1. Cam
2. Points
3. Rotor

4. Condenser
5. Distributor cap
6. Breaker plate
7. Electronic components (breakerless or electronic system)

B. Spark Advance/Retard System:

1. Centrifugal advance mechanism:
   a. Weights
   b. Springs

2. Vacuum advance unit

3. Transmission controlled spark system:

   a. Vacuum solenoid
   b. Transmission switch
   c. Temperature switches
   d. Time delay
   e. CEC valve
   f. Reversing relay

4. Electronic spark control system:

   a. Computer circuitry
   b. Speed sensor
   c. Temperature switches
   d. Vacuum switching valve

5. Orifice spark advance control system:

   a. Vacuum bypass valve
   b. OSAC (orifice spark advance control) valve
   c. Temperature control switch
   d. Distributor vacuum control valve

6. Speed controlled spark system:

   a. Vacuum solenoid
   b. Speed sensor and control switch
   c. Thermal vacuum switch

C. Spark Plugs

D. Ignition Coil

E. Ignition Wires

III. Mechanical Components

A. Valve Trains:

1. Intake valves
2. Exhaust valves
3. Valve guides
4. Valve springs
5. Valve seats
6. Camshaft

B. Combustion Chamber:

1. Cylinder head or rotor housing[1]
2. Piston or rotor[1]

IV. Evaporative Control System

A. Vapor Storage Canister and Filter

B. Vapor Liquid Separator

C. Filler Cap

D. Fuel Tank

E. Canister Purge Valve

V. Positive Crankcase Ventilation System

A. PCV Valve

B. Oil Filler Cap

C. Manifold PCV Connection Assembly

VI. Exhaust Gas Recirculation System

A. EGR Valve:

1. Valve body and carburetor spacer
2. Internal passages and exhaust gas orifice

B. Driving Mode Sensors:

[1] *Rotary (Wankel) engines only*

1. Speed sensor
2. Solenoid vacuum valve
3. Electronic amplifier
4. Temperature-controlled vacuum valve
5. Vacuum reducing valve
6. EGR coolant override valve
7. Backpressure transducer
8. Vacuum amplifier
9. Delay valves

VII. Air Injection System

A. Air Supply Assembly:

1. Pump
2. Pressure relief valve
3. Pressure-setting plug
4. Pulsed air system

B. Distribution Assembly:

1. Diverter, relief, bypass, or gulp valve
2. Check or anti-backfire valve
3. Deceleration control part
4. Flow control valve
5. Distribution manifold
6. Air switching valve

C. Temperature sensor

VIII. Catalyst, Thermal Reactor, and Exhaust System

A. Catalytic Converter:

1. Constricted fuel filler neck
2. Catalyst beads (pellet-type converter)
3. Ceramic support and monolith coating (monolith-type converter)
4. Converter body and internal supports
5. Exhaust manifold

B. Thermal Reactor:

1. Reactor casing and lining
2. Exhaust manifold and exhaust port liner

C. Exhaust System:

1. Manifold
2. Exhaust port liners
3. Double walled portion of exhaust system
4. Heat riser valve and control assembly

IX. Miscellaneous Items Used in Above Systems

1. Hoses, clamps, and pipers
2. Pulleys, belts, and idlers

X. Computer Controls

1. Electronic Control Unit (ECU)
2. Computer-coded engine operating parameter (including computer chips)
3. All sensors and actuators associated with the ECU

XI. Drive Train Parts (added to Emission-Related Parts List.

1. Engine
2. Drive mechanism
3. Transmission
4. Differential
5. Axles
6. Brakes

Appendix CD

QUALITY CONTROL CHECKLIST

Quality Control Check List

Check each box indicating whether the emissions-related or drive train part has been removed or destroyed. Insert N/A where a part is not in the original vehicle design.

Dismantler _____ Date _____

Address _____

Quality Control Inspector _____

Vehicle Make _____ Vehicle Year _____

Vehicle Model _____

Vehicle License Number _____

Vehicle Odometer Mileage _____

Category	Emission-Related Part	Part Removed	Part Destroyed
Air Induction System	Temperature sensor elements		
	Vacuum motor for air control		
	Hot air duct & stove		
	Air filter housing & element		
	Turbocharger or supercharger		
	Intercooler		
Emission Calibrated Carburetors	Metering jets		
	Metering rods		
	Needle and seat		
	Power valve		
	Float circuit		
	Vacuum break		
	Choke mechanism		
	Throttle-control solenoid		
	Deceleration valve		
Emission Calibrated Carburetors (continued)	Dashpot		
	Idle stop solenoid, anti-dieseling assembly		
	Accelerating pump		
	Altitude compensator		
Mechanical Fuel Injection:	Pressure regulator		
	Fuel injection pump		
	Fuel injector		
	Throttle-position compensator		
	Engine speed compensator		
	Engine temperature compensator		
	Altitude cut-off valve		
	Deceleration cut-off valve		
	Cold-start valve		

Category	Emission-Related Part	Part Removed	Part Destroyed
Continuous Fuel Injection:	Fuel pump		
	Pressure accumulator		
	Fuel filter		
	Fuel distributor		
	Fuel injections		
	Air-flow sensor		
	Throttle-position compensator		
	Warm-running compensator		
	Pneumatic overrun compensator		
	Cold-start valve		
Electronic Fuel Injection:	Pressure regulator		
	Fuel distribution manifold		
	Fuel injectors		
	Electronic control unit		
	Engine speed sensor		
	Engine temperature sensor		
	Throttle-position sensor		
	Altitude/manifold-pressure sensor		
Electronic Fuel Injection:	Cold-start valve		
Air Fuel Ratio Control:	Frequency valve		
	Oxygen sensor		
Air Fuel Ratio Control:	Electronic control unit		
Intake Manifold	Intake Manifold Assembly		
Distributor	Cam		
	Points		
	Rotor		
	Condenser		
	Distributor cap		
	Breaker plate		
	Electronic components (breakerless or electronic system)		
Spark Advance/ Retard System	Centrifugal advance mechanism: weights and springs		
	Vacuum advance unit		

Category	Emission-Related Part	Part Removed	Part Destroyed
	Transmission controlled spark system: vacuum solenoid, transmission switch, temperature switches, time delay, CEC valve, reversing relay		
	Electronic spark control system: computer circuitry, speed sensor, temperature switches, vacuum switching valve		
	Orifice spark advance control system: vacuum bypass valve, orifice spark advance control valve, temperature control switch, distributor vacuum control switch		
Spark Advance/ Retard System (continued)	Speed controlled spark system: vacuum solenoid, speed sensor and control switch, thermal vacuum switch		
Spark Plugs	Spark Plugs		
Ignition Coil	Ignition Coil		
Ignition Wires	Ignition Wires		
Drive Train	Engine		
	Flywheel		
	Bell Housing		
	Drive Shaft		
	Transmission		
	Differentials		
	Axles		
	Brakes		
Mechanical Components	Intake valves		
	Exhaust valves		
	Valve guides		
	Valve springs		
	Valve seats		
	Camshaft		
	Cylinder head or rotor housing		
	Piston or rotor		
Evaporative Control System	Vapor Storage Canister and Filter		

Category	Emission-Related Part	Part Removed	Part Destroyed
	Vapor Liquid Separator		
	Filler Cap		
	Fuel Tank		
	Canister Purge Valve		
Positive Crankcase Ventilation System	PCV Valve		
	Oil Filler Cap		
	Manifold PCV Connection Assembly		
Exhaust Gas Recirculation System	EGR Valve: valve body and carburetor spacer,		
	EGR Valve: internal passages and exhaust gas orifice		
Driving Mode Sensors	Speed sensor		
	Solenoid vacuum valve		
	Electronic amplifier		
	Temperature-controlled vacuum valve		
	Vacuum reducing valve		
	EGR coolant override valve		
Driving Mode Sensors (continued)	Backpressure transducer		
	Vacuum amplifier		
	Delay valves		
Air Injection System	Pump		
	Pressure-relief valve		
	Pressure-setting plug		
	Pulsed air system		
	Diverter		
	Relief, bypass, or gulp valve		
	Check or anti-backfire valve		
	Deceleration control part		
	Flow control valve		
	Distribution manifold		
	Air switching valve		
	Temperature sensor		
Catalytic Converter/Thermal Reactor/exhaust	Constricted fuel filler neck		
	Catalyst beads (pellet-type converter),		
	Ceramic support and monolith coating (monolith-type converter),		
	Converter body and internal supports,		
	Exhaust manifold		

Category	Emission-Related Part	Part Removed	Part Destroyed
	Reactor casing and lining		
	Exhaust manifold and exhaust port liner		
	Manifold		
	Exhaust port liners,		
	Double walled portion of exhaust system,		
	Heat riser valve and control assembly		
Miscellaneous Items Used in Above Systems	Hoses, clamps, and pipers		
	Pulleys, belts, and idlers		
Computer Controls	Electronic Control Unit (ECU)		
	Computer-coded engine operating parameter (including computer chips)		
	All sensors and actuators associated with the ECU		

Quality Control Inspector Final Verification All Emission-Related Parts Removed and Destroyed

Quality Control Inspector Signature:

_____

Date:

_____

Appendix DB

CALCULATION OF DEFAULT EMISSION REDUCTION CALCULATIONS
~~VOLUNTARY ACCELERATED LIGHT-DUTY VEHICLE RETIREMENT PROGRAM EMISSION REDUCTIONS~~

VOLUNTARY ACCELERATED LIGHT-DUTY VEHICLE RETIREMENT PROGRAM EMISSION REDUCTIONS

FOR VEHICLES RETIRED IN CALENDER YEAR 1999 Light-Duty Vehicle Emission Reductions (Total Pounds Per Vehicle Over 3 Year Credit Life)				
Model Year Car	ROG[A]	NOx	CO	PM_{10}
1965 and earlier	334	71	1347	5.4
1966	341	75	1395	5.0
1967	351	77	1484	5.4
1968	363	79	1586	5.5
1969	376	82	1700	5.5
1970	392	83	1851	1.8
1971	404	89	1887	1.9
1972	418	96	1918	1.9
1973	436	101	2013	1.9
1974	355	100	1671	0.7
1975	290	106	1644	1.0
1976	280	104	1841	0.9
1977	178	112	1426	0.9
1978	186	107	1891	1.1
1979	175	96	2508	1.8
1980	145	149	3286	1.1
1981	72	112	747	0.6
1982	76	102	770	0.5
1983	70	92	735	0.4
1984	41	74	445	0.3

Note A: Includes exhaust and evaporative emissions

~~VOLUNTARY ACCELERATED LIGHT-DUTY VEHICLE RETIREMENT PROGRAM EMISSION REDUCTIONS~~

~~FOR VEHICLES RETIRED IN CALENDER YEAR 2000~~				
~~Light-Duty Vehicle Emission Reductions (Total Pounds Per Vehicle Over 3 Year Credit Life)~~				
~~Model Year Car~~	~~ROG[A]~~	~~NOx~~	~~CO~~	~~PM_{10}~~
~~1966 and earlier~~	~~344~~	~~77~~	~~1396~~	~~4.8~~
~~1967~~	~~354~~	~~79~~	~~1483~~	~~5.2~~
~~1968~~	~~366~~	~~82~~	~~1581~~	~~5.4~~
~~1969~~	~~378~~	~~84~~	~~1692~~	~~5.1~~
~~1970~~	~~394~~	~~86~~	~~1840~~	~~1.9~~
~~1971~~	~~405~~	~~91~~	~~1874~~	~~1.6~~
~~1972~~	~~419~~	~~97~~	~~1907~~	~~1.6~~
~~1973~~	~~437~~	~~102~~	~~2005~~	~~1.7~~
~~1974~~	~~360~~	~~102~~	~~1669~~	~~0.7~~
~~1975~~	~~294~~	~~109~~	~~1667~~	~~0.6~~
~~1976~~	~~284~~	~~106~~	~~1868~~	~~0.6~~
~~1977~~	~~183~~	~~115~~	~~1472~~	~~0.7~~
~~1978~~	~~193~~	~~110~~	~~1944~~	~~1.0~~
~~1979~~	~~182~~	~~99~~	~~2573~~	~~1.7~~
~~1980~~	~~148~~	~~152~~	~~3371~~	~~0.8~~
~~1981~~	~~76~~	~~116~~	~~794~~	~~0.4~~
~~1982~~	~~80~~	~~106~~	~~819~~	~~0.4~~
~~1983~~	~~77~~	~~96~~	~~785~~	~~0.2~~
~~1984~~	~~46~~	~~78~~	~~490~~	~~0.1~~
~~1985~~	~~38~~	~~65~~	~~420~~	~~0.1~~

~~Note A: Includes exhaust and evaporative emissions~~

VOLUNTARY ACCELERATED LIGHT-DUTY VEHICLE RETIREMENT PROGRAM DEFAULT EMISSION REDUCTIONS

ARB shall annually calculate the emission reductions for voluntary accelerated vehicle retirement. By December 31 of each year, ARB shall calculate the emission reductions for vehicles retired in the next calendar year and shall make them publicly available in tabular form.

For exhaust (tailpipe) emissions, the following equation is used to calculate emission reduction credits. Exhaust emission reduction credits may be generated from

reductions in oxides of nitrogen (NOx), reactive organic gas (ROG), carbon monoxide (CO), and particulate matter (PM):

$$ExhReduction = [(ER_{retired} * VMT_{retired}) - (ER_{replacement} * VMT_{replacement})] * Life_{retired}$$

where:

ExhReduction= total emission reduction for tailpipe emissions (grams/life);

$ER_{retired}$ = the retired vehicle exhaust emission rate (grams/mile)
= the average exhaust emission rate of the model year vehicle retired calculated using ARB's emission inventory model;

$VMT_{retired}$ = the retired vehicle miles traveled (miles/year)
= the average VMT of the model year vehicle retired calculated using ARB's emission inventory model;

$Life_{retired}$ = the retired vehicle remaining life (years)
= 3 years;

$ER_{replacement}$ = the replacement vehicle exhaust emission rate (grams/mile)
= the fleet average exhaust emission rate calculated using ARB's emission inventory model;

$VMT_{replacement}$ = the replacement vehicle miles traveled (miles/year)
= $VMT_{retired}$

For evaporative emissions, the following equation is used to calculate emission reduction credits. Evaporative emission reduction calculations apply only to ROG emissions:

$$\begin{aligned} EvapReduction = \{&[(ER_{runloss})_{retired} - (ER_{runloss})_{replacement}] * VMT_{retired} + \\ &[(ER_{hotsoak})_{retired} - (ER_{hotsoak})_{replacement}] * Trips_{retired} + \\ &[(ER_{diurnal})_{retired} - (ER_{diurnal})_{replacement}] * 365\ days/year + \\ &[(ER_{resting})_{retired} - (ER_{resting})_{replacement}] * 365\ days/year\} * Life_{retired} \end{aligned}$$

where:

EvapReduction = total lifetime reduction of evaporative ROG emissions (grams/life);

$(ER_{runloss})_{retired}$ = the retired vehicle running loss evaporative emission rate (grams/mile)
= the average running loss evaporative emission rate of the model year vehicle retired calculated using ARB's emission inventory model;

$(ER_{runloss})_{replacement}$ = the replacement vehicle running loss evaporative emission rate (grams/mile)
= the fleet average running loss evaporative emission rate calculated using ARB's emission inventory model;

$(ER_{hotsoak})_{retired}$ = the retired vehicle evaporative emission rate attributed to hot soak after shut down (grams/trip)
= the average hot soak evaporative emission rate of the model year vehicle retired calculated using ARB's emission inventory model;

$(ER_{hotsoak})_{replacement}$ = the replacement vehicle evaporative emission rate attributed to hot soak after shut down (grams/trip)
= the fleet average hot evaporative emission rate calculated using ARB's emission inventory model;

$(ER_{diurnal})_{retired}$ = the retired vehicle emission rate for evaporative emissions occurring while vehicle is not operating and during periods of ambient temperature increase (grams/day)
= the average diurnal evaporative emission rate of the model year vehicle retired calculated using ARB's emission inventory model;

$(ER_{diurnal})_{replacement}$ = the replacement vehicle emission rate for evaporative emissions occurring while vehicle is not operating and during periods of ambient temperature increase (grams/day)
= the fleet average diurnal evaporative emission rate calculated using ARB's emission inventory model;

$(ER_{resting})_{retired}$ = the retired vehicle emission rate for evaporative emissions occurring while vehicle is not operating and during periods of constant or decreasing ambient temperature (grams/day)
= the average resting evaporative emission rate of the model year vehicle retired calculated using ARB's emission inventory model;

$(ER_{resting})_{replacement}$ = the replacement vehicle emission rate for evaporative emissions occurring while vehicle is not operating and during periods of ambient temperature increase (grams/day)
= the fleet average resting evaporative emission rate calculated using ARB's emission inventory model;

$Trips_{retired}$ = number of trips per year expected from retired vehicle
= the average trips of the model year vehicle retired calculated using ARB's emission inventory model

Appendix B:

Detailed Description of Proposed Regulatory Changes

Appendix B: Detailed Description of Proposed Regulatory Changes

A. Proposed Changes to the Regulation by Section

This section details changes that staff has proposed for each section of the voluntary accelerated vehicle retirement (VAVR) regulation. To better understand the proposed modifications, staff recommends that the reader follow the narrative along with the proposed underlined and strike-out regulation located in Appendix A to this report.

1. Section 2601 – Definitions

Staff is proposing to delete six outdated or unused definitions and add six new definitions to improve clarity. Staff is also proposing to arrange the definitions by alphabetical order for greater ease of use.

Air Resources Board (ARB) staff is proposing to delete the following definitions: gross polluter, high emitter, inspection and maintenance program, measure M1, pilot program, and SIP. The pilot program operated successfully in the South Coast Basin during1998 and 1999, and a program report was published in 2002. As the program has been completed, the definition is no longer required and is proposed for deletion. Measure M1 was proposed in the 1994 state implementation plan (SIP) in an effort to scrap over 75,000 vehicles but was unfunded and subsequently removed from the SIP. Therefore, ARB staff is proposing to delete this definition. As the proposed regulation does not contain any reference to the SIP, this definition is also proposed for deletion. The terms gross emitter and high emitter were not used in the 2002 VAVR regulation and are not proposed for use in the 2006 revised version. A new term, high emitting vehicle, is proposed to more accurately represent the type of vehicles of interest to VAVR programs. Additionally, the proposed term has been defined with respect to published emission standards pursuant to Bureau of Automotive Repair's (BAR) Accelerated Simulation Mode (ASM) Emission Standards and Gross Polluter Standards located in Title 16, Division 33, Article 5.5, Section 3340.42 of the California Code of Regulations. ARB staff is proposing to use the term Smog Check in place of the term inspection and maintenance program. The term Smog Check is more universally recognized.

Staff is proposing to add six definitions including: day, dismantle, high emitting vehicle, remote sensing device, useful life, and VAVR enterprise. The term day was added to clarify that a day is any weekday including weekend days to distinguish it from a working day. Dismantle replaces the term crush. The new term was used to confirm that other means may be used to destroy a vehicle in addition to crushing and to clarify that a vehicle or part must no longer function as originally intended after dismanting. The term high emitting vehicle is used in place of the terms gross polluter and high emitter. The term high emitter was only vaguely defined in the Health and Safety Code and did not reference emission standards. The term gross polluter defined vehicles whose emissions exceeded the Gross Polluter Standards cited above. The term high emitting vehicle is more inclusive and is defined as a vehicle whose emissions exceed

the ASM Emission Standards. This change expands the range of vehicles potentially eligible for retirement. Therefore, the new term is defined with reference to a wider range of published emission standards and is more representative of the type of vehicle that the VAVR program may target. The term remote sensing devices or RSD was added to define one of the proposed technologies that may be used to identify potential high emitting vehicles. The term useful life was added because the term is used in the legislation that authorizes the VAVR regulation to describe the condition of vehicles that are potentially eligible for retirement under VAVR. VAVR enterprise was added to define an undefined term used in the 2002 regulation to improve clarity.

The terms car and automotive were deleted, and ARB staff is proposing to use the term vehicle to clarify that both light-duty automobiles and light-duty trucks are light-duty vehicles and are eligible for inclusion in VAVR programs.

The term enterprise operator was condensed for greater ease of reading.

The definition of VAVR was revised to more accurately represent the current meaning of these types of programs. The definition was expanded to specify that for vehicles to be eligible for VAVR programs they must be operational and still have a useful life. In this way, emission reductions would be surplus and would not be considered anyways reductions. Anyways reductions are not surplus and refer to reductions from retiring a vehicle that would have been retired anyway because the vehicle reached the end of its useful life in less than the three year life time of the emission reduction credit.

2. Section 2602 – District Responsibility

Staff is proposing to make changes to this section to consolidate District responsibilities and requirements in a single section. To this end, subsections from other sections in the regulation were moved here when they were more closely related to district responsibilities and requirements. Some subsections were reorganized to improve clarity. Subsections that were not directly related to this section were moved to sections where the subject matters were more closely aligned.

To reduce excess verbiage, the phrase "within its jurisdiction" was deleted from this section and included in the definition of District.

Subsection (b) "All operators of VAVR enterprises . . ." was moved to Section 2604, as the subsection did not relate to district responsibilities but was directly related to VAVR enterprise operator requirements.

Subsections (c) and (d) were combined into a single new subsection (b) to consolidate district responsibilities and to provide the responsibilities in list form for greater clarity. Staff is proposing to reword new subsection (b) to clarify that districts "shall" administer and audit VAVR enterprises and not just have the responsibility to do so.

Proposed new subsection (d) "District approval to generate . . . " was moved from Section 2609, as the subsection was directly related to district responsibilities and consolidated district responsibilities in one location.

3. Section 2603 – Vehicle Eligibility

To improve internal consistency within the regulation, acronyms were changed to be consistent with the rest of the regulation.

Staff is proposing to replace the 120-day Department of Motor Vehicles (DMV) registration residency requirement in the district for vehicle eligibility to 24 months in subsection (a)(2). Staff proposed this change so that the regulation conforms to the requirements of the authorizing legislation. The regulation was modified in 2002 to incorporate the shorter 120 day residency requirement to harmonize with the BAR Consumer Assistance Program (CAP) program. However, this created an inconsistency with Health & Safety Code (H&SC) section 44094. Staff proposes reinstating the 24-month residency requirement for consistency with the legislation.

As staff is proposing to re-instate the 24 month vehicle residency requirement, subsection (a)(2)(A) is proposed for deletion, as it is no longer needed.

New subsections (a)(2)(B) and (C) were added to be consistent with the wording of the original 1996 VAVR regulation. These clarifications are designed to add some flexibility to the 24-month residency registration requirement to allow some degree of non-use of a vehicle prior to retirement but still within the 24 month window.

Staff is proposing to update subsection (a)(3) to define the gross vehicular weight rating for vehicles considered light-duty vehicles. The gross vehicular weight rating for light-duty vehicles is proposed to be defined as 8,500 pounds. This value is consistent with the definition of light-duty vehicle found in the low emission vehicle or LEVII program (The California Low-Emission Vehicle Regulations for Passenger Cars, Light-Duty Trucks and-Medium-Duty Vehicles, as of January 1, 2006). This proposed modification expands the fleet of vehicles that are potentially eligible for vehicle retirement.

Subsection (a)(4) is proposed for deletion, as it is redundant to subsection (b)(1). Additionally, the requirement for a vehicle to be driven to the purchase site under its own power was more closely related to the functional and equipment eligibility requirements listed in subsection (b).

ARB staff is proposing that Smog Checks must be completed by BAR licensed technicians in new subsection (a)(6). This clarification is proposed as a safeguard to ensure that Smog Checks are performed in compliance with BAR standards. BAR recommended that this language during their review of the proposed regulation.

The authorizing legislation for VAVR programs emphasizes that tampered vehicles are not eligible for VAVR programs until all of the tampering is corrected. New subsection

(a)(7) is proposed for addition to conform the regulation to the letter and intent of the authorizing legislation and to highlight the importance of not including vehicles in VAVR programs whose owners have not conformed to the requirements of the law.

Staff is proposing to reword subsection (b) to more clearly distinguish between the requirements for the equipment and the functional eligibility inspections. Excess verbiage is proposed for removal to improve readability.

Subsection (b)(6) is proposed to be modified to clarify that tampered vehicles could be eligible for retirement once all of the deficiencies are corrected outside of and without cost to the VAVR program. Once the tampering is corrected, the vehicle would no longer be considered tampered.

Subsection (c) is proposed to be rephrased to simplify the requirement that districts are limited to changes to the functional and eligibility inspection requirements so that the district changes do not omit or weaken any requirements.

4. Section 2604 – VAVR Enterprise Operator Requirements

Staff is proposing to consolidate the responsibilities and requirements of enterprise operators in one location. To this end, subsections from other sections in the regulation were moved here when they more closely related to enterprise operators. Additionally, staff is proposing to reorganize some existing subsections to improve clarity. Finally, minor changes are proposed to acronyms for consistency with other sections of the regulation and some wording changes are proposed to clarify responsibilities.

Subsection (a) "All owners and operators . . ." is proposed to be moved from Section 2602 as it more directly applies to enterprise operators than is does to districts.

Subsection (c)(1) is proposed to be renumbered as subsection (b)(1) and reworded to provide greater flexibility for the way that the enterprise operator's notification to the district is submitted. The original wording required that a form specified by the district be submitted. The proposed wording increases the flexibility in the way that the notification can be submitted to the district.

New subsection (c)(3) is proposed to be renumbered from subsection (b)(3) and reorganized to list the enterprise operator compliance requirements for easier reading.

Subsections (j) "Violation of any provision of these regulations . . . " and (k) "Violations of any provision of Section 2603 . . . " are proposed to be moved from Section 2609 to this section. Staff's proposal is to consolidate enterprise operator responsibilities in this section. Therefore, the consequences of violating any provisions of this regulation by an enterprise operator more directly apply to this section.

5. Section 2605 – Offering Vehicles to the Public

Staff is not proposing any changes to car collector provisions and proposes to retain consistency with the intent of the authorizing legislation. Staff is proposing minor changes by adding acronyms where needed and deleting unnecessary references.

6. Section 2606 – Parts Recycling and Resale

Staff is proposing minor changes to the references. Additionally, staff is proposing to replace the term crush by a more generic term dismantle throughout the section. The term crush refers to a single method by which a vehicle can be retired. As there are many additional retiring methods such as shredding, hammer milling, and cutting, the term dismantle is proposed to signal that other means are permitted to retire vehicles.

Subsections (b)(2)(A) and (B) and part of (b)(2) originally included instructions for the Quality Control Checklist. Staff is proposing to delete them and move them to Appendix C, Quality Control Checklist. Additionally, staff is proposing to reword the instructions to simplify them yet retain clear language so that the form will be completed correctly.

Subsection (c)(3)(B) now requires battery recyclers to be licensed by the State of California. The original language did not specify what entity provided the license.

Staff is proposing to reword subsection (e) to improve clarity by listing compliance requirements rather than including them sequentially in a single sentence.

7. Section 2607 – Advertising

Staff is proposing minor changes in punctuation and deletions for clarity.

8. Section 2608 – Emission Reduction Credits

ARB staff is proposing to substantially revise this section. Some subsections are proposed to be rearranged to improve clarity. A new subsection is proposed for authorizing the generation of extra emission reduction credits, and subsections are included from other sections because they are more aligned with this section.

Staff is proposing to insert subsection (a) that is contained in the 2002 version of the definition of enterprise operator. This change is intended to emphasize that emission reduction credits are marketable.

Subsections (b), (c), (d), and (e) are proposed to be moved from Section 2609, as they are more directly related to the approval of emission reduction credits and this move will consolidate district and enterprise operator responsibilities regarding emission reduction credits. The text of subsections (b) and (c) was retained. The text of subsections (d) and (e) was modified to improve readability.

Staff is proposing to reposition subsection (g)(3) to subsection (f) to emphasize that emission reduction credits have a default credit life of three years. Some subsections of subsection (g) were repositioned to highlight credit value, usage, and life.

Staff is proposing to reword subsection (g) to simplify the language but retain the meaning and intent of the text. This change will improve clarity and specify that the methodology for generating emission reduction credits will be located in Appendix D.

Prior to the proposed revisions, Appendix B contained tables of default emission reductions by vehicle model year. Two years of values were provided, and updating required a regulation revision and re-adoption. ARB staff is proposing to delete the tables and provide the methodology for developing them in Appendix D. ARB staff is proposing to publish the tables annually on the VAVR program website using the methodology described in Appendix D. The tables can easily be updated without the need to reopen and re-adopt the regulation. This flexible approach provides updated tables in a timelier manner and preserves the methodology for developing the tables.

Subsection (h) is proposed for addition to authorize the issuance of extra emission reduction credits for retiring high emitting vehicles. The subsection also proposes that anyone who operates a VAVR program that involves retiring high emitting vehicles must provide the details of how extra emission reduction credits will be calculated in a plan to the ARB. The ARB must approve the methodology in a VAVR program plan. Finally, the subsection states that the methodology must be consistent with the methodology that is recommended by the ARB in the Carl Moyer Program Guidelines.

The proposed changes require that a complete, detailed technical justification must be submitted to the ARB and approved before implementing. The ARB staff believes that the proposed ARB methodology will be applicable in most cases but understands that local conditions may require a more unique approach. This approach provides flexibility but, because the methodologies must be approved by the ARB prior to implementation, only methodologies that are technically justifiable and result in emission reductions that are real, surplus, quantifiable, and enforceable will be considered.

Proposed subsection (h) also lists the general criteria that the ARB will use to evaluate alternative methodologies. ARB staff must be provided a clear, logical, and complete description of how the alternative methodology will quantify driving cycle emissions from the raw data or initial measurements of the technology that is proposed to be used to identify potential high emitting vehicles.

9. Section 2609 – Records and Auditing

Staff is proposing to extensively revise this section. To consolidate the responsibilities and requirements of districts and enterprise operators, subsections (a)(4), (5), (6), and (7)(B) are proposed to be deleted from this section and inserted in other sections in the regulation where the content is more closely aligned. Enforcement-related subsections are proposed to be moved to the sections where the enforcement issues directly apply.

Subsection (b) is proposed to be renumbered as subsection (a)(1) and is proposed to be reworded to specify that enterprise operators shall maintain and store records instead of just being responsible for doing so.

Staff is proposing the following:

Move subsection (a)(4) to Section 2608(d) and (c)
Move subsection (a)(5) to Section 2608(e)
Move subsection (a)(6) to Section 2608(b) and
Move subsection (a)(7)(B) to Sections 2604(j) and (k) and 2602(d)

As noted above, these proposed changes are designed to consolidate district and VAVR enterprise operator requirements and responsibilities in their respective sections and to consolidate emission reduction credit responsibilities on a single location.

10. Section 2610 – Pilot Program

This section is proposed for deletion to be replaced by new Section 2610. The pilot program was initiated by the ARB in response to H&SC section 44104.5 and Measure M1 in the 1994 California State Implementation Plan for Ozone. The pilot program was conducted from November 1998 to November 1999 in Southern California. Sierra Research published a draft report in September 2000 [Sierra Research, 2000]. While the program results were encouraging, the program was not expanded due to funding limitations and emission reductions called for in the 1994 SIP were not obtained.

11. Section 2610 – Identification of High Emitting Vehicles

Staff is proposing an entirely new section that authorizes the use of remote sensing devices (RSD) and other ARB-approved technologies to identify potential high emitting vehicles that emit pollutants in excess of the ASM test pass/fail limits established by BAR. The following is a brief description of the specific additions that are proposed. The explanations for the proposed additions are described throughout the staff report

Subsection (a) authorizes the use of RSD and other ARB-approved technologies to identify high emitting vehicles. The subsection also lists the requirements that an alternative technology must meet to be considered by the ARB. Staffs intent is to limit the technologies to those that are proven in practice and are well established. As emission reductions must be real, ARB staff must be confident that the technologies will identify potential high emitting vehicles with minimal false positives.

Subsection (b) specifies that the use of these technologies is optional. Those wishing to administer or operate conventional programs are not required to use any technology to identify vehicles for voluntary participation in a VAVR program.

Subsection (c) requires that high emitting VAVR programs comply with all other requirements of the VAVR regulation. High emitter VAVR programs are a subset of

VAVR programs and are subject to the authorizing legislation and all of the applicable responsibilities and requirements of this regulation.

Subsection (d) specifies that equipment and software associated with the use of any technology must be operated according to established and approved protocols and procedures. Staff's intent is to ensure that equipment and software associated with any technology is correctly applied and used. If deviations from established protocols or operating procedures are needed, the VAVR plan must detail and justify these them.

Subsection (e) states that the generation of extra emission reduction credits for retiring eligible vehicles must comply with the requirements of section 2608.

Section (f) requires anyone wanting to operate a high emitting vehicle VAVR program to submit a detailed plan for ARB approval and that the plan must be approved by the ARB prior to implementing the plan. ARB staff's intent is to ensure that high emitting vehicle VAVR programs are well thought out prior to implementation and that the resulting emission reductions are real, surplus, quantifiable, and enforceable.

Subsection (g) lists the minimum elements for a high emitting vehicle plan to be considered by the ARB. Staff's goal is that the plan must clearly explain for the average technical reader exactly how the technology works and how it will used to identify a potential high emitting vehicle. The plan must inform ARB staff that the administrators and operators of the program have a clear understanding of the application, operations, and use of the technology. The plan should also verify that the personnel operating the technology are qualified to do so and will follow established protocols.

Section (h) lists the criteria that the ARB will use to assess a high emitting vehicle VAVR plan. Plans that are incomplete or unclear will be returned within sixty days of receipt. No high emitter VAVR program may be initiated without an approved plan.

12. Section 2611 – Procurement of Credits for SIP Measure M1

Measure M1 of the 1994 California State Implementation Plan for Ozone was drafted to encourage the retirement of older, more polluting vehicles. The measure anticipated that the program would operate between 1996 and 2010 and that 11 tons per day of NOx and 14 tons per day of ROG would be reduced in 2010. It was envisioned that implementing M1 would remove up to 75,000 vehicles per year from the South coast Air Basin. Because this measure went largely unfunded, M1 was not included in later version of the SIP. This section is proposed for deletion, as SIP Measure M1 was unfunded and is no longer in the latest version of the SIP.

B. Proposed Changes to the Appendices of the VAVR Regulation

1. Appendix A – Vehicle Functional and Equipment Eligibility Inspection Form

In 2002, the original 1998 VAVR regulation was amended to be consistent with BAR's CAP program. During this harmonization process, the requirements of Section 2603, Vehicle Eligibility, were changed to model those contained in the CAP. However, the Vehicle Functional and Equipment Eligibility Inspection Form was not changed to be consistent with the new requirements. ARB staff is proposing to modify the form to reflect the requirements that are listed in various sections of the proposed regulation. Additionally, the title of the appendix is proposed to be shortened for clarity. The form will also reduced in size from three pages to a single page for ease of use. A reference is provided for each major line item or section that specifies the location in the proposed regulation that directly relates to the information requested.

2. Appendix B – Emission/Drive Train-Related Parts List

Appendix C was relabeled as Appendix B to reflect the order in which it was cited in the regulation. There was no change in content. The listing of emissions and drive train-related parts is not all inclusive, and the inspector at the location of the enterprise operation must use best professional judgment to ensure that all emission and drive train-related parts on vehicles to be retired are intact and not just those in the list.

3. Appendix C – Quality Control Checklist

Appendix C is proposed to be relabeled from Appendix D. The directions for completing this form are located in the body of the regulation in Section 2606(b)(2) and are proposed to be relocated here and revised to simplify for ease of use.

4. Appendix D – Calculation of Default Emission Reductions

Staff is proposing to renumber Appendix B and Appendix D and re-title the appendix from the original title "Voluntary Accelerated Light-Duty Vehicle Retirement Program Emissions." The appendix will be completely revised, and the default emission reduction tables will be deleted. As previously discussed, the tables contained in the regulation are limited to two specific calendar years. ARB staff is proposing to provide a more responsive update of the tables by including the methodology that is used to develop the tables. ARB staff will then generate the tables based on the reference methodology and will publish these tables on an annual basis on the VAVR website.

Table B-1, was calculated using the methodology outlined in proposed Appendix D of the regulation and lists the emission reductions for calendar years 2007 and 2008. To use the table, the model year of the vehicle is located in the first column and the default emissions are read off to the right according to the column headings.

Table B-1

Voluntary Accelerated Light-Duty Vehicle Retirement Program
Emission Reductions for Calendar Year 2007

Total Pounds Per Vehicle Over 3 Year Credit Life

	Emission Reductions (pounds) – 3 Year Credit Life					
Model Year	**TotalROG***	**NOx**	**CO**	**PM10**	**ROG exh**	**ROG evap**
65 and earlier	506	158	2,999	0.74	279	227
66	472	152	2,771	0.81	239	233
67	479	154	2,823	0.77	243	236
68	487	159	2,889	0.83	249	239
69	498	163	2,967	0.99	255	243
70	431	167	3,056	1.04	261	170
71	436	169	3,053	1.13	270	166
72	442	172	3,059	1.06	279	163
73	448	173	3,070	0.97	284	165
74	386	152	2,821	1.20	264	122
75	320	137	2,656	1.03	207	113
76	215	110	2,246	0.75	104	111
77	173	93	2,203	0.63	90	83
78	177	92	2,191	0.88	91	86
79	161	82	1,455	0.86	77	84
80	124	74	1,211	0.69	59	65
81	105	56	934	1.16	45	59
82	102	59	920	1.04	44	58
83	92	62	795	0.91	34	58
84	99	62	752	0.93	32	67
85	92	57	490	0.86	24	68
86	89	57	446	0.89	23	66
87	80	55	407	0.80	22	58
88	72	55	371	0.77	22	50
89	51	44	424	0.71	24	27
90	49	34	450	0.68	25	24
91	44	35	438	0.63	25	19
92	42	36	434	0.60	25	17
93	32	34	253	0.55	18	14
94	19	22	40	0.49	7	12

* Includes exhaust and evaporative emissions

Source: Calculated using EMFAC Working Draft 2B (June 2006). Numbers are subject to change pending final version of emission inventory model. Assumes average 1965 through 2007 vehicle as replacement vehicle for vehicles retired in calendar year 2007.

Table B-1 (continued)

Voluntary Accelerated Light-Duty Vehicle Retirement Program
Emission Reductions for Calendar Year 2008
Total Pounds Per Vehicle Over 3 Year Credit Life

	Emission Reductions (pounds) – 3 Year Credit Life					
Model Year	**TotalROG***	**NOx**	**CO**	**PM10**	**ROG exh**	**ROG evap**
65 and earlier	503	159	2,993	0.73	278	226
66	470	152	2,760	0.69	240	230
67	478	155	2,812	0.70	244	234
68	487	159	2,879	0.72	250	237
69	497	163	2,956	0.75	257	240
70	431	167	3,047	1.23	263	168
71	439	170	3,047	0.84	272	167
72	443	171	3,050	0.88	281	162
73	450	173	3,063	0.79	285	165
74	388	155	2,835	1.39	267	122
75	324	143	2,686	0.98	210	114
76	212	109	2,209	0.79	103	110
77	171	92	2,160	0.67	88	83
78	173	92	2,144	0.66	89	85
79	160	82	1,436	0.91	76	84
80	122	74	1,195	0.74	58	64
81	104	56	928	1.00	45	59
82	102	60	912	0.92	43	58
83	93	63	791	0.84	34	58
84	100	63	751	0.84	32	68
85	95	57	499	0.89	25	70
86	94	58	466	0.90	24	70
87	85	57	428	0.83	24	62
88	77	56	395	0.80	23	54
89	56	45	445	0.77	25	31
90	54	36	470	0.76	26	28
91	49	37	460	0.72	27	22
92	47	38	456	0.66	27	20
93	37	36	278	0.60	20	18
94	25	25	73	0.56	10	15

* Includes exhaust and evaporative emissions

Source: Calculated using EMFAC Working Draft 2B (June 2006). Numbers are subject to change pending final version of emission inventory model. Assumes average 1965 through 2008 vehicle as replacement vehicle for vehicles retired in calendar year 2008.