

State of California  
AIR RESOURCES BOARD

**Notice of Public Availability of Modified Text**

**PUBLIC HEARING TO CONSIDER THE ADOPTION OF EXHAUST AND EVAPORATIVE  
EMISSION CONTROL REQUIREMENTS FOR SMALL OFF-ROAD ENGINES LESS  
THAN OR EQUAL TO 19 KILOWATTS AND EQUIPMENT THAT USE SUCH ENGINES**

Public Hearing Date: September 25, 2003

Public Availability Date: February 9, 2004

Deadline for Public Comment: March 11, 2004

At its September 25, 2003, public hearing, the Air Resources Board (the Board) approved the adoption of sections 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, California Code of Regulations (CCR), along with the incorporated "Small Off-Road Engine Evaporative Emission Test Procedures, TP-901 and TP-902" and the incorporated "Small Off-Road Engine Evaporative Emissions Control System Certification Procedures, CP-901 and CP-902." The purpose of those regulations and test procedures is to establish evaporative emission standards for small off-road engines, and equipment that use small off-road engines, less than or equal to 19 kilowatts. The Board also approved the adoption of sections 2405.1, 2405.2, and 2405.3 and amendments to sections 2400, 2401, 2403, 2404, 2405, 2407, 2408, and 2409, title 13, CCR, along with amendments to the incorporated "California Exhaust Emission Standards and Test Procedures for 1995 and later Small Off-Road Engines," as last amended January 28, 2000, title 13, CCR. In addition, the Board approved the adoption of the incorporated "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines." The purpose of those modifications to the regulations and test procedures is to include more stringent exhaust standards for small off-road engines less than or equal to 19 kilowatts. In addition, the purpose of the updated test procedures is to more closely harmonize with the federal small engine test procedures (40 Code of Federal Regulations, part 90, subparts A, B, D, and E and corresponding appendices).

At the hearing, the staff presented, and the Board approved modifications to the regulations originally proposed in the Staff Report released on August 8, 2003, in response to comments received since the Staff Report was published. The following describes the modifications, by section number:

## EXHAUST REGULATIONS

### § 2400 - Applicability

Paragraph (a) was modified such that the regulations may apply to zero-emission small off-road equipment.

### § 2401 - Definitions

Definitions for "small off-road equipment" and "zero-emission small off-road equipment" were added.

### § 2403 - Exhaust Emission Standards and Test Procedures - Small Off-Road Engines

Paragraph (b)(1) was modified to reflect two compliance options available to manufacturers certifying to the exhaust emission standards. The first option (Option A) includes a 2007 and later standard of 8.0 grams per kilowatt-hour (g/kW-hr) for engines between 80 and 225 cubic centimeters (cc), and a 2008 and later standard of 6.0 g/kW-hr for engines greater than or equal to 225 cc. The second option (Option B) includes a 2007 and later standard of 10.0 g/kW-hr for engines between 80 and 225 cc, and a 2008 and later standard of 8.0 g/kW-hr for engines greater than or equal to 225 cc. Footnote seven was added to specify the corresponding evaporative emissions compliance options available to manufacturers, as specified in sections 2754, 2754.1 and 2751(b), title 13, CCR.

Paragraph (b)(2)(A) was modified to expand the definition of Blue Sky Series engines to include zero-emission small off-road equipment. In addition the voluntary low emission standards were modified to reflect a 50 percent reduction from the exhaust standards in Option B.

Paragraph (b)(2)(B) was modified to specify that engine families that comply with the Blue Sky Series emission standards may comply with any of the applicable evaporative emission standards, as noted in sections 2754 or 2754.1 or 2751(b) or 2757, title 13, CCR.

### § 2404 - Emission Control Labels and Consumer Information - 1995 and Later Small Off-Road Engines

Paragraph (c)(4)(A) was modified to specify an alternative engine label heading.

Paragraph (c)(4)(D) was modified to reference the most recent document.

Paragraph (d) was modified to specifically state a manufacturer's ability to include

references to compliance with Canadian or European standards on the engine label.

## EXHAUST TEST PROCEDURES

### § 90.1 - Applicability

This section was modified such that the provisions may apply to zero-emission small off-road equipment.

### § 90.3 - Definitions

The definition for "span gas" was removed. "Span gas" is later defined in section 90.312.

### § 90.103 -Exhaust emission standards

Paragraph (a)(1) was modified to be consistent with the changes made to section 2403(b)(1), title 13, CCR, as noted earlier.

Paragraph (a)(3) was modified to be consistent with the changes made to section 2403(b)(2), title 13, CCR, as noted earlier.

### § 90.106 - Certificate of conformity

Paragraph (a)(2) was modified to remove the specific time requirement in which the Executive Officer may request a manufacturer to submit a letter of intent prior to the submitting an application for certification. The Executive Officer may still request a manufacturer to submit a letter of intent to better allocate certification resources.

### § 90.107 - Application for certification

Paragraph (d)(13) was added to include certification application instructions for zero-emission small off-road equipment.

### § 90.117 - Certifications procedure - test engine selection

Paragraph (c) was modified to remove a ten-day requirement for Executive Officer approval of test engines.

### § 90.118 - Certification procedure - service accumulation and usage of deterioration factors

The test procedures currently allow engine manufacturers to use auxiliary fans during testing. Paragraph (f) was added to require engine manufacturers to provide the Executive Officer with information regarding the use of auxiliary cooling fans and demonstrate the need for supplemental cooling to represent in-use engine operation.

#### § 90.122 - Amending the application and certificate of conformity

Paragraph (d)(4) was modified to reference the correct section (section 2408(f)(2), title 13, CCR) which specifies the appropriate procedures to determine manufacturer compliance based on corporate averaging.

#### § 90.123 - Denial, revocation of certificate of conformity

Paragraph (b)(5) was modified to reference the correct section of the test procedures (section 90.126) which defines "reasonable assistance."

#### § 90.307 - Engine cooling system

Similar to the modification to section 90.118 noted above, this section was modified to specify that the use of auxiliary cooling fans during testing must be approved by the Executive Officer prior to testing.

### EVAPORATIVE REGULATIONS

#### § 2750 – Purpose

Paragraph (a) was modified to delete reference to “new equipment utilizing”. The reference to “25 horsepower” was replaced with a reference to “19 Kilowatts.”

Paragraph (b) was added to describe the three compliance programs approved by the Board on September 25, 2003. Two of the compliance programs were not included in the Staff Report and reflect compliance flexibility requested by industry.

#### § 2751 – Applicability

Paragraph (a)(4) was deleted because the intent of the regulation was not to enforce against users of small off-road engines.

#### § 2752 – Definitions

Paragraph (a) was modified to reflect the definitions in section 2403 (b), title 13, CCR, describing engine classes.

Paragraph (a)(4) was modified to reference test procedures incorporated in Article.

Paragraph (a)(5) was modified to include tanks approved through section 2767 (innovative products).

Paragraph (a)(6) was modified to specify the test temperature, pressure, and fuel to use when fuel hoses are tested per Society of Automotive Engineers (SAE) J1737.

Paragraph (a)(15) was added to define “Evaporative Family Emission Limit”.

Paragraphs (a)(19) and (a)(20) were modified to reference test procedures incorporated in Article.

Paragraph (a)(23) was added to define “Running Loss Emissions”.

Paragraph (a)(25) was added to define “Small Volume Manufacturer”.

Paragraph (a)(29) was modified to reference test procedures incorporated in Article.

Paragraph (a)(30) was modified to clarify the definition of a “Walk-Behind Mower”.

#### § 2753 – Certification

Paragraph (a) was modified to clarify the description of an evaporative emission control system on engines less than or equal to 80 cc, and require certification for control systems certified to design standards. Additionally, text prohibiting the operation of non-certified equipment in California was removed.

Paragraph (b) was modified to describe certification under section 2754, section 2754.1(a), section 2754.1(b), and section 2757.

Paragraph (c) was modified to describe allowable equipment modifications under the three compliance options.

Paragraph (d) was added to specify the reduced certification requirements for equipment meeting the requirements of section 2766.

#### § 2754 – Evaporative Emission Performance Standards

Introductory paragraph and Diurnal Evaporative Emissions Standards table were modified to clarify applicability. A footnote was added under the table to specify the required number of significant digits for a test measurement of diurnal emissions.

#### § 2754.1 – Alternative Performance Standards

This section was added that details two new compliance options not reflected in the Staff Report that were approved in concept at the Board hearing on September 25, 2003. Section 2754.1(a) details a compliance option that requires diurnal testing of equipment to

alternative standards. Section 2754.1(b) reflects a compliance option that allows certification by design.

#### § 2754.2 – Certification Averaging and Banking

This section was added to allow averaging and banking of credits for engines and equipment certified to diurnal performance standards.

#### § 2754.3 – Validation Plan

This section was added to require inventory validation studies of engines and equipment certified under sections 2754.1(a) and 2754.1(b).

#### § 2755 – Permeation Emissions Performance Standard

Permeation rate table was modified to clarify applicability. A footnote was added under the table to specify the required number of significant digits for a test measurement of permeation rate.

Paragraph (a) was modified to exclude data submittal for “equivalent tanks”.

#### § 2757 – Optional Performance Standards

Section was modified to clarify intent and applicability.

#### § 2758 – Test Procedures

Paragraph (c) was modified to reflect test procedure for demonstrating compliance with optional performance standards.

#### § 2759 – Equipment and Component Labeling

Paragraphs (c)(2), (c)(3), and (c)(4) were modified to clarify applicability.

Paragraph (c)(4)(C) was modified to reference standardized SAE abbreviations.

Paragraph (c)(4)(E) was modified to reflect intent to require model year (MY) in a “statement of compliance”.

Paragraph (c)(4)(F) was removed because engine displacement is already identified on exhaust label.

Paragraph (c)(4)(G) was relabeled and modified to clarify evaporative families for engines less than or equal to 80 cc.

Paragraph (d) was modified to allow the label to include conformance with Federal, Canadian, and European emission standards.

Paragraph (g) was modified to clarify that sample labels are not required for carry over certification unless revised.

#### § 2760 – Defects Warranty Requirements for Small Off-Road Engines

Paragraph (a) was modified to clarify applicability.

Paragraph (c)(8) was modified to require manufacturer approved replacement parts.

Paragraph (d) was modified to include a footnote clarifying the warranty parts list.

#### § 2761 – Emissions Related Defect Reporting Requirements

Paragraph (d) was modified to clarify applicability.

#### § 2762 – Voluntary Emission Recall Program

Paragraph (d) was modified to clarify time frame for information retention.

#### § 2763 – Ordered Recalls

Paragraph (a)(1) was modified to clarify applicability.

#### § 2764 – Evaporative Emission Control Warranty Statement

Paragraph (a) was modified to clarify that for engines less than or equal to 80 cc, only the fuel tank is covered by the evaporative emission control warranty requirements. Also clarified the term “Emissions” for a combined warranty statement.

#### § 2765 – New Equipment Compliance Testing

Paragraph (a)(1) was modified to allow the Executive Officer to specify design specification in an Executive Order of Certification.

Paragraph (a)(1), (a)(2), (a)(3), and (a)(7) were modified to include fuel lines and carbon canisters.

Paragraph (a)(7) was modified to clarify acceptance criteria for test results.

Paragraph (b) was modified to clarify applicability and allow 30 days for a manufacturer to



notify the Executive Officer that they intend to provide additional information and/or test results. New language was added that requires the Executive Officer to consider information and corrective actions taken by the manufacturer to remedy a failure.

#### § 2766 – Exemptions

Paragraph (a) was modified to require certification and clearly specify tanks exempt from section 2755. Language was added to clarify that permeation data are not required in a certification application for exempt tanks.

Paragraph (b) was modified to clarify the definition of a “Small Volume Manufacturer” and the conditions for an exemption.

Paragraph (b)(2) was modified to reference TP-902 for measuring butane working capacity.

#### § 2767 – Innovative Products

Paragraph (b) was modified to reduce number of samples from 30 to five.

#### § 2768 – Variances

Paragraph (g) was modified to specify that a variance will not be granted for more than one full model year after the year initiated.

#### § 2772 – Penalties

Section was modified to allow the Executive Officer discretion in determining equitable relief. Section was modified to specify that penalties apply on a per engine or equipment basis and that each day of violation is a separate violation.

### EVAPORATIVE TEST PROCEDURES

TP-901, Test Procedure for Determining Permeation Emissions from Small Off-Road Engine Equipment Fuel Tanks

#### Section 1 – Applicability

Clarified applicability of test procedure.

#### Section 2 – Performance Standards

Added reference to tank permeation performance standard specified in section 2754.1(b),

title 13, CCR.

### Section 3 – Principle and Summary of Test Procedure

Removed reference to high density polyethylene (HDPE) to allow other material types.

### Section 4 – Biases and Interferences

Removed requirement to control relative humidity. Clarified level of humidity that may cause test bias.

### Section 6 - Equipment

Section 6.1 – Removed reference to “HDPE” and hot plate temperature setting to allow fusion welding with other materials.

Section 6.3 – Added suggested vented enclosure operating requirements and tolerances.

### Section 7 – Calibration Procedure

Added language that requires all instrumentation used to measure permeation to be calibrated per the manufacturer’s specifications.

### Section 8 – Durability Demonstration

Adjusted specifications in the pressure/vacuum test portion of the durability demonstration. Clarified when pressure/vacuum testing is required.

### Section 11 – Test Procedure with Buoyant Force Correction

Removed test procedure with buoyant force correction method.

### Section 12 – Test Procedure with Trip Blank Correction

Re-enumerated and added a requirement to record relative humidity and barometric pressure.

Section 12.5 – Increased the number of 24-hour cycles over which the correlation coefficient must be calculated to ten.

### Section 15 – Calculating Permeation Rate Using Buoyant Force Correction

Removed calculation for buoyant force correction.

## Section 17 – Emission Factor

Removed emission factor definition.

Figure 1 – Removed buoyant force field data sheet.

Figure 2 – Re-enumerated to Figure 1 and added columns for recording relative humidity and barometric pressure.

## TP-902, Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines

### Section 1 – Applicability

The reference to “25 horsepower” was replaced with a reference to “19 Kilowatts”.

### Section 3 – Durability Demonstration

Clarified requirement to submit for approval evaporative emission durability test procedures.

Section 3 Second Bullet – Replaced “duplicate the effects of flow of liquid and gases” with “simulate the effects of flow of liquid and gases”. Provided guidance for determining “useful life”.

Section 3 Fifth Bullet – Revised pressure/vacuum test applicability and requirements.

Section 3 Sixth Bullet – Clarified slosh test requirements.

Section 3 Seventh Bullet – Modified canister working capacity requirements. Modified ramp up and ramp down times for thermal cycling. Clarified magnitude of force for vibration exposure test.

### Section 4 – General Summary of Test Procedure

Clarified diurnal test procedure requirements.

### Section 5 – Instrumentation

Section 5.1 – Modified requirements to specify that a homogeneous mixture of air be maintained within the enclosure.

### Section 6 – Test Procedure

Section 6.1 – Modified preconditioning requirements.

Section 6.2 – Deleted reference to test. Added requirements for canister purging.

Section 6.4 – Added requirement to purge enclosure to background levels after two-hour cold soak.

Section 8 – Alternative Test Procedures

Clarified intent to allow the use of a mini-SHED for performing diurnal test if test procedure is approved by the Executive Officer.

## EVAPORATIVE CERTIFICATION PROCEDURES

CP-901, Certification and Approval Procedures for Small Off-Road Engine Fuel Tanks

Section 2.1 – Performance Standards

Clarified intent of compliance demonstration.

Section 5.1 – Certification Process

Subsection 5.1.1 - Clarified that the test result of the test tank may be applied to other families made of the same material/process.

Section 6.2 – Letter of Intent

Added language allowing manufacturers to combine exhaust and evaporative Letters of Intent together.

Section 6.4 – Equipment Labeling

Added language allowing drawings of labels to be submitted with the certification application with the ARB retaining the right to request actual labels.

Section 6.7 – Certification Test Fuel

Added language allowing the use of Indolene Clear as a test fuel.

CP-902, Certification and Approval Procedure for Evaporative Emission Control Systems

Section 1 – General Information and Applicability

Clarified that the certification procedure applies to small off-road engines or equipment > 80 cc.

### Section 2.3 – Design Requirements

New paragraph clarifying intent of design requirements.

### Section 4 – Certification Overview

Clarified applicability. Added language allowing engine and equipment to be certified under the exhaust family with the last three letters of the exhaust family referencing the evaporative family code. Added language specifying test data for evaporative system components when certifying under section 2754.1(b), title 13, CCR.

### Section 5 – Certification Process

Subsection 5.1.1 – Added language specifying test data to be submitted with the certification application. Added language allowing a retest without repeating the preconditioning process.

### Section 7.2 – Letter of Intent

Reduced the time frame for the submittal of a Letter of Intent.

### Section 7.3 – Cover Letter

Added language allowing cover letter information to be combined with exhaust certification.

### Section 7.4 – Equipment Labeling

Added language allowing drawings of labels to be submitted with the certification application with the ARB retaining the right to request actual labels.

### Section 7.5 – Engineering Description of Evaporative Emission System

New section that requires the evaporative emission control system to be described in the certification application.

### Section 7.8 – Test Procedures

Re-enumerated to section 7.9. Added references to the applicable test procedures.

Staff has made several other non-substantial modifications throughout the regulations and test procedures to correct grammatical and typographical errors, correct references and

citations, and improve the clarity of the regulations and test procedures.

A copy of Board Resolution 03-24 approving the regulatory action described above and the regulatory documents for this rulemaking are available online at the following ARB internet site: <http://www.arb.ca.gov/regact/sore03/sore03.htm>

Printed copies are also available and may be obtained from Ms. Margaret Dawson, Mobile Source Control Division, (626) 575-6632 for fax (626) 459-4480.

In accordance with section 11346.8 of the Government Code, the Board directed the Executive Officer to adopt sections 2400, 2401, 2403, 2404, 2405, 2405.1, 2405.2, 2405.3, 2407, 2408, 2409, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, CCR, after making them available to the public for comment for a period of at least 30 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted.

Written comments on the modifications approved by the Board may be submitted by postal mail, electronic mail, or facsimile as follows:

Postal Mail is to be sent to:  
Clerk of the Board  
Air Resources Board  
1001 "I" Street, 23<sup>rd</sup> Floor  
Sacramento, California 95814

Electronic mail is to be sent to: [sore03@listserv.arb.ca.gov](mailto:sore03@listserv.arb.ca.gov)

Facsimile submissions are to be transmitted to: (916) 322-3928

In order to be considered by the Executive Officer, comments must be directed to the ARB in one of the three forms described above and received by the ARB by 5:00 p.m. on the deadline date for public comment listed at the beginning of this notice. Only comments relating to the above-described modifications to the text of the regulations, test procedures, and certification procedures shall be considered by the Executive Officer.

If you have special language needs, please contact Regulations Coordinator, Alexa Malik at (916) 322-4011 or by e-mail at [amalik@arb.ca.gov](mailto:amalik@arb.ca.gov). TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

Attachments