APPENDIX A: MANUFACTURER STANDARDS AND TEST PROCEDURES
Part 5

Proposed Regulation Order Part 5: Adoption of incorporated “California Exhaust and Standards and Test Procedures for New 2010 and Later Off-Road Large Spark-Ignition Engines” (40 CFR, Part 1048)

State of California
AIR RESOURCES BOARD

PROPOSED CALIFORNIA EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2010 AND LATER OFF-ROAD LARGE SPARK-IGNITION ENGINES

2010 Emission Standards

Adopted: [insert date of adoption]

NOTE: This document incorporates by reference Title 40, Code of Federal Regulations (CFR), Part 1048 – **CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD SPARK-IGNITION ENGINES**, Subparts A, B, C, F, G, H, and I, including Appendix I and II to Part 1048 as amended on July 13, 2005 (Federal Register, Volume 70, pages 40465 through 40486), and the internally referenced subparts of 40 CFR Part 86, 40 CFR Part 1065, and 40 CFR Part 1068. Sections that have been included in their entirety are set forth with the section number and title. California provisions that replace specific federal provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California regulations. The symbols "* * * * *" and "..." mean that the remainder of the CFR text for a specific section, which is not shown in these regulations, has been included by reference, with only the printed text changed. Federal regulations that are not listed are not part of the California regulations. Text in *Italics* is provided as rationale for replacement language.

This document is all newly adopted text. *[The italicized text in brackets describes the purpose of the California provisions.]*

PART 1048 – CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD SPARK-IGNITION ENGINES

Subpart A—Overview and Applicability

§1048.1 Does this part apply to me?

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(b) DELETE AND REPLACE WITH:
This part 1048 applies for engines built on or after January 1, 2010. You need not follow this part for engines you produce before January 1, 2010. See §1048.101 through 1048.115, and the definition of model year in §1048.801 for more information about the timing of new requirements.

[Applicability is changed to January 1, 2010 to coincide with introduction of the 0.8 g/kW-hr standard. Additionally, the reference to §1048.145 is removed because that section has been deleted; see §1048.145 for deletion rationale.]

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(d) DELETE AND REPLACE WITH:
Engines with a maximum engine power at or below 19 kW are covered by Title 13, California Code of Regulations, Chapter 9, Article 1, Small Off-Road Engines

[The language was changed to reference appropriate California standards for Small Off-Road Engines, which are more stringent than the EPA standards.]

§1048.5 Which engines are excluded from this part's requirements?
This part does not apply to the following nonroad engines:

(a) DELETE AND REPLACE WITH:
Engines that are subject to the requirements of Title 13, California Code of Regulations, Chapter 9, Article 3, Off-Highway Recreational Vehicles and Engines, including any related provisions and guidelines that are applicable to Off-Highway Recreational Vehicles and Engines.

[The language was changed to reference appropriate ARB regulations for Off-Highway Recreational Vehicles and Engines]

(b) DELETE AND REPLACE WITH:
Propulsion marine engines. See Title 13, California Code of Regulations, Chapter 9, Article 4.7, Spark-Ignition Marine Engines. This part applies with respect to auxiliary marine engines.

[The language was changed to reference appropriate ARB regulations for Marine Engines]

§1048.10 How is this part organized?

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(b) DELETE AND REPLACE WITH:

Subpart B of this part describes the emission standards and other requirements that must be met to certify engines under this part.

[The reference to §1048.145 is removed because that section has been deleted]

§1048.15 Do any other regulation parts affect me?

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(b)(2) DELETE AND REPLACE WITH:
Certification Procedures for Aftermarket Parts for Off-road Vehicles, Engines, Equipment, Chapter 9, Article 4.7, sections 2470 – 2476, Title 13, California Code of Regulations

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(b)(6) DELETE AND REPLACE WITH:
Procedures for In-Use Engine Recalls for Large Off-Road Spark-Ignition Engines with an Engine Displacement Greater Than 1.0 Liter, Chapter 9, Article 4.5, section 2439, Title 13, California Code of Regulations

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(b)(7) DELETE AND REPLACE WITH:
Administrative Procedures – Hearings, Subchapter 1, Article 1, Sections 60040 – 60094, Title 17, California Code of Regulations

(b)(8) ADD
Large Spark-Ignition (LSI) Engine Fleet Requirements, Chapter 15, Article 2, sections 2775, 2775.1, and 2775.2, Title 13, California Code of Regulations

§1048.20 What requirements from this part apply to excluded stationary engines?

Subpart B—Emission Standards and Related Requirements

§1048.101 What exhaust emission standards must my engines meet?

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(a) DELETE AND REPLACE WITH:
Emission standards for transient testing. Starting in the 2010 model year, transient exhaust emissions from your engines may not exceed the following emission standards:
(1) Measure emissions using the applicable transient test procedures described in subpart F of this part.

(2) The HC+NOx standard is 0.8 g/kW-hr and the CO standard is 20.6 g/kW-hr. For severe-duty engines, the HC+NOx standard is 0.8 g/kW-hr and the CO standard is 130.0 g/kW-hr. The following engines are not subject to the transient standards in this paragraph (a):

(A) High-load engines.
(B) Engines with maximum engine power above 560 kW.
(C) Engines with maximum test speed above 3400 rpm.

[The language adds the new HC+NOx emission standard of 0.8 grams per kilowatt-hour]

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(e) Fuel types. DELETE AND REPLACE WITH:
Fuel types (a)

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ADD

(b) Test Fuel.
(1) If the engine is a gasoline-fueled large spark-ignition engine, then the test fuel used shall be consistent with the fuel specifications as outlined in the " The "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as of January 1, 2006 (last amended August 4, 2005) incorporated by reference in Section 1961(d), Title 13, CCR). The California fuel specifications are contained in the California Code of Regulations, Title 13, Chapter 5, Article 1, Sections 2260-2272. If the engine is tested using the U.S. EPA test fuel, consistent with the fuel specifications as outlined in Title

40 Code of Federal Register, Part 1065, subpart H, the manufacturer shall demonstrate that the emission test results complies with these Test Procedures.
(2) If the engine is not a gasoline-fueled large spark-ignition engine, then the test fuel used shall be consistent with the fuel specifications as outlined in the " The "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as of January 1, 2006 (last amended August 4, 2005) incorporated by reference in Section 1961(d), Title 13, CCR). The California fuel specifications are contained in the California Code of Regulations, Title 13, Chapter 5, Article 3, Sections 2290- 2293.5. If the engine is tested using the U.S. EPA test fuel, consistent with the fuel specifications as outlined in Title 40 Code of Federal Register, Part 1065, subpart H, the manufacturer shall demonstrate that the emission test results complies with these Test Procedures.
(3) During all engine tests, the engine shall employ a lubricating oil consistent with the engine manufacturer's specifications for that particular engine. These specifications shall be recorded and declared in the certification application.

(f) DELETE AND REPLACE WITH:
Small engines. Engines with total displacement at or below 1000 cc may comply with the requirements of Title 13, California Code of Regulations, Chapter 9, Article 1, Small Off-Road Engines and Chapter 15, Article 1, Evaporative Emission Requirements for Off-Road Equipment instead of complying with the requirements of this part, as described in §1048.615.

[The language was changed to reference appropriate California standards for Small Off-Road Engines, which are more stringent than the EPA standards.]

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§1048.105 What evaporative emission standards and requirements apply?

§1048.110 How must my engines diagnose malfunctions?

§1048.115 What other requirements must my engines meet?
Engines subject to this part must meet the following requirements:
(a) DELETE AND REPLACE WITH:

Crankcase emissions. No crankcase emissions shall be discharged directly into the ambient atmosphere from any new 2001 or later engines subject to the provisions of this part.

[The EPA allows crankcase emissions to be added to the exhaust. This is inconsistent with the existing LSI regulation and ARB policy.]

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§1048.120 What emission-related warranty requirements apply to me?
DELETE AND REPLACE WITH:

PART 1

(a) Applicability. This section applies to new 2010 and later model year off-road large spark-ignition engines with engine displacement greater than 1.0 liter that are certified to the applicable emission standards. The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser. The use of alternative fuels must not void the warranties on any engine certified to use such fuel.

(b) General Emissions Warranty Coverage. The manufacturer of each off-road large spark-ignition engine must warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship which cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a period of 3 years or 2,500 hours, whichever occurs first.

(3) Free from defects in materials and workmanship which cause the failure of a high-cost warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for a period of five years or 3,500 hours of operation, whichever occurs first.

> (A) Each manufacturer shall identify in its application for certification the "high-priced" warranted parts which (i) are included on the Board's "Emission Warranty Parts List" as last amended February 22, 1985, incorporated herein by reference, and (ii) have an individual replacement cost, at the time of certification, exceeding the cost limit defined in subsection (B). The replacement cost shall include the cost of the part, labor and standard diagnosis. The costs shall be those of the highest-cost metropolitan area of California.
>
> (B) The dollar value of a high cost part shall be based on the following formula:

Cost Limitn = $300 * (CPI n-2 /118.3)

where,

Cost Limitn is the cost limit for the applicable model year of the engine rounded to the nearest ten dollars.

n is the model year of the new engines.

n-2 is the calendar year two years prior to the model year of the new engines.

CPI= is the annual average nationwide urban consumer price index published by the United States Bureau of Labor Statistics.

(C) The cost limit shall be reviewed annually by the Executive Officer. The highest-cost metropolitan area in California shall be identified by the Executive Officer for use in this subsection. If a manufacturer seeks certification of an engine before the applicable annual average CPI is available, the cost limit shall be calculated using the average of the monthly nationwide urban CPI figures for the most recent twelve month period for which figures have been published by the United States Bureau of Labor Statistics.

(D) Each manufacturer shall submit to the Executive Officer the documentation used to identify the "high-priced" warranted parts required in this subsection. The documentation shall include the estimated retail parts costs, labor rates in dollars per hour, and the labor hours necessary to diagnosis and replace the parts.

(4) In the absence of a device to measure hours of use, the engine must be warranted for a period of the years noted above in subsections (2) and (3). If a device to measure hours is used, the engine must be warranted for the number of hours or the number of years noted above in subsections (2) and (3), whichever occurs first.

(c) The warranty on emissions-related parts must be interpreted as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by Subsection (e) must be warranted for the warranty period defined in Subsection (b)(2) and (b)(3). If any such part fails during the period of warranty coverage, it must be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

(2) Any warranted part that is scheduled only for regular inspection in the written instructions required by Subsection (e) must be warranted for the warranty period defined in Subsection (b)(2) and (b)(3). A statement in such written instructions to the effect of "repair or replace as necessary" must not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.

(3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions required by Subsection (e) must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced

under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty provisions of this article must be performed at no charge to the owner at a warranty station.

(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at all manufacturer distribution centers that are franchised to service the subject engines.

(6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.

(7) The engine manufacturer must be liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the engine's warranty period defined in Subsection (b)(2) and (b)(3), the engine manufacturer must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part, as defined in Section 1900(b)(13), Title 13, may be used in the performance of any maintenance or repairs and must be provided without charge to the owner. It is not necessary for replacement parts to be the same brand or by the same manufacturer as the original part sold with the engine. Such use must not reduce the warranty obligations of the engine manufacturer.

(10) Add-on or modified parts, as defined in Section 1900(b)(1) and (b)(10), Title 13, that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts will, at the discretion of the engine manufacturer, be grounds for disallowing a warranty claim made in accordance with this article. The engine manufacturer must not be liable under this article to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

(11) The Executive Officer may request and, in such case, the engine manufacturer must provide, any documents that describe that manufacturer's warranty procedures or policies.

(d) Each manufacturer must include a copy of the following emission warranty parts list with each new engine, using those portions of the list applicable to the engine.

(1) Fuel Metering System

(A) Fuel injection system.

(B) Air/fuel ratio feedback and control system.

(C) Carburetor system (internal parts and/or pressure regulator or fuel mixer or injection system).

(D) Cold start enrichment system.

(2) Air Induction System
(A) Intake manifold or air intake system.
(B) Air mass sensor assembly.
(C) Turbocharger/supercharger systems.

(3) Exhaust Gas Recirculation (EGR) System
(A) EGR valve body, and carburetor spacer if applicable.
(B) EGR rate feedback and control system.

(4) Air injection System
(A) Air pump or pulse valve.
(B) Valves affecting distribution of flow.
(C) Distribution manifold.

(5) Catalyst or Thermal Reactor System
(A) Catalytic converter.
(B) Thermal reactor.
(C) Exhaust manifold.

(6) Positive Crankcase Ventilation (PCV) System.
(A) PCV Valve.
(B) Oil Filler Cap.

(7) Ignition Control System
(A) Engine Control Module (ECM).
(B) Ignition module(s).

(8) Miscellaneous items Used in Above Systems
(A) Vacuum, temperature, and time sensitive valves and switches.
(B) Sensors used for electronic controls.
(C) Hoses, belts, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware.
(D) Pulleys, belts and idlers.

(e) Each manufacturer must furnish with each new engine written instructions for the maintenance and use of the engine by the owner. The instructions must be consistent with this article and applicable regulations contained herein.

(f) Each manufacturer must submit the documents required by Subsections (d) and (e) with the manufacturer's preliminary application for engine certification for approval by the Executive Officer. Approval by the Executive Officer of the documents required by Subsections (d) and (e) must be a condition of certification. The Executive Officer must approve or disapprove the documents required by Subsections (d) and (e) within 90 days of the date such documents are received from the manufacturer. Any disapproval

must be accompanied by a statement of the reasons therefor. In the event of disapproval, the manufacturer may file for an adjudicative hearing under Title 17, California Code of Regulation, Division 3, Chapter 1, Subchapter 1.25 to review the decision of the Executive Officer.

(g) In the application, each manufacturer must include a statement concerning proper maintenance of the engine to maximize emissions performance. The statement must include, but not be limited to, information on air filter care and replacement schedule, proper fueling and fuel mixing, engine maintenance, and a maintenance schedule to ensure that the owner returns to a servicing center to check for deposits, debris build- up, etc.

PART 2

(a) Each manufacturer must furnish a copy of the following statement with each new off-road large spark-ignition engine with engine displacement greater than 1.0 liter, that have been certified to the applicable emission standards pursuant to Section 2433(b), using those portions of the statement applicable to the engine. Each manufacturer must furnish a copy of the warranty statement as set forth in the California Code of Regulations, Title 13, Section 2406(a) with each new off-road large spark-ignition engine with engine displacement less than or equal to 1.0 liter, using those portions of the statement applicable to the engine.

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board (and manufacturer's name, optional) is pleased to explain the emission control system warranty on your (model year(s)) (equipment type or off-road large spark-ignition) engine. In California, new off-road large spark-ignition (LSI) engines must be designed, built and equipped to meet the State's stringent anti-smog standards. (Manufacturer's name) must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor, regulator or fuel-injection system, ignition system, engine computer unit (ECM), catalytic converter and air induction system. Also included may be sensors, hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, (manufacturer's name) will repair your LSI engine at no cost to you including diagnosis, parts and labor. MANUFACTURER'S WARRANTY COVERAGE: The (model year(s)) off-road large spark-ignition engines are warranted for (warranty period). If any emission-related part on your engine is defective, the part will be repaired or replaced by (manufacturer's name). OWNER'S WARRANTY RESPONSIBILITIES: - As the off-road LSI engine owner, you are

responsible for the performance of the required maintenance listed in your owner's manual. (Manufacturer's name) recommends that you retain all receipts covering maintenance on your off-road engine, but (manufacturer's name) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance. - As the off-road large spark-ignition engine owner, you should however be aware that (manufacturer's name) may deny you warranty coverage if your off-road large spark-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications. - Your engine is designed to operate on (specific fuel(s)).Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements. - You are responsible for initiating the warranty process. The ARB suggests that you present your off-road large spark-ignition engine to a (manufacturer's name) dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact (Insert chosen manufacturer's contact) at 1-XXX-XXX-XXXX.

(b) Warranty statement furnishing requirements.

(1) Commencing with the 2001 model year for large off-road large spark-ignition engines with engine displacement greater than 1.0 liter, each manufacturer must furnish with each new engine a warranty statement that generally describes the obligations and rights of the engine manufacturer and owner under this article. Engine manufacturers must also include in the warranty statement a phone number the customer may use to obtain their nearest franchised service center.

(2) Commencing with the 2002 model year for large off-road large spark-ignition engines with engine displacement less than or equal to 1.0 liter, each manufacturer must furnish with each new engine a warranty statement as set forth in the California Code of Regulations, Title 13, Section 2406(b).

(c) Each manufacturer must submit the documents required by Subsections (a) and (b) with the manufacturer's preliminary application for new engine certification for approval by the Executive Officer. The Executive Officer may reject or require modification of the documents to the extent the submitted documents do not satisfy the requirements of Subsections (a) and (b). Approval by the Executive Officer of the documents required by Subsections (a) and (b) must be a condition of certification. The Executive Officer must approve or disapprove the documents required by Subsections (a) and (b) within 90 days of the date such documents are received from the manufacturer. Any disapproval must be accompanied by a statement of the reasons therefor. In the event of disapproval, the manufacturer may petition the Board to review the decision of the Executive Officer.

[The entire section has been replaced with existing ARB warranty provisions. The ARB warranty program is generally more prescriptive and provides greater protection to the buyer]

§1048.125 What maintenance instructions must I give to buyers?

§1048.130 What installation instructions must I give to equipment manufacturers?

§1048.135 How must I label and identify the engines I produce?

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(c) The label must–

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(9) DELETE AND REPLACE WITH:
Contain the maintenance specifications and adjustments recommended by the engine manufacturer, including, as applicable: spark plug gap width, valve lash, ignition timing, idle air/fuel mixture setting procedure and value (e.g., idle CO, idle speed drop), and high idle speed. These specifications must indicate the proper transmission position (if applicable) during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. If the manufacturer does not recommend adjustment of the foregoing specifications, the manufacturer must include in lieu of the "specifications" the single statement "No other adjustments needed." For all engines, the instructions for tune-up adjustments must be sufficiently clear on the label to preclude the need for a mechanic or equipment owner to refer to another document in order to correctly perform the adjustments.

[Our warranty provisions are more prescriptive and provide greater protection to the buyer]

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(17) DELETE AND REPLACE WITH:
If your engines are certified to the optional lower-emission standards in §1048.140, state: "OLES."

[The new language refers to the ARB's "Optional Low Emission Standards." See justification for this change in §1048.140]

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(g) ADD:

Engine labels must also include evaporative warranty information as described in California Code of Regulations, Title 13, Chapter 15, Article 1, Section 2759

§1048.140 What are the provisions for certifying optional lower-emission engines?

DELETE AND REPLACE WITH:

This section defines optional lower-emission standards for engines equipped with superior emission control systems. These engines, designated as "OLES" engines, must meet all the requirements in this part that apply to 2010 model year engines and one of the standards in the following table. These engines must also meet all testing and reporting requirements:

Optional Exhaust Emission Standards for
Hydrocarbons plus Oxides of Nitrogen (HC+NOx) and Carbon Monoxide (CO)
in grams per brake horsepower-hour (grams per kilowatt-hour)

Model Year	Engine Displacement	Durability Period	Standard – g/bhp-hr (g/kW-hr)	
			HC+NOx	CO
2010 and subsequent	> 1.0 liter	5000 hours or 7 years	0.4 (0.5)	15.4 (20.6)
			0.2 (0.3)	
			0.1 (0.1)	

(a) DELETE

(b) DELETE

(c) DELETE

(d) If you certify an engine family under this section, it is subject to all the requirements of this part as if these voluntary standards were mandatory.

[We have replaced the Blue Sky standards in §1048.140 with our optional lower-emission standards that are based on a previously established manufacturer's advisory correspondence or MAC. While not identical, our optional lower-emission standards are generally consistent with the EPA's HC+NOx Blue Sky standards.]

§1048.145 Are there interim provisions that apply only for a limited time?

(a) DELETE

[§1048.145 allows for the generation of offset credits. This is inconsistent with current ARB policy and has been deleted.]

Subpart C—Certifying Engine Families

§1048.201 What are the general requirements for obtaining a certificate of conformity?

§1048.205 What must I include in my application?

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(aa) DELETE AND REPLACE WITH:
Name an agent for service of process located in the United States. Service on this agent constitutes service on you or any of your officers or employees for any action by the California Air Resources Board.

[The revised language provides the ARB the ability to serve process]

§1048.210 May I get preliminary approval before I complete my application?

§1048.220 How do I amend the maintenance instructions in my application?

§1048.225 How do I amend my application for certification to include new or modified engines?

§1048.230 How do I select engine families?

*** * * * ***

(f) DELETE

[The language has been deleted as the current LSI program and ARB policy does not allow manufacturers to divide engine families into subfamilies with multiple standards.]

§1048.235 What emission testing must I perform for my application for a certificate of conformity?

§1048.240 How do I demonstrate that my engine family complies with exhaust emission standards?

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(c) DELETE AND REPLACE WITH:
To compare emission levels from the emission-data engine with the applicable emission standards, apply deterioration factors to the measured emission levels for each pollutant. Specify the deterioration factors based on emission measurements using four significant figures, consistent with good engineering judgment. For example,

your deterioration factors must take into account any available data from in-use testing with similar engines (see subpart E of this part). Apply deterioration factors as follows:

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(2) DELETE

[ARB policy is to use a more conservative multiplicative deterioration factor]

*** * * * ***

§1048.245 How do I demonstrate that my engine family complies with evaporative emission standards?

§1048.250 What records must I keep and make available to ARB?

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(e) ADDED
Maintain certification engines for a period of two years

[ARB policy, as expressed in other motor vehicle regulations, requires engine manufacturers to maintain certification engines for a specified period.]

§1048.255 When may EPA deny, revoke, or void my certificate of conformity?

Subpart D—Testing Production-line Engines

§1048.301 When must I test my production-line engines?
DELETE AND REPLACE WITH:

(a) Compliance Test Procedures

(1) These procedures apply, commencing with the 2001 model year, to any large off-road spark-ignition engine family group (as defined in Sections 2 and 11 of the "California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines") or any subgroup within an engine family group selected for compliance testing pursuant to this section, with an engine displacement greater than 1.0 liter, that have been certified to the applicable emission standards pursuant to Section 2433(b). 2002 and later model year large off-road spark-ignition engines with engine displacement less than or equal to 1.0 liter must comply with the new engine compliance test procedures set forth in the California Code of Regulations, Title 13, Section 2407.

(2) The Executive Officer may, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, order an engine

manufacturer to make available for compliance testing and/or inspection a reasonable number of engines, and may direct that the engines be delivered to the state board at the Haagen- Smit Laboratory, 9528 Telstar Avenue, El Monte, California 91731 or where specified by the Executive Officer. The Executive Officer may also, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, have a manufacturer compliance test and/or inspect a reasonable number of engines at the manufacturer's facility under the supervision of an ARB Enforcement Officer. Engines must be representatively selected from sources specified by the Executive Officer according to a method approved by him/her, that insofar as practical must exclude engines that would result in an unreasonable disruption of the manufacturer's distribution system. To the extent practical, the Executive Officer must test a representative configuration (as defined in Section 3 of the "California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines") from the engine family group in order to minimize manufacturers' expense and inconvenience in testing different engine configurations.

A subgroup of an engine family group may be selected for compliance testing only if the Executive Officer has reason to believe that the emissions characteristics of that subgroup are substantially in excess of the emissions of the engine family group as a whole.

(3) For all 2001 and subsequent model year off-road large spark-ignition engines selected for compliance testing, the selection and testing of engines and the evaluation of data must be made in accordance with the procedures set forth herein.

(4) For manufacturers that have more than one engine family group, the Air Resources Board or its designated laboratory may procure and test at the manufacturer's expense no more than one engine family group per year, if compliance testing is required.

Notwithstanding the above, if a manufacturer fails to demonstrate compliance with the emission standards after one engine family group has been tested, the ARB or its designated laboratory may test additional engine family groups at the manufacturer's expense, until compliance is demonstrated on one engine family group or all of a manufacturer's engine family groups have been tested. However, the ARB may conduct engine enforcement testing pursuant to the engine test procedures specified in Section 2433, at its own expense. In such an instance, the Executive Officer must order testing only in those cases where evidence such as production line test data or in-use test data indicate that engines may not be in compliance.

(5) All testing must be conducted in accordance with the applicable model year certification emission test procedures. Break-in before testing may be performed on test engines to the same extent it is performed on production-line testing engines (See subsection (b)). No break-in or modifications, adjustments, or special preparation or maintenance will be allowed on engines chosen for compliance testing without the

written consent of the Executive Officer. Such consent must not be unreasonably withheld where such adjustment or alteration is required to render the engine testable and reasonably operative.

(6) If the manufacturer elects to specify a different break-in or adjustments, they will be performed by the manufacturer under the supervision of ARB personnel.

(7) Correction of damage or maladjustment that may reasonably be found to have resulted from shipment of the engine is permitted only after testing the engine, except where 100 percent of the manufacturer's production is given that inspection or maintenance by the manufacturer's own personnel. Exceptions are allowed in the cases where the damage results in the engine being unsafe to operate, inoperable, or unable to complete the emission test. Additionally, an exception is allowed if the damage results in engine performance deficiencies that would be obvious in customer service and that would cause the customer to seek repair of the engine. The manufacturer may request that the engine be repaired from shipping damage, and be retested. If the Executive Officer concurs, the engine may be retested, and the original test results may be replaced by the after-repair test results.

(8) Engines must be randomly chosen from the selected engine family group or subgroup. Prior to the start of testing, manufacturers must indicate that sampling plan (as described in paragraphs (9) and (10), below) they will use. Once testing has begun, manufacturers may not switch to the other sampling plan; the generated test results will be final. Each chosen engine must be tested according to the "California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines" ("Test Procedures") to determine its emissions. Unique specialty hardware and personnel normally necessary to prepare the engine for the performance of the test as set forth in the Test Procedures must be supplied by the manufacturer within seven days after request. Failure to supply this unique specialty hardware or personnel may not be used by the manufacturer as a cause for invalidation of the subsequent tests.

(9) Engines must be tested in groups of five until a "Pass" or Fail" decision is reached for each pollutant independently for the engine family or subgroup in accordance with the following table:

Number of Engines Tested	Decide “Fail” If “U” is greater than or equal to:	Decide “Pass” If “U” is less than or equal to:
5	2.18	-0.13
10	2.11	0.51
15	2.18	0.88
20	2.29	1.16

where:

$$U = \frac{\sum_{I=1}^{n} (x_i - \mu_o)}{\left(\sum_{I=1}^{n} (x_i - \mu_o)^2\right)^{0.5}}$$

x_i = the projected emissions of one pollutant for the ith engine tested.
μ_o = the applicable calendar year emission standard for that pollutant.
n = the number of engines tested.

(10) The Executive Officer will find that a group of engines has failed the compliance testing pursuant to the above table if the Executive Officer finds that the average emissions of the engines within the selected engine family or subgroup exceed the applicable calendar year new engine emission standard for at least one pollutant.

(11) If no decision for a pollutant or pollutants can be reached after 20 engines have been tested, the Executive Officer will not make a "Fail" decision for the selected engine family or subgroup on the basis of these 20 tests alone. Under these circumstances the Executive Officer will elect to test 10 additional engines. If the average emissions from the 30 engines tested exceed any one of the exhaust emission standards for which a "Pass" decision has not been previously made, the Executive Officer will render a "Fail" decision.

(12) If the Executive Officer determines, in accordance with the procedures set forth in Subsection (a) that an engine family, or any subgroup within an engine family, exceeds the emission standards for one or more pollutants, the Executive Officer will:

(A) Notify the engine manufacturer that the engine manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant engines in the State of California, or enjoined from any further sales or distribution, of the noncompliant engines in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending the Executive Order, or seeking to enjoin an engine manufacturer, the Executive Officer will consider production line test results, if any, and any additional test data or other information provided by the engine manufacturer and other interested parties. In addition, the engine manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code, sections 43000 et seq.

(B) Notify the equipment manufacturer that the equipment manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant engines in the State of California, or being enjoined from any further sales, or distribution, of the equipment manufacturer's equipment product line(s) that are, or utilize engines that are, noncompliant with the applicable emission regulations pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending the Executive Order, or seeking to enjoin an equipment manufacturer, the Executive Officer will consider production line test results, if any, and any additional test data or other information provided by the equipment manufacturer and other interested parties. In addition, the equipment manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code, sections 43000 et seq.

(13) Engines selected for inspection must be checked to verify the presence of those emissions-related components specified in the engine manufacturer's application for certification, and for the accuracy of any adjustments, part numbers and labels specified in that application. If any engine selected for inspection fails to conform to any applicable law in Part 5 (commencing with Section 43000) of Division 26 of the Health and Safety Code, or any regulation adopted by the state board pursuant thereto, other than an emissions standard applied to new engines to determine "certification" as specified in Chapter 9, the Executive Officer will:

(A) Notify the engine manufacturer and may seek to revoke or suspend the Executive Order authorizing sales and distribution or enjoin the engine manufacturer from any further sales, or distribution, of the applicable noncompliant engine families or subgroups within the engine families in the State of California pursuant to Section 43017 of the Health and Safety Code. Before revoking or suspending the Executive Order authorizing sales and distribution of the applicable noncompliant engine families or subgroups within the State of California, or seeking to enjoin an engine manufacturer, the Executive Officer will consider any information provided by the engine manufacturer and other interested parties. In addition, the engine manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code, sections 43000 et seq.

(B) Notify the equipment manufacturer and may seek to revoke or suspend the Executive Order authorizing sales and distribution or enjoin the equipment manufacturer from any further sales, or distribution, in the State of California of the equipment manufacturer's equipment product line(s) that are, or utilize engines that are, noncompliant with the applicable emission regulations pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending the Executive Order authorizing sales and distribution of the applicable noncompliant equipment, or seeking to enjoin an equipment manufacturer, the Executive Officer will consider any information provided by the equipment manufacturer and other interested parties. In addition, the equipment manufacturer may be subject to, on a per engine basis, any

and all remedies available under Part 5, Division 26 of the Health and Safety Code, sections 43000 et seq.

(b) 2001 and Subsequent Model Cumulative Sum Production Line Test Procedures

(1) The 2001 and subsequent model year off-road large spark-ignition engines with an engine displacement of greater than 1.0 liter, that have been certified to the applicable emission standards pursuant to Section 2433(b), are subject to production line testing performed according to the requirements specified in this section. The 2002 and subsequent model year off-road large spark-ignition engines with an engine displacement of less than or equal to 1.0 liter, that have been certified for sale in California, must comply with production line testing performed according to the requirements set forth in the California Code of Regulations, Title 13, Section 2407.

(A) Standards and Test Procedures. The emission standards, exhaust sampling and analytical procedures are those described in the Test Procedures, and are applicable to engines tested only for exhaust emissions. The production line test procedures are specified in conjunction with the Test Procedures. An engine is in compliance with these production line standards and test procedures only when all portions of these production line test procedures and specified requirements from the Test Procedures are fulfilled, except any adjustable engine parameters may be set to any value or position that is within the range available to the ultimate purchaser.

(B) Air Resources Board (ARB) personnel and mobile laboratories must have access to engine or equipment assembly plants, distribution facilities, and test facilities for the purpose of engine selection, testing, and observation. Scheduling of access must be arranged with the designated engine manufacturer's representative and must not unreasonably disturb normal operations (See Test Procedures).

(2) Engine Sample Selection.

(A) At the start of each quarter for the model year, the engine manufacturer will begin to randomly select engines from each engine family for production line testing, according to the criteria specified herein. The engines must be representative of the engine manufacturer's California sales. Each engine will be selected from the end of the assembly line. All engine models within the engine family must be included in the sample pool. Each selected engine for production line testing must pass the inspection test, by being equipped with the appropriate emission control systems certified by the ARB. The procedure for randomly selecting engines or units of equipment must be submitted to the Chief, Mobile Source Operations Division, 9528 Telstar Avenue, El Monte, CA, 91731, prior to the start of production for the first year of production.

(i) For newly certified engine families: After two engines are tested, the manufacturer will calculate the required sample size for the model year according to the Sample Size Equation in paragraph (4) of this subsection.

(ii) For carry-over engine families: After one engine is tested, the manufacturer will combine the test with the last test result from the previous model year and then calculate the required sample size for the model year according to the Sample Size Equation in paragraph (4) of this subsection.

(iii) Beginning with the 2006 model year, a manufacturer may annually request of the Executive Officer a reduction in production line testing for an engine family. In making such request, the manufacturer must demonstrate that the engine family's production line test data is consistent and in-use compliance data is consistent for the previous year(s) and in compliance with the emission standards in Section 2433. If the Executive Officer determines that a reduction is warranted, the manufacturer may test as few as one production engine during the subject model year.

(B) Engine manufacturers must provide actual California sales, or other information acceptable to the Executive Officer, including, but not limited to, an estimate based on market analysis and federal production or sales.

(3) Engine Preparation and Preconditioning

(A) No emissions tests may be performed on an engine prior to the first production line test.

(B) The engine or unit of equipment must be tested after the engine manufacturer's recommended break-in period. The engine manufacturer must submit to the Executive Officer the schedule for engine break-in and any changes to the schedule with each quarterly report. This schedule must be adhered to for all production line testing within an engine family and subgroup or engine family and assembly plant as appropriate.

(C) If an engine or unit of equipment is shipped to a remote facility for production line testing, and adjustment or repair is necessary because of such shipment, the engine manufacturer must perform the necessary adjustments or repairs only after the initial test of the engine or equipment. Engine manufacturers must report to the Executive Officer in the quarterly report, all adjustments or repairs performed on engines or equipment prior to each test. In the event a retest is performed, a request may be made to the Executive Officer, within ten days of the production quarter, for permission to substitute the after-repair test results for the original test results. The Executive Officer will either affirm or deny the request by the engine manufacturer within ten working days from receipt of the request.

(D) If an engine manufacturer determines that the emission test results of an engine or unit of equipment are invalid, the engine or equipment must be retested. Emission results from all tests must be reported. The engine manufacturer must include a detailed report on the reasons for each invalidated test in the quarterly report.

(4)(A) Manufacturers will calculate the required sample size for the model year for each engine family using the Sample Size Equation below. N is calculated from each test result. The number N indicates the number of tests required for the model year for an engine family. N is recalculated after each test. Test results used to calculate the variables in the Sample Size Equation must be final deteriorated test results as specified in (d)(3).

$$N = \left[\frac{(t_{95} \, x \, \sigma)}{(x - STD)} \right]^2 + 1$$

Where:

N = required sample size for the model year.

t_{95} = 95% confidence coefficient. It is dependent on the number of tests completed, n, as specified in the table in paragraph (C) of this section. It defines one-tail, 95% confidence intervals.

σ = test sample standard deviation calculated from the following

$$\sigma = \sqrt{\frac{\sum (X_i - x)^2}{n - 1}}$$

equation:

Where:

X_i = emission test result for an individual engine

x = mean of emission test results of the sample

STD = emission standard

n = The number of tests completed in an engine family

(B) Reserved

(C) Number of Tests (n) & 1-tail Confidence Coefficients (t 95)

n	t_{95}	n	t_{95}	n	t_{95}
2	6.31	12	1.80	22	1.72
3	2.92	13	1.78	23	1.72
4	2.35	14	1.77	24	1.71
5	2.13	15	1.76	25	1.71
6	2.02	16	1.75	26	1.71
7	1.94	17	1.75	27	1.71

n	t_{95}	n	t_{95}	n	t_{95}
8	1.90	18	1.74	28	1.70
9	1.86	19	1.73	29	1.70
10	1.83	20	1.73	30	1.70
11	1.81	21	1.72	∞	1.645

(D) A manufacturer must distribute the testing of the remaining number of engines needed to meet the required sample size N, evenly throughout the remainder of the model year.

(E) After each new test, the required sample size, N, is recalculated using updated sample means, sample standard deviations and the appropriate 95% confidence coefficient.

(F) A manufacturer must continue testing and updating each engine family's sample size calculations according to paragraphs (4)(A) through (4)(F) of this section until a decision is made to stop testing as described in paragraph (4)(G) of this section or a noncompliance decision is made pursuant to (c)(6).

(G) If, at any time throughout the model year, the calculated required sample size, N, for an engine family is less than or equal to the sample size, n, and the sample mean, x, for HC + NOx is less than or equal to the emission standard, the manufacturer may stop testing that engine family.

(H) If, at any time throughout the model year, the sample mean, x, for HC + NOx is greater than the emission standard, the manufacturer must continue testing that engine family at the appropriate maximum sampling rate.

(I) The maximum required sample size for an engine family (regardless of the required sample size, N, as calculated in paragraph (4)(A) of this section) is thirty tests per model year.

(J) Manufacturers may elect to test additional randomly chosen engines. All additional randomly chosen engines tested in accordance with the testing procedures specified in Emission Standards and Test Procedures must be included in the Sample Size and Cumulative Sum equation calculations as defined in section (b), respectively.

(K) Small volume manufacturers may limit the number of engines tested to one percent of their California production. Compliance would be determined based on the available test data.

(5) The manufacturer must produce and assemble the test engines using its normal production and assembly process for engines to be distributed into commerce.

(6) No quality control, testing, or assembly procedures will be used on any test engine or any portion thereof, including parts and subassemblies, that have not been or will not be used during the production and assembly of all other engines of that family, unless the Executive Officer approves the modification in production or assembly procedures.

(c) Calculation of Cumulative Sum (CumSum) Statistic. Each engine manufacturer must review the test results using the following procedure:

(1) Manufacturers must construct the following CumSum equation for each regulated pollutant for each engine family. Test results used to calculate the variables in the CumSum Equation must be final deteriorated test results as defined in (d)(3).

$$C_i = \max[0 \text{ OR } (C_{i-1} + X_i - (STD + F))]$$

Where:

C_i	=	The current CumSum statistic
C_{i-1}	=	The previous CumSum statistic. Prior to any testing, the CumSum statistic = 0 (i.e. $C_0 = 0$)
X_i	=	The current emission test result for an individual engine
STD	=	Emission standard
F	=	$0.25 \times \sigma$

(2) After each test, C_i is compared to the action limit, H, the quantity which the CumSum statistic must exceed, in two consecutive tests, before the engine family may be determined to be in noncompliance for purposes of paragraph (c).

H	=	The Action Limit. It is $5.0 \times \sigma$, and is a function of the standard deviation, σ.
σ	=	is the sample standard deviation and is recalculated after each test.

(3) After each engine is tested, the CumSum statistic shall be promptly updated according to the CumSum Equation in paragraph (1) of this subsection.

(4) If, at any time during the model year, a manufacturer amends the application for certification for an engine family as specified in Sections 17 and 18 of the Test

Procedures by performing an engine family modification (i.e. a change such as a running change involving a physical modification to an engine, a change in specification or setting, the addition of a new configuration, changes in calibration, or the use of a different deterioration factor), all previous sample size and CumSum statistic calculations for the model year will remain unchanged.

(5) A failed engine is one whose final deteriorated test result for a regulated pollutant exceeds the emission standard for that pollutant.

(6) An engine family may be determined to be in noncompliance, if at any time throughout the model year, the CUMSUM statistic, C i, for a regulated pollutant is greater than the action limit, H, for two consecutive tests.

(7) The engine manufacturer must perform a minimum of two (2) tests per engine family per quarter of production, regardless of whether the conditions of sample size have been met.

(8) All results from the previous quarters of the same model year must be included in the on-going Cumulative Sum analysis, provided that the engine family has not failed (e.g., if three engines of a family were tested in the first quarter, the first test of the second quarter would be considered as the fourth test).

(9) If the Cumulative Sum analysis indicates that an engine family has failed, the engine manufacturer must notify the Chief of the Mobile Source Operations Division in writing and by telephone, within ten (10) working days. Corrective action will be taken as noted in paragraphs (e) and (f) below.

(10) If a manufacturer performs corrective action on a failed engine family and then resumes production, all previous tests will be void, and Cumulative Sum analysis will begin again with the next test.

(11) At the end of the quarter, or when the Cumulative Sum analysis indicates that a decision has been made, the manufacturer must provide all the data accumulated during the quarter.

(d) Calculation and reporting of test results.

(1) Initial test results are calculated following the applicable test procedure. The manufacturer rounds these results, in accordance with ASTM E29- 93a, to the number of decimal places contained in the applicable emission standard expressed to one additional significant figure. (ASTM E29-93a has been incorporated by reference.)

(2) Final test results are calculated by summing the initial test results derived in paragraph (a) of this section for each test engine, dividing by the number of tests conducted on the engine, and rounding in accordance with ASTM E29-93a to the same

number of decimal places contained in the applicable standard expressed to one additional significant figure.

(3) The final deteriorated test results for each test engine are calculated by applying the appropriate deterioration factors, derived in the certification process for the engine family, to the final test results, and rounding in accordance with ASTM E29-93a to the same number of decimal places contained in the applicable standard expressed to one additional significant figure.

(4) If, at any time during the model year, the CumSum statistic exceeds the applicable action limit, H, in two consecutive tests, the engine family may be determined to be in noncompliance and the manufacturer must notify the Chief of Mobile Sources Operations Division and the Manager of the New Vehicle Audit Section, 9528 Telstar Ave., El Monte, CA 91731, within ten (10) working days of such exceedance by the Cum Sum statistic.

(5) Within 30 calendar days of the end of each quarter, each engine manufacturer must submit to the Executive Officer a report which includes the following information:

(A) The location and description of the manufacturer's or other's exhaust emission test facilities which were utilized to conduct testing reported pursuant to this section;

(B) Total production and sample sizes, N and n, for each engine family;

(C) The applicable emissions standards for each engine family.

(D) A description of the process to obtain engines on a random basis;

(E) A description of the test engines. (i.e., date of test, engine family, engine size, engine or equipment identification number, fuel system, dynamometer power absorber setting in horsepower, engine code or calibration number, and test location).

(F) The date of the end of the engine manufacturer's model year production for each engine family.

(G) For each test conducted,

(i) A description of the test engine, including:

(a) Configuration and engine family identification,

(b) Year, make, and build date,

(c) Engine identification number, and

(d) Number of hours of service accumulated on engine prior to testing;

(ii) Location where service accumulation was conducted and description of accumulation procedure and schedule;

(iii) Test number, date, test procedure used, initial test results before and after rounding, and final test results for all exhaust emission tests, whether valid or invalid, and the reason for invalidation, if applicable;

(iv) A complete description of any adjustment, modification, repair, preparation, maintenance, and/or testing which was performed on the test engine, was not reported pursuant to any other part of this article, and will not be performed on all other production engines;

(v) The exhaust emission data for HC+NOx (or NMHC+NOx, as applicable) and CO for each test engine or equipment. The data reported must provide two significant figures beyond the number of significant figures in applicable emission standards.

(vi) The retest emission data, as described in paragraph (d) above for any engine or unit of equipment failing the initial test, and description of the corrective actions and measures taken, including specific component replaced or adjusted.

(vii) A CumSum analysis, as required in paragraph (c), of the production line test results for each engine family;

(viii) Any other information the Executive Officer may request relevant to the determination whether the new engines being manufactured by the manufacturer do in fact conform with the regulations with respect to which the Executive Order was issued;

(ix) For each failed engine as defined in paragraph (c), a description of the remedy and test results for all retests.

(x) Every aborted test data and reason for the aborted test.

(xi) The start and stop dates of batch-produced engine family production.

(xii) The required information for all engine families in production during the quarter regardless of sample size; and

(xiii) The following signed statement and endorsement by an authorized representative of the manufacturer:

This report is submitted pursuant to this article. This production line testing program was conducted in complete conformance with all applicable regulations under the Test Procedures. No emission-related changes to production processes or quality control procedures for the engine family tested have been made during this production line testing program that affect engines from the production line. All data and information

reported herein is, to the best of (Company Name) knowledge, true and accurate. I am aware of the penalties associated with violations of the California Code of Regulations and the regulations thereunder. (Authorized Company Representative.)

(H) Each manufacturer must submit a copy of the report that has been stored (e.g., computer disc), or may be transmitted, in an electronically digitized manner, and in a format that is specified by the Executive Officer. This electronically based submission is in addition to the written submission of the report.

(e) Manufacturer Notification of Failure.

(1) The Executive Officer will notify the engine manufacturer that the engine manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant engines in the State of California, or being enjoined from any further sales, or distribution, of the noncompliant engines in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending, or seeking to enjoin an engine manufacturer, and other interested parties, including, but not limited to corrective actions applied to the noncompliant engine family. In addition, the engine manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code, sections 43000 et seq.

(2) The Executive Officer will notify the equipment manufacturer that the equipment manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant equipment in the State of California, or being enjoined from any further sales, or distribution, of the noncompliant equipment product line(s) that are, or utilize engines that are, noncompliant with the applicable emission regulations in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending, or seeking to enjoin an equipment manufacturer, and other interested parties, including, but not limited to corrective actions applied to the noncompliant engine family. In addition, the equipment manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code, sections 43000 et seq.

(f) Suspension and revocation of Executive Order.

(1) The Executive Order is automatically suspended with respect to any engine failing pursuant to paragraph (c)(5) effective from the time that testing of that engine family is completed.

(2) The Executive Officer may suspend the Executive Order for an engine family which is determined to be in noncompliance pursuant to paragraph (c)(6). This suspension will not occur before fifteen days after the engine family is determined to be in noncompliance.

(3) If the results of testing pursuant to these regulations indicate that engines of a particular family produced at one plant of a manufacturer do not conform to the regulations with respect to which the Executive Order was issued, the Executive Officer may suspend the Executive Order with respect to that family for engines manufactured by the manufacturer at this and all other plants.

(4) Notwithstanding the fact that engines described in the application for certification may be covered by an Executive Order, the Executive Officer may suspend such certificate immediately in whole or in part if the Executive Officer finds any one of the following infractions to be substantial:

(A) The manufacturer refuses to comply with any of the requirements of this subpart.

(B) The manufacturer submits false or incomplete information in any report or information provided to the Executive Officer under this subpart.

(C) The manufacturer renders inaccurate any test data submitted under this subpart.

(D) An ARB enforcement officer is denied the opportunity to conduct activities authorized in this subpart and a warrant or court order is presented to the manufacturer or the party in charge of the facility in question.

(5) The Executive Officer may suspend such certificate immediately in whole or in part if the Executive Officer finds that an ARB enforcement officer is unable to conduct activities authorized in this Section and the Test Procedures because a manufacturer has located its facility in a foreign jurisdiction where local law prohibits those activities.

(6) The Executive Officer shall notify the manufacturer in writing of any suspension or revocation of an Executive Order in whole or in part. A suspension or revocation is effective upon receipt of the notification or fifteen days from the time an engine family is determined to be in noncompliance pursuant to paragraph (c)(5) or (c)(6), whichever is later, except that the certificate is immediately suspended with respect to any failed engines as provided for in paragraph (a) of this section.

(7) The Executive Officer may revoke an Executive Order for an engine family after the certificate has been suspended pursuant to paragraph (b) or (c) of this section if the proposed remedy for the nonconformity, as reported by the manufacturer to the Executive Officer, is one requiring a design change or changes to the engine or emission control system as described in the application for certification of the affected engine family.

(8) Once an Executive Order has been suspended for a failed engine, as provided for in paragraph (a) of this section, the manufacturer must take the following actions before the certificate is reinstated for that failed engine:

(A) Remedy the nonconformity;

(B) Demonstrate that the engine conforms to the emission standards by retesting the engine in accordance with these regulations; and

(C) Submit a written report to the Executive Officer, after successful completion of testing on the failed engine, which contains a description of the remedy and test results for each engine in addition to other information that may be required by this part.

(9) Once an Executive Order for a failed engine family has been suspended pursuant to paragraph (b), (c) or (d) of this section, the manufacturer must take the following actions before the Executive Officer will consider reinstating the certificate:

(A) Submit a written report to the Executive Officer which identifies the reason for the noncompliance of the engines, describes the proposed remedy, including a description of any proposed quality control or quality assurance measures to be taken by the manufacturer to prevent future occurrences of the problem, and states the date on which the remedies will be implemented.

(B) Demonstrate that the engine family for which the Executive Order has been suspended does in fact comply with the regulations of this part by testing as many engines as needed so that the CumSum statistic falls below the action limit. Such testing must comply with the provisions of this Part. If the manufacturer elects to continue testing individual engines after suspension of a certificate, the certificate is reinstated for any engine actually determined to be in conformance with the emission standards through testing in accordance with the applicable test procedures, provided that the Executive Officer has not revoked the certificate pursuant to paragraph (f) of this section.

(10) Once the Executive Order has been revoked for an engine family, if the manufacturer desires to continue introduction into commerce of a modified version of that family, the following actions must be taken before the Executive Officer may issue a certificate for that modified family:

(A) If the Executive Officer determines that the proposed change(s) in engine design may have an effect on emission performance deterioration, the Executive Officer shall notify the manufacturer, within five working days after receipt of the report in paragraph (9)(A) of this section, whether subsequent testing under this subpart will be sufficient to evaluate the proposed change or changes or whether additional testing will be required; and

(B) After implementing the change or changes intended to remedy the nonconformity, the manufacturer must demonstrate that the modified engine family does in fact conform with the regulations of this part by testing as many engines as needed from the modified engine family so that the CumSum statistic, as calculated per aforementioned method, falls below the action limit. When both of these requirements are met, the Executive Officer shall reissue the certificate or issue a new certificate, as the case may

be, to include that family. As long as the CumSum statistic remains above the action limit, the revocation remains in effect.

(11) At any time subsequent to a suspension of an Executive Order for a test engine pursuant to paragraph (a) of this section, but not later than 15 days (or such other period as may be allowed by the Executive Officer) after notification of the Executive Officer's decision to suspend or revoke an Executive Order in whole or in part pursuant to paragraphs (b), (c), or (f) of this section, a manufacturer may request a hearing as to whether the tests have been properly conducted or any sampling methods have been properly applied.

(12) Any suspension of an Executive Order under paragraph (f)(4) of this section:

(A) must be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with all applicable requirements and;

(B) need not apply to engines no longer in the possession of the manufacturer.

(13) After the Executive Officer suspends or revokes an Executive Order pursuant to this section and prior to the commencement of a hearing, if the manufacturer demonstrates to the Executive Officer's satisfaction that the decision to suspend or revoke the Executive Order was based on erroneous information, the Executive Officer shall reinstate the Executive Order.

(14) To permit a manufacturer to avoid storing non-test engines while conducting subsequent testing of the noncomplying family, a manufacturer may request that the Executive Officer conditionally reinstate the Executive Order for that family. The Executive Officer may reinstate the Executive Order subject to the following condition: the manufacturer must commit to recall all engines of that family produced from the time the Executive Order is conditionally reinstated if the CumSum statistic does not fall below the action limit and must commit to remedy any nonconformity at no expense to the owner.

[The replacement language provides for Greater and more accurate testing, as proposed in the ARB production line testing, is necessary in order to ensure the emissions benefit prior to the equipment going in-use. The ARB has found that the proposed level of production line testing is necessary and provides an appropraite balance with the economic costs to ensure a robust control program.]

§1048.305 How must I prepare and test my production-line engines?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.310 How must I select engines for production-line testing?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.315 How do I know when my engine family fails the production-line testing requirements?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.320 What happens if one of my production-line engines fails to meet emission standards?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.325 What happens if an engine family fails the production-line requirements?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.330 May I sell engines from an engine family with a suspended certificate of conformity?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.335 How do I ask EPA to reinstate my suspended certificate?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.340 When may EPA revoke my certificate under this subpart and how may I sell these engines again?
(a) We may revoke your certificate for an engine family in the following cases:

*** * * * ***

(2) DELETE AND REPLACE WITH:
Your engine family fails to comply with the requirements of this subpart and your proposed remedy to address a suspended certificate under §1048.301 is inadequate to solve the problem or requires you to change the engine's design or emission-control system.

(b) To sell engines from an engine family with a revoked certificate of conformity, you must modify the engine family and then show it complies with the requirements of this part.

(1) DELETE AND REPLACE WITH:

If we determine your proposed design change may not control emissions for the engine's full useful life, we will tell you within ten working days after receiving your report. In this case we will decide whether production-line testing will be enough for us to evaluate the change or whether you need to do more testing.

[Subsection (a)(2) is modified to correct the reference from §1048.325 to §1048.301]

*** * * * ***

§1048.345 What production-line testing records must I send to EPA?
DELETE

[Replaced by 2437 language in §1048.301]

§1048.350 What records must I keep?
DELETE

[Replaced by 2437 language in §1048.301]

[All sections referring to production line testing have been replaced with existing the ARB program. The ARB production line testing program provides greater assurance that engines will maintain their emissions during their useful life.]

Subpart E—Testing In-use Engines

§1048.401 What testing requirements apply to my engines that have gone into service?

*** * * * ***

(b) We may approve an alternate plan for showing that in-use engines comply with the requirements of this part if one of the following is true:

(1) DELETE AND REPLACE WITH:

You produce a total of less than 2000 large spark-ignition engines annually for sale in the United States of America.

[The language has been revised to make the definition for small volume manufacturer definition consistent with other ARB regulations.]

*** * * * ***

§1048.405 How does this program work?

§1048.410 How must I select, prepare, and test my in-use engines?
DELETE AND REPLACE WITH:

(a) This section applies to new 2010 and later model year off-road large spark-ignition engines with engine displacement greater than 1.0 liter.

(b) Manufacturer In-Use Testing Program.

Standards and Test Procedures. The emission standards, exhaust sampling and analytical procedures are those described in the Test Procedures, and are applicable to engines tested only for exhaust emissions. An engine is in compliance with these standards and test procedures only when all portions of these in-use test procedures and specified requirements from the Test Procedures are fulfilled, except that any adjustable engine parameters must be set to the nominal value or position as indicated on the engine label.

(1) Within a manufacturer's model-year engine production period, the ARB will identify those engine families, and the specific configurations within an engine family, that the manufacturer must subject to in-use testing as described below. For each model year, ARB may identify a number of engine families that is no greater than 25 percent of the number of engine families to which this article is applicable. For those manufacturers producing three or less engine families in a model year, ARB may designate a maximum of one engine family per model year for in-use testing.

(2) For each engine family identified by ARB, engine manufacturers must perform emission testing of an appropriate sample of in-use engines from each engine family. Manufacturers must submit data from this in-use testing to ARB.

(3) An engine manufacturer must test in-use engines from each engine family identified by ARB. All engines selected by the manufacturer for testing must be identified by the manufacturer, and a list of the selected engines must be submitted to the Executive Officer, prior to the onset of testing. Engines to be tested must have accumulated a minimum of 0.50 (50 percent) of the family's certified useful life period. The number of engines to be tested by a manufacturer will be determined by the following method:

(A) a minimum of four engines per family, provided that no engine fails any emission standard. For each exceedance, two additional engines must be tested until the total number of engines equals ten.

(B) For engine families of less than 500 engines (national production) for the identified model year or for engine manufacturers who make less than or equal to 2,000 engines nationally for that model year, a minimum of two (2) engines per family provided that no engine fails any emission standard. For each failing engine, two more engines shall be tested until the total number of engines equals ten (10).

(C) If an engine family was certified using carryover emission data and has been previously tested under paragraphs (b)(3)(A) or (b)(3)(B) of this section (and a recall for that family has not occurred), then only one engine for that family must be tested. If that one engine fails any emission standard, testing must be conducted as outlined in subsections (b)(3)(A) or (b)(3)(B), whichever is appropriate.

(4) The Executive Officer may approve an alternative to manufacturer in-use testing, where:

(A) Engine family production is less than or equal to 200 per year, nationally;

(B) Engines cannot be obtained for testing because they are used substantially in vehicles or equipment that are not conducive to engine removal such as large vehicles or equipment from which the engine cannot be removed without dismantling either the engine, vehicle, or equipment; or

(C) Other compelling circumstances associated with the structure of the industry and uniqueness of engine applications. Such alternatives shall be designed to determine whether the engine family is in compliance.

(5) The engine manufacturer shall procure in-use engines which have been operated between 0.50 and 1.0 times the certified engine's useful life period. The engine manufacturer may test engines from more than one model year in a given year. The manufacturer shall submit a plan for testing within twelve calendar months after receiving notice that ARB has identified a particular engine family for testing and shall complete testing of such engine family within 24 calendar months from the date of approval of the plan by ARB. Test engines may be procured from sources associated with the engine manufacturer (i.e., manufacturer-established fleet engines, etc.) or from sources not associated with the manufacturer (i.e., consumer-owned engines, independently owned fleet engines, etc.).

(c) Maintenance, procurement and testing of in-use engines.

(1) A test engine must have a maintenance and use history representative of in-use conditions.

(A) To comply with this requirement a manufacturer must obtain information from the end users regarding the accumulated usage, maintenance, repairs, operating conditions, and storage of the test engines.

(B) Documents used in the procurement process must be maintained as required.

(2) The manufacturer may perform minimal restorative maintenance on components of a test engine that are not subject to parameter adjustment. Maintenance may include only that which is listed in the owner's instructions for engines with the amount of

service and age of the acquired test engine. Repairs may be performed on a test engine with prior Executive Officer approval. Documentation of all maintenance, repairs, defects, and adjustments shall be maintained and retained as required.

(3) At least one valid emission test, according to the Test Procedure, is required for each in-use engine.

(4) The Executive Officer may waive portions or requirements of the test procedure, if any, that are not necessary to determine in-use compliance.

(5) If a selected in-use engine fails to comply with any applicable emission standards, the manufacturer shall determine the reason for noncompliance. The manufacturer must report within 72 hours after the completion of the test specifying the emission results and identifying the pollutant which failed to comply with the emission standard. The manufacturer must report all such reasons of noncompliance within fifteen business days of completion of testing. Additional time beyond the initial fifteen days may be granted providing that the manufacturer receives prior approval from the Executive Officer. The reports may be filed electronically or mailed to the following address: Chief of Mobile Source Operations Division, 9528 Telstar Avenue, El Monte, CA 91731.

(6) At the discretion of the Executive Officer, an engine manufacturer may test more engines than the minima described in paragraph (b)(3) of this section or may concede failure before testing a total of ten engines. Upon conceding failure the manufacturer shall proceed with a voluntary recall program as specified in Section 2439.

(7) The Executive Officer will consider failure rates, average emission levels and the existence of any defects, among other factors, in determining whether to pursue remedial action under this subpart. The Executive Officer may order a recall pursuant to Section 2439 before testing reaches the tenth engine whenever the Executive Officer has determined, based on production-line test results or in-use test results, enforcement testing results, or any other information, that a substantial number of a class or category of equipment 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 equipments' or engines' failure to meet applicable standards over their useful lives; or whenever a class or category of equipment or engines within their useful lives, on average, do not conform to the emission standards prescribed pursuant to Part 5 (commencing with Section 43000) of Division 26 of the Health and Safety Code, or any regulation adopted by the state board pursuant thereto, other than an emissions standard applied to new engines to determine "certification" as specified in Chapter 9, as applicable to the model year of such equipment or engines.

(8) Prior to an ARB-ordered recall, the manufacturer may perform a voluntary emissions recall pursuant to Article 4.5, Section 2439(b). Such manufacturer is subject to the reporting requirements in subsection (d) below.

(9) Once ARB determines that a substantial number of engines fail to conform with the requirements, the manufacturer will not have the option of a voluntary emissions recall.

(d) In-use test program reporting requirements.

(1) The manufacturer shall electronically submit to the Executive Officer within three months of completion of testing all emission testing results generated from the in-use testing program. The following information must be reported for each test engine:

(A) engine family,

(B) model,

(C) engine serial number or alternate identification, as applicable,

(D) date of manufacture,

(E) estimated hours of use,

(F) date and time of each test attempt,

(G) results (if any) of each test attempt,

(H) results of all emission testing,

(I) summary of all maintenance, repairs, and adjustments performed,

(J) summary (if any) of all ARB pre-approved modifications and repairs,

(K) determinations of noncompliance or compliance.

(2) The manufacturer must electronically submit the results of its in-use testing with a pre-approved information heading. The Executive Officer may exempt manufacturers from this requirement upon written request with supporting justification.

(3) All testing reports and requests for approvals made under this subpart shall be sent to the Executive Officer.

(4) The Executive Officer may require modifications to a manufacturer's in-use testing programs.

[All sections referring to in-use compliance have been replaced with existing the ARB program. The ARB in-use compliance program provides greater assurance that engines will maintain their emissions during their useful life.]

§1048.415 What happens if in-use engines do not meet requirements?

DELETE AND REPLACE WITH:

Procedures for In-Use Engine Recalls for Large Off-Road Spark-Ignition Engines with an Engine Displacement Greater Than 1.0 Liter.

(a) The recall procedures in this section apply as set forth in Title 13, California Code of Regulations, Sections 2433 and 2438.

(b) Voluntary Emissions Recall

(1) When any manufacturer initiates a voluntary emission recall, the manufacturer shall notify the Executive Officer of the recall at least 30 days before owner notification is to begin. The manufacturer shall also submit to the Executive Officer a voluntary recall plan for approval, as prescribed in the following:

(A)(i) a description of each class or category of engines to recall, including the number of engines to be recalled, the engine family or a sub-group thereof, the model year, and such other information as may be required to identify the engines:

(ii) a description of the specific modifications, alterations, repairs, corrections, adjustments, or other changes to be made to correct the engines affected by the nonconformity;

(iii) a description of the method by which the manufacturer will notify engine owners including copies of any letters of notification to be sent to engine owners;

(iv) a description of the proper maintenance or use, if any, upon which the manufacturer conditions eligibility for repair under the recall plan, and a description of the proof to be required of an engine owner to demonstrate compliance with any such conditions;

(v) a description of the procedure to be followed by engine owners to obtain correction of the nonconformity. This shall include designation of the date on or after which the owner can have the nonconformity remedied, the time reasonably necessary to perform the labor to remedy the nonconformity, and the designation of facilities at which the nonconformity can be remedied;

(vi) a description of the class of persons other than dealers and authorized warranty agents of the manufacturer who will remedy the nonconformity;

(vii) a description of the system by which the manufacturer will assure that an adequate supply of parts is available to perform the repair under the plan; or

(B)(i) a description of each class or category of engines subject to recall, including the number of engines subject to being recalled, the engine family or a sub-group thereof, the model year, and such other information as may be required to identify the engines;

(ii) a description of the method by which the manufacturer will use the in-use emissions credit, averaging, banking, and trading program, as described in Section 2438(e), to remedy the nonconformity.

(2) Voluntary Recall Progress Report. A manufacturer who initiates a voluntary emission recall campaign pursuant to paragraph (b)(1)(A) of this section must submit at least one report on the progress of the recall campaign. This report shall be submitted to the Executive Officer by the end of the fifth quarter, as defined in Section 2112(j), Chapter 2, Title 13 of the California Code of Regulations, following the quarter in which the notification of equipment or engine owners was initiated, and include the following information:

(A) Engine family involved and recall campaign number as designated by the manufacturer.

(B) Date owner notification was begun, and date completed.

(C) Number of equipment or engines involved in the recall campaign.

(D) Number of equipment or engines known or estimated to be affected by the nonconformity.

(E) Number of equipment or engines inspected pursuant to the recall plan and found to be affected by the nonconformity.

(F) Number of inspected equipment or engines.

(G) Number of equipment or engines receiving repair under the recall plan.

(H) Number of equipment or engines determined to be unavailable for inspection or repair under the recall plan due to exportation, theft, scrapping, or for other reasons (specify).

(I) Number of equipment or engines determined to be ineligible for recall action due to removed or altered components.

(J) A listing of the identification numbers of equipment or engines subject to recall but for whose repair the manufacturer has not been invoiced. This listing shall be supplied in a standardized computer data storage device to be specified by the Executive Officer.

(K) Any service bulletins transmitted to dealers which relate to the nonconformity and which have not previously been submitted.

(L) All communications transmitted to equipment or engine owners which relate to the nonconformity and which have not previously been submitted.

(3) The information gathered by the manufacturer to compile the reports must be retained for not less than seven years from the date of the manufacture of the engines and must be made available to the Executive Officer or designee of the Executive Officer upon request.

(4) A voluntary recall plan shall be deemed approved unless disapproved by the Executive Officer within 20 business days after receipt of the recall plan.

(5) Under a voluntary recall program, initiated and conducted by a manufacturer or its agent or representative as a result of in-use enforcement testing or other evidence of noncompliance provided or required by the Board to remedy any nonconformity, the capture rate shall be at a minimum 55 percent of the equipment or engine within the subject engine family or a sub-group thereof. The manufacturer shall comply with the capture rate by the end of the fifth quarter, as defined in Section 2112(j), Chapter 2, Title 13 of the California Code of Regulations, following the quarter in which the notification of equipment or engine owners was initiated. If the manufacturer cannot correct the percentage of equipment specified in the plan by the applicable deadlines, the manufacturer must use good faith efforts through other measures, subject to approval by the Executive Officer, to bring the engine family into compliance with the standards. If the Executive Officer does not approve the manufacturer's efforts, the manufacturer shall propose mitigation measures to offset the emissions of the unrepaired equipment within 45 days from the last report filed pursuant to paragraph (b)(2), above. The Executive Officer shall approve such measures provided that:

(A) The emission reductions from the recalled and repaired equipment or engines and the mitigation measures are equivalent to achieving the capture rate; and

(B) The emission reductions from the mitigation measures are real and verifiable; and

(C) The mitigation measures are implemented in a timely manner.

(c) Initiation and Notification of Ordered Emission-Related Recalls.

(1) A manufacturer shall be notified whenever the Executive Officer has determined, based on production-line test results or in-use test results, enforcement testing results, or any other information, that a substantial number of a class or category of equipment 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 equipments' or engines' failure to meet applicable standards over their useful lives; or whenever a class or category of equipment or engines within their useful lives, on average, do not conform to the emission standards prescribed pursuant to Part 5 (commencing with Section 43000) of Division 26 of the Health and Safety Code, or any regulation adopted by the state board pursuant thereto, other than an emissions standard applied to new engines to determine "certification" as specified in Chapter 9, as applicable to the model year of such equipment or engines.

(2) It shall be presumed for purposes of this section that an emission-related failure will result in the exceedance of emission standards unless the manufacturer presents evidence in accordance with the procedures set forth in subsections (A), (B), and (C) which demonstrates to the satisfaction of the Executive Officer that the failure will not result in exceedance of emission standards within the useful life of the equipment or engine.

(A) In order to overcome the presumption of noncompliance set forth in paragraph (c)(2) above, the average emissions of the equipment and engines with the failed emission-related component must comply with applicable emission standards. A manufacturer may demonstrate compliance with the emission standards by following the procedures set forth in either paragraphs (c)(2)(B) or (c)(2)(C) of this section.

(B) A manufacturer may test properly maintained in-use equipment with the failed emission-related component pursuant to the applicable certification emission tests specified in Section 2433, Title 13 of the California Code of Regulations. The emissions shall be projected to the end of the equipment's or engine's useful life using in-use deterioration factors. The in-use deterioration factors shall be chosen by the manufacturer from among the following:

(i) "Assigned" in-use deterioration factors provided by the ARB on a manufacturer's conditions; request and based on ARB in-use testing; or,

(ii) deterioration factors generated during certification, provided adjustments are made to account for equipment aging, customer hour usage-accumulation practices, type of failed component, component failure mode, effect of the failure on other emission-control components, commercial fuel and lubricant quality, and any other factor which may affect the equipment's or engine's operating or,

(iii) subject to approval by the Executive Officer, a manufacturer-generated deterioration factor. Such deterioration factor must based on in-use data generated from certification emission tests performed on properly maintained and used equipment in accordance with the procedures set forth in Section 2433 of Title 13 of the California Code of Regulations, and the equipment from which it was derived must be representative of the in-use fleet with regard to emissions performance and equipped with similar emission control technology as equipment with the failed component.

(C) In lieu of the equipment or engine emission testing described in subsection (B) above and subject to approval by the Executive Officer, a manufacturer may perform an engineering analysis, laboratory testing or bench testing, when appropriate, to demonstrate the effect of the failure.

(3) The notification shall include a description of each class or category of equipment or engines encompassed by the determination of nonconformity, shall set forth the factual basis for the determination and shall designate a date at least 45 business days from the date of receipt of such notification by which the manufacturer shall submit a plan to remedy the nonconformity.

(4) Availability of Public Hearing.

(A) The manufacturer may request a public hearing pursuant to the procedures set forth in Subchapter 1.25, Division 3, Chapter 1, Title 17, California Code of Regulations to contest the finding of nonconformity and the necessity for or the scope of any ordered corrective action.

(B) If a manufacturer requests a public hearing pursuant to subsection (A) above, and if the Executive Officer's determination of nonconformity is confirmed at the hearing, the manufacturer shall submit the recall plan required by Section 2439 within 30 days after receipt of the Board's decision.

(5) Ordered Recall Plan.

(A) Unless a public hearing is requested by the manufacturer, a recall plan shall be submitted to the Chief, Mobile Source Operations Division, 9528 Telstar Avenue, El Monte, CA 91731, within the time limit specified in the notification. The Executive Officer may grant the manufacturer an extension upon good cause shown.

(B) The recall plan shall contain the following:

(i) A description of each class or category of equipment or engine to be recalled, including the engine family or sub-group thereof, the model-year, the make, the model, and such other information as may be required to identify the equipment or engines to be recalled.

(ii) A description of the nonconformity and the specific modifications, alterations, repairs, corrections, adjustments or other changes to be made to bring the equipment or engines into conformity including a brief summary of the data and technical studies which support the manufacturer's decision regarding the specific corrections to be made.

(iii) A description of the method by which the manufacturer will determine the names and addresses of equipment or engine owners and the method by which they will be notified.

(iv) A description of the procedure to be followed by equipment or engine owners to obtain correction of the nonconformity including the date on or after which the owner can have the nonconformity remedied, the time reasonably necessary to perform the labor required to correct the nonconformity, and the designation of facilities at which the nonconformity can be remedied. The repair shall be completed within a reasonable time designated by the Executive Officer from the date the owner delivers the equipment or engine for repair. This requirement becomes applicable on the date designated by the manufacturer as the date on or after which the owner can have the nonconformity remedied.

(v) If some or all of the nonconforming equipment or engines are to be remedied by persons other than dealers or authorized warranty agents of the manufacturer, a description of such class of persons and a statement indicating that the participating members of the class will be properly equipped to perform such remedial action.

(vi) The capture rate required for each class or category of equipment or engine to be recalled. Under recalls based on exceedance of emission standards, the capture rate shall be at a minimum 80 percent of the equipment or engine within the subject engine family.

(vii) The plan may specify the maximum incentives (such as a free tune-up or specified quantity of free fuel), if any, the manufacturer will offer to induce equipment or engine owners to present their equipment for repair, as evidence that the manufacturer has made a good faith effort to repair the percentage of equipment or engines specified in the plan. The plan shall include a schedule for implementing actions to be taken including identified increments of progress towards implementation and deadlines for completing each such increment.

(viii) A copy of the letter of notification to be sent to equipment or engine owners.

(ix) A description of the system by which the manufacturer will assure that an adequate supply of parts will be available to perform the repair under the recall plan including the date by which an adequate supply of parts will be available to initiate the repair campaign, and the method to be used to assure the supply remains both adequate and responsive to owner demand.

(x) A copy of all necessary instructions to be sent to those persons who are to perform the repair under the recall plan.

(xi) A description of the impact of the proposed changes on fuel economy, operation, performance and safety of each class or category of equipment or engines to be recalled and a brief summary of the data, technical studies, or engineering evaluations which support these descriptions.

(xii) A description of the impact of the proposed changes on the average emissions of the equipment or engines to be recalled based on noncompliance described in subsection (c)(1), above. The description shall contain the following:

(1.) Average noncompliance emission levels.

(2.) Average emission reduction or increase per pollutant resulting from the recall repair. These averages shall be verified by the manufacturer by applying the proposed recall repairs to two or more in-use equipment or engines representing the average noncompliance emission levels. Only those equipment or engines with baseline emission levels within 25 percent of the average emission levels of noncomplying pollutant(s) established under the in-use enforcement test program may be used by manufacturers to verify proposed recall repairs. The Executive Officer may allow the use of equipment or engines exceeding these upper averaging noncompliance limits if none which meet the limits can be reasonably procured.

(3.) An estimate of the average emission level per pollutant for a class or category of equipment or engines after repair as corrected by the required capture rate. The estimated average emission level shall comply with the applicable emission standards. If the average emissions levels achieved by applying the average emission reduction per equipment or engine after repair and the estimated capture rate, do not achieve compliance with the emissions standards, a manufacturer shall propose other measures to achieve average emissions compliance.

(xiii) Any other information, reports, or data which the Executive Officer may reasonably

determine to be necessary to evaluate the recall plan.

(6) Approval and Implementation of Recall Plan.

(A) If the Executive Officer finds that the recall plan is designed effectively to correct the nonconformity and complies with the provisions of this Section, he or she will so notify the manufacturer in writing. Upon receipt of the approval notice from the Executive Officer, the manufacturer shall commence implementation of the approved plan. Notification of equipment or engine owners and the implementation of recall repairs shall commence within 45 days of the receipt of notice unless the manufacturer can show good cause for the Executive Officer to extend the deadline.

(B) If the Executive Officer does not approve the recall plan or the mitigation measures provided in this Section as submitted, the Executive Officer shall order modification of the plan or mitigation measures with such changes and additions as he or she determines to be necessary. The Executive Officer shall notify the manufacturer in writing of the disapproval and the reasons for the disapproval.

(C) The manufacturer may contest the Executive Officer's disapproval by requesting a public hearing pursuant to the procedures set forth in Subchapter 1.25, Division 3, Chapter 1, Title 17, California Code of Regulations. As a result of the hearing, the Board may affirm, overturn or modify the Executive Officer's action. In its decision, affirming or modifying, the Board shall specify the date by which the manufacturer shall commence notifying equipment or engine owners and implementing the required recall repairs.

(D) If no public hearing is requested in accordance with (C) above, the manufacturer shall incorporate the changes and additions required by the Executive Officer and shall commence notifying equipment or engine owners and implementing the required recall repairs within 60 days of the manufacturer's receipt of the Executive Officer's disapproval.

(7) Notification of Owners.

(A) Notification to equipment or engine owners shall be made by first class mail or by such other means as approved by the Executive Officer provided, that for good cause, the Executive Officer may require the use of certified mail to ensure an effective notification.

(B) The manufacturer shall use all reasonable means necessary to locate equipment or engine owners provided, that for good cause, the Executive Officer may require the manufacturer to use motor equipment registration lists, as applicable, available from State or commercial sources to obtain the names and addresses of equipment or engine owners to ensure effective notification.

(C) The Executive Officer may require subsequent notification by the manufacturer to equipment or engine owners by first class mail or other reasonable means provided, that for good cause, the Executive Officer may require the use of certified mail to ensure effective notification.

(D) The notification of equipment or engine owners shall contain the following:

(i) The statement: "The California Air Resources Board has determined that your (equipment or engine) (is or may be) releasing air pollutants which exceed (California or California and Federal) standards. These standards were established to protect your health and welfare from the dangers of air pollution."

(ii) A statement that the nonconformity of any such equipment or engines will be remedied at the expense of the manufacturer.

(iii) A statement that eligibility may not be denied solely on the basis that the equipment or engine owner used parts not manufactured by the original equipment manufacturer, or had repairs performed by outlets other than the equipment or engine manufacturer's franchised dealers.

(iv) A clear description of the components which will be affected by the recall action and a general statement of the measures to be taken to correct the nonconformity.

(v) [Reserved]

(vi) A description of the adverse effects, if any, that an uncorrected nonconformity would have on the performance, fuel economy, or driveability of the equipment or engine or to the function of other engine components.

(vii) A description of the procedure which the equipment or engine owner should follow to obtain correction of the nonconformity including the date on or after which the owner can have the nonconformity remedied, the time reasonably necessary to correct the nonconformity, and a designation of the facilities located in California at which the nonconformity can be remedied.

(viii) After the effective date of the recall enforcement program referred to above, a statement that a certificate showing that the equipment has been repaired under the recall program shall be issued by the service facilities and that such a certificate may be required as a condition of equipment registration or operation, as applicable.

(ix) A card to be used by a equipment or engine owner in the event the equipment or engine to be recalled has been sold. Such card should be addressed to the manufacturer, have postage paid, and shall provide a space in which the owner may indicate the name and address of the person to whom the equipment or engine was sold.

(x) The statement: "In order to ensure your full protection under the emission warranty made applicable to your (equipment or engine) by State or Federal law, and your right to participate in future recalls, it is recommended that you have your (equipment or engine) serviced as soon as possible. Failure to do so could be determined to be a lack of proper maintenance of your (equipment or engine)".

(xi) A telephone number provided by the manufacturer, which may be used to report difficulty in

obtaining recall repairs.

(xii) The manufacturer shall not condition eligibility for repair on the proper maintenance or use of the equipment except for strong or compelling reasons and with approval of the Executive Officer; however, the manufacturer shall not be obligated to repair a component which has been removed or altered so that the recall action cannot be performed without additional cost.

(xiii) No notice sent pursuant to Section (D), nor any other communication sent to equipment or engine owners or dealers shall contain any statement, express or implied, that the nonconformity does not exist or will not degrade air quality.

(xiv) The manufacturer shall be informed of any other requirements pertaining to the notification under this section which the Executive Officer has determined are reasonable and necessary to ensure the effectiveness of the recall campaign.

(8) Repair Label.

(A) The manufacturer shall require those who perform the repair under the recall plan to affix a label to each equipment or engine repaired or, when required, inspected under the recall plan.

(B) The label shall be placed in a location as approved by the Executive Officer and shall be fabricated of a material suitable for such location and which is not readily removable.

(C) The label shall contain the recall campaign number and a code designating the facility at which the repair, inspection for repair, was performed.

(9) Proof of Correction Certificate. The manufacturer shall require those who perform the recall repair to provide the owner of each equipment or engine repaired with a certificate, through a protocol and in a format prescribed by the Executive Officer, which indicates that the noncomplying equipment or engine has been corrected under the recall program. This requirement shall become effective and applicable upon the effective date of the recall enforcement program referred to in this section, above.

(10) Capture Rates and Alternative Measures.

The manufacturer shall comply with the capture rate specified in the recall plan as determined pursuant to this Section, above, by the end of the fifth quarter, as defined in Section 2112(j), Chapter 2, Title 13 of the California Code of Regulations, following the quarter in which the notification of equipment or engine owners was initiated. If, after good faith efforts, the manufacturer cannot correct the percentage of equipment specified in the plan by the applicable deadlines and cannot take other measures to bring the engine family into compliance with the standards, the manufacturer shall propose mitigation measures to offset the emissions of the unrepaired equipment within 45 days from the last report filed pursuant to Section 2439(c)(13), below. The Executive Officer shall approve such measures provided that:

(A) The emission reductions from the recalled and repaired equipment or engines and the mitigation measures are equivalent to achieving the capture rate; and

(B) The emission reductions from the mitigation measures are real and verifiable; and

(C) The mitigation measures are implemented in a timely manner.

(11) Preliminary Tests. The Executive Officer may require the manufacturer to conduct tests on components and equipment or engines incorporating a proposed correction, repair, or modification reasonably designed and necessary to demonstrate the effectiveness of the correction, repair, or modification.

(12) Communication with Repair Personnel. The manufacturer shall provide to the Executive Officer a copy of all communications which relate to the recall plan directed to dealers and other persons who are to perform the repair. Such copies shall be mailed to the Executive Officer contemporaneously with their transmission to dealers and other persons who are to perform the repair under the recall plan.

(13) Recordkeeping and Reporting Requirements.

(A) The manufacturer shall maintain sufficient records to enable the Executive Officer to conduct an analysis of the adequacy of the recall campaign. For each class or category of equipment or engine, the records shall include, but need not be limited to, the following:

(i) Engine family involved and recall campaign number as designated by the manufacturer.

(ii) Date owner notification was begun, and date completed.

(iii) Number of equipment or engines involved in the recall campaign.

(iv) Number of equipment or engines known or estimated to be affected by the nonconformity.

(v) Number of equipment or engines inspected pursuant to the recall plan and found to be affected by the nonconformity.

(vi) Number of inspected equipment or engines.

(vii) Number of equipment or engines receiving repair under the recall plan.

(viii) Number of equipment or engines determined to be unavailable for inspection or repair under the recall plan due to exportation, theft, scrapping, or for other reasons (specify).

(ix) Number of equipment or engines determined to be ineligible for recall action due to removed or altered components.

(x) A listing of the identification numbers of equipment or engines subject to recall but for whose repair the manufacturer has not been invoiced. This listing shall be supplied in a standardized computer data storage device to be specified by the Executive Officer. The frequency of this submittal, as specified in subsection (C) below, may be changed by the Executive Officer depending on the needs of recall enforcement.

(xi) Any service bulletins transmitted to dealers which relate to the nonconformity and which have not previously been submitted.

(xii) All communications transmitted to equipment or engine owners which relate to the nonconformity and which have not previously been submitted.

(B) If the manufacturer determines that the original responses to subsections (A)(iii) and (iv) of these procedures are incorrect, revised figures and an explanatory note shall be submitted. Responses to subsections (A)(v), (vi), (vii), (viii), and (ix) shall be cumulative totals.

(C) Unless otherwise directed by the Executive Officer, the information specified in subsection (A) of these procedures shall be included in six quarterly reports or two annual reports, beginning with the quarter in which the notification of owners was initiated, or until all nonconforming equipment or engines involved in the campaign have been remedied, whichever occurs sooner. Such reports shall be submitted no later than 25 days after the close of each calendar quarter.

(D) The manufacturer shall maintain in a form suitable for inspection, such as computer information storage devices or card files, and shall make available to the Executive Officer or his or her authorized representative upon request, lists of the names and addresses of equipment or engine owners:

(i) To whom notification was given;

(ii) Who received remedial repair or inspection under the recall plan; and

(iii) Who were denied eligibility for repair due to removed or altered components.

(E) The records and reports required by these procedures shall be retained for not less than one year beyond the useful life of the equipment or engines involved, or one year beyond the reporting time frame specified in subsection (C) above, whichever is later.

(14) Penalties.

Failure by a manufacturer to carry out all recall actions ordered by the Executive Officer pursuant to Sections 2439(c) of these procedures is a violation of Health and Safety Code Section 43013 and 43105 and shall subject the manufacturer, on a per engine basis, to any and all remedies available under Part 5, Division 26 of the Health and Safety Code, sections 43000 et seq.

(d) Extension of Time. The Executive Officer may extend any deadline in the plan if he or she

finds in writing that a manufacturer has shown good cause for such extension.

(e) The Executive Officer may waive any or all of the requirements of these procedures if he or she determines that the requirement constitutes an unwarranted burden on the manufacturer without a corresponding emission reduction.

[All sections referring to in-use compliance have been replaced with existing the ARB program. The ARB in-use compliance program provides greater assurance that engines will maintain their emissions during their useful life.]

§1048.420 What in-use testing information must I report to EPA?
DELETE

[Replaced by 2438-9 language in §1048.410-415]

[The language is not necessary as information regarding the reporting of in-use testing is already contained in §1048.415.]

§1048.425 What records must I keep?
DELETE

[Replaced by 2438-9 language in §1048.410-415;The provisions contained in §1048.415 include submittal of an electronic report to ARB; as such, there is no need to retain records.]

Subpart F—Test Procedures

§1048.501 How do I run a valid emission test?

§1048.505 How do I test engines using steady-state duty cycles, including ramped-modal testing?

§1048.510 Which duty cycles do I use for transient testing?

§1048.515 What are the field-testing procedures?

Subpart G—Compliance Provisions

§1048.601 What compliance provisions apply to these engines?

§1048.605 What provisions apply to engines certified under the motor-vehicle program?

§1048.610 What provisions apply to vehicles certified under the motor-vehicle program?

§1048.615 What are the provisions for exempting engines designed for lawn and garden applications?

*** * * * ***

(a)

(3) DELETE AND REPLACE WITH:

The engine must be in an engine family that has a valid executive order showing that it meets emission standards for Class II engines under Title 13, California Code of

Regulations, Chapter 9, Article 1, Small Off-Road Engines and Chapter 15, Article 1, Evaporative Emission Requirements for Off-Road Equipment.

*** * * * ***

(d) DELETE AND REPLACE WITH:
Engines exempted under this section are subject to all the requirements affecting engines under Title 13, California Code of Regulations, Chapter 9, Article 1, Small Off-Road Engines and Chapter 15, Article 1, Evaporative Emission Requirements for Off-Road Equipment. The requirements and restrictions of Title 13, California Code of Regulations, Chapter 9, Article 1, Small Off-Road Engines and Chapter 15, Article 1, Evaporative Emission Requirements for Off-Road Equipment apply to anyone manufacturing these engines, anyone manufacturing equipment that uses these engines, and all other persons in the same manner as if these engines had a total maximum engine power at or below 19 kW.

§1048.620 What are the provisions for exempting large engines fueled by natural gas?

§1048.625 What special provisions apply to engines using noncommercial fuels?

§1048.630 What are the provisions for exempting engines used solely for competition?

§1048.635 What special provisions apply to branded engines?

Subpart H—[Reserved]

Subpart I—Definitions and Other Reference Information

§1048.801 What definitions apply to this part?
The following definitions apply to this part. The definitions apply to all subparts unless we note otherwise. All undefined terms have the meaning the Act gives to them. The definitions follow:

*** * * * ***

All-terrain vehicle has the meaning given in 40 CFR 1051.801
DELETE AND REPLACE WITH: All-terrain vehicle has the meaning given in Title 13, California Code of Regulations, Chapter 9, Article 3, Off-Highway Recreational Vehicles and Engines.

[EPA's definition is inconsistent with the existing California definition for Off-Highway Recreational Vehicles and Engines]

*** * * * ***

Blue Sky Series engine
DELETE

[The ARB is proposing to replace the Blue Sky standards with their own optional lower emission standards; see §1048.140].

*** * * * ***

Designated Compliance Officer means the Manager, Engine Programs Group (6405-J), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.
DELETE AND REPLACE WITH:
Designated Compliance Officer means the Executive Officer of the California Air Resources Board or a designee of the Executive Officer.

Designated Enforcement Officer means the Director, Air Enforcement Division (2242A), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW.,Washington, DC 20460.
DELETE AND REPLACE WITH:
Designated Enforcement Officer means any officer or employee of the California Air Resources Board so designated in writing by the Executive Officer or by the Executive Officer's designee.

*** * * * ***

High-cost warranted part means a component covered by the emission-related warranty with a replacement cost (at the time of certification) exceeding $400 (in 1998 dollars). Adjust this value using the most recent annual average consumer price index information published by the U.S. Bureau of Labor Statistics. For this definition, replacement cost includes the retail cost of the part plus labor and standard diagnosis.
DELETE AND REPLACE WITH:
High-cost warranted part means a component covered by the emission-related warranty with a replacement cost derived by the formula in section §1048.120(b)(3)(B).

[The definition has been replaced to reflect existing ARB warranty provisions. The ARB warranty program is generally more prescriptive and provides greater protection to the buyer.]

*** * * * ***

Low-hour means relating to an engine with stabilized emissions and represents the undeteriorated emission level. This would generally involve less than 300 hours of operation.
DELETE

[ARB certification is based on zero-hour emission testing]

*** * * * ***

Small-volume engine manufacturer means a company with fewer than 200 employees. This includes any employees working for parent or subsidiary companies.

DELETE AND REPLACE WITH:

Small-volume manufacturer means an engine manufacturer that produces a total of less than 2000 large spark-ignition engines annually for sale in the United States of America.

*** * * * ***

§1048.805 What symbols, acronyms, and abbreviations does this part use?

§1048.810 What materials does this part reference?

§1048.815 What provisions apply to confidential information?

(a) Clearly show what you consider confidential by marking, circling, bracketing, stamping, or some other method.

(b) We will store your confidential information as described in 40 CFR part 2. Also, we will disclose it only as specified in 40 CFR part 2. This applies both to any information you send us and to any information we collect from inspections, audits, or other site visits.

(c) If you send us a second copy without the confidential information, we will assume it contains nothing confidential whenever we need to release information from it.

(d) If you send us information without claiming it is confidential, we may make it available to the public without further notice to you, as described in 40 CFR 2.204.

§1048.820 How do I request a hearing from the executive officer of the ARB?

(a) You may request a hearing under certain circumstances, as described elsewhere in this part. To do this, you must file a written request, including a description of your objection and any supporting data, within 30 days after we make a decision.

(b) For a hearing you request under the provisions of this part, we will approve your request if we find that your request raises a substantial factual issue.

(c) If we agree to hold a hearing, we will use the procedures specified in §1048.15(b)(7).

Appendix I to Part 1048—Large Spark-ignition (SI) Transient Cycle for Constant-Speed Engines
Appendix II to Part 1048—Large Spark-ignition (SI) Composite Transient Cycle