Final Regulation Order

Note: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those sections with proposed changes are included. Sections 2402 and 2406 remain unchanged.

Amend Article 1, Chapter 9, Division 3, Title 13, California Code of Regulations, to read as follows:

Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

Article 1. Small Off-Road Engines

§ 2400. Applicability.

(a) (1) This article applies to small off-road engines ~~(below 25 horsepower)~~ produced on or after January 1, 1995 and any equipment produced on or after January 1, 1995 that uses such engines.

(2) Every new small off-road engine that is manufactured for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce, and that is subject to any of the standards prescribed in this article must be covered by an Executive Order, issued pursuant to this article.

(3) This article does not apply to compression-ignition engines, as defined in Section 2421, below 25 horsepower, produced during the 2000 and later model years or any equipment that uses such engines produced during the 2000 and later model years.

(4) This article may apply to zero-emission small off-road equipment.

(b) Each part of this article is severable, and in the event that any part of this article is held to be invalid, the remainder of this article remains in full force and effect.

(c) (1) For purposes of this article, military tactical vehicles or equipment means vehicles or equipment owned by the U.S. Department of Defense and/or the U.S. military services and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

(2) This article shall not apply to engines used in off-road military tactical vehicles or equipment which have been exempted from regulations under the federal national security exemption, 40 CFR, subpart J, section 90.908. It

shall also not apply to those vehicles and equipment covered by the definition of military tactical vehicle that are commercially available and for which a federal certificate of conformity has been issued under 40 CFR Part 90, subpart B.

(3) On January 1, 1997, the U.S. Department of Defense shall submit to the ARB a list of all vehicle and equipment types that are exempted under the above provisions and which are located in the State of California. If any additional vehicle and equipment types are added to the list during the previous 12 months, the U.S. Department of Defense shall update the list and submit it to the ARB by January 1 of the following year.

NOTE: Information regarding authorization to adopt regulations that are included in this chapter for nonpreempted nonroad vehicles or engines pursuant to section 209(e) of the federal Clean Air Act (42 U.S.C. 7543(e)) may be obtained from the Air Resources Board at 9528 Telstar Avenue, El Monte, California 91731.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2401. Definitions.

(a) The definitions in Section 1900 (b), Chapter 1, Title 13 of the California Code of Regulations, apply with the following additions:

(1) "ARB Enforcement Officer" means any officer or employee of the Air Resources Board so designated in writing by the Executive Officer or by the Executive Officer's designee.

(2) "Assembly-~~L~~line ~~T~~tests" are those tests or inspections that are performed on or at the end of the assembly-line.

(3) "Averaging" means the exchange of emission credits among engine families within a given manufacturer's product line.

(4) "Banking" means the retention of small off-road engine emission credits by the manufacturer generating the emission credits for use in future model year averaging or trading as permitted by these regulations.

(5) "Basic ~~E~~engine" means an engine manufacturer's unique combination of engine displacement, number of cylinders, fuel system, emission control system and other engine and emission control system characteristics specified by the Executive Officer.

(6) "Calendar ~~Y~~year" is the twelve month period commencing on January 1 through December 31.

(7) "Certification ~~E~~emission ~~R~~reduction ~~C~~credits" means the amount of emission reduction or exceedance, by an engine family, below or above the applicable $HC+NO_x$ (or $NMHC+NO_x$, as applicable) or Particulate Matter emission standard, respectively. Family emission levels (FEL) below the standard create "positive credits," while FELs above the standard create "negative credits." Some or all of these credits may be revoked if the Executive Officer's review of the end-of-year reports or any subsequent audit action(s) reveals problems or errors of any nature with credit computations.

(A) "Projected credits" refer to emission credits based on the projected applicable production/sales volume of the engine family.

(B) "Reserved credits" are emission credits generated within a model year available for reporting to the Executive Officer at the end of the model year.

(C) "Actual credits" refer to emission credits based on California's share, determined by market analysis, of actual federal production/sales volume as contained in the end-of-year reports submitted to the Executive Officer.

(8) “Certification value” means the product of the measured emissions of the prototype engine at zero hours and the (calculated or assigned) deterioration factor.

(9) “Blue Sky Series engine” means a small off-road engine meeting the requirements of Section 2403(b)(2)(A).

~~(9)~~(10) “Complete ~~E~~engine ~~A~~assembly” or “Engine ~~C~~configuration” means an assembly of a basic engine and all of the specific applicable components (e.g., air inlet, fuel and exhaust systems, etc.) and calibrations (e.g., carburetor jet size, valve timing, etc.) required for the assembly to be installed into a new unit of equipment.

~~(10)~~(11) “Crankcase ~~E~~emissions” means airborne substances emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication system.

~~(11)~~(12) “Deterioration factor” means the calculated or assigned number that represents the certification engine’s emissions change over the durability period. It is multiplied by zero hour (new) engine test results to determine the engine family compliance level. The deterioration factor is determined as per Part II, Section 3 of the 1995-2004 Test Procedures and Subpart B, Section 90.104 of the 2005 and Later Test Procedures. See “Emissions Durability Period,” below.

~~(12)~~(13) “Emission ~~C~~control ~~S~~system” includes any component, group of components, or engine modification that controls or causes the reduction of substances emitted from an engine.

~~(13)~~(14) “Emissions ~~D~~durability ~~P~~period” is the period that represents an engine’s useful life. The emissions durability period is selected from the choices listed in Part II, Section 1 of the 1995-2004 Test Procedures and Subpart B, Section 90.104 of the 2005 and Later Test Procedures. The durability periods are also noted in the table in section 2403 (b). The emissions durability period is used to determine an engine family’s deterioration factors and in the calculation of certification and production emission reduction credits.

~~(14)~~(15) “Emissions durability values” means emissions from an engine that has accumulated service equivalent to that engine’s emissions durability period, or the result of the product of the zero hour (new) engine test results and the appropriate deterioration factor (e.g., the certification values). The Executive Officer must approve the methods of service accumulation before the manufacturer begins service accumulation.

(16) “Emission-related defect” means a defect in design, materials, or workmanship in a device, system, or assembly described in the approved

application for certification which affects any applicable parameter, specification, or component enumerated in Appendix A to Article 2.1, Chapter 2, Division 3, Title 13, California Code of Regulations or listed in the Emission Warranty Parts List pursuant to section 2405(d).

~~(15)~~(17) "End of ~~A~~assembly-~~L~~line" is defined as that place where the final inspection test or production line test is performed.

~~(16)~~(18) "Engine ~~F~~family" is a subclass of a basic engine based on similar emission characteristics. The engine family is the grouping of engines that is used for the purposes of certification.

~~(17)~~(19) "Engine ~~F~~family ~~N~~name" means a multi-character alphanumeric sequence that represents certain specific and general information about an engine family.

~~(18)~~(20) "Engine ~~M~~manufacturer" means the manufacturer granted certification.

~~(19)~~(21) "Exhaust ~~E~~emissions" means substances emitted into the atmosphere from any opening downstream from the exhaust port of an engine.

~~(20)~~(22) "Extreme nonattainment area" means any area classified as an extreme ozone nonattainment area by the U.S. Environmental Protection Agency pursuant to Section 181(a) of the Clean Air Act, as amended, including Orange County and the portions of Los Angeles, San Bernardino and Riverside Counties described as extreme ozone nonattainment areas in Title 40, section 81.305 of the Code of Federal Regulations.

~~(21)~~(23) "Family emission level" or "FEL" means an emission level that is declared by the manufacturer to serve for the averaging, banking, and trading program and in lieu of an emission standard for certification. The FEL serves as the engine family's emission standard for emissions compliance efforts. If the manufacturer does not declare an FEL for an engine family, the applicable emissions standard must be treated as that engine family's FEL for the purposes of any provision of this Article.

~~(22)~~(24) "Final ~~C~~calendar ~~Q~~quarter ~~P~~production" is defined as the calendar quarter in which the production of an engine family ends.

~~(23)~~(25) "First ~~C~~calendar ~~Q~~quarter ~~P~~production" is defined as the calendar quarter in which the production of an engine family begins.

~~(24)~~(26) "Fuel ~~S~~system" means the combination of any of the following components: fuel tank, fuel pump, fuel lines, oil injection metering system, carburetor or fuel injection components, or all fuel system vents

~~(25)~~(27) "Gross ~~E~~engine ~~M~~malfunction" is defined as one yielding an emission value greater than the sum of the mean plus three (3) times the standard deviation. This definition shall apply only for determination of control limits.

~~(26)~~(28) "~~H~~Horizontal-shaft engine" means any engine that is designed to operate with the axis of the crankshaft in a horizontal position.

~~(27)~~(29) "Incomplete ~~E~~engine ~~A~~assembly" means a basic engine assembly that does not include all of the components necessary for designation as a complete engine assembly, and is marketed in order to be a part of, and assembled into, a new unit of equipment that is marketed to ultimate purchasers.

~~(28)~~(30) "Model year" means the manufacturer's annual production period that includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year.

~~(29)~~(31) "Off-~~R~~road ~~V~~vehicle" or "Off-road equipment" means any non-stationary device, powered by an internal combustion engine or motor, used primarily off the highways to propel, move, or draw persons or property including any device propelled, moved, or drawn exclusively by human power, and used in, but not limited to, any of the following applications: Marine Vessels, Construction/Farm Equipment, Locomotives, Small Off-Road Engines, Off-Road Motorcycles, and Off-Highway Recreational Vehicles.

~~(30)~~(32) "Point of first retail sale" means the point that the engine is first sold directly to the ultimate purchaser. Generally, this point is the retail engine or equipment dealer. If the engine is sold first to an equipment manufacturer for installation in a piece of equipment, the equipment manufacturer is the point of first retail sale if the equipment manufacturer cannot demonstrate to a reasonable certainty that the engine will be exported or destined for retail sale outside California.

~~(31)~~(33) "Production ~~E~~emission ~~R~~reduction ~~C~~credits" means the amount of emission reduction or exceedance by an engine family below or above, respectively, the applicable FEL to which the engine family is certified. Emission reductions below the standard are considered "positive credits," while emission exceedances above the standard are considered "negative or required credits." (See Section 2409.)

~~(32)~~(34) "Production ~~L~~line ~~T~~test" is defined as the emissions test performed on a sample of production engines produced for sale in California and conducted according to the Emissions Standards and Test Procedures specified in Section 2403(b) and (~~c~~d).

~~(33)~~(35) "Sales" or "Eligible sales" means the actual or calculated sales of an engine family in California for the purposes of averaging, banking or trading. Upon Executive Officer approval, an engine manufacturer may calculate its eligible sales through market analysis of actual federal production or sales volume. Actual sales are sales calculated at the end of a model year based on that model year's production, rather than on estimates of production.

~~(34)~~(36) "Scheduled ~~M~~maintenance" means any adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems required by the engine manufacturer that is performed on a periodic basis to prevent part failure or equipment or engine malfunction, or anticipated as necessary to correct an overt indication of malfunction or failure for which periodic maintenance is not appropriate.

~~(35)~~(37) "Small off-road engine" means any engine that produces a gross horsepower less than 25 horsepower (at or below19 kilowatts for 2005 and later model year), or is designed (e.g., through fuel feed, valve timing, etc.) to produce less than 25 horsepower (at or below19 kilowatts for 2005 and later model year), that is not used to propel a licensed on-road motor vehicle, an off-road motorcycle, an all-terrain vehicle, a marine vessel, a snowmobile, a model airplane, a model car, or a model boat. If an engine family has models below 25 horsepower (at or below 19 kilowatts) and models at or above 25 horsepower (above 19 kilowatts), only the models under 25 horsepower (at or below 19 kilowatts) would be considered small off-road engines. Uses for small off-road engines include, but are not limited to, applications such as lawn mowers, weed trimmers, chain saws, golf carts, specialty vehicles, generators and pumps. All engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air Act, as amended, and as defined by regulation of the Environmental Protection Agency, are specifically not included within this category. Any compression-ignition engine, as defined in Section 2421, produced during the 2000 and later model years shall not be defined as a small off-road engine.

(38) "Small off-road equipment" means any off-road equipment powered by a small off-road engine, or comparable electric motor or other power source.

~~(36)~~(39) "Third-~~P~~party ~~D~~distributor" is a party that is not an engine or equipment manufacturer, and that engages in wholesale or retail sales of complete or incomplete small off-road engine assemblies.

~~(37)~~(40) "Trading" means the exchange of small off-road engine emission credits between manufacturers.

~~(38)~~(41) “Ultimate ~~P~~purchaser” means the first person who in good faith purchases a new small off-road engine or equipment using such an engine for purposes other than resale.

~~(39)~~(42) “Unscheduled ~~M~~maintenance” means any inspection, adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems that is performed to correct or diagnose a part failure that was not anticipated.

~~(40)~~(43) “Vertical-shaft engine” means any engine that is designed to operate with the axis of the crankshaft in a vertical position.

~~(41)~~(44) “Warrantable ~~C~~condition” means any condition of an engine that requires the manufacturer to take corrective action pursuant to Section 2405.

~~(42)~~(45) “Warranted ~~P~~part” any emissions-related part installed on an engine by the equipment or engine manufacturer, or installed in a warranty repair, that is listed on the warranty parts list.

~~(43)~~(46) “Warranty period” means the period of time that the engine or part is covered by the warranty provisions.

~~(44)~~(47) “Warranty station” means a service facility authorized by the equipment or engine manufacturer to perform warranty repairs. This includes all manufacturer distribution centers that are franchised to service the subject equipment or engines.

(48) “Zero-emission small off-road equipment” means any small off-road equipment that produces zero emissions of any criteria pollutant (or precursor pollutant) under any and all possible operational modes and conditions.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 45205.5 and 43210-43212, Health and Safety Code.

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

(a) This section applies to small off-road engines produced on or after January 1, 1995.

(b) (1) Exhaust emissions from small off-road engines manufactured for sale, sold, or offered for sale in California, or that are introduced, delivered or imported into California for introduction into commerce, must not exceed:

Exhaust Emission Standards
grams per brake horsepower-hour
[grams per kilowatt-hour]

Calendar Year	Engine Class[1]	Hydrocarbon plus Oxides of Nitrogen[2]	Hydrocarbon[2]	Carbon Monoxide	Oxides of Nitrogen	Particulate
1995	I	12.0	—	300	—	0.9[3]
	II	10.0	—	300	—	0.9[3]
	III[4]	—	220	600	4.0	—
	IV[4]	—	180	600	4.0	—
	V[4]	—	120	300	4.0	—
1996 to1999	I	12.0[5]	—	350	—	0.9[3]
	II	10.0[5]	—	350	—	0.9[3]
	III[4]	—	220[5]	600	4.0[5]	—
	IV[4]	—	180[5]	600	4.0[5]	—
	V[4]	—	120[5]	300	4.0[5]	—

Exhaust Emission Standards for Spark-Ignition Engines
grams per brake horsepower-hour
[grams per kilowatt-hour]

Model Year	Engine Class[1]	Durability Periods (hours)	Hydrocarbon plus Oxides of Nitrogen[2]	Carbon Monoxide	Particulate
2000-2001[5]	~~SI~~ 0-65 cc, inclusive	50/125/300	54 [72]	400 [536]	1.5[4] [2.0]
	~~SI~~ >65 cc - <225 cc	NA	12.0 [16.1]	350 [467]	
	~~SI~~ ≥225 cc	NA	10.0 [13.4]	350 [467]	
2002-200~~5~~4[5]	~~SI~~ 0-65 cc, inclusive	50/125/300	54 [72]	400 [536]	1.5[4] [2.0]
	~~SI~~ >65 cc - <225 cc Horizontal-Shaft Engine	125/250/500	12.0 [16.1]	410 [549]	
	~~SI~~ >65 cc - <225 cc Vertical-Shaft Engine	NA	12.0 [16.1]	350 [467]	
	~~SI~~ ≥225 cc	125/250/500	9.0 [12.0]	410 [549]	
~~2006 and subsequent[5]~~	~~SI 0-65 cc, inclusive~~	~~50/125/300~~	~~54 [72]~~	~~400 [536]~~	~~1.5[4] [2.0]~~
	~~SI >65 cc - <225 cc~~	~~125/250/500~~	~~12.0 [16.1]~~	~~410 [549]~~	
	~~SI ≥ 225 cc~~	~~125/250/500~~	~~9.0 [12]~~	~~410 [549]~~	

Exhaust Emission Standards for Spark-Ignition Engines
grams per kilowatt-hour

Model Year	Displacement Category	Durability Periods (hours)	Hydrocarbon plus Oxides of Nitrogen[(2)(6)]	Carbon Monoxide	Particulate
2005 and subsequent	<50 cc	50/125/300	50	536	2.0[(4)]
	50-80 cc, inclusive	50/125/300	72	536	2.0[(4)]
2005	>80 cc - <225 cc Horizontal-shaft Engine	125/250/500	16.1	549	
	>80 cc - <225 cc Vertical-shaft Engine	NA	16.1	467	
	≥225 cc	125/250/500	12.1	549	
2006	>80 cc - <225 cc	125/250/500	16.1	549	
	≥ 225 cc	125/250/500	12.1	549	
2007	>80 cc - <225 cc	125/250/500	10.0	549	
	≥ 225 cc	125/250/500	12.1	549	
2008 and subsequent	>80 cc - <225 cc	125/250/500	10.0	549	
	≥ 225 cc	125/250/500/1000	8.0	549	

(1) "Class I" means small off-road engines greater than 65 cc to less than 225 cc in displacement.

"Class II" means small off-road engines greater than or equal to 225 cc in displacement.

"Class III" means small off-road engines less than 20 cc in displacement.

"Class IV" means small off-road engines 20 cc to less than 50 cc in displacement.

"Class V" means small off-road engines greater than or equal to 50 cc to 65 cc in displacement.

(2) The Executive Officer may allow gaseous-fueled (i.e., propane, natural gas) engine families, that satisfy the requirements of the regulations, to certify to either the hydrocarbon plus oxides of nitrogen or hydrocarbon emission standard, as applicable, on the basis of the non-methane hydrocarbon (NMHC) portion of the total hydrocarbon emissions.

(3) Applicable to all diesel-cycle engines.

(4) Applicable to all two-stroke engines.

(5) Engines used exclusively in snowthrowers and ice augers need not certify to or comply with the HC and NO_x standards or the crankcase requirements at the option of the manufacturer.

(6) Engines used exclusively to power products which are used exclusively in wintertime, such as snowthrowers and ice augers, at the option of the engine manufacturer, need not certify to or comply with standards regulating emissions of $HC+NO_x$ or $NMHC+NO_x$, as applicable. If the manufacturer exercises the option to certify to standards regulating such emissions, such engines must meet such standards. If the engine is to be used in any equipment or vehicle other than an exclusively wintertime product such as a snowthrower or ice auger, it must be certified to the applicable standard regulating emissions of $HC+NO_x$ or $NMHC+NO_x$ as applicable.

(2) Low-emitting Blue Sky Series engine requirements.

Voluntary standards. Engines may be designated "Blue Sky Series" engines by meeting:

(A) All applicable requirements of this Article, and

(B) The following voluntary exhaust emission standards, which apply to all certification and compliance testing. Blue Sky Series engines shall not be included in the averaging, banking, and trading program. Zero-emission small off-road equipment may certify to the Blue Sky Series emission standards.

Manufacturers of zero-emission small off-road equipment are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined in the 2005 and Later Test Procedures to certify their equipment for sale in California.

Voluntary Emission Standards
(grams per kilowatt-hour)

Model Year	Displacement Category	Hydrocarbon plus Oxides of Nitrogen	Carbon Monoxide	Particulate*
2005 and subsequent	<50 cc	25	536	2.0
	50 - 80 cc, inclusive	36	536	2.0
2007 and subsequent	>80 cc - <225 cc	5.0	549	
2008 and subsequent	≥225 cc	4.0	549	

* Applicable to all two-stroke engines

(3) Evaporative emission requirements for small off-road engines are specified in Title 13, Chapter 15, Article 1.

(c) (1) For the 2000 through 2006 model years, ~~M~~manufacturers of small spark-ignited off-road engines between 65 and 225 cc displacement that are manufactured for sale, offered for sale, or sold in any extreme non-attainment area, or introduced, delivered or imported into any such extreme non-attainment area for sale to an ultimate purchaser in an extreme non-attainment area, and that are produced by manufacturers who produce more than 40,000 engines per year between 65 and 225 cc for sale in such areas (based on data for engines produced for sale in such areas in model year 1998), must meet the additional requirements of this subsection and achieve the additional emission reductions in subparagraph (3).

(2) No later than May 1, 1999, each manufacturer subject to this subsection shall submit a plan to achieve additional emission reductions. The plan shall include the following:

(A) An identification of the specific measures from subparagraph (4) that the manufacturer intends to implement in the extreme nonattainment areas, including but not limited to identification of engine families that in model years 2000 and 2001 will meet the exhaust emissions reduction requirements of subsection (b) for 2002 and subsequent model years prior to required implementation, and the projected sales volumes of such engine families in the extreme nonattainment areas;

(B) Data documenting the emissions performance of engines included in the plan when operated on fuels meeting the requirements of Chapter 5, Article 1, subarticle 2 of this Title applicable in the extreme nonattainment areas; and

(C) A description of the provisions made by the manufacturer to assure that all engines offered for sale or sold in the extreme nonattainment

areas (or introduced, delivered or imported into the extreme nonattainment areas for sale to an ultimate purchaser in that area) will meet the requirements of the plan, including but not limited to a description of the methods to be used to determine actual sales of engines in the extreme nonattainment areas; provided, that in the case of manufacturers that maintain data on actual or projected Statewide engine sales, the Executive Officer may approve provisions that demonstrate compliance with the plan on a Statewide basis.

(3) The plans submitted under this subsection shall in the aggregate provide for emissions reductions and controls by or from the group of engines produced by the submitting manufacturers that are equal to or greater than the difference between: 1) reductions that would have been achieved in the extreme nonattainment areas in calendar years 2000, 2001, 2005 and 2010 by all manufacturers of engines greater than 65 cc displacement that would have met the emissions reduction requirements proposed in the staff report contained in Mail-Out MSC-98-02 released February 6, 1998; and 2) those same engines meeting the requirements of subsection (b). The Executive Officer shall determine whether a plan meets this requirement based on the estimated model year 1998 sales in the extreme nonattainment areas available at time of plan submission by manufacturers covered by this subsection, and using a proportional allocation between such manufacturers based upon such estimated sales.

(4) The manufacturer's plan shall achieve additional emission reductions or controls through one or more of the following measures:

(A) The certification and introduction of engines greater than 65 cc meeting the standards in subsection (b) before the applicable model year;

(B) The voluntary certification of engines not subject to emission reductions requirements of the ARB due to preemption under section 222 of U.S. Public Law No. 101-549. A manufacturer choosing voluntarily to certify an engine shall also certify that it will honor all compliance and warranty requirements set forth in the provisions of this Title for that engine;

(C) The certification of engines to Family Emission Levels below the standards in subsection (b), or of engines that otherwise generate emissions credits under section 2408 of this Article and that are not used for any other purpose;

(D) The certification of engines to useful life periods longer than the maximum requirements set forth in subsection (b);

(E) The introduction of engines that achieve in-use reductions in engine evaporative emissions demonstrated by procedures acceptable to the Executive Officer;

(F) The use of emission credits generated by the manufacturer pursuant to section 2409 of this Article and that are not used for any other purpose; and

(G) Other measures approved in advance by the Executive Officer.

(5) The plan shall also demonstrate that at least 60 percent of engines greater than 65 cc sold in extreme nonattainment areas comply in model years 2000 and 2001 with the standards in subsection (b) applicable to the 2006 model year. The percentage shall be calculated based on the total projected sales by all manufacturers of engines greater than 65 cc in the extreme nonattainment areas in those model years, and shall be proportionally allocated between the manufacturers subject to this subsection.

(6) The provisions of this subsection are not applicable to engines offered for sale or sold outside an extreme nonattainment area, or introduced, delivered or imported into an extreme nonattainment area for sale to an ultimate purchaser outside an extreme nonattainment area.

(7) The Executive Officer shall determine if a plan timely submitted under this subsection meets the requirements of this subsection no later than June 1, 1999. The Executive Officer shall not issue any executive orders for individual engine families subject to the plan until the plan is approved. The manufacturer shall submit annual reports to the Executive Officer demonstrating compliance with the plan approved by the Executive Office and may, at its discretion, propose revisions to its plan on an annual basis. If, on the basis of information contained in a manufacturer's annual report or any other information, the Executive Officer finds that the manufacturer is not in compliance with an approved plan, the Executive Officer may direct the manufacturer to submit a revised plan; provided, that no such revision shall be required solely as a result of gain or loss in market share in the extreme nonattainment areas during the period while this subsection remains in effect. The Executive Officer shall act upon any proposed revision of a plan within 30 days of receipt. Pending approval of a revised plan, the Executive Officer shall not issue any Executive Orders for individual engine families subject to the revised plan. These actions of the Executive Officer are in addition to any remedies available under this Article or Part 5 of Division 26 of the Health & Safety Code.

(d) The test procedures for determining compliance with the standards for exhaust emissions from new small off-road engines are set forth in "California Exhaust Emission Standards and Test Procedures for 1995-2004 ~~and Later~~ Small Off-Road Engines", adopted March 20, 1992, and last amended ~~January 28, 2000,~~ July 26, 2004 or "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines," adopted July 26, 2004, as applicable, which is incorporated herein by reference.

(e) Averaging. For new 2000 and subsequent model year small off-road engines, a manufacturer may comply with the standards established in paragraph (b), above, by choosing either to certify an engine family to the standards or to use the corporate average described below.

(1) For each model year, the corporate average value for a pollutant is defined by the following equation:

$$\frac{\sum_{j=1}^{n}(\text{FEL}_j)(\text{Sales}_j)(\text{~~HP~~}_j\ \underline{\text{Power}_j})(\text{Load Factor})(\text{EDP}_j) - \text{credits expended}}{\sum_{j=1}^{n}(\text{Sales}_j)(\text{~~HP~~}_j\ \underline{\text{Power}_j})(\text{Load Factor})(\text{EDP}_j)} = \text{AVG}$$

where

n = the number of small off-road engine families.

FEL = the Family emission level for an engine family.

Sales_j = eligible sales of engine family j.

~~HP_j~~ $\underline{\text{Power}_j}$ = sales-weighted maximum modal <u>power, in</u> horsepower <u>or kilowatt as applicable,</u> of engine family j, or an alternative approved by the Executive Officer.

EDP_j = Emissions durability period of engine family j.

AVG = For a given pollutant ($HC+NO_x$, CO, or Particulate Matter), a manufacturer's corporate average of the exhaust emissions from those California small off-road engines subject to the California corporate average pollutant exhaust emission standard, as established by an Executive Order certifying the California production for the model year. <u>Engines certified to voluntary standards of 2403 (b)(2) are not eligible for corporate averaging</u>.

Credits expended = $HC+NO_x$ or Particulate Matter credits, as defined in sections 2408 and 2409, that are expended by the manufacturer to adjust the corporate average. This term has no meaning for any pollutants other than $HC+NO_x$ and Particulate Matter.

<u>Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e., 0.85). For approved alternate test procedures, the load factor must be calculated according to the Load Factor formula found in paragraph (f)(1) of section 2408</u>.

(2) The manufacturer's average pollutant exhaust emissions must meet the corporate average standard at the end of the manufacturer's production for the model year. At the end of the model year, the manufacturer must calculate a corrected corporate average using actual rather than projected sales. Any discrepancy must be made up with emission reduction credits as explained in paragraph (3).

(3) All excess $HC+NO_x$ or Particulate Matter emissions resulting from final non-compliance with the California standard must be made up with emission reduction credits or through incorporation in the following model year's corporate average.

(A) Emission reduction credits expended within the next model year to remedy final non-compliance will be used at a rate of 1 gram to 1 gram.

(B) Emission reduction credits expended after the end of the next model year to remedy final non-compliance must be used at a rate of 1.5 grams to 1 gram.

(f) In 1995 and subsequent years, fire and police departments, and other entities that specialize in emergency response may purchase emergency equipment powered by a non-California certified engine only when such equipment with a California-certified engine is not available. For purposes of this section, a request to purchase emergency equipment powered by a non-California certified engine must be submitted for approval to the Executive Officer.

(g) (1) No new engines below 225 cc may be produced for sale to replace pre-1995 model equipment after January 1, 1999, unless such new engines comply with the 1995 model emission standards.

(2) (A) A new small off-road engine equal to or greater than 225 cc, intended solely to replace an engine in a piece of off-road equipment that was originally produced with an engine manufactured prior to the applicable implementation date as described in paragraph (b), shall not be subject to the emissions requirements of paragraph (b) provided that:

~~(i)~~1. The engine manufacturer has ascertained that no engine produced by itself or the manufacturer of the engine that is being replaced, if different, and certified to the requirements of this article, is available with the appropriate physical or performance characteristics to repower the equipment; and

~~(ii)~~2. Unless an alternative control mechanism is approved in advance by the Executive Officer, the engine manufacturer or its agent takes ownership and possession of the engine being replaced; and

~~(iii)~~3. The replacement engine is clearly labeled with the following language, or similar alternate language approved in advance by the Executive Officer:

THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA OFF-ROAD OR ON-HIGHWAY EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE IN AN OFF-ROAD VEHICLE OR PIECE OF OFF-ROAD EQUIPMENT WHOSE ORIGINAL ENGINE WAS NOT CERTIFIED IS A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.

(B) At the beginning of each model year, the manufacturer of replacement engines must provide, by engine model, an estimate of the number of replacement engines it expects to produce for California for that model year.

(C) At the conclusion of the model year, the manufacturer must provide, by engine model, the actual number of replacement engines produced

for California during the model year, and a description of the physical or performance characteristics of those models that indicate that certified replacement engine(s) were not available as per paragraph (A).

(h) Any new equipment engine certified to comply with California emission standards and test procedures for on-road or other off-road applications may, upon approval by the Executive Officer, be in compliance with these regulations.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

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

(a) Purpose. The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for engines to meet the applicable emission standards. In addition, the Board recognizes that information regarding engines' emissions levels may influence consumer choice. These specifications require engine or equipment manufacturers to affix a label (or labels) on each production engine (or equipment, as applicable) to provide the engine or equipment owner and service mechanic with information necessary for the proper maintenance of these parts in customer use. These specifications further require engine or equipment manufacturers to make information regarding relative emissions levels available to potential ultimate purchasers.

(b) Applicability. These specifications apply to

(1) 1995 and later small off-road engines, that have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.

(2) Engine manufacturers and original equipment manufacturers, as applicable, that have certified such engines; and

(3) Original equipment manufacturers, regardless of whether they have certified the engine, if their equipment obscures the emissions control label of such certified engines.

(c) Engine Label Content and Location.

(1) A plastic or metal tune-up label must be welded, riveted or otherwise permanently attached by the engine manufacturer to an area on the engine (i.e., block or crankcase) in such a way that it will be readily visible to the average person after installation of the engine in the equipment. If such an attachment is not feasible, the Executive Officer may allow the label to be attached on components of the engine or equipment assembly (as applicable) that satisfy the requirements of Subsection (c)(2). Such labels must be attached on all engine assemblies (incomplete and complete) that are produced by an engine manufacturer.

(2) In selecting an acceptable location, the engine manufacturer must consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each engine label(s) must be affixed in such a manner that it cannot be removed without destroying or defacing the label, and must not be affixed to any engine (or equipment, as applicable) part that is likely to be replaced during the engine's (or equipment's,

as applicable) useful life. The engine label must not be affixed to any engine (or equipment, as applicable) component that is easily detached from the engine. If the manufacturer claims there is inadequate space to affix the label, the Executive Officer will determine a suitable location.

(3) The engine label information must be written in the English language and use block letters and numerals (i.e., sans serif, upper-case characters) that must be of a color that contrasts with the background of the label.

(4) The engine label must contain the following information:

(A) The label heading must read: "IMPORTANT ENGINE INFORMATION or "IMPORTANT EMISSION INFORMATION."

(B) The full corporate name or trademark of the engine manufacturer.

~~(i)~~1. An engine manufacturer may request the Executive Officer's approval to delete its name and trademark, and substitute the name and trademark of another engine manufacturer, original equipment manufacturer, or third-party distributor.

~~(ii)~~2. Such an approval does not relieve the engine manufacturer granted an engine family Executive Order of any requirements imposed on the applicable engines by this Article.

(C) For alternate-fuel or dual-fuel engines, "THIS ENGINE IS CERTIFIED TO OPERATE ON (specify operating fuel(s))."

(D) Identification of the Exhaust Emission Control System. The method utilized to identify the exhaust emission control systems must conform to the emission-related nomenclature and abbreviations method provided in the Society of Automotive Engineers' ~~procedure~~recommended practice J1930, "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations and Acronyms--Equivalent to ISO/TR 15031-2: April 30, 2002", ~~September 1991~~April 2002; and as specified in Section 1977, Title 13, California Code of Regulations.

(E) For otto-cycle engines, the maintenance specifications and adjustments recommended by the engine manufacturer, including, as applicable: valve lash, ignition timing, idle air/fuel mixture setting procedure and value (e.g., idle CO, idle speed drop), and high idle speed. For diesel-cycle engines, the specifications and adjustments recommended by the engine manufacturer, including, as applicable: initial injection timing, and fuel rate (in mm^3/stroke) at rated power. 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 engine manufacturer does not recommend adjustment of the foregoing specifications, the engine manufacturer may 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 engine label to preclude the need

for a mechanic or equipment owner to refer to another document in order to correctly perform the adjustments.

(F) Any specific fuel or engine lubricant requirements (e.g., lead content, research octane number, engine lubricant type).

(G) The date of engine manufacture (month and year).

(H) An unconditional statement of compliance with the appropriate calendar year (for 1995-1999) or model year(s) (for 2000 and later) California regulations; for example, "THIS ENGINE MEETS 2005 CALIFORNIA EXH EMISSION REGULATIONS FOR SMALL OFF-ROAD ENGINES." For engines certified to emission standards subject to a durability period as set forth in §2403(b), the durability period must be stated in the owner's manual.

(I) Engine displacement (in cubic centimeters) of the engine upon which the engine label is attached.

(J) The engine family identification (i.e., engine family name).

(5) If there is insufficient space on the engine to accommodate an engine label that contains all of the information required in Subsection (4) above, the Executive Officer may allow the engine manufacturer to modify the engine label as follows:

(A) Exclude the information required in Subsections (4)(C), (D), (E), (F), and (I) from the engine label. The fuel or lubricant information must be specified elsewhere on the engine, or in the owner's manual.

(B) Substitute the information required in Subsection (4)(E) with the statement: "REFER TO OWNER'S MANUAL FOR MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS." When such a statement is used, the information required by Subsection (4)(E) must appear in the owner's manual.

(C) Exclude the information required by Subsection (4)(G) on the engine label if the date the engine was manufactured is stamped permanently on the engine, and this stamped date is readily visible.

(D) Make such other reasonable modifications or abbreviations as may be approved by the Executive Officer.

(d) An engine label may state that the engine conforms to any applicable federal, Canadian, or European emission standards for new equipment engines; or any other information that the engine manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of the engine.

(e) Supplemental Engine Label Content and Location.

(1) When a final equipment assembly that is marketed to any ultimate purchaser is manufactured and the engine label attached by the engine manufacturer is obscured (i.e., not readily visible), the manufacturer of the final equipment assembly (i.e., original equipment manufacturer) must attach a supplemental engine label upon the engine or equipment. The supplemental engine label must be plastic or metal, must meet the visibility, durability and formatting requirements of paragraphs (f), (g) and (h), and must be welded,

riveted or otherwise attached permanently to an area of the engine or equipment assembly so as to be readily visible to the average person.

(2) The original equipment manufacturer required to attach a supplemental engine label must consider the possibility of accidental damage to the supplemental engine label in the determination of the label location. Such a label must not be attached to any engine or equipment component that is likely to be replaced during the useful life of the engine or equipment (as applicable). Such a label must not be attached to any engine or equipment component that is detached easily from the engine or equipment (as applicable).

(3) The supplemental engine label information must be written in the English language and use block letters and numerals (i.e., sans serif, upper-case characters) that must be of a color that contrasts with the background of the label.

(4) A supplemental engine label must contain the information as specified in Subsection (c)(4) (and (l), as applicable), except that the date of engine manufacture specified in (c)(4)(G) may be deleted from the supplemental engine label. When the date of engine manufacture does not appear on the supplemental engine label, the responsible original equipment manufacturer must display (e.g., label, stamp, etc.) the date elsewhere on the engine or equipment so as to be readily visible.

(f) As used in these specifications, readily visible to the average person means that a label is readable from a distance of 46 centimeters (18 inches) without any obstructions from equipment or engine parts (including all engine manufacturer or original equipment manufacturer (as applicable) available optional equipment) except for flexible parts (e.g., vacuum hoses, ignition wires) that can be moved out of the way without disconnection. Alternatively, information required by these specifications to be printed on the engine and supplemental engine (as applicable) must be no smaller than 2 millimeters in height provided that no equipment or engine parts (including all manufacturer available optional equipment), except for flexible parts, obstruct the label(s).

(g) The labels and any adhesives used must be designed to withstand, for the engine's or equipment's useful life, typical equipment environmental conditions in the area where the labels required by this section are attached. Typical equipment environmental conditions include, but are not limited to, exposure to engine fuels, lubricants and coolants (e.g., gasoline, motor oil, water, ethylene glycol). The engine manufacturer must submit, with its certification application, a statement attesting that its labels comply with these requirements.

(h) The engine manufacturer must obtain approval from the Executive Officer for all label formats and locations in conjunction with the engine family certification. Approval of the specific maintenance settings is not required;

however, the format for all such settings and tolerances, if any, is subject to review. If the Executive Officer finds that the information on the label is vague or subject to misinterpretation, or that the location does not comply with these specifications, the Executive Officer may require that the label or its location be modified accordingly.

(i) Samples of all actual production labels used within an engine family must be submitted to the Executive Officer within thirty days after the start of production. Engine manufacturers must provide samples of their own applicable production labels, and samples of applicable production original equipment manufacturer labels that are accessible to the engine manufacturers due to the direct market arrangement between such manufacturers.

(j) The Executive Officer may approve alternate label locations or may, upon request, waive or modify the label content requirements provided that the intent of these specifications is met.

(k) (1) If the Executive Officer finds any engine manufacturer using labels that are different from those approved or that do not substantially comply with the readability or durability requirements set forth in these specifications, the engine manufacturer will be subject to revocation or suspension of Executive Orders for the applicable engine families, or enjoined from any further sales or distribution, of such 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 seeking to enjoin an engine manufacturer, the Executive Officer will consider any information provided by the engine manufacturer.

(2) If the Executive Officer finds any original equipment manufacturer using labels for which it has responsibility for attaching that are different from those approved or that do not substantially comply with the readability or durability requirements set forth in these specifications, the equipment manufacturer will be subject to being enjoined from any further sales, or distribution, of the applicable equipment product line that uses such noncompliant labels in the State of California pursuant to Section 43017 of the Health and Safety Code. Before seeking to enjoin an equipment manufacturer, the Executive Officer will consider any information provided by the equipment manufacturer.

(l) Air Index Label Content and Location. For engines certified to emission standards subject to a durability period as set forth in §2403(b) and for engines used to meet the requirements of §2403(c), each engine manufacturer must make Air Index and durability period information available to potential ultimate purchasers.

(1) The Air Index for each engine family is determined by the following formula:

$$\text{Air Index} = \frac{\text{FEL} \times 3}{\text{Standard}},$$

rounded to the nearest whole number in accordance with ASTM E 29-93a (May 1993),

where
FEL= the Family Emission Limit (or standard, if averaging is not being used) for the engine; and
Standard = The $HC+NO_x$ emissions standard, as applicable in § 2403 (b).

(2) The emissions durability period must be indicated by the actual hours, by the descriptive terms shown in the table below, or by both.

For 2000 through 2004 model year small off-road engines:

Descriptive term	Applicable to Emissions Durability Period
Moderate	50 hours (0-65 cc, inclusive) 125 hours (~~65 cc and~~ greater than 65 cc)
Intermediate	125 hours (0-65 cc, inclusive) 250 hours (~~65 cc and~~ greater than 65 cc)
Extended	300 hours (0-65 cc, inclusive) 500 hours (~~65 cc and~~ greater than 65 cc)

For 2005 and subsequent model year small off-road engines:

Descriptive term	Applicable to Emissions Durability Period
Moderate	50 hours (0-80 cc, inclusive) 125 hours (greater than 80 cc)
Intermediate	125 hours (0-80 cc, inclusive) 250 hours (greater than 80 cc)
Extended	300 hours (0-80 cc, inclusive) 500 hours (greater than 80 cc) 1000 hours (225 cc and greater)

(3) The Air Index information must include a graphical representation of the Air Index, information regarding the significance of the Air Index, and an indication of the emissions durability period of the engine.

(A) The Air Index information should be conveyed in the general the form of the following example.

The Air Index of this engine is 7

0 2 4 6 8 10

Most Clean *Least Clean*

Note: The lower the Air Index, the less pollution.

This engine is certified to be emissions compliant for the following use:
☐Moderate [or appropriate hours, or both]
X Intermediate [or appropriate hours, or both]
☐Extended [or appropriate hours, or both]
Check the owner's manual for further details.

(B) The Executive Officer, upon request, may waive or modify the form of the Air Index information or may approve alternative forms, provided that the intent of providing Air Index information is met.

(4) No earlier than January 1, 2003, the Executive Officer will conduct a hearing to assess consumer awareness of Air Index information in purchasing decisions.

(A) At such hearing the Executive Officer will compare the degree of consumer awareness of Air Index information by purchasers of engines not meeting specifications (A)-(C) in subsection (l)(5) to the degree of consumer awareness of Air Index information by purchasers of engines substantially meeting specifications (A)-(C) of subsection (l)(5). If the Executive Officer determines that the degree of consumer awareness is statistically equivalent, the provisions of subsections (l)(1-3) shall remain in effect and the Executive Officer will not require engine manufacturers to meet the requirements of subsection (l)(5).

(B) If the Executive Officer determines that there are insufficient engines meeting specifications (A)-(C) in subsection (l)(5) to make the above comparison, the Executive Officer will compare the degree of consumer awareness of Air Index information by purchasers of engines not meeting specifications (A)-(C) in subsection (l)(5) to other similar consumer information programs including, but not limited to, the passenger car Smog Index labeling program. If the Executive Officer determines that the degree of consumer awareness is statistically equivalent to other similar consumer information programs, the provisions of subsections (l) (1-3) shall remain in effect and the Executive Officer will not require engine manufacturers to meet the requirements of subsection (l)(5).

(C) If the Executive Officer determines that the degree of consumer awareness is not statistically equivalent under (A) and (B), then no earlier than at the beginning of the first full model year following the Executive Officer's final determination, provided that manufacturers have no less than 9 months of lead time, the Executive Officer will require engine manufacturers to meet the requirements of subsection (l)(5).

(5) If the Executive Officer has made the determination in subsection (l)(4)(C), then the following requirements apply:

(A) All information required on the Air Index Label must be no smaller than 2 millimeters in height.

(B) The Air Index Label must be noticeable from a distance of 150 centimeters (59 inches) without any obstructions by equipment or engine

parts, including all engine manufacturer or original equipment manufacturer (as applicable) available optional equipment. For engines that are installed in an engine compartment that is easily accessible to the ultimate purchaser, this subsection (l)(5)(B) may be satisfied by a generic label or hang tag stating "LOOK INSIDE THE ENGINE COMPARTMENT FOR IMPORTANT EMISSIONS INFORMATION," or by other means, subject to the Executive Officer's approval.

(C) The Air Index Label must be located in at least one of the following locations:

~~(i)~~1. included on the engine label;

~~(ii)~~2. included as an additional engine label, designed and intended for removal only by the ultimate purchaser; or

~~(iii)~~3. included as an engine or equipment hang-tag designed or intended for removal only by the ultimate purchaser;

(D) For engines 0-65 cc (up to 80 cc beginning with the 2005 model year), inclusive, the engine manufacturer must also arrange for a label with the engine family's Air Index to be attached to the equipment packaging.

(E) The Executive Officer, upon request, may waive or modify the form of the Air Index Label or may approve alternative forms, sizes or locations, provided that the intent of the Air Index Label requirement is met.

(6) The labeling and consumer information provisions of subsection (l) shall not apply to engines that are not the primary power source of the equipment in which they are installed or to engines that are installed in equipment that the engine or equipment manufacturer can demonstrate, to the Executive Officer's reasonable satisfaction, are used almost exclusively in commercial applications in which consumer information are not likely to affect a purchasing decision.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43017, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2405. Defects Warranty Requirements for 1995 and Later Small Off-Road Engines.

(a) Applicability. This section applies to 1995 and later small off-road engines. The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser.

(b) General Emissions Warranty Coverage. The manufacturer of each small off-road 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 that 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 two years.

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

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by Subsection (d) must be warranted for the warranty period defined in Subsection (b)(2). 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 (d) must be warranted for the warranty period defined in Subsection (b)(2). A statement in such written instructions to the effect of "repair or replace as necessary" will 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 (d) 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 is 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), the engine manufacturer must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of the engine manufacturer.

(10) Add-on or modified parts 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 be grounds for disallowing a warranty claim made in accordance with this article. The engine manufacturer will 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

~~(i)~~(A) Carburetor and internal parts (and/or pressure regulator or fuel injection system).

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

~~(iii)~~(C) Cold start enrichment system.

(2) Air Induction System

~~(i)~~(A) Controlled hot air intake system.

~~(ii)~~(B) Intake manifold.

~~(iii)~~(C) Air filter.

(3) Ignition System

~~(i)~~(A) Spark Plugs.

~~(ii)~~(B) Magneto or electronic ignition system.

~~(iii)~~(C) Spark advance/retard system.

(4) Exhaust Gas Recirculation (EGR) System

~~(i)~~(A) EGR valve body, and carburetor spacer if applicable.

~~(ii)~~(B) EGR rate feedback and control system.

(5) Air injection System

~~(i)~~(A) Air pump or pulse valve.

~~(ii)~~(B) Valves affecting distribution of flow.

~~(iii)~~(C) Distribution manifold.

(6) Catalyst or Thermal Reactor System

~~(i)~~(A) Catalytic converter.

~~(ii)~~(B) Thermal reactor.

~~(iii)~~(C) Exhaust manifold.

(7) Particulate Controls

~~(i)~~(A) Traps, filters, precipitators, and any other device used to capture particulate emissions.

(8) Miscellaneous items Used in Above Systems

~~(i)~~(A) Vacuum, temperature, and time sensitive valves and switches.

~~(ii)~~(B) Electronic controls.

~~(iii)~~(C) Hoses, belts, connectors, and assemblies.

(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 engine manufacturer must submit the documents required by Subsection (d) with the engine manufacturer's application for engine certification for approval by the Executive Officer. Approval by the Executive Officer of the documents required by Subsection (d) is a condition of certification. The Executive Officer will approve or disapprove the documents required by Subsection (d) within 90 days of the date such documents are received from the engine manufacturer. Any disapproval must be accompanied by a statement of the reasons thereof. In the event of disapproval, the engine manufacturer may file for an adjudicative hearing pursuant to Title 17, California Code of Regulations, Section 60040 et seq., to review the decision of the Executive Officer.

(g) In the application for engine certification, each engine manufacturer must include a statement regarding the maintenance of the engine for clean air. The statement must include, but not be limited to, information on carburetor adjustment, air filter care and replacement schedule, spark plug maintenance and inspection, proper fuel/oil ratio for low emissions, use of appropriate fuel, proper fueling and fuel mixing, proper method of disposing of oil and oil containers, engine maintenance, and a maintenance schedule to ensure that the owner returns to a servicing center to check for deposits, debris build-up, etc.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2405.1. Emission-related Defect Reporting Requirements.

(a) Applicability. This section applies to 2005 model year and later small off-road engines. The requirement to report emission-related defects affecting a given class or category of engines will remain applicable for five years from the end of the calendar year in which such engines were manufactured.

(b) A manufacturer must file a defect information report whenever, on the basis of data obtained subsequent to the effective date of these regulations:

(1) The manufacturer determines, in accordance with procedures established by the manufacturer to identify either safety-related or performance defects, that a specific emission-related defect exists; and

(2) A specific emission-related defect exists in 25 or more engines of a given engine family manufactured in the same Executive Order or model year.

(c) No report must be filed under this section for any emission-related defect corrected prior to the sale of the affected engines to ultimate purchasers.

(d) The manufacturer must submit defect information reports to Chief, Mobile Source Operations Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731, not more than 15 working days after an emission-related defect is found to affect 25 or more engines manufactured in the same Executive Order or model year. Information required by paragraph (e) of this section that is either not available within 15 working days or is significantly revised must be submitted the Executive Officer as it becomes available.

(e) Each defect report must contain the following information in substantially the format outlined below:

(1) The manufacturer's corporate name.

(2) A description of the defect and part number(s).

(3) A description of each class or category of engines potentially affected by the defect including make, model, model year, calendar year produced, and any other information required to identify the engines affected.

(4) For each class or category of engine described in response to paragraph (e)(3) of this section, the following must also be provided:

(A) The number of engines known or estimated to have the defect and an explanation of the means by which this number was determined.

(B) The address of the plant(s) at which the potentially defective engines were produced.

(5) An evaluation of the emissions impact of the defect and a description of any operational problems which a defective engine might exhibit.

(6) Emission data which relate to the defect.

(7) An indication of any anticipated manufacturer follow-up.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2405.2. Voluntary Emission Recall Program

(a) When any manufacturer initiates a voluntary emissions recall campaign involving 25 or more engines, the manufacturer must submit a report describing the manufacturer's voluntary emissions recall plan as prescribed by this section within 15 working days prior to the date owner notification was issued. The report must contain the following:

(1) A description of each class or category of engines recalled including the number of engines to be recalled, the model year, the make, the model, and such other information as may be required to identify the engines recalled;

(2) A description of the specific modifications, alterations, repairs, corrections, adjustments, or other changes to be made to correct the engines affected by the emission-related defect;

(3) A description of the method by which the manufacturer will notify engine owners and, if applicable, the method by which the manufacturer will determine the names and addresses of engine owners;

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

(5) A description of the procedure to be followed by engine owners to obtain correction of the nonconformity. This may 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 defect, and the designation of facilities at which the defect can be remedied;

(6) A description of the class of persons other than dealers and authorized warranty agents of the manufacturer who will remedy the defect;

(7) When applicable, three copies of any letters of notification to be sent engine owners;

(8) 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, and that the supply remains both adequate and responsive to owner demand;

(9) Three copies of all necessary instructions to be sent to those persons who are to perform the repair under the recall plan;

(10) A description of the impact of the proposed changes on fuel consumption, performance, and safety of each class or category of engines to be recalled;

(11) A sample of any label to be applied to engines which participated in the voluntary recall campaign.

(b) The manufacturer must submit at least one report on the progress of the recall campaign. Such report must be submitted no later than 18 months from the date notification was begun and include the following information:

(1) The methods used to notify both engine owners, dealers and other individuals involved in the recall campaign;

(2) The number of engines known or estimated to be affected by the emission-related defect and an explanation of the means by which this number was determined;

(3) The number of engines actually receiving repair under the plan; and

(4) The number of engines determined to be ineligible for remedial action due to a failure to properly maintain or use such engines.

(c) Send the defect report, voluntary recall plan, and the voluntary recall progress report to: Chief, Mobile Source Operations Division, Air Resources Board, 9528 Telstar Avenue, El Monte, CA 91731.

(d) Retain the information gathered by the manufacturer to compile the reports for not less than five years from the date of the manufacture of the engines. The manufacturer must make this information available to duly authorized officials of the ARB upon request.

(e) The filing of any report under the provisions of this section does not affect a manufacturer's responsibility to file reports or applications, obtain approval, or give notice under any provision of law.

(f) The act of filing an Emission Defect Information Report is inconclusive as to the existence of a defect subject to the warranty provided by section 2405.

(g) A manufacturer may include on each page of its Emission Defect Information Report a disclaimer stating that the filing of a Defect Information Report pursuant to these regulations is not conclusive as to the applicability of the warranty provided by section 2405.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2405.3. Ordered Recalls.

(a) (1) If the Executive Officer determines that a substantial number of any class or category of engines, although properly maintained and used, do not conform to the regulations prescribed under Section 2400-2409, Chapter 1, Title 13 of the California Code of Regulations, when in actual use throughout their durability period (as defined under section 2403), the Executive Officer shall immediately notify the manufacturer of such nonconformity and require the manufacturer to submit a plan for remedying the nonconformity of the engines with respect to which such notification is given.

(A) The manufacturer's plan shall provide that the nonconformity of any such engines which are properly used and maintained will be remedied at the expense of the manufacturer.

(B) If the manufacturer disagrees with such determination of nonconformity and so advises the Executive Officer, the Executive Officer shall afford the manufacturer and other interested persons an opportunity to present their views and evidence in support thereof at a public hearing pursuant to Subchapter 1.25, Title 17, California Code of Regulations. Unless, as a result of such hearing, the Executive Officer withdraws such determination of nonconformity, the Executive Officer shall, within 60 days after the completion of such hearing, order the manufacturer to provide prompt notification of such nonconformity in accordance with paragraph (a)(2) of this section. The manufacturer shall comply in all respects with the requirements of this subpart.

(2) Any notification required to be given by the manufacturer under paragraph (a)(1) of this section with respect to any class or category of engines shall be given to dealers, ultimate purchasers, and subsequent purchasers (if known) in such manner and containing such information as required in section 2405.1(d).

(3) (A) Prior to an ARB ordered recall, the manufacturer may perform a voluntary emissions recall pursuant to regulations at section 2405.2. Such manufacturer is subject to the reporting and recordkeeping requirements of section 2405.2(c) and (d).

(B) Once ARB determines that a substantial number of engines fail to conform with the requirements of Section 2400-2409, Chapter 1, Title 13 of the California Code of Regulations, the manufacturer will not have the option of a voluntary recall.

(b) The manufacturer bears all cost obligation a dealer incurs as a result of a requirement imposed by paragraph (a) of this section. The transfer of any such cost obligation from a manufacturer to a dealer through franchise or other agreement is prohibited.

(c) Any inspection of an engine for purposes of paragraph (a)(1) of this section, after its sale to the ultimate purchaser, is to be made only if the owner of

such engine voluntarily permits such inspection to be made, except as may be provided by any state or local inspection program.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2407. New Engine Compliance and Production Line Testing – New Small Off-Road Engine Selection, Evaluation, and Enforcement Action.

(a) Compliance Test Procedures.

(1) The Executive Officer may, with respect to any new engine family 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 or where specified by the Executive Officer. The Executive Officer may also, with respect to any new engine family or subgroup being sold, offered for sale, or manufactured for sale in California, have an engine manufacturer compliance test and/or inspect a reasonable number of engines at the engine manufacturer's facility under the supervision of an ARB Enforcement Officer. Engines must be selected at random from sources specified by the Executive Officer according to a method approved by the Executive Officer, that, insofar as practical, must exclude engines that would result in an unreasonable disruption of the engine manufacturer's distribution system.

A subgroup 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 as a whole.

(2) For all 1995 and subsequent small off-road 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.

(3) These procedures are applicable, commencing with the 1995 calendar year, to any engine family or any subgroup within an engine family selected for compliance testing pursuant to this section.

(4) All testing must be conducted in accordance with the applicable calendar year (for 1995-1999) or model year (for 2000 and later) certification emission test procedures. Any adjustable engine parameters must be set to values or positions that are within the range available to the ultimate purchaser as determined by the ARB Enforcement Officer. For example, an engine carburetor with an adjustable idle fuel/air mixture must be compliance tested at any mixture position requested by the ARB Enforcement Officer that is within the range of adjustment available to the end-use operator. Engine service accumulation (i.e., break-in) before testing may be performed on test engines to the same extent it is performed on production line testing engines (See subsection (d)). 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.

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

(6) Correction of damage or maladjustment that may reasonably be found to have resulted from shipment of the engine is permitted only after test of the engine, except where 100 percent of the engine manufacturer's production is given that inspection or maintenance by the engine manufacturer's own personnel. The engine 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.

(7) Engine must be randomly chosen from the selected engine family or subgroup. Each chosen engine must be tested according to the "California Exhaust Emission Standards and Test Procedures for 1995-2004 ~~and Later~~ Small Off-Road Engines" ("Emission Standards and Test Procedures"), adopted March 20, 1992, and last amended ~~January 28, 2000~~ July 26, 2004, or "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines," adopted July 26, 2004, as applicable, 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 Procedures must be supplied by the engine manufacturer within seven days after the request for such speciality hardware or personnel. Failure to supply this unique specialty hardware or personnel may not be used by the engine manufacturer as a cause for invalidation of the subsequent tests.

(8) 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:

$$U = \frac{\sum_{i=1}^{n}(x_i - m_0)}{\sqrt{\sum_{i=1}^{n}(x_i - m_0)^2}}$$

x_i = the projected emissions of one pollutant for the ith engine tested.
m_0 = the applicable calendar year emission standard for that pollutant.
n = the number of engines tested.

(9) 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.

(10) If no decision 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.

(11) 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 manufacturers and other interested parties, including the availability of emission reductions credits to remedy the failure.

(B) Notify the equipment manufacturer that the equipment manufacturer may be subject to 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, including the availability of emissions reduction credits to remedy the failure.

(12) 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, including the availability of emissions reductions credits to remedy the failure.

(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. Before 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, including the availability of emissions reductions credits to remedy the failure.

(b) 1996 and Subsequent Calendar (Model) Year Quality-Audit Production Line Test Procedures.

(1) Small off-road engines produced in the 1996 and subsequent calendar (or model) years, that have been certified for sale in California, are subject to the quality-audit requirements specified in (b) and (d). Each engine manufacturer must use the quality-audit test procedures as specified in (b) and (d) unless it can satisfactorily provide an alternate method that shows an equivalent assurance of compliance. The purpose of providing alternate sampling, testing methods, and procedures is to help reduce sample size and

testing costs, while providing a reasonable assurance that production engines comply with the applicable emission standards. The engine manufacturer must submit the method of quality-audit to the Executive Officer for approval no later than 90 days prior to 1996 calendar year production, or any subsequent calendar or model year production, as applicable, if a change is proposed.

(2) Engine Sample Selection

(A) Except as provided in subsection (b)(3), the engine manufacturer must randomly select one percent of the California sales volume of engines from each engine family for quality-audit testing. Additional engine sample criteria appear in subsection (d)(3).

(B) The Executive Officer may, upon notice to the engine manufacturer, require the sample rate to be increased to a maximum of ten percent of production (not to exceed 30 additional engines or units of equipment) of the calendar quarterly production of any engine family.

(3) Alternate Quality-Audit Engine Selection Criteria For The 1996 Through 1999 Calendar Years

(A) An engine manufacturer may use the alternate engine selection method outlined in this Subsection.

(B) Engines or equipment must be randomly selected at a rate of 1.0 percent of engine family production at the beginning of production. When test results of the first 10 engines or units of equipment have been accumulated, an evaluation as indicated below must be made.

(C) Calculate the family mean and standard deviation of each pollutant (HC, CO, NO_x and PM, if applicable). Identify engines or units of equipment that have emission levels greater than three standard deviations above the mean. Eliminate these emission data points and recalculate the mean and standard deviation. Continue the calculation until there are no values greater than three standard deviations above the mean. Count the number of these data points greater than the emission standard (outliers). If the number of outliers is equal to or less than the allowable number in Table 1 for each pollutant, the engine family is eligible to continue to a second evaluation, shown in paragraph (D) below. Otherwise, sampling must continue at a rate of 1.0 percent of production for the rest of the month.

(D) If the allowable outlier criterion is met, the family mean standard deviation, and sample size determined for each contaminant before excluding any outliers, are substituted in the following expression:

$$\frac{(\text{emission standard} - \text{mean})\sqrt{(N)}}{(\text{standard deviation})}$$

(E) If the expression is greater than C in Table 2 below, and the engine manufacturer reasonably estimates that the quarterly engine family production will exceed 5,000 engines or units of equipment, the sampling rate for the remaining portion of the calendar month following the date of selection of the

last of the 10 engines or equipment is 10 per month, applied on a prorated basis. If the expression is greater than C in Table 2 below, and the engine manufacturer reasonably estimates that the quarterly engine family production will be 5,000 engines or units of equipment or less, the sampling rate for the remaining portion of the calendar month following the date of selection of the last of the 10 engines or equipment is 5 per month, applied on a prorated basis. If the expression is equal to or less than C in Table 2, the sampling rate continues to be 1.0 percent of production for the remaining portion of the month in which selection of the 10 engines or equipment is completed. The value of C is a function of the coefficient of variation (standard deviation/mean). The coefficient of variation and "C" must be rounded to the number of decimal places shown in Table 2.

Table 1

Sample Size	*Allowable Outliers*	*Sample Size*	*Allowable Outliers*
1-32	1	430-478	11
33-68	2	479-528	12
69-107	3	529-578	13
108-149	4	579-629	14
150-193	5	630-680	15
194-238	6	681-731	16
239-285	7	732-783	17
286-332	8	784-835	18
333-380	9	836-887	19
381-429	10	888-939	20

Table 2

Coefficient of Variation	C
0.1	0.5
0.2	1.2
0.3	1.8
0.4	2.5
0.5	3.1
0.6	3.8
0.7	4.4
0.8	5.1
0.9	5.7

(F) At the conclusion of each month of quarterly engine family production, the emission test data must be evaluated in order to determine the sampling rate as set forth in Paragraphs C and D above. This evaluation must utilize all test data accumulated in the applicable quarter. The sample rate for the next month of production must be determined as follows: ten (10) engines per month when the engine manufacturer's estimated quantity of quarterly engine

family production is greater than 5,000; five (5) engines per month when the engine manufacturer's estimated quantity of quarterly engine family production is equal to or less than 5,000; or, one (1) percent of the quarterly engine family production as determined by the sampling evaluation method set forth in Paragraphs D and E.

(G) For each subsequent quarter, the preceding sample selection method must be followed. The sample rate determination for the first month of each subsequent quarter must be based on the accumulated data from the previous quarter. The sample rate for the succeeding months of the quarter must be determined as previously set forth.

(H) If the start of production does not coincide with the first of a quarter, the sequence for sample rate determination must be followed, but references to remaining calendar months may not be appropriate.

(I) Where an engine manufacturer has sampled engines or equipment at a rate of 5 per month following a reasonable estimate that the quarterly engine family production will be 5,000 engines or units of equipment or less, and subsequently determines, or reasonably should determine based on information available to the engine manufacturer, that the quarterly engine family production will exceed 5,000 engines or units of equipment, the engine manufacturer must increase the sampling rate for the quarter such that the requirements of Paragraph D applicable to families reasonably estimated to exceed a quarterly production of 5,000 engines or units of equipment are satisfied.

(4) Compliance Evaluation

(A) Each engine manufacturer must review the test results of the first 10 test engines or equipment of each engine family, from each calendar quarter of production or from the start of calendar year production. It must also review the quarter's cumulative test results of each engine family at the end of each month. If 10 or more engines or units of equipment have been tested, the engine manufacturer must notify the Chief of the Mobile Source Operations Division, in writing within ten working days whenever an engine family exceeds an emission standard.

(B) At the end of the quarter, all of the data accumulated during the quarter are evaluated, and the compliance of the engine family with the family emission levels or emission standards, whichever is applicable, is determined. If a sample size for a particular production quarter is less than ten engines, the data from that quarter must be combined with all of the data from each successive quarter of the calendar year until data from at least ten engines that have been quality-audit tested are included in the quarterly evaluation. If the sample size for the first quarter's production for a calendar year does not contain at least ten engines, the data available for that quarter are evaluated. However, compliance of the engine family with the family emission levels or emission standards, whichever is applicable, is not determined until subsequent quarterly production data is available that includes evaluations of at least ten engines. If the sample size for the last final quarter's production for a calendar year does not

contain at least ten engines, the data from the last final quarter must be combined with all the data from each preceding quarter of the calendar year until the sample size contains at least ten engines.

(C) When the average value of any pollutant that is rounded off to the same number of significant digits as is the standard, in accordance with ASTM E 29-93a (May 1993), exceeds the applicable family emission level or emission standard, whichever is applicable; or, when the engine manufacturer's submitted data reveal that the production line tests were performed improperly, the engine family may be determined to be in noncompliance. The Executive Officer will follow the manufacturer notification procedures in section (d)(5).

(D) A failed engine is one whose emission test results for a regulated pollutant exceeds the emission standard or FEL, as applicable.

(5) Reports

(A) Each engine manufacturer shall submit a written report to the ARB within 45 calendar days of the end of each calendar quarter.

(B) The quarterly report shall include the following:

~~(i)~~1. The total production and sample size for each engine family.

~~(ii)~~2. Engine identification numbers and explanation of the identification code.

~~(iii)~~3. The applicable emissions standards or Family Emission Levels for each engine family.

~~(iv)~~4. A description of each test engine or equipment (i.e., date of test, engine family, engine size, engine or equipment identification number, fuel system, dynamometer power absorber setting in horsepower or kilowatts, engine code or calibration number, and test location).

~~(v)~~5. The exhaust emission data for PM, CO, NO_x and HC for each test engine or equipment. The data reported shall provide two significant figures beyond the number of significant figures in the applicable emission standard.

~~(vi)~~6. The retest emissions data, as described in paragraph ~~(v)~~5 above for any engine or unit of equipment failing the initial test, and description of the corrective measures taken, including specific components replaced or adjusted.

~~(vii)~~7. A statistical analysis of the quality-audit test results for each engine family stating:

~~1~~a. Number of engines or units of equipment tested.

~~2~~b. Average emissions and standard deviations of the sample for HC, CO, NO_x and PM.

~~(viii)~~8. Every aborted test data and reason for the aborted test.

~~(ix)~~9. The applicable quarterly report shall include the date of the end of the engine manufacturer's calendar year (for 1995-1999) or model year (for 2000 and subsequent years) production for an engine family.

~~(x)~~10. The required information for all engine families in production during the quarter regardless of sample size.

~~(xi)~~11. The start and stop dates of batch-produced engine family production.

(C) Each engine manufacturer shall submit a copy of the report that has been stored (e.g., computer discs), 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.

(c) 2000 and Subsequent Model Cumulative Sum Production Line Test Procedures.

(1) The 2000 and subsequent model year small off-road engines, that have been certified for sale in California, are subject to production line testing performed according to either the Cumulative Sum requirements specified in (c) and (d), or to the Quality-Audit requirements specified in paragraph (b) and (d). At the time of certification, the engine manufacturer must designate which production line testing procedure, either Quality-Audit or Cumulative Sum, it will use for the model year. If an engine manufacturer uses the Cumulative Sum procedures, it must use the Cumulative Sum test procedures as specified herein.

(2) Engine Sample Selection

(A) At the start of each model year, the small off-road engine manufacturer will begin to randomly select engines from each engine family for production line testing, according to the criteria specified herein. Additional engine sample criteria appear in subsection (d)(3).

~~(i)~~1. 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 (B) of this section.

~~(ii)~~2. 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 (B) of this section.

(B) ~~(i)~~1. 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 paragraph (c)(4)(C).

~~$N = \left[\frac{(t_{95} \times s)^2}{(x - FEL)}\right] + 1$~~ $N = \left[\frac{(t_{95} \times s)}{(x - FEL)}\right]^2 + 1$

where:

N = required sample size for the model year.

t_{95} = 95% confidence coefficient. It is dependent on the actual number of tests completed, n, as specified in the table in paragraph (B)~~(ii)~~2 of this section. It defines one-tail, 95% confidence intervals.

s = actual test sample standard deviation calculated from the following equation:

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

X_i = emission test result for an individual engine

x = mean of emission test results of the actual sample

FEL = Family Emission Level, or emission standard if no Family Emission level is established

n = The actual number of tests completed in an engine family

~~(ii)~~2. Actual 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
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

~~(iii)~~3. 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.

~~(iv)~~4. After each new test, the required sample size, N, is recalculated using updated sample means, sample standard deviations and the appropriate 95% confidence coefficient.

~~(v)~~5. A manufacturer must continue testing and updating each engine family's sample size calculations according to paragraphs (B)~~(i)~~1 through (B)~~(iv)~~4 of this section until a decision is made to stop testing as described in paragraph (B)~~(vi)~~6 of this section or a noncompliance decision is made pursuant to paragraph (c)(3)(A)~~(v)~~5 of this section.

~~(vi)~~6. 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 actual sample size, n, and the sample mean, x, for each regulated pollutant is less than or equal to the emission standard (or FEL, as applicable) for that pollutant, the manufacturer may stop testing that engine family except as required by paragraph (c)(3)(A)~~(vi)~~6.

~~(vii)~~7. If, at any time throughout the model year, the sample mean, x, for any regulated pollutant is greater than the emission standard (or FEL, as applicable), the manufacturer must continue testing that engine family at the appropriate maximum sampling rate.

~~(viii)~~8. The maximum required sample size for an engine family (regardless of the required sample size, N, as calculated in paragraph (B)~~(i)~~1 of this section) is thirty tests per model year.

~~(ix)~~9. Manufacturers may elect to test additional randomly chosen engines. All additional randomly chosen engines tested in accordance with the testing procedures specified in the Emission Standards and Test Procedures must be included in the Sample Size and Cumulative Sum equation calculations as defined in paragraphs (B)~~(i)~~1 and (c)(3)(A)~~(i)~~1 of this section, respectively.

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

(D) 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.

(3) Calculation of the Cumulative Sum Statistic

(A) Each engine manufacturer must review the test results using the following procedure:

~~(i)~~1. Manufacturers must construct the following Cumulative Sum Equation for each regulated pollutant for each engine family. Test results used to calculate the variables in the Cumulative Sum Equation must be final deteriorated test results as defined in paragraph (c)(4)(C).

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

where:

C_i = The current Cumulative Sum statistic

C_{i-1} = The previous Cumulative Sum statistic. Prior to any testing, the Cumulative Sum statistic = 0 (i.e. $C_0 = 0$)

X_i = The current emission test result for an individual engine

FEL = Family Emission Level, or emission standard if no Family Emission level is established

F = 0.25 x *F*

After each test, C_i is compared to the action limit, H, the quantity that the Cumulative Sum statistic must exceed, in two consecutive tests, before the engine family may be determined to be in noncompliance for purposes of paragraphs (c)(3)(A)~~(iv)~~4 and (c)(3)(A)~~(v)~~5.

H = The Action Limit. It is 5.0 x *F*, and is a function of the standard deviation, *F*,.

F = is the sample standard deviation and is recalculated after each test.

~~(ii)~~2. After each engine is tested, the Cumulative Sum statistic must be promptly updated according to the Cumulative Sum Equation in paragraph ~~(i)~~1 of this section.

~~(iii)~~3. If, at any time during the model year, a manufacturer amends the application for certification for an engine family as specified in Part I, Sections 28 and 29 of the 1995-2004 Emission Standards and Test Procedures, or Subpart B, §90.120 and §90.122 of the 2005 and Later Emission Standards and Test Procedures, as applicable, 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, or the use of a different deterioration factor), all previous sample size and Cumulative Sum statistic calculations for the model year will remain unchanged.

~~(iv)~~4. A failed engine is one whose final deteriorated test results pursuant to paragraph (c)(4)(C), for a regulated pollutant exceeds the emission standard or the FEL, as applicable, for that pollutant.

~~(v)~~5. An engine family may be determined to be in noncompliance, if at any time throughout the model year, the Cumulative Sum statistic, C_i, for, a regulated pollutant is greater than the action limit, H, for two consecutive tests.

~~(vi)~~6. The engine manufacturer must perform a minimum of two tests per engine family per quarter, regardless of whether the conditions of paragraph (c)(2)(B)~~(iv)~~4 have been met.

~~(vii)~~7. All results from 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).

~~(viii)~~8. 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 working days. Corrective action will be taken as noted in paragraph (d)(5), below.

~~(ix)~~9. 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.

(B) 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.

(4) Calculation and Reporting of Test Results.

(A) Initial test results are calculated following the applicable test procedure specified in “California Exhaust Emission Standards and Test Procedures for 1995-2004 ~~and Later~~ Small Off-Road Engines” or “California Exhaust Emission Standards and Test Procedures for 2005 and Later Small

Off-Road Engines," as applicable. 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)

(B) 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.

(C) 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.

(D) If, at any time during the model year, the Cumulative Sum 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 the Mobile Source Operations Division and the Manager of the ~~New Vehicle Audit~~ Off-Road Certification/Audit Section, 9528 Telstar Avenue, El Monte, CA, 91731, within ten working days of such exceedance by the Cumulative Sum statistic.

(E) Within 45 calendar days of the end of each quarter, each engine manufacturer must submit to the Executive Officer a report that includes the following information unless the Executive Officer has approved the omission of some of the information:

~~(i)~~1. The location and description of the manufacturer's or other's exhaust emission test facilities that were utilized to conduct testing reported pursuant to this section;

~~(ii)~~2. Total production and sample sizes, N and n, for each engine family;

~~(iii)~~3. The applicable emissions standards or Family Emissions Levels for each engine family;

~~(iv)~~4. A description of the process to obtain engines on a random basis;

~~(v)~~5. A description of the test engines or equipment (i.e., date of test, engine family, engine size, engine or equipment identification number, fuel system, dynamometer power absorber setting in horsepower or kilowatts, engine code or calibration number, and test location);

~~(vi)~~6. The date of the end of the engine manufacturer's model year production for each engine family;

~~(vii)~~7. For each test conducted,

~~1~~a. A description of the test engine, including:

~~(I)~~i. Configuration and engine family identification,

~~(II)~~ii. Year, make, and build date,

~~(III)~~iii. Engine identification number and explanation of the identification code, and

~~(IV)~~iv. Number of hours of service accumulated on engine prior to testing;

~~2~~b. Location where service accumulation was conducted and description of accumulation procedure and schedule;

~~3~~c. 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;

~~4~~d. The exhaust emission data for PM, CO, NO_x and HC (or NMHC, as applicable) for each test engine or equipment. The data reported must provide two significant figures beyond the number of significant figures in the applicable emission standard;

~~5~~e. The retest emissions data, as described in Paragraph 4 above for any engine or unit of equipment failing the initial test, and description of the corrective measures taken, including specific components replaced or adjusted;

~~6~~f. A complete description of any adjustment, modification, repair, preparation, maintenance, and/or testing that 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;

~~7~~g. A Cumulative Sum analysis, as required in paragraph (c)(3), of the production line test results for each engine family;

~~8~~h. 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;

~~(viii)~~8. For each failed engine as defined in paragraph (c)(3)(A)~~(iv)~~4, a description of the remedy and test results for all retests;

~~(ix)~~9. Every aborted test data and reason for the aborted test;

~~(x)~~10. The start and stop dates of batch-produced engine family production;

~~(xi)~~11. The required information for all engine families in production during the quarter regardless of sample size; and

(F) 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.

(d) Procedures Applicable to All Production Line Testing.

(1) Standards and Test Procedures. The emission standards, exhaust sampling and analytical procedures are those described in the Emission Standards and Test Procedures, and are applicable to engines tested only for

exhaust emissions. The production line test procedures are specified in conjunction with the Emission Standards and 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 Emission Standards and Test Procedures are fulfilled, except for the provisions as follows:

(A) A handheld equipment engine manufacturer, (or~~, for the 2000 and subsequent model year~~, a manufacturer of 2000 through 2004 model year engines 65 cc or below, or a manufacturer of 2005 and subsequent model years engines 80 cc or below,) may request that the Executive Officer allow the values of rated engine power and speed determined in the engine family certification be used in lieu of the determination of the engine power and speed of a production line engine. This request must include a specification of the particular power absorption device (e.g., dynamometer, water brake, etc.) used to apply the test load to the production engines. An engine manufacturer must request and must receive approval from the Executive Officer for this allowance before the production line tests are conducted. The engine manufacturer should establish equivalent assurance of compliance by providing emission data from a statistically valid sample of engines for comparison between the proposed procedures and the required procedures.

(B) Any adjustable engine parameters must be set to any value or position that is within the range available to the ultimate purchaser.

(2) 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 Section 31 of the 1995-2004 Emission Standards and Test Procedures or Section 90.126 of the 2005 and Later Emission Standards and Test Procedures, as applicable).

(3) Engine Sample Selection

(A) The engine manufacturer must randomly select engines according to (b)~~(3)~~(2) or (c)(2), as applicable, from each engine family for production line testing. 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 quality-audit 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.

(B) ~~(i)~~1. Prior to the beginning of the 2000 model year, if an engine manufacturer cannot provide actual California sales data, it must provide

its total production and an estimate of California sales at the end of the model year. The engine manufacturer must also provide supporting material for its estimate.

~~(ii)~~2. For the 2000 and later model years, 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.

(4) 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.

(5) Manufacturer Notification of Failure

(A) 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 the Executive Order, or seeking to enjoin an engine manufacturer, the Executive Officer will consider all information provided by the engine manufacturer, and other interested parties, including, but not limited to corrective actions applied to the noncompliant engine family, and for 2000 and subsequent model year engines, the availability of emissions reduction credits to remedy the failure.

(B) 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, 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 all information provided by interested parties, including, but not limited to corrective actions applied to the noncompliant engine family, and for 2000 and subsequent model year engines, the availability of emissions reduction credits to remedy the failure.

(6) Suspension and Revocation of Executive Orders.

(A) The Executive Order is automatically suspended with respect to any engine failing pursuant to paragraph (c)(3)(A)~~(iv)~~4 or (b)(4)(D) effective from the time that testing of that engine is completed.

(B) The Executive Officer may suspend the Executive Order for an engine family that is determined to be in noncompliance pursuant to paragraph (c)(3)(A)~~(v)~~5 or (b)(4)(C). This suspension will not occur before fifteen days after the engine family is determined to be in noncompliance. 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, including the availability of emissions reductions credits to remedy the failure.

(C) 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 all other plants.

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

~~(i)~~1. The manufacturer refuses to comply with any of the requirements of this section;

~~(ii)~~2. The manufacturer submits false or incomplete information in any report or information provided to the Executive Officer under this section;

~~(iii)~~3.The manufacturer renders inaccurate any test data submitted under this section;

~~(iv)~~4. An ARB enforcement officer is denied the opportunity to conduct activities authorized in this section and a warrant or court order is presented to the manufacturer or the party in charge of the facility in question;

~~(v)~~5. An ARB enforcement officer is unable to conduct activities authorized in paragraph (d)(2) of this section because a manufacturer has located its facility in a foreign jurisdiction where local law prohibits those activities.

(E) The Executive Officer will 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)(3)(A)~~(v)~~5 or (b)(4)(C), whichever is later, except that the Executive Order is immediately suspended with respect to any failed engines as provided for in paragraph (A) of this section.

(F) The Executive Officer may revoke an Executive Order for an engine family after the Executive Order 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 and/or emission control system as described in the application for certification of the affected engine family.

(G) 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 Executive Order is reinstated for that failed engine:

~~(i)~~1. Remedy the nonconformity;

~~(ii)~~2. Demonstrate that the engine conforms to the emission standards by retesting the engine in accordance with these regulations; and

~~(iii)~~3. Submit a written report to the Executive Officer, after successful completion of testing on the failed engine, that contains a description of the remedy and test results for each engine in addition to other information that may be required by this part.

(H) 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 Executive Order:

~~(i)~~1. Submit a written report to the Executive Officer that identifies the reason for the noncompliance of the engines, describes the proposed remedy, including a description of any proposed quality control and/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; and

~~(ii)~~2. 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 Cumulative Sum statistic, as calculated in paragraph (c)(3)(A)~~(i)~~1, falls below the action limit, or the average emissions from the Quality-Audit testing as calculated in paragraph (b)(4)(C) remains below the emission standard or FEL, as applicable. Such testing must comply with the provisions of this section. If the manufacturer elects to continue testing individual engines after suspension of an Executive Order, the

Executive Order 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 Executive Order pursuant to paragraph (F) of this section.

(I) 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 an Executive Order for that modified family:

~~(i)~~1. If the Executive Officer determines that the proposed change(s) in engine design may have an effect on emission performance deterioration, the Executive Officer will notify the manufacturer, within five working days after receipt of the report in paragraph (H)~~(i)~~1 of this section, whether subsequent testing under this section will be sufficient to evaluate the proposed change or changes or whether additional testing will be required; and

~~(ii)~~2. 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 section by testing as many engines as needed from the modified engine family so that the Cumulative Sum statistic, as calculated in paragraph (c)~~(6)~~(3)(A)~~(i)~~1 falls below the action limit, or the average emissions from the Quality Audit testing as calculated in paragraph (b)(4)~~(C)~~ remains below the emission standard or FEL, as applicable. When both of these requirements are met, the Executive Officer will reissue the Executive Order or issue a new Executive Order, as the case may be, to include that family. As long as the Cumulative Sum statistic remains above the action limit, or the average emissions from the Quality Audit testing exceeds the emission standard or FEL, as applicable, the revocation remains in effect.

(J) 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.

(K) Any suspension of an Executive Order under paragraph (D) of this section:

~~(i)~~1. must be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with all applicable requirements and;

~~(ii)~~2. need not apply to engines no longer in the possession of the manufacturer.

(L) 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 will reinstate the Executive Order.

(M) 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 Cumulative Sum statistic does not fall below the action limit, or the average emissions from the Quality-Audit testing remains above the emission standard or FEL, as applicable, and must commit to remedy any nonconformity at no expense to the owner.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2408. Emission Reduction Credits – Certification Averaging, Banking, and Trading Provisions.

(a) Applicability. The requirements of this section are applicable to all small off-road engines produced in the 2000 and later model years. Engines certified to the voluntary standards in subsection 2403(b)(2) are not eligible for participation in this program. Participation in the averaging, banking and trading program is voluntary, but if a manufacturer elects to participate, it must do so in compliance with the regulations set forth in this section. The provisions of this section are limited to $HC+NO_x$ (or $NMHC+NO_x$, as applicable) and Particulate Matter emissions.

(b) General provisions.

(1) The certification averaging, banking, and trading provisions for $HC+NO_x$ and Particulate Matter emissions from eligible engines are described in this section.

(2) An engine family may use the averaging, banking and trading provisions for $HC+NO_x$ and $NMHC+NO_x$ and Particulate Matter emissions if it is subject to regulation under this article with certain exceptions specified in paragraph (3) of this section. $HC+NO_x$ and Particulate Matter credits are interchangeable subject to the limitations on credit generation, credit usage, cross-class averaging and other provisions described in this section.

(3) A manufacturer must not include in its calculation of credit generation and may exclude from its calculation of credit usage, any new engines that are exported from California, or that are not destined for California, unless the manufacturer has reason or should have reason to believe that such engines have been or will be imported in a piece of equipment.

(4) For an engine family using credits, a manufacturer may, at its option, include its entire production of that engine family in its calculation of credit usage for a given model year.

(5) A manufacturer may certify engine families at Family Emission Limits (FELs) above or below the applicable emission standard subject to the limitation in paragraph (6) of this section, provided the summation of the manufacturer's projected balance of credits from all credit transactions for each engine class in a given model year is greater than or equal to zero, as determined under paragraph (f).

(A) A manufacturer of an engine family with an FEL exceeding the applicable emission standard must obtain positive emission credits sufficient to address the associated credit shortfall via averaging, banking, or trading.

(B) An engine family with an FEL below the applicable emission standard may generate positive emission credits for averaging, banking, or trading, or a combination thereof.

(C) In the case of a production line test failure, credits may be used to cover subsequent production of engines for the family in question if the manufacturer elects to recertify to a higher FEL. Credits may be used to remedy a nonconformity determined by production line testing or new engine compliance testing, at the discretion of the Executive Officer.

(D) In the case of a production line testing failure pursuant to section 2407, a manufacturer may revise the FEL based upon production line testing results obtained under section 2407 and upon Executive Officer approval. The manufacturer may use certification credits to cover both past production and subsequent production as needed.

(6) No engine family may have an FEL that is greater than the emission levels in the table below.

~~(A) 180 g/bhp-hr $HC+NO_x$ for engines 0-65 cc, inclusive,~~

~~(B) 24.1 g/bhp-hr $HC+NO_x$ for engines greater than 65 cc and less than 225 cc, or~~

~~(C) 20 g/bhp-hr $HC+NO_x$ for engines greater than 225 cc.~~

Model Year	Displacement Category	$HC+NO_x$ level	
		g/kW-hr	g/bhp-hr
2000-2004	0-65 cc, inclusive		180
	> 65 cc - < 225 cc		24.1
	≥ 225 cc		20
2005 and subsequent	< 50 cc	241.4	
	50-80 cc, inclusive	186	
2005-2006	> 80 cc- < 225 cc	32.3	
	≥ 225 cc	26.8	
2007	> 80 cc- < 225 cc	16.1	
	≥ 225 cc	26.8	
2008 and subsequent	> 80 cc- < 225 cc	16.1	
	≥ 225 cc	12.1	

(7) Manufacturers must demonstrate compliance under the averaging, banking, and trading provisions for a particular model year by 270 days after the end of the model year. An engine family generating negative credits for which the manufacturer does not obtain or generate an adequate number of positive credits by that date from the same or previous model year engines will violate the conditions of the Executive Order. The Executive Order may be voided *ab initio* for this engine family.

(c) Averaging.

(1) Negative credits from engine families with FELs above the applicable emission standard must be offset by positive credits from engine

families having FELs below the applicable emission standard, as allowed under the provisions of this section. Averaging of credits in this manner is used to determine compliance under paragraph (f)(2).

(2) Subject to the limitations above, credits used in averaging for a given model year may be obtained from credits generated in the same model year by another engine family, credits banked in previous model years, or credits of the same or previous model year obtained through trading. The restrictions of this paragraph notwithstanding, credits from a given model year may be used to address credit needs of previous model year engines as allowed under paragraph (f)(3).

(d) Banking.

(1) Beginning with the 1999 model year, a manufacturer of an engine family with an FEL below the applicable emission standard for 2006 and subsequent years may bank credits in that model year for use in averaging and trading. Negative credits may be banked only according to the requirements of paragraph (f)(3) of this section.

(2) A manufacturer may bank emission credits only after the end of the model year and after ARB has reviewed the manufacturer's end-of-year reports. During the model year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging in the end-of-year report and final report.

(3) Credits declared for banking from the previous model year that have not been reviewed by ARB may be used in averaging or trading transactions. However, such credits may be revoked at a later time following ARB review of the end-of-year report or any subsequent audit actions.

(e) Trading.

(1) An engine manufacturer may exchange emission credits with other engine manufacturers in trading.

(2) Credits for trading can be obtained from credits banked in previous model years or credits generated during the model year of the trading transaction.

(3) Traded credits can be used for averaging or banking.

(4) Traded credits are subject to the limitations on use for past model years, and the use of credits from early banking as set forth in paragraph (c)(2).

(5) In the event of a negative credit balance resulting from a transaction, both the buyer and the seller are liable, except in cases involving fraud. The Executive Officer may void Executive Orders of all engine families participating in a negative trade *ab initio*.

(f) Credit calculation and manufacturer compliance with emission standards.

(1) For each engine family, $HC+NO_x$ and Particulate Matter certification emission credits (positive or negative) are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation.

Credits = (Standard – FEL) x Sales x Power x EDP x Load Factor

Where:
Standard = the current and applicable small off-road engine $HC+NO_x$ ($NMHC+NO_x$) or Particulate Matter emission standard ~~in grams per brake-horsepower hour~~ as determined in Section 2403.
FEL = the family emission limit for the engine family in grams per brake-horsepower hour or g/kW-hr as applicable.
Sales = eligible sales as defined in section 2401. Annual sales projections are used to project credit availability for initial certification. Actual sales volume is used in determining actual credits for end-of-year compliance determination.
Power = the sales weighted maximum modal power, in horsepower or kilowatts as applicable. This is determined by multiplying the maximum modal power of each configuration within the family by its eligible sales, summing across all configurations and dividing by the eligible sales of the entire family. Manufacturers may use an alternative if approved by the Executive Officer (for example, maximum modal power of the test engine).
EDP = the Emissions Durability Period for which the engine family was certified.
Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e.,0.85). For approved alternate test procedures, the load factor must be calculated according to the following formula:

$$\sum_{i=1}^{n}(\%\text{MTT mode}_i)\times(\%\text{MTS mode}_i)\times(\text{WF mode}_i)$$

Where:
$\%\text{MTT mode}_i$ = percent of the maximum torque for mode i
$\%\text{MTS mode}_i$ = percent of the maximum engine rotational speed for mode i
WF mode_i = the weighting factor for mode i

(2) Manufacturer compliance with the emission standard is determined on a corporate average basis at the end of each model year. A

manufacturer is in compliance when the sum of positive and negative emission credits it holds is greater than or equal to zero, except that the sum of positive and negative credits for a given class may be less than zero as allowed under paragraph (3) of this section.

(3) If, as a result of production line testing as required in section 2407, an engine family is determined to be in noncompliance, the manufacturer may raise its FEL for past and future production as necessary. Further, a manufacturer may carry a negative credit balance (known also as a credit deficit) for the subject class and model year forward to the next model year. The credit deficit may be no larger than that created by the nonconforming family. If the credit deficit still exists after the model year following the model year in which the nonconformity occurred, the manufacturer must obtain and apply credits to offset the remaining credit deficit at a rate of 1.2 grams for each gram of deficit within the next model year. The provisions of this paragraph are subject to the limitations in paragraph (4) of this section.

(4) Regulations elsewhere in this section notwithstanding, if an engine manufacturer experiences two or more production line testing failures pursuant to the regulations in section 2407 of this article in a given model year, the manufacturer may raise the FEL of previously produced engines only to the extent that such engines represent no more than 10% of the manufacturer's total eligible sales for that model year. For any additional engines determined to be in noncompliance, the manufacturer must conduct offsetting projects approved in advance by the Executive Officer.

(5) If, as a result of production line testing under section 2407, a manufacturer desires to lower its FEL, it may do so subject to Executive Officer approval and demonstration that the family would meet the new FEL in the production line testing using the existing data.

(6) Except as allowed at paragraph (c) of this section, when a manufacturer is not in compliance with the applicable emission standard by the date 270 days after the end of the model year, considering all credit calculations and transactions completed by then, the manufacturer will be in violation of these regulations and the Executive Officer may, void *ab initio* the Executive Orders of engine families for which the manufacturer has not obtained sufficient positive emission credits.

(g) Certification Using Credits.

(1) In the application for certification a manufacturer must:

(A) Submit a statement that the engines for which certification is requested will not, to the best of the manufacturer's belief, cause the manufacturer to be in noncompliance under paragraph (f)(2) when all credits are calculated for all the manufacturer's engine families.

(B) Declare an FEL for each engine family for HC+NO_x (NMHC+NO_x) and Particulate Matter, if applicable. The FEL must have the same number of significant digits as the emission standard.

(C) Indicate the projected number of credits generated/needed for this family; the projected applicable eligible sales volume and the values required to calculate credits as given in paragraph (f).

(D) Submit calculations in accordance with paragraph (f) of projected emission credits (positive or negative) based on production projections for each family.

(E) ~~(i)~~1. If the engine family is projected to generate negative emission credits, state specifically the source (manufacturer/engine family or reserved) and quantity of the credits necessary to offset the credit deficit according to projected production.

~~(ii)~~2. If the engine family is projected to generate credits, state specifically the recipient (manufacturer/engine family or reserved) and quantity of the credits used to offset a deficit, banked, or traded, according to where the projected credits will be applied.

(2) The manufacturer may supply the information required above in subparagraphs (C), (D), and (E) by use of a spreadsheet detailing the manufacturer's annual production plans and the credits generated or consumed by each engine family.

(3) All Executive Orders issued are conditional upon manufacturer compliance with the provisions of this section both during and after the model year of production.

(4) Failure to comply with all provisions of this section will be considered to be a failure to satisfy the conditions upon which the Executive Order was issued, and the Executive Order may be determined to be void *ab initio.*

(5) The manufacturer bears the burden of establishing to the satisfaction of the Executive Officer that the conditions upon which the Executive Order was issued were satisfied or waived.

(6) Projected credits based on information supplied in the certification application may be used to obtain an Executive Order. However, any such credits may be revoked based on review of end-of-year reports, follow-up audits, and any other verification steps considered appropriate by the Executive Officer.

(h) Maintenance of records.

(1) The manufacturer must establish, maintain, and retain the following adequately organized and indexed records for each engine family:

(A) ARB engine family identification code,

(B) Family Emission Limit (FEL) or FELs where FEL changes have been implemented during the model year,

(C) Maximum modal power for each configuration sold or an alternative approved by the Executive Officer.

(D) Projected sales volume for the model year, and

(E) Records appropriate to establish the quantities of engines that constitute eligible sales for each power rating for each FEL.

(2) Any manufacturer producing an engine family participating in trading reserved credits must maintain the following records on a quarterly basis for each such engine family:

(A) The engine family,

(B) The actual quarterly and cumulative applicable production/sales volume,

(C) The values required to calculate credits as given in paragraph (f),

(D) The resulting type and number of credits generated/required,

(E) How and where credit surpluses are dispersed, and

(F) How and through what means credit deficits are met.

(3) The manufacturer must retain all records required to be maintained under this section for a period of eight years from the due date for the end-of-model year report. Records may be retained as hard copy or reduced to microfilm, diskettes, and so forth, depending on the manufacturer's record retention procedure; provided, that in every case all information contained in the hard copy is retained.

(4) Nothing in this section limits the Executive Officer's discretion in requiring the manufacturer to retain additional records or submit information not specifically required by this section.

(5) Pursuant to a request made by the Executive Officer, the manufacturer must submit to the Executive Officer the information that the manufacturer is required to retain.

(6) ARB may void ab initio the Executive Order for an engine family for which the manufacturer fails to retain the records required in this section or to provide such information to the Executive Officer upon request.

(i) End-of-year and final reports.

(1) End-of-year and final reports must indicate the engine family, the actual sales volume, the values required to calculate credits as given in paragraph (f), and the number of credits generated/required. Manufacturers must also submit how and where credit surpluses were dispersed (or are to be

banked) and/or how and through what means credit deficits were met. Copies of contracts related to credit trading must be included or supplied by the broker, if applicable. The report must include a calculation of credit balances to show that the credit summation for each class of engines is equal to or greater than zero (or less than zero in cases of negative credit balances as permitted in paragraph (f)(3).

(2) The calculation of eligible sales (as defined in section 2401) for end-of-year and final reports must be based on the location of the point of first retail sale (for example, retail customer or dealer) also called the final product purchase location. Upon advance written request, the Executive Officer will consider other methods to track engines for credit calculation purposes, such as shipments to distributors of products intended for sale in California, that provide high levels of confidence that eligible sales are accurately counted.

(3) (A) End-of-year reports must be submitted within 90 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731.

(B) Unless otherwise approved by the Executive Officer, final reports must be submitted within 270 days of the end of the model year to: Chief, Mobile Source Operations Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731.

(4) Failure by a manufacturer to submit any end-of-year or final reports in the specified time for any engines subject to regulation under this section is a violation of Section 2403 for each engine.

(5) A manufacturer generating credits for banking only who fails to submit end-of-year reports in the applicable specified time period (90 days after the end of the model year) may not use the credits until such reports are received and reviewed by ARB. Use of projected credits pending ARB review is not permitted in these circumstances.

(6) Errors discovered by ARB or the manufacturer in the end-of-year report, including errors in credit calculation, may be corrected in the final report.

(7) If ARB or the manufacturer determines that a reporting error occurred on an end-of-year or final report previously submitted to ARB under this section, the manufacturer's credits and credit calculations must be recalculated. Erroneous positive credits will be void except as provided in paragraph (h) of this section. Erroneous negative credit balances may be adjusted by ARB.

(8) If within 270 days of the end of the model year, ARB review determines a reporting error in the manufacturer's favor (that is, resulting in an increased credit balance) or if the manufacturer discovers such an error within

270 days of the end of the model year, ARB must restore the credits for use by the manufacturer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2409. Emission Reduction Credits – Production Credit Program for New Engines.

(a) Applicability. The 1998 model year and later small off-road engines subject to the provisions of this article are eligible to participate in the production emission credit program described in this section for HC +NO_x (or NMHC+NO_x, as applicable) and Particulate Matter emissions.

(b) General provisions.

(1) The production credit program for eligible small off-road engines is described in this section. Participation in this program is voluntary.

(2) Any 2000 model year or later engine family subject to the provisions of this article is eligible to participate in the production credit program described in this section. Any 1998 or 1999 model year engine family subject to the provisions of this article is eligible to participate in the production emissions credit program described in this section provided it conforms with the requirements of section 2403.

(3) Credits generated and used in the certification averaging, banking, and trading program pursuant to the provisions of section 2408 may not be used in the production credit program.

(4) An engine family with a compliance level, as determined by production line testing pursuant to section 2407, below the applicable FEL to which the engine family is certified may generate emission credits for averaging, banking, or trading in the production credit program.

(5) Positive credits generated in a given model year may be used in that model year and/or in any subsequent model year.

(c) Averaging.

(1) A manufacturer may use averaging across engine families to demonstrate a zero or positive credit balance for a model year. Positive credits to be used in averaging may be obtained from credits generated by another engine family of the same model year, credits banked in previous model years, or credits obtained through trading.

(2) ~~Credits used to demonstrate a zero or positive credit balance must be used at a rate of 1.1 grams to 1 gram.~~ Production emission credits used for the certification emission credit program must be discounted 1.1 grams to 1 gram.

(d) Banking.

(1) A manufacturer of an engine family with a production compliance level below the FEL to which the engine family is certified for a given model year may bank positive production credits for that model year for use in certification averaging, trading, or, at the Executive Officer's discretion, to remedy noncompliance of another engine family.

(2) Unless otherwise approved by the Executive Officer, a manufacturer that generates positive production credits must wait 30 days after it has both completed production testing for the model year for which the credits were generated and submitted the report required by paragraph (g)(1) before it may bank credits for use in future averaging or trading. During the 30 day period, the Executive Officer will work with the manufacturer to correct any error in calculating banked credits, if necessary.

(e) Trading.

(1) An engine manufacturer may exchange positive production emission credits with other engine manufacturers through trading.

(2) Production credits for trading can be obtained from credits banked for model years prior to the model year of the engine family requiring production credits.

(3) Traded production credits can be used for certification averaging or banking.

(4) Unless otherwise approved by the Executive Officer, a manufacturer that generates positive production credits must wait 30 days after it has both completed production testing for the model year for which the credits were generated and submitted the report required by paragraph (g)(1) before it may transfer credits to another manufacturer or broker.

(5) In the event of a negative credit balance resulting from a transaction, both the buyer and the seller are liable, except in cases involving fraud. Engine families participating in a trade that leads to a negative credit balance may be subject to suspension or revocation of the Executive Order if the engine manufacturer having the negative credit balance is unable or unwilling to obtain sufficient credits in the time allowed.

(f) Credit calculation. For each participating engine family, and for each regulated pollutant ($HC+NO_x$ ($NMHC+NO_x$)~~, CO~~ and Particulate Matter) emission credits (positive or negative) are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation:

Credits = (FEL – CL) × Sales × Power × EDP × Load Factor

Where:

FEL = The applicable Family Emission level to which the engine family was certified.

CL = compliance level of the deteriorated production line testing results for the subject pollutant in g/bhp-hr or g/kW-hr as applicable.

Sales = sales or eligible sales as defined in section 2401.

Power = the sales weighted maximum modal power, in horsepower or kilowatts as applicable, as calculated from the applicable test procedure as described in Section 2403. This is determined by multiplying the maximum modal power of each configuration within the family by its eligible sales, summing across all configurations and dividing by the eligible sales of the entire family. Where testing is limited to certain configurations designated by the Executive Officer, the maximum modal power for the individual configuration(s) must be used. Manufacturers may use an alternative if approved by the Executive Officer.

EDP = the Emissions Durability Period for which the engine family was certified.

Load Factor = For Test Cycle A and Test Cycle B, the Load Factor = 47% (i.e., 0.47). For Test Cycle C, the Load Factor = 85% (i.e.,0.85). For approved alternate test procedures, the load factor must be calculated according to the Load Factor formula found in paragraph (f)(1) of section 2408.

(g) Maintenance of records.

(1) Any manufacturer that is participating in the production credit program set forth in this section must establish, maintain, and retain the records required by paragraph (h) of Section 2408 with respect to its participation in the production credit program.

(2) The Executive Officer may void ab initio an Executive Order for an engine family for which the manufacturer fails to retain the records required under this section or to provide such information to the Executive Officer upon request.

(h) Reporting requirements.

(1) Any manufacturer who participates in the production credit program is required to submit a production credit report with the end of the model year production testing report required under Section 2407 within 90 days of the end of the production testing of a given model year's engine families. This report must show the calculation of credits from all the production testing conducted by the manufacturer for a given model year's engines. Such report must show the applications of credits, the trading of credits, the discounting of credits that are

used and the final credit balance. The manufacturer may submit corrections to such end of model year reports in a final report for a period of up to 270 days after the end of the production testing of a given model year's engine families.

(2) The calculation of eligible sales (as defined in section 2401) for end-of-year and final reports must be based on the location of the point of first retail sale (for example, retail customer or dealer) also called the final product purchase location. Upon advance written request, the Executive Officer will consider other methods to track engines for credit calculation purposes, such as shipments to distributors of products intended for sale in California, that provide high levels of confidence that eligible sales are accurately counted.

(3) Reports must be submitted to: Chief, Mobile Source Operations Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731.

(4) A manufacturer that fails to submit a timely end of year report as required in paragraph (h)(1) of this section will be considered ineligible to have participated in the production credit program.

(5) If the Executive Officer or the manufacturer determines that a reporting error occurred on an end of model year report previously submitted under this section, or an engine family production testing report submitted under section 2407, the manufacturer's credits and credit calculations will be recalculated. Erroneous positive credits will be void. Erroneous negative credits may be adjusted by the Executive Officer. An update of previously submitted "point of first retail sale" information is not considered an error and no increase in the number of credits will be allowed unless an actual error occurred in the calculation of credits due to an error in the "point of first retail sale" information from the time of the original end of model year report.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.