

State of California  
AIR RESOURCES BOARD

**Notice of Public Availability of Modified Text  
and Supporting Documents and Information**

PUBLIC HEARING TO CONSIDER THE ADOPTION OF NEW EMISSION  
STANDARDS, FLEET REQUIREMENTS, AND TEST PROCEDURES FOR  
FORKLIFTS AND OTHER INDUSTRIAL EQUIPMENT

Public Hearing Date: April 20, 2006  
Postponed to: May 25, 2006  
Public Availability Date: December 1, 2006  
Deadline for Public Comment: December 18, 2006

At its public hearing on May 25, 2006, the Air Resources Board (ARB or Board) approved amendments and adoptions to title 13, California Code of Regulations (CCR), and to several documents incorporated by reference therein. The regulations approved for amendment are sections 2430, 2431, 2433, 2434, and 2438. The regulations approved for adoption are sections 2775, 2775.1, 2775.2, 2780, 2781, 2782, 2783, 2784, 2785, 2786, 2787, 2788, and 2789.

The approved documents incorporated by reference are: 1) the amendment of incorporated "California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-Ignition Engines," Parts I and II; 2) the adoption of incorporated "California Exhaust Emission Standards and Test Procedures for New 2007 through 2009 Model-Year Off-Road Large Spark-Ignition Engines;" 3) the adoption of incorporated "California Exhaust Emission Standards and Test Procedures for New 2007 and Later Model-Year Off-Road Large Spark-Ignition Engines;" and 4) the adoption of incorporated "California Exhaust and Emission Standards and Test Procedures for New 2010 and Later Model-Year Off-Road Large Spark-Ignition Engines."

The approved regulations are designed to reduce the ozone-forming emissions of hydrocarbons and oxides of nitrogen (HC + NOx) from new and in-use forklifts and other industrial equipment. The regulations meet a commitment made in the 2003 State and Federal Strategy for the State Implementation Plan, approved by the Board on October 23, 2003.

**The Board's Action**

At the hearing, the Board adopted Resolution 06-11, approving the amended and adopted regulations with modifications (Attachment B of the Resolution). In the Resolution, the Board directed the Executive Officer to incorporate the approved modifications into the proposed regulatory text, with such other conforming modifications as may be appropriate, and to make the modified text available for a supplemental comment period.

## **Modified Text Being Made Available**

Subsequent to the hearing, staff has identified other conforming modifications that are needed to provide flexibility to fleet operators and to clarify the requirements of the regulations. The Board's approved modified text, including staff's subsequent modifications, is appended to this notice as Attachment 1. Staff also identified additional references that support the regulations. By this notice, the modified text, the additional references, and Resolution 06-11 are being made available for public comment prior to the final action by the Board's Executive Officer. All of these documents are available online for public inspection at ARB's Internet website for this rulemaking at <http://www.arb.ca.gov/regact/lore2006/lore2006.htm>. Copies of these documents may be obtained from the Board's Public Information Office by calling (916) 322-2990 or by visiting the 1<sup>st</sup> floor Visitors and Environmental Services Center, 1001 I Street, Sacramento, California 95814. They may also be obtained from Ms. Kathy Leuterio at (916) 322-1731, or by email at [kleuteri@arb.ca.gov](mailto:kleuteri@arb.ca.gov).

## **Summary of Proposed Modifications**

The following summarizes the proposed substantive modifications and the rationale for making them. The section numbers and paragraphs are referenced as renumbered in the modified text.

### **Title 13, California Code of Regulations, § 2430. Applicability**

**(a)(1)** The engine size to which the proposal applies is clarified. The existing California LSI engine regulations define the engine as one that produces a power of 25 horsepower or greater ( $\geq$ ), and the emission standards are stated in terms of grams per brake horsepower-hour (g/bhp-hr). In contrast, the U.S. Environmental Protection Agency (U.S. EPA) uses kilowatt as the unit of power for these same engines, and the federal standards are expressed in terms of grams per kilowatt-hour (g/kW-hr). Additionally, the newly amended California small off-road engine regulations apply to engines that produce a gross power at or below ( $\leq$ ) 19 kW. This results in a temporary overlap in the California regulatory definition of large versus small off-road engines (e.g., engines with displacement equal to 19 kW can either be certified under small off-road engines or LSI regulations). The modifications provide consistency with the federal program definition of engine size and address the overlap by clarifying that engines certifying in California at 19 kW [25 horsepower] would certify as small off-road engines.

**(a)(3)** The reference to the U.S. EPA's Off-Highway regulations is removed as the reference to U.S. EPA's program could leave gaps in regulatory coverage and uncertainty to interested parties regarding how vehicles are classified. ARB staff's modifications to ARB's Off-Highway Recreational Vehicles regulations presented at the July 20, 2006 Public Hearing provides additional clarification as to how these vehicles are classified.

### **Title 13, California Code of Regulations, § 2431. Definitions**

**(a)(19)** A definition is added for “family emission level or FEL.” This definition prescribes the HC+NO<sub>x</sub> and CO emission level numbers to be used in the alternative emissions certification formula contained in section 2433 (b)(2).

**(a)(28)** The definition is amended to address kilowatts as a unit of power as described for the change made in section 2430(a)(1).

### **Title 13, California Code of Regulations, § 2433 Emission Standards and Test Procedures – Off-Road Large Spark-ignition Engines**

**(b)(1)** For clarification, this section is divided into subparagraphs (b)(1)(A) and (b)(1)(B). Subparagraph (b)(1)(A) contains the required exhaust emission standards while (b)(1)(B) contains the optional exhaust emission standards. Additionally, a correction is made to the first row of the table in subparagraph (b)(1)(A) to show that the exhaust emission standards in that row are for engines with displacement of equal to or less than one liter. The symbol for “equal to” was inadvertently omitted from the table. Errors in the standards table and the optional standards table for the carbon monoxide standard for model years 2007 through 2009 and for model year 2010 and subsequent are corrected. The carbon monoxide standard has been harmonized with the federal standard and the alternative certification formula contained in subparagraph (b)(2).

**(b)(2)** An optional certification formula is added to be consistent with U.S. EPA. The term “family emission level” is added to clarify that the HC+NO<sub>x</sub> and CO numbers used in the formula do not have to be actual test results. This term is more consistent with U.S. EPA’s intent to provide engine manufacturers another engine certification element.

**(b)(4)(A)** A clarification to the evaporative emissions standards is added to apply the requirements to engines over one liter, consistent with the federal program.

**(b)(4)(D)** An option to use design-based certification for the evaporative emission standards is added to be consistent with the federal program.

**(c)** The references for the incorporated test procedures for determining certification and compliance with the standards for exhaust emissions are corrected and added.

### **Title 13, California Code of Regulations, § 2438. In-Use Compliance Program**

**(e)(7)(A)** The term “STD” in the credit calculation is redefined by adding the phrase “or family emission level” after the phrase “the emission standard.”

### **Incorporated “California Exhaust Emission Standards and Test Procedures for New 2001 through 2006 Off-Road Large Spark-Ignition Engines, Part I”**

A second reference is added to reflect that there is now a second document prescribing exhaust emission standards and test procedures for small off-road engines (2005 and later). The last amended date of the first document (1995-2004) is corrected.

**Incorporated “California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 through 2009 Off-Road Large Spark-ignition Engines” (40 CFR, Part 1048)**

The caption for the incorporated standards and test procedures for model years 2007 through 2009 is corrected to reference the applicable engine model years.

**§1048.101 What exhaust emission standards must my engines meet?**

**(a)(2)** The portion of the emission standards table presented in Title 13, California Code of Regulations, Article 4.5, section 2433 (b)(1)(A) for 2007 through 2009 model year engines is reiterated here. This reflects ARB practice of including standards in test procedures and identifies these as California standards. The standards for LSI engines with a total displacement of 1000 cc or less are also reiterated.

**(e)** The subsection numbering scheme is changed for consistency.

**(f)** Language is changed to clarify that smaller engines within the LSI category (at or less than 1.0 liter displacement) must certify under the standards for LSI engines, and not the standards for small off-road engines. The applicability section states that small off-road engines are those with a brake horsepower of 19 kW or less; those engines must certify to the applicable standards in Title 13, California Code of Regulations, Chapter 9, Article 1.

**§1048.140 What are the provisions for certifying Blue Sky Series engines?**

The section on Blue Sky Series engines and Blue Sky standards is replaced by a section on optional lower-emission standards (OLES) engines. This conforms to the establishment of OLES engines in the 2007-2009 time frame in Title 13, California Code of Regulations, § 2433 Emission Standards and Test Procedures – Off-Road Large Spark-ignition Engines.

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

**(b)(1)** The change proposed for this section is deleted. This section was originally replaced in error because the reference to number of engines was believed to be related to the small business definition. In actuality, the number is related to production line testing and should be consistent with the U.S. EPA number.

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

This section is deleted. The U.S. EPA provides manufacturers an option to certify engines with a total displacement of 1000 cc or less as small off-road engines in section 1048.101(f) and this section provided associated requirements. However, ARB staff has modified section 1048.101(f) to stipulate that small engines are now considered to be LSI engines unless they have a brake horsepower of 19 kW or less. Thus, there is no need for the requirements contained in section 1048.615.

**Incorporated “California Exhaust and Evaporative Emission Standards and Test Procedures for New 2010 and Later Off-Road Large Spark-ignition Engines”**

**§1048.101 What exhaust emission standards must my engines meet?**

**(a)(2)** The portion of the emission standards table presented in Title 13, California Code of Regulations, Article 4.5, section 2433 (b)(1)(A) for 2010 and later model year engines is reiterated here in a format consistent with section 1048.101 (a)(2) in the Incorporated “California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 through 2009 Off-Road Large Spark-ignition Engines” (40 CFR, Part 1048). The standards for LSI engines with a total displacement of 1000 cc or less are also reiterated.

**(e)** The subsection numbering scheme is changed for consistency.

**(f)** Language is changed to clarify that smaller engines within the LSI category (at or less than 1.0 liter displacement) must certify under the standards for LSI engines, and not the standards for small off-road engines. The applicability section states that small off-road engines are those with a brake horsepower of 19 kW or less; those engines must certify to the applicable standards in Title 13, California Code of Regulations, Chapter 9, Article 1.

**§1048.120 What emission-related warranty requirements apply to me?**

The formula for determining the dollar value of a high-cost part is corrected by subscripting the “n” in “Limitn” and the “n-2” in the term “CPI n-2.”

**§1048.140 What are the provisions for certifying Blue Sky Series engines?**

The section on Blue Sky Series engines and Blue Sky standards is replaced by a section on optional lower-emission standards (OLES) engines. This conforms to the establishment of OLES engines in the 2010 and later time frame in Title 13, California Code of Regulations, § 2433 Emission Standards and Test Procedures – Off-Road Large Spark-ignition Engines.

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

**(b)(1)** The change proposed for this section is deleted. This section was originally replaced in error because the reference to number of engines was believed to be related to the small business definition. In actuality, the number is related to production line testing and should be consistent with the U.S. EPA number.

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

This section is deleted. The U.S. EPA provides manufacturers an option to certify engines with a total displacement of 1000 cc or less as small off-road engines in section 1048.101(f) and this section provided associated requirements. However, ARB staff has modified section 1048.101(f) to stipulate that small engines are now considered to be LSI engines unless they have a brake horsepower of 19 kW or less. Thus, there is no need for the requirements contained in section 1048.615.

## **Title 13, California Code of Regulations, § 2775(d) Definitions**

### **“Agricultural Crop Preparation Services”**

The Agricultural Crop Preparation Services definition is clarified by defining the word “dehydrators” and the phrase “nut hullers and processors,” and by modifying the phrase “and other related activities” to read “and other related activities that fall within the United States Census Bureau NAICS definition for Industry 115114 – Postharvest Crop Activities.” The definition further clarifies “and other related activities” by excluding manufacturing activities such as the freeze drying of fruits and vegetables, the slicing and dicing of garlic or onions, the flaking of potato products, and the making of bouillon, noodle mixes, rice mixes, soup mixes, sauce mixes, and salad dressing mixes.

These clarifications and modifications respond to inquiries from affected businesses about the intent of the word “processors” in the phrase “nut hullers and processors,” the intent of the word “dehydrators,” and the intent of the phrase “and other related activities.” They also reflect our intent that the “Agricultural Crop Preparation Services” definition follow the United States Census Bureau NAICS (North American Industry Classification System) definition for “Postharvest Crop Activities” as closely as possible.

### **“Airport Ground Support Equipment”**

Language is added to the definition to clarify that some of the categories of equipment to be included in the fleet average calculations are vehicles designed for on-road use, but dedicated to GSE operations and not licensed for on-road use. This definition is based on the 24 categories of equipment included in section B.3. of Appendix 2 of the South Coast Ground Support Equipment (GSE) Memorandum of Understanding, dated November 27, 2002.

### **“Dehydrators”**

A definition is added to clarify the use of the word “dehydrators” in the “Agricultural Crop Preparation Services” definition. The definition closely follows the intent of “sun drying” in the United States Census Bureau NAICS definition for Industry 115114 – Postharvest Crop Activities, but additionally includes the artificially drying and dehydrating portion of the manufacturing processes included in the NAICS definition for Industry 311423 – Food Processing.

### **“Fleet Average Emission Level”**

The phrase “or verification level (absolute emissions)” is appended to the phrase “emissions certification standard” to reflect that the operator’s fleet average emission level calculations include in-use equipment with verified retrofit emissions control systems. Verified retrofits are one of the tools for compliance with the fleet average emission level requirements, and definitions for “retrofit,” “verification,” and “verification level” were all included in section 2775(d). Additionally, section 2772(e)(1)(A) was originally included to provide for extensions to the fleet average compliance dates if retrofit emission control systems are not verified or commercially available.

The gram per kilowatt-hour (g/kW-hr) equivalent emissions are added to the definition. This is consistent with our effort to provide the g/kW-hr conversion in all places where emissions have been listed in grams per brake horsepower-hour.

Additional language is added to the definition to clarify that fleet operators may exclude electric-powered equipment from their fleet average emission level calculations. This allows operators the flexibility to apply electric equipment in excess of that needed to comply with the LSI fleet average emission level calculations to be applied to non-LSI fleet average requirements as are being proposed in the off-road compression ignition engine rulemaking.

#### **“Label”**

The label definition requires that new engine labels specify the emission standard to which the new engine certified. Modifications to the definition clarify that engines with retrofit emission control systems are required to have a label specifying the verification level (absolute emissions) to which the engine is verified.

#### **“Military Tactical Support Equipment”**

The Military Tactical Support Equipment definition is modified to be consistent with the same definition in other Board regulations, in particular, adding the phrase “or its allies.” This modification responds to requests from military representatives to be consistent in our definition.

#### **“Nut Hullers and Processors”**

A definition is added to clarify the use of the word “processors” in the “Agricultural Crop Preparation Services” definition. The definition distinguishes the activities that fall within the United States Census Bureau NAICS definition for Industry 115114 – Postharvest Crop Activities from those which do not.

#### **“Verification Level”**

The gram per kilowatt-hour (g/kW-hr) equivalent absolute emission level has been added to Table 1. This is consistent with our effort to provide the g/kW-hr conversion in all places where emissions have been listed in grams per brake horsepower-hour.

#### **“Zero Emission Vehicle” or “ZEV”**

The definition is deleted as it is no longer necessary because the requirements in section 2775.1(b) for a specified portion of ground support equipment to be ZEV equipment has been deleted.

### **Title 13, California Code of Regulations, § 2775.1. Standards**

**(a)** Language has been added to clarify that operators must first establish their fleet size before identifying exceptions and subsequent fleet average emission level requirements. This language conforms to the intent of the original language but more clearly spells out for operators that they may not exclude equipment before determining fleet size.

**(a)(2)** The fleet average emission standards are based on the assumption that all equipment procured by dealers or operators in 2004 would have controlled engines. This was not the case as model year 2004 equipment contained in many instances uncontrolled engines produced in 2003. To alleviate the economic burden on dealers who would otherwise be responsible for addressing this equipment, new language has been added to exempt uncontrolled 2004 rental equipment from the operator fleet average calculations for an additional year and equipment leased prior to May 25, 2006.

**(b)** Requirements related to requiring a specified percentage of ground support equipment at airports in the South Coast Basin to be zero emission equipment has been deleted because air carriers have demonstrated that they have already attained the specified percentage of electric equipment and have assured the Board that factors operating in the south coast air basin will act to increase the electric component over time.

**(c)(3)** The exclusion for rental and leased forklifts in agricultural crop preparation services fleets now provides an additional year for equipment with uncontrolled 2003-2004 model year engines. The original exclusion required all rental and leased forklifts to be controlled to a 3.0 gram per brake horsepower-hour emission standard or better on or after January 1, 2009. The extension of the exclusion takes into account the lifetime of the rental and leased forklifts with uncontrolled 2003-2004 model year engines. These leased forklifts are now excluded from the 3.0 gram emission standard for the life of the lease or until January 1, 2010 as long as the lease agreement was initiated before the Board hearing. These rental forklifts are now excluded from the 3.0 gram emission standard until January 1, 2010.

### **Title 13, California Code of Regulations, § 2775.2. Compliance Requirements for Fleet Operators**

**(a)** Language is changed in this section to clarify that only medium and large facilities (those subject to the requirements in 2775.1(a)) are required to conduct a baseline inventory.

**(b)** Language is changed in this section to clarify that only medium and large facilities (those subject to the requirements in 2775.1(a)) are required to keep records. The record keeping requirement is clarified to state that operators are only required to obtain written statements (bills of lading?) from the fuel supplier indicating that the fuel meets state and federal law (i.e., the fuel meets motor vehicle grade), if such statements (product delivery tickets or receipts) are available.

**(d)** The effective date of the requirements for agricultural crop preparation services fleets is delayed by 18 months to reflect modifications made in the requirements themselves. The reference to section 2775.1(d) is corrected to read 2775.1(c).



### **Title 13, California Code of Regulations, § 2783. Emissions Reduction Testing Requirements**

(e) Modifications are made to the test cycle language to correct: (1) the title of the reference containing the steady-state test procedure, (2) the location of the reference, and (3) the reference adoption date.

(k) Modifications are made to correct the reference.

### **Title 13, California Code of Regulations, § 2786. Other Requirements**

(c)(1) A correction is made to the retrofit emission control group name within the system labeling requirement.

### **Title 13, California Code of Regulations, § 2789. In-Use Compliance Requirements**

(e)(2) A correction is made to the reference adoption date.

### **Supporting Documents and Information**

In accordance with section 11347.1 of the Government Code, staff has added to the rulemaking record the following documents, which are incorporated by reference in the regulation:

Almond Hullers and Processors Association flowchart of tree nut processing (California Almond Hullers & Processors Association, Huller/Sheller Good Manufacturing Practices and Sanitation Manual; from Almond Hullers and Processors Association website copyrighted 2003)

Discussion of almond processing (United States Environmental Protection Agency, AP 42, Fifth Edition, Volume 1, Chapter 9: Food and Agricultural Industries; January 1995)

United States Census Bureau NAICS codes for post harvest crop activities and food processing (2002 NAICS Definitions 115114 and 311423; May 5, 2003)

### **Comments and Subsequent Action**

In accordance with section 11346.8 of the Government Code, the Board directed the Executive Officer to amend sections 2430, 2433, and 2434, and adopt sections 2775, 2775.1, 2775.2, 2780, 2781, 2782, 2783 2784, 2785, 2786, 2787, 2788, and 2789, title 13, CCR, and the amendments and adoptions of documents incorporated therein, after making the modified regulatory language available to the public for a supplemental written comment period of at least 15 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of comments

received, and shall present the regulations to the Board for further consideration if she determines that this is warranted.

Written comments on the modifications approved by the Board in Resolution 05-61 may be submitted by postal mail, electronic mail, or facsimile as follows:

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

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

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

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

Attachments