

## ATTACHMENT B-1

### FOR CONSIDERATION BY THE AIR RESOURCES BOARD AT THE PUBLIC HEARING ON THE PROPOSED AMENDMENTS TO THE CALIFORNIA OFF-ROAD EMISSIONS REGULATION FOR COMPRESSION-IGNITION ENGINES AND EQUIPMENT

PRESENTED AT THE DECEMBER 9, 2004, BOARD HEARING

#### Staff's Suggested Changes to the Original Proposal

The attachment shows the staff's suggested changes to the originally proposed amendments. Only those portions containing the suggested modifications are included. The originally proposed additions to the regulatory language are shown in underline. The originally proposed deletions are shown in ~~strikeout~~. The suggested modifications to the original proposal are shown in double underline to indicate additions and ~~double strikeout~~ to indicate deletions. All proposed modifications will be made available to the public for a fifteen-day comment period.

§ 2421. Definitions.

(14) "Constant-speed engine" means (A) for engines subject to the 2000 and Later Plus Limited Test Procedures, an off-road compression-ignition engine that is governed to operate only at rated speed, or (B) for engines subject to the 2008 and Later Test Procedures, an off-road compression-ignition engine certified to operate only at constant speed. Constant-speed operation means engine operation with a governor that controls the operator input to maintain an engine at a reference speed, even under changing load. An engine's classification as a constant-speed engine becomes nullified when the constant-speed governor function is removed or disabled from the engine.

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(32) "Marine diesel engine" means a compression-ignition engine that is installed or intended to be installed on a vessel. There are two types of Marine Diesel Engines: (A) Propulsion marine compression-ignition engines, which are those that move or are intended to move a vessel through water or direct the movement of a vessel, and (B) Auxiliary marine diesel engines, which are integral to the vessel, but which do not propel the vessel. Portable auxiliary generators are not included in the definition of Marine Diesel Engine unless they share the fueling, cooling, and exhaust systems of the vessel with the propulsion engine.

(33) "Maximum Engine Power" means the maximum brake power point on the nominal power curve for a specific engine configuration, rounded to the nearest whole kilowatt. The "Nominal power curve" of an engine configuration means the relationship between maximum available engine brake rated power and engine speed for a specific engine configuration, as determined by using the mapping procedures specified in

Part 1065 of the 2008 and Later Test Procedures and, based on the manufacturer's design and production specifications for that engine. This relationship "Nominal power curve" may also be expressed as by a torque curve that relates maximum available engine torque with engine speed. The nominal power curve shall be within the normal production variability of actual power curves for production engines of the same engine configuration. All references to a specific power value or range of power values with respect to engines subject to the 2008 and Later Test Procedures shall be deemed applicable to this definition of Maximum Engine Power, except as otherwise noted. Specifically, Maximum Engine Power shall be used as the basis for categorizing engine families into appropriate Tier 4 power categories.

(34) "Maximum Rated Power" means the maximum brake kilowatt output of an engine as stated by the manufacturer in the manufacturer's sales and service literature and in the application for certification. Maximum Rated Power shall be used as the basis for categorizing engine families into appropriate Tier 1, Tier 2, and Tier 3 power categories, except as otherwise noted or permitted by the Executive Officer.

~~(35) "Maximum Test Speed" means the single point on an engine's normalized maximum power versus speed curve that lies farthest away from the zero power, zero speed point. This is intended to ensure that the maximum speed of the test is representative of actual engine operating characteristics and is not improperly used to influence the parameters under which their engines are certified. In such cases where the definition of maximum test speed results in an engine speed that is unrepresentative of in-use operation, the Executive Officer may specify a different maximum speed if the manufacturer can show that the alternative is more representative. Is defined as in Part 1065.515 of the 2008 and Later Test Procedures.~~

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(44) "Power category" means a specific range of maximum engine power that defines the applicability of standards. For example, references to the 56-130 kW power category and  $56 \leq \text{kW} < 130$  include all engines with maximum engine power at or above 56 kW but below 130 kW. Also references to 56-560 kW power categories or  $56 \leq \text{kW} \leq 560$  include all engines with maximum engine power at or above 56 kW, but at or below 560 kW, even though these engines span multiple power categories. Note that in some cases, FEL caps are based on a subset of a power category. The Tier 4 applicable power categories are defined as follows:

- (A) Engines with maximum engine power below 19 kW.
- (B) Engines with maximum engine power at or above 19 kW but below 56 kW.
- (C) Engines with maximum engine power at or above 56 kW but below 130 kW.
- (D) Engines with maximum engine power at or above 130 kW but at or below 560 kW.
- (E) Engines with maximum engine power above 560 kW.

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§ 2423. Exhaust Emission Standards and Test Procedures - Off-Road Compression-Ignition Engines.

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*Footnote to Table 1b - Tier 4 Exhaust Emission Standards*

4 Manufacturers have the option of complying with the Tier 4 standards over a two year period at 50% per year using banked Tier 2 credits or over a three year period at 25% per year without the use of Tier 2 credits. The three year phase-in period is shown. The 2014 model year cannot extend beyond December 30, 2014, when the 3 year phase-in option is used.

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(d)(5) *Labeling requirements.* Allowances claimed under the Tier 2/3 or Tier 4 equipment flexibility programs must be labeled, as appropriate, per the following:

(A) *Engine labeling.* Except for engines used in flexibility allowances prior to January 1, 2006, engine manufacturers shall meet the labeling requirements provided in Section 2424. Of the following, the statement best representing the classification of the engine must be substituted for the statement of compliance required in Sections 2424(c)(1)(E)6 and 2424(c)(2):

Certified Flexibility Engines:

“THIS ENGINE BELONGS TO FAMILY \_\_\_\_\_ AND MEETS COMPLIES WITH CALIFORNIA EMISSION STANDARDS REQUIREMENTS UNDER 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF STATE LAW SUBJECT TO CIVIL PENALTY.” [Insert Engine Family Name]

Uncertified Tier 2/3 Flexibility Engines Less Than 37 kW Only:

“THIS ENGINE QUALIFIES FOR USE IN EQUIPMENT RATED BELOW 37 KW BY PROVISION OF 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.”

As an alternative for flexibility engines produced under the Tier 2/3 program, and for which the engine manufacturer offers proof that the otherwise required statements of compliance in this subsection would be unduly burdensome or costly to implement, engine manufacturers may instead use the following:

“THIS ENGINE CONFORMS TO CALIFORNIA OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS UNDER 13 CCR 2423(d).” [Insert Engine Family Name if Certified]

These revised statements of compliance does not preclude the referencing of similar federal requirements that would be satisfied simultaneously by meeting the provisions of

Section 2423(d). Furthermore, the Executive Officer may, upon request, approve alternate labeling specifications provided that they meet the intent of this ~~requirement subsection~~.

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2423(d)(7) *Notification and reporting requirements for using Tier 4 flexibility allowances.* As a prerequisite to using any Tier 4 flexibility allowances, the equipment manufacturer shall notify the ARB of its intent to use such allowances. The manufacturer shall also send an annual report after each year that flexibility allowances have been used to verify that the allowances claimed do not exceed the number of allowances permitted.

(A) Before January 1 of the first year that flexibility provisions will be used, a written notice informing ARB of the manufacturer's intent to use flexibility allowances must be sent to the Chief of the Mobile Source Operations Division, or designee, containing the following information:

1. The equipment manufacturer's name and address, and the name and address of the parent company, if applicable.
2. The name and telephone number of a person to contact for more information.
3. The calendar years for which the Tier 4 flexibility provisions shall apply.
4. The engine manufacturer's name and address that produces the engines which will be used in the equipment claimed as flexibility allowances.
5. An accurate estimate of the number of flexibility allowances in each power category that will be produced under the percent-of-production provisions in Section 2423(d)(1)(C), or the small volume provisions in Section 2423(d)(2)(B).
6. A tabulation of U.S.-directed ~~and California-directed~~ flexibility allowances in each power category that have been sold in previous calendar years under the provisions of Section 2423(d) and 40 CFR 89.102(d).

(B) For each year that Tier 4 flexibility allowances are used, the equipment manufacturer must submit, by March 31 of the following year, a written report to the Chief of the Mobile Source Operations Division, or designee, documenting the utilization of those allowances. This report shall include the total number of equipment sold by the manufacturer ~~in California and federally~~ during the preceding year for each power category, based on actual U.S.-directed ~~and California-directed~~ production information, and shall identify the flexibility allowances in each power category by reporting the percentages of U.S.-directed ~~and California-directed~~ flexibility production corresponding to the number of equipment in each power category. The report shall also identify the cumulative yearly totals and percentages for all flexibility allowances sold ~~in California~~

~~and federally~~ for each power category. The percentage figures may be omitted from the report if alternately stated that percent-of-production allowances shall not be used. If available, end of year percentage figures for California-directed sales shall also be included in this report.

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(h) *Allowance for the production of engines.* To meet the demand for engines created under paragraph (d), (f), or (g) of this section, engine manufacturers may produce engines that do not meet current year emission requirements ~~without obtaining permission from the ARB prior to production.~~ However, engine manufacturers must receive written assurance from each equipment manufacturer, prior to production, that a certain number of these engines are needed for the equipment manufacturer's Tier 4 equipment flexibility allowances. Engine manufacturers shall provide to the Executive Officer annually, as part of the certification application, a list of the equipment manufacturers requesting such engines for their Tier 2/3 and Tier 4 equipment flexibility allowances. The list shall include the equipment manufacturers' names, engine models, volumes, and a copy of the original correspondence requesting the flexibility engines. Notwithstanding, all engines produced for sale in California under either of the transitional flexibility provisions for equipment manufacturers, starting January 1, 2006, must be covered by an Executive Order. ~~The Executive Order need not be current for the year in which the engine is used as a flexibility allowance, but may have been issued previously so long as the engine was certified to the standards required by the applicable flexibility provision.~~ To obtain an Executive Order for these engines, the engine manufacturer must comply with the following:

- (1) Prior to the start of production, submit a letter to the Chief of the Mobile Source Operations Division, or designee, requesting certification for flexibility engines intended for sale in California, and
- (2) Provide written assurance that the flexibility engines to be produced will be identical in all material respects to those for which a valid Executive Order has been issued in a previous model year. The engine family name of the previously certified engine family must be included in the manufacturer's request for certification.

Upon determination that the conditions in paragraphs (1) and (2) have been satisfied, the engine manufacturer shall be provided with an Executive Order covering the requested flexibility engine families for the current model year. The engine family names included in the Executive Order shall either be the same as, or a subset of the previously certified engine family names, and will remain the same for as long as the engines continue to qualify as flexibility allowances regardless of model year. These engine family names shall be used by the engine manufacturer to comply with the labeling requirements of 2423(d)(5)(A).

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(1) ~~Re-labeling prohibition and supplemental labels for rebuilt engines. Practices and labeling requirements for rebuilt engines.~~ This section shall apply to all off-road compression-ignition engines subject to the requirements of Section 2423 that are rebuilt after December 31, 2005, including those engines that were originally manufactured prior to December 31, 2005.

(A) Practices.

(1) When rebuilding an engine that remains installed in the equipment during the rebuilding process, or which will be reinstalled after the rebuilding process has been completed, the rebuilder shall rebuild the engine to the same ARB certified configuration, or the ARB certified configuration of a later model year engine.

(2) When replacing the engine in a piece of equipment with a rebuilt engine, the replacement engine shall be an ARB certified configuration that is at least equivalent, from an emissions standpoint, to the certified engine originally installed in the equipment.

(B) Labeling Requirements.

(1) Rebuilt Engines. A rebuilder of engines, wherein the base identity of the engine to be rebuilt is not significantly altered by the rebuilding process, shall not remove or deface in any manner the original emission control label, as described in Section 2424, from any off-road compression-ignition engine ~~subject to the requirements of Section 2423, including those engines that were originally manufactured prior to December 31, 2005,~~ that is rebuilt or remanufactured after December 31, 2005. The rebuilder or remanufacturer must take care to protect the original label from the effects of sandblasting, acid dipping, or any other restorative process.

(2) Remanufactured Engines. A rebuilder of engines, wherein the base identity of the engine to be rebuilt is significantly altered by the rebuilding process, shall either label the engine using the original emission control label should it continue to accurately represent the emissions performance of the reassembled engine, or with a new permanent replacement label that states the following:

“THIS ENGINE HAS BEEN REMANUFACTURED TO A CERTIFIED CONFIGURATION AND CONFORMS IN ALL MATERIAL RESPECTS TO A CALIFORNIA TIER [X] OFF-ROAD COMPRESSION-IGNITION ENGINE. THIS ENGINE MUST BE INSTALLED SOLELY IN EQUIPMENT ORIGINALLY REQUIRING TIER [X] OR EARLIER ENGINES UNDER 13 CCR 2423(L).”

As an alternative for incomplete remanufactured engines, those which are sold without all the necessary components to enable engine operation including, but not necessarily limited to, the fuel system and the air system, rebuilders may instead use the following:

“THIS INCOMPLETE ENGINE CONFORMS IN ALL MATERIAL RESPECTS TO A CALIFORNIA TIER [X] OFF-ROAD COMPRESSION-IGNITION ENGINE TO THE EXTENT RENOVATED. THIS ENGINE MUST BE COMPLETED WITH THE TIER [X] COMPONENTS WHICH COMPLETE THIS ENGINE IN ITS CERTIFIED CONFIGURATION. IT MAY ONLY BE INSTALLED IN EQUIPMENT ORIGINALLY REQUIRING TIER [X] OR EARLIER ENGINES UNDER 13 CCR 2423(L).”

Improperly completed engines that are placed into service will be in violation of State law subject to civil penalty. The rebuilder of the incomplete engine shall provide to the final assembler at the time of sale clear written instruction that the engine must be finished using only the TIER [X] components designed for that engine.

(3) Further, a supplemental label must be affixed to the rebuilt or remanufactured engine indicating the date of renovation and other pertinent information such as the degree of renovation, but must not obscure in any way the visibility of the labels in paragraphs (1) or (2) of this subsection or imply that the rebuilt or remanufactured engine is “new” or that it belongs to an engine family other than the one to which it was originally certified. ~~Retaining the original label offers proof, and a means to verify, that the engine was “rebuilt to a certified configuration of the same or later model year as the original engine” as required by the existing rebuild provisions.~~

(4) Notwithstanding, the original emission control label on any engine that is ~~remanufactured~~ rebuilt to “like-new” condition and which is recertified to current-year emission requirements including durability and warranty must be replaced by the ~~remanufacturer~~ rebuilder with one identifying the engine as belonging to a family meeting current-year emission requirements in accordance with the provisions of Section 2424. A supplemental label may be affixed by the ~~remanufacturer~~ rebuilder, if desired, but must adhere to the requirements for supplemental labels described in this paragraph (4) of this subsection.

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#### § 2425.1 Defect Investigation and Reporting Requirements.

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(b) *General requirements.* Engine manufacturers shall investigate their engines that have been introduced into commerce in California for incorrect, improperly installed, or otherwise defective emission-related components or systems, and shall submit a report to the ARB based on federal triggering thresholds documenting these activities, as required, and their findings. If available, California-specific incidence rates shall also be included in this report.