

UPDATED INFORMATIVE DIGEST

Amendments to the Small Off-Road Engine Regulations

Sections Affected: This action amends the following chapter and sections of Title 13, California Code of Regulations, and the documents incorporated by reference therein: Chapter 9, Off-road Vehicles and Engines Pollution Control Devices; Article 1, Utility and Lawn and Garden Engines; Sections 2400, et seq., and the incorporated "California Exhaust Emission Standards and Test Procedures for 1995 and Later Utility and Lawn and Garden Equipment Engines;" and Article 3, Off-Highway Recreational Vehicles and Engines; Sections 2410 - 2414.

Background: The California Clean Air Act as codified in the Health and Safety Code Sections 43013 and 43018 grants the ARB authority to regulate off-road mobile source categories. Included are marine vessels, locomotives, utility engines, off-road motorcycles, and off-highway vehicles.

In December, 1990, the Board approved emission control regulations for small off-road (utility) engines. (See Title 13, California Code of Regulations, sections 2400-2407 and the documents incorporated therein). The small off-road engine category was the first off-road category subject to emission control regulations because its emissions impact was significant and because a court order required Board action on the category by January 1991. As initially adopted, the small off-road engine regulations applied to engines produced on or after January 1, 1994. On July 5, 1995, the United States Environmental Protection Agency (U.S. EPA) approved California's authorization request; approval allows the state to enforce the regulations.

The small off-road engine regulations include exhaust emission standards, test procedures, and provisions for warranty and production engine compliance programs. The adopted regulations consist of two tiers of emission standards. The Tier 1 took effect in 1995, while Tier 2 was to become effective in 1999. Exhaust emission standards were established for hydrocarbon (HC), oxides of nitrogen (NO_x), carbon monoxide, and particulate (PM) (for diesel-powered and two-stroke engines only). Additionally, the regulations were divided into two major categories--handheld and nonhandheld. Engines used in handheld applications, such as chainsaws and trimmers, were required to comply with the less stringent set of emission standards.

The Board directed the ARB staff to present progress reports before implementing the Tier 2 small off-road engine standards in 1999. The reports are intended to inform the Board of industry's progress in developing the technology required to comply with the standards, and of any issues that must be addressed. The staff made its initial report to the Board on January 25, 1996. The Board's directives at that time were for staff to investigate how the regulations could be improved, and to consider issues raised by industry in this process.

The Amendments. On March 26, 1998, the Board considered and approved amendments the staff proposed in response to the Board's 1996 directives. In general, the regulations were amended to reflect the realities of the small engine market and the technological

capabilities of the industry. Following is a description of specific major amendments, including modifications adopted in response to the Board's directives at the March 26, 1998 hearing.

The regulations were revised to include all engines less than 25 horsepower that are used in off-road mobile applications. This also includes specialty vehicles and golf cart engines below 25 horsepower. New golf carts for use in areas that do not meet the federal ozone standards continue to have a zero-emission requirement.

The standards categories of handheld and nonhandheld engines have been replaced with standards categories based on engine displacement. Engines less than or equal to 65 cubic centimeters displacement are subject to emissions standards formerly associated with handheld equipment engines, while engines greater than 65 cubic centimeters displacement are subject to emissions standards formerly associated with nonhandheld equipment engines. The revised distinction will simplify matters for most engine manufacturers and their customers.

For engines less than or equal to 65 cubic centimeters (≤ 65 cc) displacement, the 2000 and subsequent emission standards for HC and NO_x remain essentially unchanged from the previous 1999 Tier 2 levels for "handheld" engines. The action combined the HC and NO_x standards for ≤ 65 cc engines to enhance compliance flexibility while maintaining the same overall level of ozone precursor emissions. For engines greater than 65 cubic centimeters displacement, the emission standards for HC and NO_x relaxed the previous 1999 Tier 2 "nonhandheld" levels. Furthermore, the Board aligned with the U.S. EPA/ARB/industry Statement of Principles regarding the regulation of compression-ignition engines.

The Board also revised the regulations to ensure that engines are "emissions durable," i.e., controlled throughout their useful life. Engines will be differentiated based on emissions durability periods. Manufacturers will be required to provide information to potential consumers regarding an engine's durability period and emissions level.

Compliance with the PM standard will be determined through an engineering evaluation process, rather than through direct measurement. Specifically, compliance with the 2-stroke particulate standard be determined from dividing the HC emissions by the fuel/oil ratio used in the engine.

The Board approved the addition of emissions averaging and credits programs to the certification and production line testing regulations, and revised portions of the existing program to increase industry's flexibility in complying. In particular, the revisions included the addition of an option to the current quality-audit program that would reduce the manufacturers' testing burden. The Board also instituted special reduced testing considerations for small volume manufacturers that produce less than 500 engines annually for California.

At the hearing, the Board approved an alternative to the standards proposed in the staff report. The alternative is projected to attain the same emissions reductions from these engines as the original staff proposal, but would provide manufacturers greater flexibility to attain those

reductions. The alternative would delay the implementation of the Tier 2 standards until 2002 for engines equal to or greater than 225 cc and horizontal-shaft engines below 225 cc, and until 2006 for vertical-shaft engines less than 225 cc. In return, manufacturers who produce more than 40,000 spark-ignited engines per year between 65 and 225 cc for sale in extreme nonattainment areas will be responsible for additional emission reductions to attain the emissions reductions equivalent to the original staff proposal in MSC 98-02. The extent to which manufacturers have met these obligations will be evaluated on the basis of statewide implementation of the manufacturers' plans, since manufacturers have indicated that they cannot track the destination of their engines more specifically than statewide.

The Board also directed the staff to include incentive programs to encourage the production and purchase of clean engines. These programs are to provide additional emissions information to the potential purchaser. The amendments require an Air Index label, similar to that used for on-road vehicles, on each piece of new equipment. The Air Index will provide a relative comparison between the emissions expected from various engines. The engine manufacturer must arrange for a label with the engine family's Air Index to be attached to the equipment, and in some cases to the equipment packaging, where a potential consumer can view the information prior to purchase. After a trial period during which manufacturers may use alternatives to the default Air Index label, a determination will be made as to whether any alternatives implemented were sufficiently effective in promoting consumer awareness to avoid mandatory use of the default labeling provisions.

The Board approved several minor modifications to the originally proposed amendments including, in response to the request of a manufacturer, the option of an intermediate 125-hour durability period for engines 0-65 cc.

Finally, the Board made other miscellaneous changes to the regulations and test procedures to conform with federal practices and to clarify existing regulatory language.

Incorporation of Test Procedures and Federal Regulations. The amended test procedures are incorporated by reference in Title 13, CCR, sections 2402. The amended test procedures, in turn, incorporate test procedures adopted by the U.S. Environmental Protection Agency and contained in Title 40 Code of Federal Regulations (CFR) Part 89.

Title 13, CCR sections 2402 and 2412 (c) identify the incorporated ARB documents by title and date. The ARB documents are readily available from the ARB upon request and were made available during the subject rulemaking in the manner specified in Government Code section 11346.7(a). The CFR is published by the Office of the Federal Register, National Archives and Records Administration, and is therefore reasonably available to the affected public from a commonly known source.

The test procedures are incorporated by reference because it would be impractical to print

them in the CCR. Existing ARB administrative practice has been to have the test procedures incorporated by reference rather than printed in the CCR because these procedures are highly technical and complex. They include the "nuts and bolts" engineering protocols required for certification of small off-road engines and have a very limited audience. Because the ARB has never printed complete test procedures in the CCR, the directly affected public is accustomed to the incorporation format utilized therein. The ARB's test procedures as a whole are extensive and it would be both cumbersome and expensive to print these lengthy, technically complex procedures for a limited audience in the CCR.

The test procedures for compression-ignition engines incorporate portions of the CFR because the ARB requirements are substantially based on the federal regulations, as per the Statement of Principles entered into by ARB, Industry, and the U.S. EPA as described in the staff report on pages 32-33. Incorporation of the federal regulations by reference will simplify manufacturer certification.

Economic and Fiscal Impact. The Board approved ARB staffs' evaluation of the potential economic impacts on private persons and businesses. Although some stakeholders contend that the amendments would be too stringent, the amendments actually relax the existing requirements. Overall, most manufacturers of small off-road engines and equipment are expected to benefit from the proposed amendments. The amendments provide manufacturers with greater flexibility than the existing standards. This, in turn, results in a more cost-effective program to achieve the goals of SIP emission reductions. However, some manufacturers that have already developed compliant products may be adversely affected by the proposed amendments because they may not realize the return on their investment as soon as they have planned. However, the benefits gained by the industry from the proposed amendments outweigh the slight loss of opportunity to these manufacturers. As a result, the Board expects the proposed regulations to have positive impacts on California employment, business status, and competitiveness.

The relaxation and extension of the 1999 standards will ease the technological challenge that the industry is facing and will provide the industry with additional time to complete the development of their compliant products. This, in turn, tends to lower the compliance costs for manufacturers. However, some manufacturers that have already developed compliant products may be adversely affected by the proposed amendments. These amendments reduce the ability of these manufacturers to benefit from their efforts and realize any income that may be generated from licensing their technology to others. Moreover, it may discourage them in their future efforts to develop complying products on time. However, the benefits gained by the industry as a whole from the amendments outweigh the slight loss of opportunity to a few manufacturers.

The amendments postpone or reduce any potential increase in the retail prices of small off-road equipment that might have resulted from the implementation of the 1999 standards. This is because the manufacturers will have less stringent standards and more time to develop more cost-effective products. Consumers will also benefit from the amendments because their choice of products would be greater than if the 1999 standards had been retained. Furthermore, because

the proposal relaxes and delays the standards, and provides features like averaging and low-volume consideration, the proposal will allow a greater number of manufacturers and technologies to continue to supply the California market.

Finally, the Board determined that this regulatory action will not result in a mandate to any local agency or school district the costs of which are reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code. The regulations apply only to engine and equipment manufacturers. Therefore, no state agency, local agency, or school district will incur costs in reasonable compliance with this regulation.

As discussed above, the regulations will have a net positive impact or no impact on businesses in general. Although not directly affected by the rule, small businesses are among those who would benefit. To the extent that indirect costs may be passed on to small businesses that purchase complying engines or equipment, they have been included in the cost and cost-effectiveness calculations of the staff report.

Consideration of Alternatives. The amendments proposed in this rulemaking were the result of extensive discussions and meetings involving staff and the directly affected parties (e.g., small off-road engine and equipment manufacturers). Staff considered all of the alternatives proposed by industry and was able to incorporate a majority of industry's proposed amendments into the regulation presented to the Board. The Board rejected several major alternatives for the reasons described in the staff report at pages 63-65, and in the Responses to Comments found in the Final Statement of Reasons. Also, a number of additional modifications proposed during the comment periods were incorporated into the final amendments. The Board determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

Comparison to Federal Regulations. The U.S. EPA also has regulations for small off-road engines (Title 40, Code of Federal Regulations, Part 90). Those regulations are similar to the California Tier 1 regulations that predated them. The U.S. EPA regulations differ from the ARB staff's proposal in a number of ways, including less stringent emissions standards, no control of engine deterioration, and no measures to increase industry flexibility such as averaging. The U.S. EPA is proposing a phase 2 regulation that will control engine deterioration and introduce flexibility measures such as averaging, but the emissions standards remain less stringent than the Board-adopted amendments. The Board made every effort to minimize conflicts with the proposed U.S. EPA rule, while retaining specific features needed by California. Those efforts include aligning the structure of the production-line testing programs and the averaging programs. However, the amendments retain several differences from the U.S. EPA proposal, including year-round production-line testing, and more stringent emissions standards.

The Board approved staffs' analysis indicating the proposal will reduce emissions from ozone precursors in a cost-effective manner, beyond what would be accomplished either by the existing federal rule or by the federal proposal. Thus, the cost of the separate California program is justified by the benefit to human health, public welfare, and the environment. In addition, the differences from the federal program are authorized by Health and Safety Code sections 43013

and 43018.