Air Resources Board

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 www.arb.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

October 5, 2007

Mail-Out # MSC 07-29

TO: Manufacturers of Small Off-Road Engines (SORE) and Equipment, Manufacturers of Large Spark-Ignition (LSI) Engines and Equipment with Engines Less Than or Equal to One Liter (≤1 liter) in Displacement, and Interested Parties

SUBJECT: WORKSHOP TO DISCUSS THE CALIFORNIA REGULATIONS AND TEST PROCEDURES FOR SORE AND LSI ENGINES ≤1 LITER DISPLACEMENT

At the time and place noted below, the California Air Resources Board (ARB or Board) will host a public workshop to discuss the recent amendments to California's regulations and test procedures for new SORE and equipment and LSI engines and equipment with engines ≤1 liter displacement. Specifically, the discussion will focus on standards for LSI engines ≤1 liter displacement, modifications to the SORE emissions credit program, and other minor changes in the SORE regulatory language.

The workshop will be held at the following time and location:

Date: November 14, 2007

Time: 9:30 a.m. – 12:00 noon

Location: California Air Resources Board –Annex 4 Auditorium
9530 Telstar Avenue
El Monte, California 91731

Background

Small Off-Road Engines

In December 1990, ARB approved emission control regulations for new small off-road spark-ignition engines. In 1998, the regulations were revised as a result of Board directed outreach and analysis of the SORE manufacturers' ability to comply with the 1999 Tier 2 standards.

One of the changes made in 1998 was the establishment of production emission credits, which provided compliance flexibility to the engine manufacturers during the transitional period of emission standard changes. At the time, the United States Environmental Protection Agency (U.S. EPA) was also considering the use of production emission credits in addition to the certification credits. Staff believed that allowing production emission credits would harmonize with U.S. EPA and would also ease the burden on small engine manufacturers by rewarding those manufacturers which had built cleaner engines early. Ultimately, however, U.S. EPA decided against offering production emissions credits as an option for these engines and equipment. Production credits were not needed to comply with tier 2 standards.

Large Spark-Ignition Engines

In May of 2006, the Board approved new regulations for the LSI equipment category. However, the portion of the LSI equipment category with engines that are ≤1 liter displacement was not addressed in the regulation. In recent years, the population of this category, the number of engine families, and the maximum power ratings of engines within it has grown significantly.

Purpose of Workshop

Staff intends to propose changes to regulations pertaining to the SORE and LSI categories to provide greater alignment with other ARB regulations and U.S. EPA regulations. ARB staff welcomes comments and suggestions pertaining to the proposed changes. The proposed changes and ideas follow:

Small Off-Road Engines

1. Production Credits – Staff is considering removal of the mechanisms that allow for the generation of production credits in the California Code of Regulations Title 13, Section 2409. Our decision to propose this change is based in part on the fact that the SORE program is unique in allowing generation of production credits. The on-road vehicle program and other off-road programs have never allowed production credits to be generated.

Additionally, production credits give emission credits to manufacturers for what should be their margin of safety to meet certification standards. In all other program categories, this margin of safety is used by manufacturers in case some of their engines do not meet their original certification emission levels. The extra emission reductions achieved through the margin of safety has always benefited Californians. Awarding production credits thus results in a reduction of benefits from the program.

Furthermore, staff proposes to align the SORE program with other ARB programs and with U.S. EPA's programs on this issue. U.S. EPA does not have provisions for this type of emissions credits. Although U.S. EPA had considered using production credits in the 1990's, they did not find it necessary for achieving the goals of its regulations. In fact, U.S. EPA is not even considering them in their newly proposed regulation.

Staff does not believe that production credits are necessary to meet current SORE requirements. If anything, production credits are delaying engines from meeting the current standards. If the production credit program is removed, manufacturers would still have an incentive to produce cleaner engines because the manufacturer would still be able to claim certification credits for the cleaner than required engines.

2. Emission Durability Period or Useful Life – Staff is proposing changing the definition of emission durability period of SORE to include a "years" interval in addition to the "hours" interval already in effect. Most of ARB and U.S. EPA engine programs include a useful life definition in terms of years of use or extent of engine operation in hours. Staff is suggesting using five years as the durability period or useful life. For example, for engines which have a durability period of 125 hours, the durability period would become either five years or 125 hours, whichever comes first. The five-year period is equivalent to a typical median life of SORE equipment and U.S. EPA is also considering this time period in their proposed regulation.

3. Credit Lifetime – Staff is also planning to limit the lifetime of all credits including certification credits. Currently, SORE credits never expire, which leads to the possibility of manufacturers using credits from engines that are no longer in the fleet. This is detrimental to air quality. ARB staff believes that credits should not remain in place beyond the existence of the engine from which the credits were generated; therefore, staff is suggesting that emission credits expire five years after they are generated. This five-year period is equivalent to a typical median life of SORE equipment and the same as the suggested durability period or useful life mentioned above in planned change number (2).

4. Existing Credits – Similarly, staff intends to propose that both certification and production credits expire five years from the time of the adoption of these changes should the Board agree with staff's recommendations. The purpose of the credits was to ease the burden of compliance on manufacturers during the transitional period of a regulatory change in the emission standards. They were not meant to be stored up as an offset for future regulatory changes.

5. Discounting Credits – In addition to limiting the life of emission credits, staff is considering proposing a discount factor for both certification and production emission credits. Staff is suggesting that the credits be discounted by one fifth each year. This would give manufacturers a chance to use the credits early, but discourage the retention of credits. This would also encourage manufacturers to introduce cleaner engines in a more timely manner.

6. Additional Changes

a. Warranty Contact Information – Staff proposes requiring either a United States contact telephone number or a toll-free number in the owner's manual for warranty claims. Manufacturers would also be required to provide, at a minimum, an English language option for users who call the contact number. Other language options may also be included, if desired.

b. Enforcement Bond – U.S. EPA is proposing to require importers of certified engines and equipment to post a bond to cover any potential compliance or enforcement actions under the Clean Air Act. Importers would be exempt from the bond requirement should they be able to alternatively demonstrate that they would meet any compliance- or enforcement-related obligations. Staff is considering using a similar bond idea for California. Staff would especially appreciate comments on what form this should take.

Large Spark-Ignited Engines

1. Exhaust Emission Standards – Staff is proposing that the emission standard for LSI engines ≤1 liter displacement be modified to 8 grams per kilowatt-hours (g/kW-hr) for the combined hydrocarbon and oxides of nitrogen (HC+NOx) standard. This is consistent with SORE regulations for engines larger than 225 cubic centimeters (cc), but still much less stringent that LSI engines greater than one liter as shown in Table 1 below.

Table 1. Current and Proposed Emission Standards for LSI Engines
(grams per brake horsepower-hour)
[grams per kilowatt-hour]

Model Year	Engine Displacement	Durability Period	HC + NOx	Carbon Monoxide
2002 and subsequent	≤ 1.0 liter	1,000 hours or 2 years	9.0 [12.0]	410 [549]
2007-2009	> 1.0 liter	5000 hours or 7 years	2.0 [2.7]	3.3 [4.4]
2010 and subsequent	> 1.0 liter	5000 hours or 7 years	0.6 [0.8]	15.4 [20.6]
Proposed 2010 and subsequent	≤ 1.0 liter	1,000 hours or 2 years	6.0 [8.0]	410 [549]

2. Evaporative Emission Requirements – Staff also plans to propose that LSI engines ≤ 1 liter displacement meet the same evaporative emission requirements as SORE engines with a displacement larger than 225cc for the near term. Staff will continue to look into further evaporative emission reductions in the future.

3. Optional Standards – Staff would like to receive comments on whether optional standards, which would allow for funding, would be of interest to the industry. Specifically, staff would like feedback on an appropriate level for such a standard.

Workshop Materials

Workshop presentations and handouts will be available at the workshop and on ARB's SORE website at: http://www.arb.ca.gov/msprog/offroad/sore/sore.htm . If you would like to receive notification by email of updates to the SORE website, please sign up at: http://www.arb.ca.gov/listserv/sore.htm .

Additional Information

If you have a disability-related accommodation need, please go to http://www.arb.ca.gov/html/ada/ada.htm for assistance, or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than

English, please go to http://www.arb.ca.gov/as/eeo/languageaccess.htm or contact the Bilingual Coordinator at (916) 324-5049.

ARB staff is soliciting comments and questions from interested stakeholders before the workshop takes place. If you have comments or questions about the proposed regulatory changes or related matters, kindly submit them at your earliest convenience to either Ms. Yun Hui Park, Air Resources Engineer, at (626) 450-6263 or email ypark@arb.ca.gov , or Mr. Scott Rowland, Manager, at (626) 575-6676 or email srowland@arb.ca.gov .

Sincerely,

Robert H. Cross, Chief
Mobile Source Control Division

cc: Mr. Scott Rowland, Manager
Off-Road Controls Section

Ms. Yun Hui Park
Air Resources Engineer
Off-Road Controls Section