

UPDATED INFORMATIVE DIGEST

AMENDMENTS TO THE LARGE SPARK-IGNITION (LSI) ENGINE FLEET REQUIREMENTS REGULATION

Sections Affected

Amendments to California Code of Regulations, title 13, sections 2775, 2775.1, and 2775.2.

Background

Health and Safety Code sections 43013 and 43018 direct the Air Resources Board (ARB or Board) to achieve the maximum feasible and cost-effective emission reductions from all mobile source categories, including large spark-ignition (LSI) engines, by establishing emission standards and other related requirements that will accomplish attainment of state standards.

LSI engines, which are defined as spark-ignition (i.e., Otto-cycle) engines greater than or equal to 25 horsepower, are a source of hydrocarbons (HC) and oxides of nitrogen (NO_x). They are used in a variety of equipment, including, but not limited to, forklifts, airport ground support equipment (GSE), sweeper/scrubbers, industrial tow tractors, generator sets, and irrigation pumps. LSI equipment is found in approximately 2,000 fleets throughout California operating at warehouses and distribution centers, seaports, airports, railyards, manufacturing plants, and many other commercial and industrial facilities.

In 1998, the Board first adopted emission standards for off-road LSI engines. The original LSI regulation required engine manufacturers to certify new LSI engines to a 3.0 gram per brake horsepower-hour (g/bhp-hr) combined HC and NO_x, or HC+NO_x, standard. The emission control requirements were phased-in, in increments of 25 percent of engine sales per year, beginning with the 2001 model year. By the 2004 model year, 100 percent of new LSI engines were required to be emission-controlled. To achieve this standard, manufacturers relied upon the same emission control technologies used in automotive engines for more than 20 years—three-way catalytic converters, electronic fuel/air controllers, and oxygen sensors. The 3.0 g/bhp-hr standard represented a 75 percent reduction in emissions versus LSI engines with no emission controls.

Building on this success, in 2002, the United States Environmental Protection Agency (U.S. EPA) subsequently harmonized the national standard with California's standard starting with the 2004 model year and adopted a more stringent 2.0 g/bhp-hr HC+NO_x standard for 2007 and subsequent model year engines. The federal program demonstrated that additional reductions from new engines were technically feasible and cost-effective.

In the 2003 State Implementation Plan for Ozone (2003 SIP), California committed to two additional LSI measures—one for the development of more stringent new engine standards and another for the development of in-use fleet requirements. ARB adopted these two LSI measures in a 2006 rulemaking, which harmonized California’s standard with U.S. EPA’s 2.0 g/bhp-hr HC+NOx standard starting with the 2007 model year, set forth a more stringent 0.6 g/bhp-hr California standard starting with the 2010 model year, and established in-use LSI fleet requirements. The 0.6 g/bhp-hr standard represents a 95 percent emission reduction versus uncontrolled LSI engines and is still in effect today.

The in-use element of the 2006 rulemaking requires in-use fleet operators of four or more forklifts, sweeper/scrubbers, industrial tow tractors and airport GSE to meet specific HC+NOx Fleet Average Emission Level (FAEL) standards. The FAEL standards, which have become more stringent over time, vary based upon equipment type and fleet size. For example, the FAEL standard for forklifts is more stringent because there are more retrofit devices available for forklifts than for other types of LSI equipment. In addition, FAEL standards are more stringent for large fleets (greater than 25 pieces of LSI equipment) because of their greater ability to incorporate zero and near-zero emission equipment into their operations.

Description of Regulatory Action

In this rulemaking, the Board has approved proposed revisions to the Large Spark-Ignition Engine Fleet Requirements Regulation (California Code of Regulations, title 13, sections 2775, 2775.1, and 2775.2 (LSI Fleet Regulation)). The approved amendments consist of three major elements: (1) establishing a reporting requirement starting June 30, 2017, and annually thereafter; (2) establishing a labeling requirement starting in June 30, 2017; and (3) continuation of the existing recordkeeping requirements. The recordkeeping, reporting and labeling requirements will all sunset on June 30, 2023.

On May 31, 2016, ARB issued a “Notice of Public Hearing to Consider Proposed Amendments to the LSI Fleet Regulation” at the Board’s July 2016 hearing. An Initial Statement of Reasons entitled “Staff Report: Proposed Hearing to Consider the Proposed Amendments to the Large Spark-Ignition Engine Fleet Requirements Regulation” (Staff Report) was made available for public review and comment on May 31, 2016 and ARB accepted public comments regarding the amendments beginning June 3, 2016, and ending July 18, 2016. The Staff Report contained a description of the rationale for the proposed amendments. The text of the proposed amendments was included as Appendix A to the Staff Report. The Staff Report and Appendix A were posted on ARB’s website at:

<https://www.arb.ca.gov/regact/2016/sparkignition2016/sparkignition2016.htm>.

At its July 21, 2016, public hearing the Board approved for adoption amendments to the existing LSI Fleet Regulation. At the hearing, the Board received written comments. No oral comments were submitted. The Board approved Resolution 16-10, which endorsed

the revisions proposed in the Staff Report without proposing additional modifications to the amendments.

Resolution 16-10 also directed the Executive Officer to consider written comments as may be submitted during the 15 day public review period, to make such modifications as may be appropriate in light of the comments received, and to present the regulation to the Board for further consideration if the Executive Officer determined this was warranted in light of the comments received. No further comments were received during this time and no modifications were made.

ARB responded to all written comments in the Final Statement of Reasons.

Objectives, Benefits, and Effect of the Regulatory Action

The purpose of the LSI Fleet Amendments is to strengthen the LSI Fleet Regulation, provide ARB with key compliance information about LSI equipment, which will be used to increase enforcement effectiveness and compliance rates, and to inform future policy decisions.

The information ARB is requesting is necessary to be able to ensure LSI fleets are complying with the existing FAEL standards. The amendments provide ARB enforcement staff with a mechanism to detect non-compliance among the regulated community, which reduces the public's exposure to air pollutants, results in equity among regulated fleets, encourages other fleets to comply, and ensures the intent of the original LSI Fleet Regulation is met.

While the statewide emission reductions projected for the LSI Fleet Regulation were committed to in the 2003 SIP, very limited data are currently available for determining progress towards the regulation's ultimate air quality objectives. The approved amendments address this by providing a mechanism for collecting the data needed for more accurate emission estimates. More importantly, they improve the reliability of the emission reductions originally projected for the existing LSI Fleet Regulation by increasing enforcement effectiveness and, ultimately, compliance rates.

In addition, these amendments achieve one of several ARB data collection efforts that support the near-term action Data Collection described in ARB's Sustainable Freight: Pathways to Zero and Near-Zero Emissions, Discussions Document (Pathways Document). The compliance data gathered as a result of the amendments will be used to inform the development of future measures to accelerate the deployment of zero emission technology, including the Zero Emission Off-Road Measure described in the Pathways Document and in ARB's 2016 Mobile Source Strategy. Staff believes that this future measure will be a key enabling step in transitioning zero emission technology into heavier, higher-power-demand applications, such as those that currently utilize diesel powertrains.

The amendments may also result in indirect benefits to the health and welfare of California residents, worker safety, and the state's environment by reducing criteria and climate emissions and improving air quality.

Comparable Federal Regulations

Section 209(e)(2) of the federal Clean Air Act (CAA) allows California, upon obtaining authorization from the U.S. EPA, to adopt and enforce emission standards and other requirements related to the control of emissions for new and in-use off-road engines not expressly preempted (i.e., new off-road engines under 175 horsepower used in farm and construction equipment, and vehicles, new locomotives, and locomotive engines as set forth in CAA section 209(e)(1)).

LSI engines are regulated under the Code of Federal Regulations (CFR), title 40, part 1048 et seq., which was harmonized with California's emission standards until 2010, when California's standards became more stringent. Under the federal standard, there are no fleet requirements and therefore, no reporting, labeling, or recordkeeping requirements for LSI fleets.

ARB requested authorization from the U.S. EPA for California to enforce the LSI State standards and was granted authorization for the following standards and amendments:

- 1) 1998 LSI engine emission standards were authorized on May 23, 2006 (71 Fed. Reg. 29621-01);
- 2) 2006 amendments to the engine emission standards and adoption of fleet requirements were authorized on April 4, 2012 (77 Fed. Reg. 20388);
- 3) 2008 amendments establishing new categories of LSI engines and more stringent emission standards were authorized on December 9, 2015 (80 Fed. Reg. 76468); and
- 4) 2010 LSI fleet amendments extending the compliance period for LSI fleets and clarifying existing provisions were found to be "within the scope" of the previous authorization on December 9, 2015 (80 Fed. Reg. 76468).

Because there are no federal fleet requirements, there are no comparable federal regulations to this current amendment. To the extent that the proposed amendments affect the previously granted authorization, ARB may submit a subsequent request to U.S. EPA for authorization action.

Changes to Underlying Laws

This amendment is not inconsistent or incompatible with existing State regulations. There have been no changes to the governing statutory authority.