

Adopt Article 2, Large Sparks Ignition (LSI) Engine Fleet Requirements, within Chapter 15, Division 3, Title 13, California Code of Regulations, and new sections 2775, 2775.1, and 2775.2 to read:

Article 2. Large Spark-Ignition (LSI) Engine Fleet Requirements

Section 2775. Applicability.

- (a) *General Applicability.* This article applies to operators of off-road large spark-ignition (LSI) engine forklifts, sweepers/scrubbers, industrial tow tractors or airport ground support equipment operated within the State of California in the conduct of business with:
 - (1) 25 horsepower or more (greater than 19 kilowatts for 2005 and later model year engines), and
 - (2) greater than 1.0 liter displacement.
- (b) *Exemptions.*
 - (1) Small Fleets as defined in subsection (d).
 - (2) Rental or leased equipment operated in California no more than 30 aggregated calendar days per year shall be exempt from the requirements of this article.
 - (3) Off-road military tactical vehicles or equipment exempt from regulation under the federal national security exemption, 40 CFR, subpart J, section 90.908, are exempt from the requirements of this article. Vehicles and equipment covered by the definition of military tactical vehicle that are commercially available and for which a federal certificate of conformity has been issued under 40 CFR Part 90, subpart B, shall also be exempt from the requirements of this article.
 - (4) Each part of this article is severable, and in the event that any part of this chapter or article is held to be invalid, the remainder of the article shall remain in full force and effect.
- (c) *Definitions.* The definitions in Section 1900 (b), Chapter 1, and Section 2431 (a), Chapter 9 of Title 13 of the California Code of Regulations apply to this article. In addition, the following definitions apply to this article:

“Aggregated Operations” means all of an operator’s California facilities for which equipment purchasing decisions are centrally made. Facilities that budget and make equipment purchasing decisions independent of a government or corporate headquarters are assumed to be independent and therefore are not required to be aggregated for the purpose of determining fleet size.

"Agricultural Crop Preparation Services" means packinghouses, cotton gins, nut hullers and processors, dehydrators, feed and grain mills, and other related activities that fall within the United States Census Bureau NAICs (North American Industry Classification System) definition for Industry 115114 – "Postharvest Crop Activities," as published in the North American Industry Classification System – United States, 2002.

"Airport Ground Support Equipment," "Ground Service Equipment," or "GSE" means any large spark-ignition engine or electric-powered equipment contained in the 24 categories of equipment included in section B.3. of Appendix 2 of the South Coast Ground Support Equipment Memorandum of Understanding, dated November 27, 2002. Specifically included in this definition are those categories of GSE equipment designed for on-road use, but not licensed for on-road use ("On-Road Equivalent" GSE).

"Baseline Inventory" means an inventory of equipment as defined in this subdivision that reflects all equipment owned at the time of the inventory.

"Certification Standard" means the level to which an LSI engine is certified, in grams per kilowatt-hour of hydrocarbon and oxides of nitrogen, combined, as identified in an Executive Order (EO) issued by the Executive Officer of the California Air Resources Board.

"Dehydrators" means sun drying of fruits, vegetables, tomatoes, dates, prunes, raisins and olives, or artificially drying and dehydrating fruits, vegetables, tomatoes, dates, prunes, raisins, grapes, and olives.

"Emission Control System" means any device or system employed with a new or in-use off-road LSI-engine vehicle or piece of equipment that is intended to reduce emissions. Examples of LSI emission control systems include, but are not limited to, closed-loop fuel control systems, fuel injection systems, three-way catalysts, and combinations of the above.

"Equipment" or "Pieces of Equipment" means one or more forklifts, industrial tow tractors, sweeper/scrubbers, or pieces of airport ground support equipment as defined in this section.

"Executive Officer" means the Executive Officer of the California Air Resources Board, or his or her delegate.

"Executive Order" means a document signed by the Executive Officer that specifies the standard to which a new LSI engine is certified or the level to which an LSI retrofit emission control system is verified.

"Facility" means any structure, appurtenance, installation, and improvement on land that operates and/or garages one or more pieces of equipment.

“Facility Sample” means the selection of one or more individual facilities from an operator’s California facilities for comparison to the operator’s aggregate fleet inventory for fleet average calculation.

“Fleet Average Emission Level” means the arithmetic mean of the combined hydrocarbon plus oxides of nitrogen emissions certification standard or verification absolute emissions level for each piece of applicable equipment comprising an operator’s fleet. For the purposes of calculating the fleet average, electric-powered equipment shall be considered to have combined hydrocarbon plus oxides of nitrogen emissions level of zero (0). Electric-powered equipment of less than 19 kilowatts shall be allowed to be included in the fleet average calculation provided that the operator can demonstrate that the equipment performs the work equivalent of an LSI engine-powered piece of equipment. For the purposes of calculating the fleet average for a non-forklift fleet, each piece of On-Road Equivalent GSE shall be considered to have a combined hydrocarbon plus oxides of nitrogen emissions level as follows: 1.1 g/bhp-hr (1.5 g/kW-hr) for purposes of determining compliance with the 1/1/2009 standard; 0.8 g/bhp-hr (1.1 g/kW-hr) for purposes of determining compliance with the 1/1/2011 standard; and 0.7 g/bhp-hr (0.9 g/kW-hr) for purposes of determining compliance with the 1/1/2013 standard. For the purpose of calculating the fleet average, fleet operators shall be permitted to exclude at their discretion any electric-powered equipment that could otherwise be used to lower the LSI fleet’s average emission level.

“Forklift” means an electric Class 1 or 2 rider truck or a large spark-ignition engine-powered Class 4 or 5 rider truck as defined by the Industrial Truck Association. Electric Class 3 trucks are not forklifts for the purposes of this regulation.

“Industrial Tow Tractor” means an electric or large spark-ignition engine-powered Class 6 truck as defined by the Industrial Truck Association. Industrial tow tractors are designed primarily to push or pull non-powered trucks, trailers, or other mobile loads on roadways or improved surfaces. Industrial tow tractors are commonly referred to as tow motors or tugs. Industrial tow tractors are distinct from airport ground support equipment tugs for the purposes of this regulation.

“Label” means a permanent material that is welded, riveted or otherwise permanently attached to the engine block or other major component in such a way that it will be readily visible after installation of the engine in the equipment. If the equipment obscures the label on the engine, the equipment manufacturer must attach a supplemental label such that it is readily visible. The label will state the emission standard or verification absolute emissions level to which the engine or equipment was certified or verified.

"Large Fleet" means an operator's aggregated operations in California of 26 or more pieces of equipment.

"Leased forklift" for use in agricultural crop preparation services means a forklift under a contract or agreement for a term or period of one year or more that may include an option to purchase the forklift.

"LSI Retrofit Emission Control System" means an emission control system employed exclusively with an in-use off-road LSI-engine vehicle or piece of equipment.

"Manufacturer" means the manufacturer granted new engine certification or retrofit emission control system verification.

"Medium Fleet" means an operator's aggregated operations in California of 4 to 25 pieces of equipment.

"Memorandum of Understanding Signatories" or "MOU Signatories" means any of the airlines that entered into the South Coast Ground Support Equipment Memorandum of Understanding, dated November 27, 2002.

"Military tactical vehicles or equipment" means vehicles or pieces of equipment that meet military specifications, are owned by the U.S. Department of Defense and/or the U.S. military services or its allies, and are used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

["Model Year" means the manufacturer's annual production period, which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year.]¹

["New Engine" means an engine's ownership has not been transferred to the ultimate consumer.]

"Non-forklift fleet" means an operator's aggregated operations in California of four (4) or more sweeper/scrubbers, industrial tow tractors, or pieces of airport ground support equipment, alone or in combination.

"Nut hullers and processors" means facilities where nuts are received, hulled, aspirated, shelled, sized, stored, packaged and shipped. Facilities that blanch, slice, dice, roast, salt, or smoke nuts or nut meats are not included in the "nut hullers and processors" definition.

¹ Bracketed definitions are replicated for ease of use and presentation clarity from Section 1900 (b), Chapter 1, or Section 2431 (a), Chapter 9, of Title 13 of the California Code of Regulations.

["Off-Road Large Spark-ignition Engines" or "LSI Engines" means any engine that produces a gross horsepower of 25 horsepower or greater (greater than 19 kilowatts for 2005 and later model years) or is designed (e.g., through fueling, engine calibrations, valve timing, engine speed modifications, etc.) to produce 25 horsepower or greater (greater than 19 kilowatts for 2005 and later model years). If an engine family has models at or above 25 horsepower (greater than 19 kilowatts) and models below 25 horsepower (at or below 19 kilowatts), only the models at or above 25 horsepower (above 19 kilowatts) would be considered LSI engines. The engine's operating characteristics are significantly similar to the theoretical Otto combustion cycle with the engine's primary means of controlling power output being to limit the amount of air that is throttled into the combustion chamber of the engine. LSI engines or alternate fuel-powered LSI internal combustion engines are designed for powering, but not limited to powering, forklift trucks, sweepers, generators, and industrial equipment and other miscellaneous applications. All engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air Act, as amended, and as defined by regulation of the Environmental Protection Agency, are specifically excluded from this category. Specifically excluded from this category are: 1) engines operated on or in any device used exclusively upon stationary rails or tracks; 2) engines used to propel marine vessels; 3) internal combustion engines attached to a foundation at a location for at least 12 months; 4) off-road recreational vehicles and snowmobiles; and 5) stationary or transportable gas turbines for power generation.]

"Operator" means a person with legal right of possession and use of LSI engine equipment other than a person whose usual and customary business is the rental or leasing of LSI engine equipment. Operator includes a person whose usual and customary business is the rental or leasing of LSI engine equipment for any LSI engine equipment not solely possessed or used for rental or leasing.

"Rental forklift" for use in agricultural crop preparation services means a forklift under a contract or agreement for a term or period of less than one year that may include an option to renew the contract or agreement.

"Repower" means a new or remanufactured engine and parts offered by the OEM or by a non-OEM rebuilder that has been demonstrated to the ARB to be functionally equivalent from a durability standpoint to the OEM engine and components being replaced.

"Retrofit" means the application of an emission control system to a non-new LSI engine.

"Serial Number" means an engine serial number and date of engine manufacture (month and year) that are stamped on the engine block or stamped on a metal label riveted or permanently attached to the engine block. Engine manufacturers

must keep records such that the engine serial number can easily be used to determine if an engine was certified for the applicable model year, and beginning January 1, 2007, the standard to which the engine was certified.

"Small Fleet" means an operator's aggregated operations in California of 1 to 3 forklifts and/or 1 to 3 pieces of non-forklift equipment.

"Sweeper/scrubber" means an electric or large spark-ignition engine-powered piece of industrial floor cleaning equipment designed to brush and vacuum up small debris and litter or scrub and squeegee the floor, or both.

"Specialty Equipment" means a piece of equipment with unique or specialized performance capabilities that allow it to perform prescribed tasks and as approved by the Executive Officer.

["Ultimate Purchaser" means the first person who in good faith purchases a new LSI engine or equipment using such engine for purposes other than resale.]

"Uncontrolled LSI Engine" means pre-2001 uncertified engines and 2001-2003 certified uncontrolled LSI engines. The default emission rate for an uncontrolled LSI engine is 16.0 grams per kilowatt-hour of hydrocarbon plus oxides of nitrogen.

"Verification" means a determination by the Executive Officer that the LSI emission control system meets the requirements of this Procedure. This determination is based on both data submitted or otherwise known to the Executive Officer and engineering judgement.

"Verification Level" means one of four emission reduction classifications that apply to the performance capability of retrofit emission control systems as described in Title 13, California Code of Regulations, Section 2782(f), Table 1, as set forth in Table 1:

Table 1. LSI Engine Retrofit System Verification Levels

<i>Classification</i>	<i>Percentage Reduction (HC+NO_x)</i>	<i>Absolute Emissions (HC+NO_x)</i>
LSI Level 1 ⁽¹⁾	> 25% ⁽²⁾	Not Applicable
LSI Level 2 ⁽¹⁾	> 75% ⁽³⁾	3.0 g/bhp-hr ⁽³⁾ (4.0 g/kW-hr)
LSI Level 3a ⁽¹⁾	> 85% ⁽⁴⁾	0.5, 1.0, 1.5, 2.0, 2.5 g/bhp-hr (0.7, 1.3, 2.0, 2.7, 3.4 g/kW-hr)
LSI Level 3b ⁽⁵⁾	Not Applicable	0.5, 1.0, 1.5, 2.0 g/bhp-hr (0.7, 1.3, 2.0, 2.7 g/kW-hr)

Notes:

- ⁽¹⁾ Applicable to uncontrolled engines only
- ⁽²⁾ The allowed verified emissions reduction is capped at 25% regardless of actual emission test values
- ⁽³⁾ The allowed verified reduction for LSI Level 2 is capped at 75% or 3.0 g/bhp-hr (4.0 g/kW-hr) regardless of actual emission test values
- ⁽⁴⁾ Verified in 5% increments, applicable to LSI Level 3a classifications only
- ⁽⁵⁾ Applicable to emission-controlled engines only

NOTE: Authority cited: Sections 39600, 39601, 43013, and 43018, Health and Safety Code.

Reference: Sections 43013, 43017 and 43018, Health and Safety Code.