



## **OUTLINE OF PROPOSED MODIFICATIONS**

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## PROPOSED REGULATION MODIFICATIONS

### 1. Modify the agricultural definition – 2775(c)

#### Issue:

The In-Use Off-Road Large Spark-Ignition (LSI) Engine Regulation (LSI Fleet Regulation) defines “Agricultural Crop Preparation Services” as 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. It doesn’t mention nursery and forest operations, leaving these operators to assume that they are subject to the fleet average requirements of the LSI Fleet Regulation. It also doesn’t discuss how equipment used in both agricultural operations and non-agricultural operations should be treated. Staff proposes to modify the definition to clarify that: (1) nursery and forest operations are considered agricultural operations, and (2) more than half of the annual operating hours of a mixed use piece of equipment must be in agricultural operations for the vehicle to be considered engaged in agricultural operations.

#### Proposed language:

#### **2775(c)**

~~“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.~~

**“Agricultural operations”** means (1) the growing or harvesting of crops from soil (including forest operations) and the raising of plants at wholesale nurseries, but not retail nurseries, or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution, or (2) agricultural crop preparation services such as packinghouses, cotton gins, nut hullers and processors, dehydrators, feed and grain mills and other related activities that fall within the United States Census Bureau North American Industry Classification system (NAICs) definition for Industry 115114 – “Postharvest Crop Activities.”

For purposes of this regulation, a vehicle that is used by its owner for both agricultural and non-agricultural operations is considered to be a vehicle engaged in agricultural operations, only if over half of its annual operating hours are for agricultural operations.

## 2. Clarify the airport ground support equipment definition – 2775(c)

### Issue:

The LSI Fleet Regulation defines “Airport Ground Support Equipment” or “GSE” as 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. Two of these categories are “carts” and “other,” which, for the purposes of electric-powered equipment, can be interpreted very broadly. The intent of the GSE definition is to allow operators to include electric equipment in their fleet average emission level (FAEL) standards calculations only as long as the equipment performs the work equivalent of an LSI engine-powered piece of equipment. Staff proposes to add clarifying language to the definition.

### Proposed language:

#### **2775(c)**

“Airport Ground Support Equipment,” “Ground Service Equipment,” or “GSE” means any large spark-ignition engine or electric-powered equipment capable of and used for performing the work normally performed by an LSI engine-powered piece of 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 except that equipment that falls into the “other” category , whether spark-ignited or electric, shall not be considered GSE for the purposes of this regulation.

## 3. Clarify the baseline inventory definition – 2775(c)

### Issue:

The LSI Fleet Regulation requires operators to conduct a baseline inventory. The “baseline inventory” definition states that this inventory should reflect all equipment owned at the time of the inventory. The intent of the regulation was that the baseline inventory should reflect all operated equipment subject to the FAEL requirements. Staff proposes to modify the “baseline inventory” definition to reflect this intent.

### Proposed language:

#### **2775(c)**

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

## 4. Add a “boneyard” definition – 2775(c)

### Issue:

In some instances, boneyards or end of service repository areas contain entire fleets of retired equipment from various departments awaiting reuse by other government agencies or scrap. The LSI Fleet Regulation does not have a mechanism for dealing

with fleets that are entirely non-operational or out of service such as would be found at a United States Department of Defense reutilization facility. The ARB intends for these fleets to be excluded from the requirement to attain FAEL standards. Staff proposes to add a definition for “boneyard.”

Proposed language:

**2775(c)**

“Boneyard” means a grouping of LSI engine-powered pieces of equipment at a location geographically separated from operational fleets subject to the fleet average requirements and intended for retirement, sale, or other disposition.

**5. Clarify the fleet average emission level definition – 2775(c)**

Issue:

There are four issues that the ARB wishes to address in this definition. First, the definition states that electric-powered equipment of less than 19 kW shall be allowed to be included in the FAEL calculation if the operator can demonstrate it performs the work equivalent of LSI equipment. Since by definition, LSI engines have a power of 19kW or greater, the intent of this language was that electric vehicles rated lower than this would have to demonstrate that they performed the work equivalent of LSI prior to being allowed into FAEL standard calculations. However, electric forklifts have separate lift and drive motors and none of those in the 3,000-5,000 lb lift capacity range are greater than 19kW. Additionally, in the GSE category, none of the allowed electric carts and burden carriers exceed 19kW.

Second, the California Air Resources Board (ARB) committed, during the LSI Fleet Regulation rulemaking, to develop a non-fleet average compliance option for agricultural forklifts used in post-harvest crop activities. The ARB also committed to exempt agricultural forklifts used exclusively in field. The former commitment was codified in the LSI Fleet Regulation. As the result of an oversight, the latter commitment was never codified.

Third and fourth, this definition does not address treatment of experimental and “boneyard” LSI equipment, respectively, in FAEL standard calculations. Staff proposes to address these issues by modifying the definition for “fleet average emission level.”

Proposed language:

**2775(c)**

“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 controlled equipment and the default emission rate of 12.0 g/bhp-hr (16.0 g/kW-hr) for uncontrolled equipment comprising an operator’s fleet. LSI equipment meeting the boneyard, in-field equipment, or retired equipment definitions shall not be included in fleet average emission level

compliance calculations. 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 it meets the airport ground support equipment, forklift, industrial tow tractor, or sweeper/scrubber definition and the operator can demonstrate that the equipment performs, with similar efficiency, the same function as 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.

## **6. Add an “in-field equipment” definition – 2775(c)**

### Issue:

As mentioned above, the ARB committed to exempt agricultural forklifts used exclusively in field, but this commitment was never codified. The ARB is now proposing to modify the fleet average emission level definition to exclude in-field LSI equipment, but must define “in-field.” Staff proposes to add a definition for “in-field equipment.”

### Proposed language:

#### **2775(c)**

“In-field equipment” means LSI equipment that is used predominantly in agricultural operations (greater than half of its annual operating hours). LSI forklifts used predominantly in agricultural crop preparation services fleets are not part of the in-field equipment definition.

## **7. Clarify the operator definition – 2775(c)**

### Issue:

This definition states that “operator” includes a person whose usual and customary business is the rental or leasing of LSI engine equipment for any not solely possessed or used for rental or leasing. The intent of the regulation was to allow dealers some de minimis level of use of their rental and used equipment fleet vehicles without triggering the FAEL standard requirements. As it stands, a dealer could become an operator if they use any four vehicles, regardless of duration of usage. Staff proposes to modify the “operator” definition to reflect this intent.

Proposed language:

**2775(c)**

“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 used more than 50 hours per year for purposes other than ~~not solely possessed or used for~~ rental or leasing.

**8. Add a “retired equipment” definition – 2775(c)**

Issue:

Operators may retire LSI equipment as part of their compliance strategy. This retired equipment often remains on site awaiting sale or scrap. Through Mail Out #MSC 10-08, the ARB has established procedures for designating equipment as retired, but needs to include a retired equipment definition in the text of the regulation. Staff proposes to add a “retired equipment” definition.

Proposed language:

**2775(c)**

“Retired equipment” means LSI equipment with an operational non-resettable hour meter that has been removed from service and rendered inoperable using the following procedures:

1. Remove fuel and the starter battery from the piece of equipment. For propane-fueled LSI engines, the operator may simply remove the fuel canister.
2. Remove the steering wheel from the piece of equipment.
3. Store the retired equipment at a central location, apart from operational equipment, either within the facility or elsewhere, and employ lockout/tagout controls. At a minimum, place a lockout box on either the propane connector or the positive cable to the starter battery. Operators planning to scrap a piece of equipment need not use a lockout box, but may instead sever the positive battery cable more than six inches from the connector.
4. Record the initial hour meter reading at the time of decommission and write the date of decommission and the initial meter reading in permanent ink in a readily visible location on a non-removable surface of the piece of equipment. Additionally, record the hour meter serial number, if available. Continue to record meter readings at quarterly intervals (every three months), and sign under penalty of perjury. Retain records in accordance with the LSI record keeping requirements in section 2775.2.

5. Develop an inventory for all retired pieces of equipment at the date of first retirement and sign, under penalty of perjury, that the equipment is retired for the purposes of the LSI Fleet Regulation.

Retired equipment may remain at the facility for up to one year. After one year, the retired equipment must either be removed from the facility or reentered into FAEL standards calculations.

## **9. Modify the Limited Hours of Use Provisions – 2775.1(d)(1)(D)**

### Issue:

LSI equipment operated fewer than 251 hours per year is considered limited hours of use (LHU) equipment and may be excluded from FAEL standard calculations, but only until January 1, 2011. After this date, LHU equipment that has been retrofitted to a 3.0 g/bhp-hr standard may continue to be excluded from FAEL standard calculations. If not retrofitted, the LHU piece of equipment must be reentered into the FAEL calculations. This provision of the LSI Fleet Regulation is significantly more stringent than the LHU provision in the In-Use Off-Road Diesel Regulation, which allows indefinite exclusion of LHU equipment. Off-Road Diesel currently has an LHU threshold of 100 hours per year, but staff is proposing to raise the threshold to 150 hours per year.

The inability to exclude LHU equipment from the LSI Fleet Regulation's FAEL standards calculations after January 1, 2011 will have a significant impact on some operators. For example, one operator has 156 sweepers that are currently used fewer than 100 hours per year. These sweepers would have to be replaced by January 2, 2011 for the fleet to remain in compliance with the FAEL standards under the current requirements. Other operators have expensive specialized equipment that is used fewer than 100 hours per year. Again, these operators would no longer be allowed to exclude this equipment from their FAEL standard calculations after January 1, 2011 under the current requirements. Staff proposes to extend the LHU provisions for equipment operated no more than 150 hours per year. Finally, the ARB intends to clarify that operators desiring to exclude equipment under the LHU provisions need to use non-resettable hour meters.

### Proposed language:

#### **2775.1(d)(1)(D)**

- (1) Forklift and non-forklift equipment in medium and large fleets shall be exempted from the provisions of subdivision (a) of this section provided that:
- (A) the equipment is used, on average over any three year period, less than 251 hours per year, and
  - (B) the equipment is equipped with an operational non-resettable hours of use meter, and
  - (C) the operator maintains hours of use records for the piece of equipment at a facility, and

(D) the operator addresses the emissions by January 1, 2011, through option (i) or (ii) below or operates the equipment no more than 150 hours per year subsequent to January 1, 2011:

(i) retrofit or repower the equipment to a Level 2 or Level 3 verification level as described in Title 13, California Code of Regulations, Section 2782 (f),  
or

(ii) retire the equipment or replace the equipment with a new or used piece of equipment certified to a 4.0 g/kW-hr (3.0 g/bhp-hr) hydrocarbon plus oxides of nitrogen standard.

#### **10. Clarify the record keeping requirement; remove fuel quality – 2775.2(b)**

##### Issue:

The LSI Fleet Regulation requires operators to obtain product delivery tickets or a like surrogate, if obtainable, stipulating that the fuel they are using is suitable for use in motor vehicles. The ARB added this requirement in an attempt to force operators to put pressure on their fuel suppliers to provide uncontaminated and low-olefin (propene) content motor vehicle grade fuel. Contaminated or high olefin content fuel can adversely affect the performance of emission control systems. However, operators have been unable to obtain this documentation from their fuel suppliers. Staff proposes to remove the fuel quality record keeping requirement. Staff also proposes to clarify the ARB's intent that the record keeping requirement apply to each piece of LSI equipment and that serial numbers be recorded for both engines and equipment.

##### Proposed language:

At a minimum, fleet operators subject to the fleet average emission level requirements contained in Table 2 of section 2775.1(a) shall record and maintain on file for each LSI piece of equipment operated at their facilities, information on the equipment type, make, model, serial number, and engine serial number and emission certification standard or retrofit verification level. ~~Fleet operators shall also maintain on file, for a period of three years, information on the quality of propane fuel they purchased for their fleet that includes a written statement, product delivery ticket, or receipt from the fuel supplier, if obtainable, that the fuel supplied to the operator meets all applicable state and federal laws for use in their engines.~~ Operators that maintain multiple facilities may aggregate the records at a centralized facility or headquarters. Records for all equipment at all facilities shall be made available to the Air Resources Board within 30 calendar days upon request. Compliance staff may then select a facility sample for inspection purposes.

**11. Broaden compliance extension flexibility; Correct the reference –  
2775.2(e)(1)(A)**Issue:

Currently, an operator can request a one-year compliance extension on the basis of no retrofit kit available. Two particularly troublesome instances of non-availability of retrofit kits have come to light.

The first concerns equipment required to have an Underwriters Laboratories (UL) issued LPS/GS (propane/gas) safety designation. Fire codes require LSI equipment used in explosive environments to have spark arrestors and other safety devices. Based on discussions with retrofit kit manufacturers during the 2005 rulemaking, staff anticipated that UL certified kits would become available. However, that has not happened.

The second concerns equipment with large displacement engines. The ARB has verified Engine Control Systems and Nett Technologies retrofit kits for use on engines up to 8.2 L and 6.0 L displacement, respectively. Some operators have been told by vendors that these kits are not appropriate for their large LSI equipment.

In general, retrofitting is considered a compliance option; if an operator cannot retrofit a piece of equipment, then equipment retirement or replacement are available alternatives to achieve their FAEL standard. However, in either of the two cases above, the cost to replace the equipment is significantly greater than the cost to replace a typical piece of LSI equipment. Staff proposes to allow a two-year compliance extension with provisions for an additional two years in the event of non-availability of retrofit kits.

Administratively, section 2775.2(e)(1)(A) provides an incomplete reference to “subsections (a), (c), and (d) without stating the section. Staff proposes to add the section reference.

Proposed language:**2775.2(e)(1)(A)**

If the Executive Officer has not verified a retrofit emission control system, or if one is not commercially available for a particular engine and equipment combination, the Executive Officer may grant a ~~two~~ one-year extension in compliance if prior to each compliance deadline specified in subsections 2775.1(a), (c), and (d), the Executive Officer finds that insufficient numbers of retrofit emission control systems are projected to be available. If the Executive Officer still finds that insufficient numbers of retrofit emission control systems are projected to be available near the end of the first two-year extension, the Executive Officer may grant a subsequent two-year extension in compliance. At the conclusion of the approved extension(s), the operator must include the LSI piece of equipment in their FAEL standards calculations.