

Rule 1001 Airborne Toxic Control Measure For Stationary Compression Ignition (CI)  
Engines Used in Agricultural Operations

*(Adopted April 26, 2007, Amended November 29, 2007, Amended June 25, 2009)*

RULE 1001 CONTENTS

1. PURPOSE
2. APPLICABILITY
3. EFFECTIVE DATE
4. EXEMPTIONS
5. DEFINITIONS
6. FUEL AND FUEL ADDITIVE REQUIREMENTS
7. PM STANDARDS
8. ADMINISTRATION
9. TEST METHODS
10. SEVERABILITY

**Rule 1001**

- 1 PURPOSE:** The purpose of this Rule is to reduce emissions of diesel particulate matter (PM) from stationary diesel-fueled compression ignition (CI) engines used in agricultural operations.
- 2 APPLICABILITY:** Except as provided in Section 4 below, this Rule applies to any person who either sells a stationary CI engine, offers a stationary CI engine for sale, leases a stationary CI engine, or purchases, owns or operates a stationary CI engine used in agricultural operations in the Butte County Air Quality Management District (DISTRICT) with a rated brake horsepower greater than 50 (>50 bhp), any “portable” CI engine used exclusively at an agricultural source and registered with the Air Pollution Control Officer (APCO), and, as of the effective date of this Rule, any new stationary CI engines of any size used in agricultural operations in the DISTRICT.
- 3 EFFECTIVE DATE:** This Rule shall become effective on October 18, 2007.

**4 EXEMPTIONS**

- 4.1** The in-use stationary diesel agricultural particulate matter emission standard and other requirements of Section 7.3 of this Rule do not apply to agricultural emergency standby engines, low-use agricultural engines, or remotely-located agricultural engines provided:
  - 4.1.1** The engines are equipped with nonresettable hour meters with a minimum display capability of 9,999 hours; and
  - 4.1.2** The owners or operators of such engines shall comply with the registration in Section 8.1 of this Rule and applicable recordkeeping and reporting requirements of this Rule; and
  - 4.1.3** The owners or operators of a low-use engine request and accept a total operating hours limitation as determined by a site specific health risk analysis, as determined by the methodologies specified in the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, Office of Environmental Health Hazard Assessment, August 2003, and remove the low-use engine from service in accordance with the dates listed in Table 4.1 below.

<b>TABLE 4.1: LOW-USE ENGINE EXEMPTION FOR GREATER THAN 50 BHP IN-USE STATIONARY DIESEL-FUELED ENGINES USED IN AGRICULTURAL OPERATIONS</b>	
(See Section 4.1)	
<b>Engine Certification</b>	<b>Replacement by December 31 of</b>
Non-Certified	2020
Tier 1	2020
Tier 2	2025

- 4.2** The APCO may exempt any stock engine from the new stationary diesel-

fueled engine emission standards in Sections 7.1 and 7.2 of this Rule provided the seller and the owner or operator demonstrate to the satisfaction of the APCO that the following conditions are met:

**4.2.1** Seller: Any stationary diesel-fueled engine greater than 50 bhp shall meet the following standards and conditions:

**4.2.1.1** The stationary diesel-fueled engine emission standards in Section 7.3; or

**4.2.1.2** The Off-Road CI Engine Certification Standards (Title 13, CCR (California Code of Regulations), section 2423) immediately preceding the transition to new standards for an off-road CI engine of the same model year and maximum rated power, and

**4.2.1.3** The engine was delivered to California no more than twelve (12) months immediately preceding the transition to new standards for an off-road CI engine of the same model year and maximum rated power, and

**4.2.1.4** The engine was sold no later than six (6) months after the effective date of the new standards for an off-road CI engine of the same model year and maximum rated power.

**4.2.2** Owner/operator:

**4.2.2.1** The date of acquisition of the stock engine is no later than six (6) months from the date an emission standard applicable to new engines becomes more stringent than the emission standard to which the stock engine is certified.

**4.2.2.2** The date the APCO determines the application is complete for a permit or registration is no later than six (6) months after the date of acquisition of the stock engine.

**4.3** An agricultural wind machine as defined in Section 5.2 below is exempt from this Rule.

**5 DEFINITIONS:** For purposes of this Rule, the following definitions apply:

**5.1 Agricultural Operations:** The growing and harvesting of crops 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. Agricultural operations do not include activities involving the processing or distribution of crops or fowl or pumping of water for distribution outside the DISTRICT.

**5.2 Agricultural Wind Machine:** A stationary CI engine-powered fan used exclusively in agricultural operations to provide protection to crops during

cold weather by mixing warmer atmospheric air with the colder air surrounding a crop.

- 5.3 Air Pollution Control Officer (APCO):** The person appointed pursuant to California Health and Safety Code (HSC) section 40750, or his or her designated representative.
- 5.4 Alternative Fuel:** Natural gas, propane, ethanol, or methanol.
- 5.5 Alternative Diesel Fuel:** Any fuel used in a CI engine that is not commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in American Society for Testing and Materials (ASTM) D975-81, "Standard Specification for Diesel Fuel Oils," as modified in May 1982, which is incorporated herein by reference, or an alternative fuel, and does not require engine or fuel system modifications for the engine to operate, although minor modifications (e.g., recalibration of the engine fuel control) may enhance performance. Examples of alternative diesel fuels include, but are not limited to, biodiesel and biodiesel blends that do not meet the definition of CARB diesel fuel; Fischer-Tropsch fuels; emulsions of water in diesel fuel; and fuels with a fuel additive, unless:
- 5.5.1** The additive is supplied to the engine fuel by an on-board dosing mechanism, or
  - 5.5.2** The additive is directly mixed into the base fuel inside the fuel tank of the engine, or
  - 5.5.3** The additive and base fuel are not mixed until engine fueling commences, and no more additive plus base fuel combination is mixed than required for a single fueling of a single engine.
- 5.6 Baseline or Baseline Emissions:** The emissions level of a diesel-fueled engine using CARB diesel fuel as configured upon initial installation or by January 1, 2003, whichever is later.
- 5.7 California Air Resources Board (CARB) Diesel Fuel:** Any diesel fuel that meets the specifications of vehicular diesel fuel, as defined in Title 13, CCR, sections 2281 and 2282.
- 5.8 Cancer Risk:** The characterization of the probability of developing cancer from exposure to environmental chemical hazards, in accordance with the methodologies specified in "The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," Office of Environmental Health Hazard Assessment, August 2003, which is incorporated herein by reference.
- 5.9 Carbon Monoxide (CO):** A colorless, odorless gas resulting from the

incomplete combustion of hydrocarbon fuels.

- 5.10 Certified Engine:** A CI engine that is certified to meet the Tier 1, Tier 2, Tier 3, or Tier 4 Off-Road CI Certification Standards as specified in Title 13, CCR, section 2423.
- 5.11 Compression Ignition (CI) Engine:** An internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
- 5.12 Cumulatively:** The aggregation of hours or days of engine use, and any portion of an hour or day of engine use, toward a specified time limit(s).
- 5.13 Date of Acquisition or Submittal:**
- 5.13.1** For each DISTRICT-approved permit or DISTRICT registration for stationary sources, the date the application for the DISTRICT permit or the application for engine registration was submitted to the APCO. Alternatively, upon APCO approval, the date of purchase as defined by the date shown on the front of the cashed check, the date of the financial transaction, or the date on the engine purchasing agreement, whichever is earliest.
- 5.13.2** For an engine subject to neither a DISTRICT permit program nor a DISTRICT registration program for stationary sources, the date of purchase as defined by the date shown on the front of the cashed check, the date of the financial transaction, or the date on the engine purchasing agreement, whichever is earliest.
- 5.14 Date of Initial Installation:** One of the following, whichever is earlier:
- 5.14.1** The date on which a new stationary diesel-fueled engine is placed at a location in order to be operated for the first time since delivery from the manufacturer or distributor, or,
- 5.14.2** For the purposes of a Tier 1- or Tier 2-certified stationary diesel agricultural engine complying with Section 7.3.2 of this Rule Particulate Matter (PM) emission standards, one year from January 1 of the model year of such engine.
- 5.15 Diesel Fuel:** Any fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel, including any mixture of primarily liquid hydrocarbons - organic compounds consisting exclusively of the elements carbon and hydrogen - that is sold or represented by the supplier as suitable for use in an internal combustion, compression-ignition engine.
- 5.16 Diesel-Fueled:** Fueled by diesel fuel, CARB diesel fuel, or jet fuel, in whole or part.

- 5.17 Diesel Particulate Filter (DPF):** An emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.
- 5.18 Diesel Particulate Matter (PM):** The particles found in the exhaust of diesel-fueled CI engines as determined in accordance with the test methods identified in Section 9 of this Rule.
- 5.19 DISTRICT:** The Butte County Air Quality Management District and its authorized representatives.
- 5.20 Dual-fuel Diesel Pilot Engine:** A dual-fueled engine that uses diesel fuel as a pilot ignition source at an annual average ratio of less than 5 parts diesel fuel to 100 parts total fuel on an energy equivalent basis.
- 5.21 Dual-fuel Engine:** Any CI engine that is engineered and designed to operate on a combination of alternative fuels, such as compressed natural gas (CNG) or liquefied petroleum gas (LPG) and diesel fuel or an alternative diesel fuel. These engines have two separate fuel systems, which inject both fuels simultaneously into the engine combustion chamber.
- 5.22 Emergency Standby Engine:** A stationary engine that meets the criteria specified below:
- 5.22.1** Is installed for the primary purpose of providing electrical power or mechanical work during an emergency use and is not the source of primary power at the facility; and
  - 5.22.2** Is operated to provide electrical power or mechanical work during an emergency use; and
  - 5.22.3** Is operated under limited circumstances for maintenance and testing, emissions testing, or initial start-up testing.
- 5.23 Emergency Use:** Providing electrical power or mechanical work during any of the following events and subject to the following conditions:
- 5.23.1** The failure or loss of all or part of normal electrical power service or normal natural gas supply to the facility:
    - 5.23.1.1** Which is caused by any reason other than the enforcement of a contractual obligation the owner or operator has with a third party or any other party; and
    - 5.23.1.2** Which is demonstrated by the owner or operator to the APCO's satisfaction to have been beyond the reasonable control of the owner or operator;
  - 5.23.2** The failure of a facility's internal power distribution system:
    - 5.23.2.1** Which is caused by any reason other than the enforcement of a contractual obligation the owner or

- operator has with a third party or any other party; and
- 5.23.2.2** Which is demonstrated by the owner or operator to the APCO's satisfaction to have been beyond the reasonable control of the owner or operator;
- 5.23.3** The pumping of water or sewage to prevent or mitigate a flood or sewage overflow;
- 5.23.4** The pumping of water for fire suppression or protection;
- 5.23.5** The pumping of water to maintain pressure in the water distribution system for the following reasons:
- 5.23.5.1** A pipe break that substantially reduces water pressure; or
- 5.23.5.2** High demand on the water supply system due to high use of water for fire suppression; or
- 5.23.5.3** The breakdown of electric-powered pumping equipment at sewage treatment facilities or water delivery facilities.
- 5.24 Emission Control Strategy:** Any device, system, or strategy employed with a diesel-fueled CI engine that is intended to reduce emissions including, but not limited to, particulate filters, diesel oxidation catalysts, selective catalytic reduction systems, fuel additives used in combination with particulate filters, alternative diesel fuels, and any combination of the above.
- 5.25 End User:** Any person who purchases or leases a stationary diesel-fueled engine for operation in California. Persons purchasing engines for the sole purpose of resale are not considered "end users."
- 5.26 Executive Officer:** The executive officer of the California Air Resources Board (CARB), or his or her designated representative.
- 5.27 Facility:** One or more contiguous properties, in actual physical contact or separated solely by a public roadway or other public right-of-way, under common ownership on which engines operate.
- 5.28 Fuel Additive:** Any substance designed to be added to fuel or fuel systems or other engine-related engine systems such that it is present in-cylinder during combustion and has any of the following effects: decreased emissions, improved fuel economy, increased performance of the engine; or assists diesel emission control strategies in decreasing emissions, or improving fuel economy or increasing performance of the engine.
- 5.29 Generator Set:** A CI engine coupled to a generator that is used as a source of electricity.
- 5.30 Hazard Index:** The sum of individual acute or chronic hazard quotients for

each substance affecting a particular toxicological endpoint, as determined in accordance with the requirements of "The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," Office of Environmental Health Hazard Assessment, August 2003, which is incorporated herein by reference.

- 5.31 Health Facility:** The same as defined in HSC Section 1250.
- 5.32 In-Use or In-Use Engine:** A stationary CI engine that is used in agricultural operations as of the effective date of this Rule, including:
- 5.32.1** A replacement stationary CI engine that is installed to temporarily replace an in-use engine while the in-use engine is undergoing maintenance and testing, provided the replacement engine emits no more than the in-use engine, and the replacement engine is not used more than 180 days cumulatively in any 12-month rolling period;
  - 5.32.2** An engine that is one of four or more engines owned by an owner or operator and is relocated prior to January 1, 2008 to an offsite location that is owned by the same owner or operator.
  - 5.32.3** An engine, or replacement for an engine, used in agricultural operations that is relocated within the same facility or to another offsite facility under the same owner or operator for use in agricultural operations, provided the engine has a valid certificate of registration from the APCO.
  - 5.32.4** An engine installed at a facility prior to the effective date of this Rule, and relocated within the same facility after the effective date of this Rule.
- 5.33 Incentive Program:** For purposes of this subsection, State or federal incentive funding programs include, but are not limited to, California's Carl Moyer Program, as set forth in Title 17, Part 5, Chapter 9 of the California Health and Safety Code, and the U.S. Department of Agriculture's Environmental Quality Incentives Program (EQIP), as set forth in Title 7, Chapter XIV, Part 1466 of the Code of Federal Regulations (CFR).
- 5.34 Initial Start-up Testing:** Operating the engine or supported equipment to ensure their proper performance either:
- 5.34.1** For the first time after installation of a stationary diesel-fueled CI engine at a facility, or
  - 5.34.2** For the first time after installation of emission control equipment on an in-use stationary diesel-fueled CI engine.
- 5.35 Landfill Gas:** Any gas derived through any biological process from the decomposition of waste buried within a waste disposal site.
- 5.36 Location:** Any single site at a facility.

- 5.37 Low-Use Agricultural Engine:** A diesel-fueled engine used exclusively in agricultural operations for limited hours on cumulative basis in accordance with Section 4.1, including, but not limited to, engines used for frost protection, and spraying operations.
- 5.38 Maintenance and Testing:** Operating an emergency standby CI engine to:
- 5.38.1** Evaluate the ability of the engine or its supported equipment to perform during an emergency; or
  - 5.38.2** Facilitate the training of personnel on emergency activities; or
  - 5.38.3** Provide electric power for the facility when the utility distribution company takes its power distribution equipment offline to service that equipment for any reason that does not qualify as an emergency use.
- 5.39 Maximum Rated Power:** The maximum brake kilowatt output of an engine as determined from any of the following, whichever is the greatest:
- 5.39.1** The manufacturer's sales and service literature,
  - 5.39.2** The nameplate of the unit, or
  - 5.39.3** If applicable, as shown in the application for certification of the engine.
- 5.40 Model Year:** The stationary CI engine manufacturer's annual production period, which includes January 1st of a calendar year, or if the manufacturer has no annual production period, the calendar year.
- 5.41 Motive Power:** Power or ability to move or propel the vehicle, equipment, or unit from one location to another
- 5.42 New or New CI Engine:** A stationary CI engine installed at a facility and used for agricultural operations after the effective date of this Rule, including:
- 5.42.1** An engine relocated from an off-site location after the effective date of this Rule, or
  - 5.42.2** A stationary CI engine that has been reconstructed after the effective date of this Rule, unless the sum of the costs of all individual reconstructions of that engine after the effective date of this Rule, is less than 50% of the lowest-available purchase price, determined at the time of the most recent reconstruction, of a complete, comparably-equipped new engine (within + 10% of the reconstructed engine's brake horsepower rating).
- 5.43 Nitrogen Oxides (NO<sub>x</sub>):** Compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.

- 5.44 Noncertified Engine:** A CI engine that is not certified to meet an Off-Road CI Certification Standards as specified in Title 13, CCR, section 2423.
- 5.45 Non-Methane Hydrocarbons (NMHC):** The sum of all hydrocarbon air pollutants except methane.
- 5.46 Owner or Operator:** Any person subject to the requirements of this Rule, including but not limited to:
- 5.46.1** An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including but not limited to, a government corporation; and
  - 5.46.2** Any city, county, district, commission, the State or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law.
- 5.47 Particulate Matter (PM):** The particles found in the exhaust of CI engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- 5.48 Portable CI Engine:** A compression ignition (CI) engine that is designed and capable of being carried or moved from one location to another. Indicia of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. For the purposes of this regulation, dredge engines on a boat or barge are considered portable. The engine is not portable if:
- 5.48.1** The engine or its replacement is attached to a foundation, or if not so attached, will reside at the same location for more than twelve (12) consecutive months. The period during which the engine is maintained at a storage facility shall be excluded from the residency time determination. Any engine, such as a back-up or stand-by engine, that replace an engine(s) at a location, and is intended to perform the same or similar function as the engine(s) being replaced, will be included in calculating the consecutive time period. In that case, the cumulative time of all engine(s), including the time between the removal of the original engine(s) and installation of the replacement engine(s), will be counted toward the consecutive time period; or
  - 5.48.2** The engine remains or will reside at a location for less than twelve (12) consecutive months if the engine is located at a seasonal source and operates during the full annual operating period of the seasonal source, where a seasonal source is a stationary source that remains in a single location on a permanent basis (at least two (2) years) and that operates at that single location at least three (3) months each year; or
  - 5.48.3** The engine is moved from one location to another in an attempt to

circumvent the portable residence time requirements.

- 5.49 Prime CI Engine:** A stationary CI engine that is not an emergency standby CI engine.
- 5.50 Prioritization Score:** The numeric value used to rank facilities in order of their potential to pose significant risk to human receptors. Prioritization scores are calculated per the process described in the "CAPCOA Air Toxics 'Hot Spots' Program Facility Prioritization Guidelines," California Air Pollution Control Officer's Association (CAPCOA), July 1990, which is incorporated herein by reference.
- 5.51 Rated Brake Horsepower (bhp):**
- 5.51.1** For in-use engines, the maximum bhp output of an engine as determined from any of the following, whichever reflects the engine's configuration as of the effective date of this Rule:
    - 5.51.1.1** The manufacturer's sales and service literature;
    - 5.51.1.2** The nameplate of the engine; or
    - 5.51.1.3** If applicable, as shown in the application for certification of the engine;
    - 5.51.1.4** For new engines, the maximum bhp output of an engine as determined from any of the following, whichever reflects the engine's configuration upon the engine's initial installation at the facility:
      - 5.51.1.4.1** The manufacturer's sales and service literature;
      - 5.51.1.4.2** The nameplate of the engine; or
      - 5.51.1.4.3** If applicable, as shown in the application for certification of the engine pursuant to Title 13, CCR Section 2423.
- 5.52 Receptor Location:** Any location outside the boundaries of a facility where a person may experience exposure to diesel exhaust due to the operation of a stationary diesel-fueled CI engine. Receptor locations include, but are not limited to, residences, businesses, hospitals, daycare centers, and schools.
- 5.53 Reconstruction:** The rebuilding of the engine or the replacement of engine parts, including pollution control devices, but excluding operating fluids, lubricants, and other consumables such as air filters, fuel filters, and glow plugs that are subject to regular replacement. For purposes of this definition, the cost of reconstruction and the cost of a comparable new engine shall not include the cost of equipment and devices required to meet the requirements of this Rule.

- 5.54 Remotely-Located Agricultural Engine:** A stationary diesel-fueled CI engine used in agricultural operations that is located more than one-half mile from any receptor location.
- 5.55 School or School Grounds:** Any public or private school, including any building or structure, playground, athletic field, or other areas of improved school property, used for purposes of the education of more than twelve (12) children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s).
- 5.56 Selective Catalytic Reduction (SCR) System:** An emission control system that reduces NO<sub>x</sub> emissions through the catalytic reduction of NO<sub>x</sub> in diesel exhaust by injecting nitrogen-containing compounds into the exhaust stream, such as ammonia or urea.
- 5.57 Seller:** Any person who sells, leases, or offers for sale any stationary diesel-fueled engine directly to end users.
- 5.58 Stationary CI Engine:** A CI engine that is designed to stay in one location, or remains in one location. A CI engine is stationary if :
- 5.58.1** The engine is not portable as defined in this Rule unless the portable CI engine is used exclusively in agricultural operations under the control of the owner or operator and is voluntarily registered with the DISTRICT under the requirements of this Rule; and
  - 5.58.2** The engine does not provide motive power; and
  - 5.58.3** The engine or its replacement is attached to a foundation, or if not so attached, resides at the same location for more than twelve (12) consecutive months. Any engine such as backup or standby engines, that replaces an engine at a location and is intended to perform the same or similar function as the engine(s) being replaced, shall be included in calculating the consecutive time period. The cumulative time of all engine(s), including the time between the removal of the original engine(s) and installation of the replacement engine(s), will be counted toward the consecutive time period; or
  - 5.58.4** The engine remains or will reside at a location for less than twelve (12) consecutive months if the engine is located at a seasonal source and operates during full annual operating period of the seasonal source, where a seasonal source is a stationary source that remains in a single location on a permanent basis (at least two (2) years) and that operates at that single location at least three (3) months each year; or
  - 5.58.5** The engine is moved from one location to another in an attempt to circumvent the twelve (12) month residence time requirement. The

period during which the engine is maintained at a storage facility shall be excluded from the residency time determination.

- 5.59 Stationary Source:** Any building, structure, facility, or installation that emits any pollutant directly or as fugitive emissions. Building, structure, facility, or installation include all pollutant emitting activities which:
- 5.59.1** Are under the same ownership or operation, or which are owned or operated by entities which are under common control; and
  - 5.59.2** Belong to the same industrial grouping either by virtue of falling within the same two-digit standard industrial code or by virtue of being part of a common industrial process, manufacturing process, or connected process involving a common raw material; and
  - 5.59.3** Are located on one or more contiguous or adjacent properties.
- 5.60 Stock Engine:** A certified CI engine that has never been placed in service and is part of a supply of engines offered for sale, rent, or lease by a person or firm who offers for sale, rent, or lease engines and related equipment for profit.
- 5.61 Supported Equipment:** Includes, but is not limited to, generators, pumps, transformers, switchgear, and breakers.
- 5.62 Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Verification Procedure):** The CARB regulatory procedure codified in Title 13, CCR, sections 2700-2710, which is incorporated herein by reference, that engine manufacturers, sellers, owners, or operators may use to verify the reductions of diesel PM or NOx from in-use diesel engines using a particular emission control strategy.
- 5.63 Verified Diesel Emission Control Strategy:** An emission control strategy, designed primarily for the reduction of diesel PM emissions, which has been verified pursuant to the "Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines" in Title 13, CCR, commencing with section 2700.
- 6 FUEL AND FUEL ADDITIVE REQUIREMENTS:** As of the effective date of this Rule, owners or operators of a new or in-use stationary diesel-fueled CI engine with a rated bhp of greater than 50 (>50 bhp) used in agricultural operations shall not fuel the engine with any fuel unless the fuel is one or a combination of the following:
- 6.1** CARB Diesel Fuel; or
  - 6.2** An alternative diesel fuel that is:
    - 6.2.1** Biodiesel;

- 6.2.2** a biodiesel blend that does not meet the definition of CARB Diesel Fuel;
- 6.2.3** A Fischer-Tropsch fuel; or
- 6.2.4** An emulsion of water in diesel fuel; or
- 6.3** Any alternative diesel fuel that is not identified in Section 6.2 above and meets the requirements of the Verification Procedure; or
- 6.4** An alternative fuel; or
- 6.5** CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure.

## **7 DIESEL PM EMISSION STANDARDS**

- 7.1 New Stationary Diesel-Fueled Engines, Less Than or Equal to 50 bhp (<50 bhp) Used in Agricultural Operations:** As of the effective date of this Rule, except as provided in Section 4 of this Rule, no person shall sell, offer for sale, or lease for use in California any stationary diesel-fueled CI engine to be used in agricultural operations that has a rated bhp less than or equal to 50, unless the engine meets the current Off-Road Compression-Ignition Engine Standards (Title 13, CCR, section 2423) for PM for diesel off-road engines of the same maximum rated power.
- 7.2 New Stationary Diesel-Fueled CI Engines (>50 bhp) Used in Agricultural Operations:** As of the effective date of this Rule, except as provided in Sections 4 and 7.2.4 of this Rule, no person shall sell, purchase, or lease for use in California any new stationary diesel-fueled engine to be used in agricultural operations that has a rated bhp greater than 50, or operate any new stationary diesel-fueled engine to be used in agricultural operations that has a rated bhp greater than 50, unless the engine meets the following emission performance standards which are summarized in Table 7.2 next page:

<b>TABLE 7.2: SUMMARY OF THE EMISSION STANDARDS FOR NEW STATIONARY DIESEL-FUELED CI ENGINES &gt; 50 BHP USED IN AGRICULTURAL OPERATIONS</b> (See Section 7.2)	
<b>Horsepower Range (hp)</b>	<b>DIESEL PM</b>
	<b>DIESEL PM STANDARDS<sup>1</sup> (g/bhp-hr)</b> <b>The More Stringent of:</b>
All Applications Greater Than >50 But Less Than to < 100, Other Than Generator Sets	Less Than or Equal to 0.30  OR  Off-Road CI Engine Certification Standard for an off-road engine of the same maximum rated power
All Applications Greater Than or Equal to >100 But Less Than to < 175, Other Than Generator Sets	Less Than or Equal to 0.22  OR  Off-Road CI Engine Certification Standard for an off-road engine of the same maximum rated power
All Applications Greater Than or Equal to 175 AND Generator Sets Greater than 50	Less than or Equal to 0.15  OR  Off-Road Engine Certification Standard for an off-road engine of the same maximum rated power

<sup>1</sup>Prior to January 1, 2008 these limits shall not apply to engines sold from one agricultural operation to another and funded under State or federal incentive funding programs.

**7.2.1** New agricultural stationary diesel-fueled CI engines, used in all agricultural operations except generator set applications with a maximum rated horsepower greater than 50 but less than 100 shall not emit more than the more stringent of:

**7.2.1.1** 0.30 g/bhp-hr diesel PM limit; or

**7.2.1.2** The PM standards, as specified in the Off-Road

Compression-Ignition Engine Standards for off-road engines of the same maximum rated power (Title 13, CCR, section 2423), in effect on the date of acquisition or submittal; and

- 7.2.2** New agricultural stationary diesel-fueled CI engines, used in all agricultural operations except generator set applications with a maximum rated horsepower greater than or equal to 100 but less than 175 shall not emit more than the more stringent of:

**7.2.2.1** 0.22 g/bhp-hr diesel PM limit; or

**7.2.2.2** The PM standards, as specified in the Off-Road Compression-Ignition Engine Standards for off-road engines of the same maximum rated power (Title 13, CCR, section 2423), in effect on the date of acquisition or submittal; and

- 7.2.3** New agricultural stationary diesel-fueled CI engines, used in all agricultural operations with a maximum rated horsepower greater than or equal to 175 and all generator set applications with a maximum rated horsepower greater than 50 shall not emit more than the more stringent of:

**7.2.3.1** 0.15 g/bhp-hr diesel PM; or

**7.2.3.2** The PM standards, as specified in the Off-Road Compression Ignition Engine Standards for off-road engines of the same maximum rated power (Title 13, CCR, section 2423), in effect on the date of acquisition or submittal; and

- 7.2.4** Diesel PM Standard Delay for Diesel-Fueled CI Engines Funded Through An Incentive Program

**7.2.4.1** Prior to January 1, 2008, the requirements of Section 7.2 of this Rule shall not apply to any stationary diesel-fueled CI engine that:

**7.2.4.1.1** Is used in agricultural operations; and

**7.2.4.1.2** Was funded under a State or federal incentive funding program; and

**7.2.4.1.3** Was sold for use in another agricultural operation, provided the stationary diesel-fueled CI engine complies with Tier 2 Off-Road Compression Ignition PM Emission Standards for off-road engines of the same maximum rated power (Title 13, CCR, section 2423).

- 7.3 In-Use Stationary Diesel-Fueled CI Engines (>50 bhp) Used in Agricultural Operations:** Except as provided in Sections 4, 7.3.3, 7.3.4 and 7.3.5 of this Rule, no owner or operator shall operate an in-use stationary diesel-fueled CI engine greater than 50 bhp in an agricultural operation in

California unless it meets the requirements in Sections 7.3.1 and 7.3.2 below (which are summarized in Tables 7.3.1 page 19 and 7.3.2 page 21):

**7.3.1** Except as provided in Section 4 of this Rule, Non-certified In-use Stationary Diesel-fueled CI Engines Used in Agricultural Operations:

**7.3.1.1** On or after December 31, 2015 no owner or operator shall operate greater than 50 but less than 75 bhp noncertified stationary diesel-fueled generator set engine used in an agricultural operation unless:

**7.3.1.1.1** Such generator set engine's diesel PM emissions do not exceed 0.02 g/bhp-hr; or

**7.3.1.1.2** The diesel PM emission rate is reduced by 85%, by weight, from the baseline level and limits for other pollutants in Section 7.3.1.8 of this Rule are not exceeded.

**7.3.1.2** On or after December 31, 2011 no owner or operator shall operate any greater than 50 but less than 75 bhp noncertified stationary diesel-fueled engine, other than a generator set engine, used in an agricultural operation unless:

**7.3.1.2.1** Such engine's diesel PM emissions do not exceed 0.30 g/bhp-hr; or

**7.3.1.2.2** The diesel PM emission rate is reduced by 85%, by weight, from the baseline level and limits for other pollutants in Section 7.3.1.8 of this Rule are not exceeded.

**7.3.1.3** On or after December 31, 2015 no owner or operator shall operate any greater than or equal to 75 but less than 175 bhp noncertified stationary diesel-fueled generator set engine used in an agricultural operation unless:

**7.3.1.3.1** Such generator set engine's diesel PM emissions do not exceed 0.01 g/bhp-hr; or

**7.3.1.3.2** Is a certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with a Level 3 Verified Diesel Emission Control Strategy; or

**7.3.1.3.3** The diesel PM emission rate is reduced by 85%, by weight, from the baseline level and limits for other pollutants in Section 7.3.1.8 below are not exceeded.

- 7.3.1.4** On or after December 31, 2011 no owner or operator shall operate any greater than or equal to 75 but less than 100 bhp noncertified stationary diesel-fueled engine, other than a generator set engine, used in an agricultural operation unless;
- 7.3.1.4.1** Such engine's diesel PM emissions do not exceed 0.30 g/bhp-hr; or
- 7.3.1.4.2** The diesel PM emission rate is reduced by 85%, by weight, from the baseline level and limits for other pollutants in Section 7.3.1.8 are not exceeded.
- 7.3.1.5** On or after December 31, 2010 no owner or operator shall operate any greater than or equal to 100 but less than 175 bhp noncertified stationary diesel-fueled engine, other than a generator set engine, used in an agricultural operation unless:
- 7.3.1.5.1** Such engine's diesel PM emissions do not exceed 0.22 g/bhp-hr; or
- 7.3.1.5.2** The diesel PM emission rate is reduced by 85%, by weight, from the baseline level and limits for other pollutants in Section 7.3.1.8 are not exceeded.
- 7.3.1.6** On or after December 31, 2010 no owner or operator shall operate any greater than or equal to 175 through 750 bhp noncertified stationary diesel-fueled engine used in an agricultural operation unless:
- 7.3.1.6.1** Such engine's diesel PM emissions do not exceed 0.15 g/bhp-hr; or
- 7.3.1.6.2** The diesel PM emission rate is reduced by 85%, by weight, from the baseline level and limits for other pollutants in Section 7.3.1.8 are not exceeded.
- 7.3.1.7** On or after December 31, 2014 no owner or operator shall operate any greater than 750 bhp noncertified stationary diesel-fueled engine used in an agricultural operation unless such engine's diesel PM emissions do not exceed 0.075 g/bhp-hr.
- 7.3.1.8** In meeting the 85% reduction from baseline PM standard, the following pollutants shall be limited by the following:
- 7.3.1.8.1** CO, HC, or NO<sub>x</sub> shall not increase above baseline by more than 10%; or
- 7.3.1.8.2** CO shall not increase by more than 10% above baseline and NMHC+NO<sub>x</sub> shall not increase.

<b>TABLE 7.3.1: PM EMISSION STANDARDS NONCERTIFIED GREATER THAN 50 BHP IN-USE STATIONARY DIESEL-FUELED ENGINES USED IN AGRICULTURAL OPERATIONS</b> (See Section 7.3.1)			
<b>Horsepower Range</b>	<b>Application</b>	<b>Compliance On or After December 31</b>	<b>Diesel PM Not to Exceed (g/bhp-hr)</b>
Greater Than 50 But Less Than 75	Generator Sets	2015	0.02
	All Other Applications	2011	85% Reduction from Baseline Levels OR 0.30
Greater Than or Equal to 75 But Less Than 100	Generator Sets	2015	0.01 OR Certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with Level 3 Verified Diesel Emission Control Strategy
	All Other Applications	2011	85% Reduction from Baseline Levels OR 0.30
Greater Than or Equal to 100 But Less Than 175	Generator Sets	2015	0.01 OR Certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with Level 3 Verified Diesel Emission Control Strategy
	All Other Applications	2010	85% Reduction from Baseline Levels OR 0.22
Greater Than or Equal to 175 But Less Than or Equal to 750	All Applications	2010	85% Reduction from Baseline Levels OR 0.15
Greater Than 750	All Applications	2014	0.075

- 7.3.2** Except as provided in Section 4 of this Rule, Diesel PM Standards for Tier 1- and Tier 2-Certified In-use Stationary Diesel-fueled Engines Used in Agricultural Operations:
- 7.3.2.1** On or after December 31, 2015 or twelve (12) years after the date of installation, whichever is later, no owner or operator shall operate any greater than 50 but less than 75 bhp Tier 1- and Tier 2-certified in-use stationary diesel-fueled engine used in an agricultural operation unless such engine's diesel PM emissions do not exceed 0.02 g/bhp-hr.
- 7.3.2.2** On or after December 31, 2015 or twelve (12) years after the date of initial installation, whichever is later, no owner or operator shall operate any greater than or equal to 75 but less than 175 bhp stationary diesel-fueled engine used in an agricultural operation that did not meet the PM standards of Section 7.2.2 of this Rule unless:
- 7.3.2.2.1** Such generator set engine's diesel PM emissions do not exceed 0.01 g/bhp-hr;  
or
- 7.3.2.2.2** Is a certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with a Level 3 Verified Diesel Emission Control Strategy.
- 7.3.2.3** On or after December 31, 2014 or twelve (12) years after the date of installation, whichever is later, no owner or operator shall operate any greater than or equal to 175 through 750 bhp stationary diesel-fueled engine used in an agricultural operation that did not meet the PM standards of Section 7.2.3 of this Rule unless:
- 7.3.2.3.1** Such generator set engine's diesel PM emissions do not exceed 0.01 g/bhp-hr  
or
- 7.3.2.3.2** Is a certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with a Level 3 Verified Diesel Emission Control Strategy.
- 7.3.2.4** On or after December 31, 2014 or twelve (12) years after the date of initial installation, whichever is later, no owner or operator shall operate any greater than 750 bhp stationary diesel-fueled engine used in an agricultural operation that did not meet the PM standards of Section 7.2.3 unless such engine's diesel PM emissions do not exceed 0.075 g/bhp-hr.

<b>TABLE 7.3.2: PM EMISSION STANDARDS                      TIER 1 AND TIER 2 CERTIFIED GREATER THAN 50 BHP                      IN-USE STATIONARY DIESEL-FUELED ENGINES USED IN                      AGRICULTURAL OPERATIONS</b> (See Section 7.3.2)		
<b>Horsepower Range</b>	<b>Compliance On or After December 31</b>	<b>Diesel PM Not to Exceed (g/bhp-hr)</b>
Greater Than 50 But Less Than 75	2015 or 12 years after the date of initial installation, whichever is later	0.02
Greater Than or Equal to 75 But Less Than 175	2015 or 12 years after the date of initial installation, whichever is later	0.01 OR Certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with Level 3 Verified Diesel Emission Control Strategy
Greater Than or Equal to 175 But Less Than or Equal to 750	2014 or 12 years after the date of initial installation, whichever is later	0.01 OR Certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with Level 3 Verified Diesel Emission Control Strategy
Greater Than 750	2014 or 12 years after the date of initial installation, whichever is later	0.075

**7.3.3** Upon request by the owner or operator, the APCO may extend the compliance dates in Section 7.3 of this Rule up to one (1) year, provided that verifiable information shows new engine packages for stationary diesel engine applications are not available in sufficient numbers or in a sufficient range of makes, models, and sizes to replace in-use stationary diesel agricultural engines.

**7.3.4** Upon request by an owner or operator, the APCO may allow an owner or operator up to two (2) additional years to comply with Section 7.3, provided at least sixty (60) days prior to the applicable compliance date or dates, the owner or operator submits to the

APCO documentation demonstrating that an affected engine or engines shall be replaced with an electric motor or electric motors within two (2) years. Documentation for each engine replaced shall include identification of the engine, the purchasing agreement for the electric motor, and a copy of an agreement with a utility distribution company to provide electricity if electricity is not already available for electric motor operation.

**7.3.5** Upon the request of an owner or operator of an engine located within ½ mile of a receptor location, the APCO may extend compliance with Sections 7.3.1.2, 7.3.1.4, 7.3.1.5 or 7.3.1.6 of this Rule up to four (4) years provided:

**7.3.5.1** The APCO determines at the time of initial registration that diesel PM emissions from an engine meeting the standards of Sections 7.3.1.2, 7.3.1.4, 7.3.1.5 or 7.3.1.6 would exceed the DISTRICT's threshold for significant risk for a Cancer Risk of greater than ten (10) theoretical lifetime increased incidences of cancer per million population or Total Hazard Index greater than one (1), as determined by the methodologies specified in the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, Office of Environmental Health Hazard Assessment, August 2003, and

**7.3.5.2** No later than four (4) years after the applicable initial compliance date for Sections 7.3.1.2, 7.3.1.4, 7.3.1.5 or 7.3.1.6, one of the following is installed:

**7.3.5.2.1** An electric motor;

**7.3.5.2.2** An engine greater than 50 bhp but less than 75 bhp that does not exceed 0.02 g/bhp-hr PM; or

**7.3.5.2.3** An engine greater than 75 bhp that does not exceed 0.01 g/bhp-hr diesel PM or a certified engine with PM emissions not exceeding 0.15 g/bhp-hr and equipped with a Level 3 Verified Diesel Emission Control Strategy.

## **8 ADMINISTRATION**

### **8.1 Registration Requirements for Greater than 50 bhp Stationary Diesel-Fueled CI Agricultural Engines**

**8.1.1** Registration Submittal: Except as provided in Section 4.3 of this Rule, the owner or operator of a greater than 50 bhp stationary diesel-fueled CI engine or engines used in agricultural engines shall submit an application for a certificate of registration as required by

Rule 441-Registration Requirements for Stationary Compression Ignition Engines Used in Agricultural Operations of these Rules and Regulations according to the following schedule:

**8.1.1.1** For each in-use stationary diesel-fueled CI agricultural engine, no later than March 1, 2008; and

**8.1.1.2** For each new stationary diesel-fueled CI engine installed between the effective date of this Rule and January 1, 2008, no later than March 1, 2008; and

**8.1.1.3** For all other new stationary diesel-fueled CI engines, no later than ninety (90) days after the date of installation.

**8.1.2 Portable CI Engines Used Exclusively for Agricultural Operations:** The owner or operator of any portable CI engines rated at greater than 50 bhp and used exclusively in agricultural operations under the control of the owner or operator may voluntarily register those engines under the provision of Section 8.1.1 above and be subject to the requirements of this Rule. The registration schedule must be consistent with the requirements of Section 8.1.1. If any owner or or operator elects to not register a portable engine under this Rule or if any portable CI engine voluntarily registered with the APCO under the requirements of this Rule is used in any non-agricultural operation, the engine shall be subject to the requirements for portable CI engines under the California Air Resources Board's *Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater*, California Health and Safety Code, Section 93116.

**8.1.3** Fee Requirements for Greater than 50 bhp Stationary Diesel-Fueled CI Agricultural Engine Owners or Operators: The owner or operator of a greater than 50 bhp stationary diesel-fueled CI agricultural engine or engines shall pay any fees assessed by the APCO for the purpose of recovering the DISTRICT's cost of implementing and enforcing this Rule pursuant to the requirements of Rule 513-Registration Fees for Stationary Compression Ignition Engines Used in Agricultural Operations of these Rules and Regulations.

**8.2 Reporting Requirements for Sellers of Stationary Diesel-Fueled CI Engines Having a Rated Bhp Less Than or Equal to 50 (< 50 bhp):** No later than by January 31, 2008 and by January 31st of each year thereafter, all sellers of stationary diesel-fueled CI engines sold for use in Butte County that have a rated bhp less than or equal to 50 shall provide the following information for the previous calendar year (January 1st through December 31st) to the Executive Officer of CARB:

**8.2.1** Contact Information

**8.2.2** Sellers Company Name (if applicable);

**8.2.3** Contact name, phone number, e-mail address;

- 8.2.4** Engine Sales Information (for each engine sold for use in California in the previous calendar year)
- 8.2.4.1** Make,
  - 8.2.4.2** Model,
  - 8.2.4.3** Model year (if known),
  - 8.2.4.4** Rated bhp,
  - 8.2.4.5** Number of engines sold,
  - 8.2.4.6** Certification executive order number (if applicable),
  - 8.2.4.7** Engine family number (if known),
  - 8.2.4.8** Emission control strategy (if applicable).

**8.3 Demonstration of Compliance with Emission Limits:** By no later than the earliest applicable compliance date specified in Section 7.3 of this Rule, the owner or operator of an in-use stationary diesel-fueled CI engine(s) subject to the requirements of Section 7.3 shall provide emissions, source test, and/or operational data to the APCO in accordance with the requirements of Section 8.7 of this Rule for purposes of demonstrating compliance.

**8.4 Notification of Loss of Exemption:**

**8.4.1** Owners or operators of in-use stationary diesel-fueled CI engines, who are subject to operating under an exemption specified in Section 4 of this Rule from all or part of the requirements of Section 7 of this Rule, shall notify the APCO within five (5) days immediately after they become aware that the exemption no longer applies shall demonstrate compliance with the applicable requirements of Section 7 of this Rule, no later than 18 months after the date the exemption no longer applies or no later than 18 months after the emission standard compliance date set forth in Section 7.3 of this Rule, whichever is later.

**8.4.2** An owner or operator of an in-use stationary diesel-fueled CI engine(s) subject to the requirements of Section 7.3 shall provide emissions data to the APCO in accordance with the requirements of Section 8.7 below for purposes of demonstrating compliance pursuant to Section 8.4.1 above.

**8.5 Monitoring Equipment:**

**8.5.1** A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation, or by no later than January 1, 2008 on all engines subject to all or part of the requirements of Section 7.2 of this Rule, unless the APCO determines on a case-by-case basis that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.

**8.5.2** The APCO may require the owner or operator to install and maintain

additional monitoring equipment for the particular emission control strategy(ies) used to meet the requirements of Section 7.

**8.6 Reporting Provisions for Exempted Emergency, Low-Use, and Remotely-Located Engines Used in Agricultural Operations:**

**8.6.1** An owner or operator of a stationary agricultural engine exempt from the requirements of Section 7.3 pursuant to Section 4.1 of this Rule shall:

**8.6.1.1** Keep records of the number of hours the engines are operated on a monthly basis. Such records shall be retained for a minimum of 36 months from the date of entry. Record entries made within 24 months of the most recent entry shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the APCO upon request. Record entries made from 25 to 36 months from the most recent entry shall be made available to APCO within 5 (five) working days from the request.

**8.6.1.2** Declare, in writing, to the APCO that the engine is a low-use engine qualifying for exemption and a tracking registration by September 1, 2009 or at the time of registration for a new engine.

**8.6.1.3** Request a site specific health risk analysis to determine hours of operation to limit the potential health risk to one potential cancer case per million population at the nearest off-property receptor.

**8.7 Emissions Data:**

**8.7.1** Upon approval by the APCO, the following sources of data may be used in whole or part to meet the emission data requirements of Section 7 of this Rule:

**8.7.1.1** Off-road engine certification test data for the stationary diesel-fueled CI engine,

**8.7.1.2** Engine manufacturer test data,

**8.7.1.3** Emissions test data from a similar engine, or

**8.7.1.4** Emissions test data used in meeting the requirements of the Verification Procedure for the emission control strategy implemented.

**8.7.2** Emissions testing of a stationary diesel-fueled CI engine, for purposes of showing compliance with the requirements of Section 7 of this Rule, shall be done in accordance with the methods specified in Section 9 of this Rule.

**8.7.3** For purposes of emissions testing, the PM emissions from a dual-fueled stationary CI engine, which uses as its fuel a mixture of diesel fuel and other fuel(s), shall be deemed to be 100% diesel PM.

- 8.7.4** Emissions testing for the purposes of determining the percent change from baseline shall include baseline and emission control strategy testing subject to the following conditions:
- 8.7.4.1** Baseline testing may be conducted with the emission control strategy in place, provided the test sample is taken upstream of the emission control strategy and the presence of the emission control strategy is shown to the APCO's satisfaction as having no influence on the emission test results;
  - 8.7.4.2** Control strategy testing shall be performed on the stationary diesel-fueled CI engine with full implementation of the emission control strategy;
  - 8.7.4.3** The percent change from baseline shall be calculated as the baseline emissions minus control strategy emissions, with the difference being divided by the baseline emissions and the result expressed as a percentage; and
  - 8.7.4.4** The same test method shall be used for determining both baseline emissions and control strategy emissions.
- 8.7.5** Emission testing for the purposes of demonstrating compliance with an emission level shall be performed on the stationary diesel-fueled CI engine with the emission control strategy fully implemented.
- 9 TEST METHODS:** The following test methods shall be used to determine diesel PM, HC, NO<sub>x</sub>, CO and NMHC emission rates:
- 9.1** Diesel PM emission testing shall be done in accordance with one of the following methods:
    - 9.1.1** California Air Resources Board Method 5 (CARB Method 5), "Determination of Particulate Matter Emissions from Stationary Sources," as amended July 28, 1997, which is incorporated herein by reference.
      - 9.1.1.1** For purposes of this subsection, diesel PM shall be measured only by the probe catch and filter catch and shall not include PM captured in the impinger catch or solvent extract.
      - 9.1.1.2** The tests are to be carried out under steady state operation. Test cycles and loads shall be in accordance with ISO-8178 Part 4 or alternative test cycle approved by the APCO.
      - 9.1.1.3** The APCO may require additional engine or operational duty cycle data if an alternative test cycle is requested; or
    - 9.1.2** International Organization for Standardization (ISO) 8178 Test procedures: ISO 8178-1:1996(E) ("ISO 8178 Part 1") ISO 8178-2:1996(E) ("ISO 8178 Part 2"); and ISO 8178-4:1996(E) ("ISO 8178

- Part 4"), which are incorporated herein by reference; or
- 9.1.3** Title 13, CCR, section 2423, "Exhaust Emission Standards and Test Procedures - Off-Road Compression Ignition Engines," which is incorporated herein by reference.
- 9.2** NO<sub>x</sub>, CO and HC emission testing shall be done in accordance with one of the following methods:
- 9.2.1** California Air Resources Board Method 100 (ARB Method 100), "Procedures for Continuous Gaseous Emission Stack Sampling," as amended July 28, 1997, which is incorporated herein by reference.
- 9.2.1.1** Tests using ARB Method 100 shall be carried out under steady state operation. Test cycles and loads shall be in accordance with ISO-8178 Part 4 or an alternative test cycle approved by the APCO.
- 9.2.1.2** The APCO may require additional engine or operational duty cycle data if an alternative test cycle is requested; or
- 9.2.2** International Organization for Standardization (ISO) 8178 Test procedures: ISO 8178-1:1996(E) ("ISO 8178 Part 1") ISO 8178-2:1996(E) ("ISO 8178 Part 2"); and ISO 8178-4:1996(E) ("ISO 8178 Part 4"), which are incorporated herein by reference; or
- 9.2.3** Title 13, California Code of Regulations, section 2423, "Exhaust Emission Standards and Test Procedures - Off-Road Compression Ignition Engines," which is incorporated herein by reference.
- 9.3** NMHC emission testing shall be done in accordance with one of the following methods:
- 9.3.1** International Organization for Standardization (ISO) 8178 Test procedures: ISO 8178-1:1996(E) ("ISO 8178 Part 1") ISO 8178-2:1996(E) ("ISO 8178 Part 2"); and ISO 8178-4:1996(E) ("ISO 8178 Part 4"), which are incorporated herein by reference; or
- 9.3.2** Title 13, California Code of Regulations, section 2423, "Exhaust Emission Standards and Test Procedures - Off-Road Compression Ignition Engines," which is incorporated herein by reference.
- 9.4** The APCO may approve the use of alternatives to the test methods listed in this Rule, provided the alternatives are demonstrated to the APCO's satisfaction as accurate in determining the emission rate of diesel PM.
- 10 SEVERABILITY:** Each part of this Rule shall be deemed severable, and in the event that any part of this Rule is held to be invalid, the remainder of this Rule shall continue in full force and effect.