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FOR MARCH 2003 PUBLIC MEETING
DISCUSSION PURPOSES ONLY**

**Proposed Airborne Toxic Control Measure for
New and In-Use Stationary Compression Ignition
Engines Greater than 50 Horsepower**

**California Environmental Protection Agency
Air Resources Board**

March 2003

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PROPOSED REGULATION ORDER

**AIRBORNE TOXIC CONTROL MEASURE FOR NEW AND IN-USE STATIONARY
COMPRESSION IGNITION ENGINES GREATER THAN 50 HORSEPOWER**

Adopt new section xxxxxx, title 17, California Code of Regulations, to read as follows:

17 CCR, section xxxxxx. New and In-Use Stationary Compression Ignition (CI) Engine (> 50 HP) Airborne Toxic Control Measure.

(a) Purpose

- (1) The purpose of this airborne toxic control measure (ATCM) is to require the owners or operators of new and in-use stationary CI engines that are greater than 50 horsepower to:
 - (A) provide districts with a record of where their engines are located, what fuel they use, and how they are operated;
 - (B) to require *diesel-fueled* new and in-use stationary CI engines to meet specified fuel requirements, operating limits, and emission standards; and
 - (C) to require *non-diesel-fueled* new and in-use stationary CI engines to meet specified fuel requirements.

(b) Effective Date

- (1) No later than 120 days after the approval of this section by the Office of Administrative Law, each air pollution control and air quality management district (district) must:
 - (A) implement and enforce the requirements of this section; or
 - (B) propose their own ATCM to reduce diesel PM from new and in-use stationary diesel-fueled compression ignition (CI) engines as provided in Health and Safety Code section 39666(d).

(c) Applicability

- (1) Except as provided in subsection (d), this section applies to
 - (A) to any person who sells, offers for sale, leases, purchases, owns, or operates for use in California any new stationary diesel-fueled CI engine

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- having a rated brake horsepower greater than 50, used in prime and emergency standby applications; and
- (B) owners or operators of in-use stationary CI engines having a rated brake horsepower greater than 50, used in prime or emergency standby applications.

(d) Exemptions

- (1) The requirements of this section do not apply to portable CI engines or CI engines used to provide the motive power for on-road and off-road vehicles and marine vessels.
- (2) The requirements of this section do not apply to new or in-use stationary CI engines used in agricultural operations¹ that are exempted from permit in accordance with Health and Safety Code Section 42310.
- (3) The requirements of this section do not apply to in-use stationary CI engines having a rated brake horsepower of less than or equal to 50 horsepower.
- (4) The requirements defined in subsections (f)(2) do not apply to permitted in-use stationary diesel-fueled CI engines used in emergency standby and prime applications that were required through written authorization by the district, prior to the effective date of this regulation, to meet either the minimum technology requirements or the performance standards defined in the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines, October 2000*.
- (5) The requirements defined in subsections (f)(2) do not apply to permitted in-use emergency standby stationary diesel-fueled CI engines that will be removed from service or replaced prior to January 1, 2009, in accordance with an approved Office of Statewide Health Planning Development (OSHPD) Compliance Plan.
- (6) The requirements defined in subsections (f)(1) and (f)(2) do not apply to new or in-use stationary diesel-fueled CI engines used solely for the training of United States Air Force maintenance officers or enlisted personnel, or civilian government employees, and are identified as Class I Training Equipment in accordance with Air Force Space Command Instruction 21-0114. **[Note: It is our intent to expand this exemption to other branches of the armed forces as specific reference citations are determined.]**

1) ARB staff is currently working with California agricultural interests to develop an approach to address in-use agricultural engines.

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- (7) The requirements defined in subsections (f)(1) and (f)(2) do not apply to new or in-use stationary diesel-fueled CI engines operating on San Nicolas and San Clemente Islands. The Ventura County Air Pollution Control District APCO and the South Coast Air Quality Management District APCO shall periodically review the land use plans for the island in their jurisdiction. If the land use plans are changed to allow public use of the islands, the exemption from the requirements in subsections (f)(1) and (f)(2) shall no longer apply.
- (8) The requirements defined in subsection (f)(2) do not apply to stationary diesel-fueled engines operating on outer continental shelf (OCS) platforms.
- (9) Prior to January 1, 2010, owners or operators of in-use stationary diesel-fueled CI engines may file a Request for Delay of Implementation of the requirements defined in subsection (f)(2) for remotely located engines. The district APCO may approve a Request for Delay of Implementation if the following criteria are met:
- (A) the engine is located at least 2 mile from the nearest receptor location, and
 - (B) the engine operates less than 500 hours per year.
 - (C) Before providing this exemption, the district APCO shall:
 - (i) consider the following information: county land use plans, the current use of the surrounding land, the current and anticipated zoning designations, additional CI engines operating on-site; and;
 - (ii) require that any delay of implementation shall be valid for no longer than three years. At the end of the three year period, the owner or operator may reapply.
- Any delay of implementation in effect on January 1, 2010, shall cease to be valid and no delays of implementation shall issued or renewed after January 1, 2010.
- (10) Owners or operators of in-use stationary emergency standby diesel-fueled CI engines subject to the requirements of the Nuclear Regulatory Commission (NRC) and used for the safe shutdown and maintenance of a nuclear facility when normal power service fails or is lost may file a Request for Exemption for these engines from the requirements defined in subsection (f)(2). The district APCO may approve a Request for Exemption provided the operation of the engine for maintenance and testing purposes does not exceed 200 hours per calendar year. Before providing this exemption, the district APCO may establish additional criteria that must be met prior to approval.
- (11) Owners or operators of in-use prime stationary diesel-fueled CI engines may file a Request for Exemption from the requirements defined in subsection (f)(2).

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The district APCO may approve a Request for Exemption if the following criteria are met:

- (A) the engine is located at least 1000 feet from a school, and
- (B) the engine operates less than or equal to 15 hours per year.

Before providing this exemption, the district APCO shall consider the following information: county land use plans, the current use of the surrounding land, the current and anticipated zoning designations, and the existence of additional CI engines operating on-site.

(e) Definitions

For purposes of this section, the following definitions apply:

- (1) "Alternative fuel" means natural gas, propane, ethanol, methanol, electricity, fuel cells, or advanced technologies that do not rely on diesel fuel, except as a pilot ignition source at an average ratio of less than 1 part diesel fuel to 10 parts total fuel on an energy equivalent basis. Alternative fuels also means any of these fuels used in combination with each other or in combination with other non-diesel fuels. Alternative-fueled engines shall not have the capability of idling or operating solely on diesel fuel at any time.
- (2) "Alternative Diesel Fuel" means any fuel used in a CI engine that is not a reformulated CARB diesel fuel as defined in Title 13 CCR Sections 2281 and 2282 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, Fischer Tropsch fuels, and emulsions of water in diesel fuel. Natural gas is not an alternative diesel fuel. An emission control strategy using a fuel additive will be treated as an alternative diesel fuel based strategy unless:
 - (A) the additive is supplied to the engine fuel by an on-board dosing mechanism, or
 - (B) the additive is directly mixed into the base fuel inside the fuel tank of the engine, or
 - (C) 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.
- (3) "Agricultural Operations" means the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a

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livelihood, or conducting agricultural research or instruction by an educational institution.

- (4) "Air Pollution Control Officer" means the Executive Officer of a district, or his or her designee.
- (5) "ALSF-1 and ALSF-2" mean high intensity approach lighting systems with sequenced flashers used at airports to illuminate specified runways during category II and III weather conditions. Category II: decision height of 100 feet and runway visual range of 1,200 feet. Category III: no decision height or decision height below 100 feet and runway visual range of 700 feet.
- (6) "Baseline (emissions)" means the emission level of a diesel-fueled engine using CARB diesel fuel as configured upon initial installation or by January 1, 2003, whichever is later.
- (7) "Carbon Monoxide (CO)" is a colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels.
- (8) "CARB Diesel Fuel" means any diesel fuel that meets the specifications defined in subsection (e)(11) and meets the specifications defined in *Title 13 CCR sections 2281-2282*.
- (9) "Compression Ignition (CI) Engine" means 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.
- (10) "Control Area" means the electrical region that regulates its power generation in order to balance electrical loads and maintain planned interchange schedules with other control areas.
- (11) "Diesel Fuel" means any fuel that meets the following specification: *ASTM D975 – 98, Standard Specification for Diesel Fuel Oils*; includes No. 1-D, No. 1-D low sulfur, No. 2-D, No. 2-D low sulfur, and No. 4-D.
- (12) "Diesel-Fueled" means fueled by diesel fuel, CARB diesel fuel, or jet fuel, in whole or part.
- (13) "Diesel Particulate Filter (DPF)" means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate. Periodically, the collected particles are either physically removed or oxidized (burned off) in a process called regeneration.

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- (14) "Diesel Particulate Matter (PM)" means the particles found in the exhaust of diesel-fueled CI engines. Diesel PM may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (15) "District" means an air pollution control district or air quality management district created or continued in existence pursuant to provisions of Part 3 (commencing with section 40000) of the California Health and Safety Code. Each district is headed by an Air Pollution Control Officer (APCO).
- (16) "Dual-fuel engine" means any gaseous-fuel engine that is engineered and designed to be operated on either a gaseous or petroleum fuel.
- (17) "Emergency Standby CI Engine" means a stationary CI engine used solely for emergency use.
- (18) "Emergency use" means used to mitigate any of the following:
- (A) failure or loss of normal electrical power service;
 - (B) failure or loss of normal natural gas supply;
 - (C) flood mitigation;
 - (D) sewage overflow mitigation;
 - (E) pumping of water for fire suppression or protection;
 - (F) for powering airport runway approach lights (ALSF-1 and ALSF-2 systems only) under category II or III weather conditions.
 - (G) Failure of facility's internal power distribution system provided the owner or operator demonstrates to the district APCO's satisfaction that the failure was beyond the reasonable control of the owner or operator.
- (19) "Emission Control Strategy" means any device, system, or strategy employed with a diesel-fueled CI engine that is intended to reduce emissions. Examples of emission control strategies include, but are not limited to, particulate filters, diesel oxidation catalysts, selective catalytic reduction systems, fuel additives used in combination with particulate filters, alternative diesel fuels, and combinations of the above.
- (20) "Executive Officer" means the executive officer of the Air Resources Board, or his or her delegate.
- (21) "Facility" means 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.
- (22) "Fuel Additive" means 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

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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. Fuel additives used in conjunction with diesel fuel may be treated as an alternative diesel fuel. (See (e)(2).)

- (23) "Generator Set" means a CI engine coupled to a generator used as a source of electricity.
- (24) "In-Use"(CI engine) means a CI engine that is not a "new" CI engine.
- (25) "Interruptible Load Contract" means a contract between an electric power supplier and an owner of a facility where the facility owner receives payment or other economic benefit (e.g., lower rates) in return for load reduction.
- (26) "Jet fuel" means fuel meeting any of the following specifications:
- (A) *ASTM D 1655 – 98, Standard Specification for Aviation Turbine Fuels*; includes Jet A, Jet A-1, and Jet B.
 - (B) *MIL-DTL-5624T, Turbine Fuel, Aviation, Grades JP-4, JP-5, and JP-5/JP8 ST.*
 - (C) *MIL-T-83133D, Turbine Fuel, Aviation, Kerosene Types, NATO F-34 (JP-8) and NATO F-35; NATO F-35 similar to (JP-8).*
- (27) "Location" means any single site at a facility.
- (28) "Maintenance and Testing Operation" means operating an emergency standby CI engine during maintenance of the engine or the supported equipment; or operating the engine to test the engine's ability to perform during an emergency, or the supported equipment's ability to perform during an emergency. Supported equipment includes, but is not limited to, generators, pumps, transformers, switch gear, and breakers.
- (29) "Model Year" means 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.
- (30) "New" (CI engine) means a stationary CI engine that meets any of the following criteria:
- (A) an engine installed at a new or existing facility after the effective date of this section with the following exceptions:
 - (i) A replacement stationary CI engine that is installed for purposes of allowing for maintenance of the existing permanent engine is not considered a new engine. To qualify for this exception, the

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replacement engine must be have an equivalent or less emission rating and must not be used more than 180 days in any 12-month period.

- (ii) An engine, after the effective date of this section, that was approved by the District for installation prior to the effective date is not considered a new engine.

 - (B) an engine relocated from an offsite location after the effective date of this section, with the following exception:
 - (i) An engine that is one of four or more engines owned by an owner or operator may be relocated to an offsite location that is owned by the same owner or operator until January 1, 2008.

 - (C) an engine that has been reconstructed after the effective date of this section, where the cost of a single reconstruction is at least 50% of the lowest available purchase price of a new engine, with basic equipment only, that is within plus or minus 10% of the reconstructed engine's brake horsepower rating. The cost incurred, as a result of complying with the requirements of this ATCM, is not included in the cost of reconstruction.
- (31) "Nitrogen Oxides (NO_x)" means compounds of nitric oxide (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition.
- (32) "Non-Methane Hydrocarbons (NMHC)" means the sum of all hydrocarbon air pollutants except methane. NMHCs are precursors to ozone formation.
- (33) "Owner or operator" means any person subject to the requirements of this section, including but not limited to:
- (A) an individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including but not limited to, a government corporation;
 - (B) 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; or
 - (C) a project proponent and any of its contractors or subcontractors.
- (34) "Particulate Matter" means 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.

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- (35) "Portable Engine" means an engine designed and capable of being carried or moved from one location to another. Indicators of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. The engine is not portable if it meets the definition of a stationary CI engine (see (e)(41)).
- (36) "Prime CI Engine" means a stationary CI engine that is not an emergency standby engine.
- (37) "Rated Brake Horsepower" means the maximum continuous rating for an engine as specified by the manufacturer, based on SAE test 1349 or a similar standard, without taking into account any deratings.
- (38) "Receptor location" means 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.
- (39) "Rotating Outage" means a controlled, involuntary curtailment of electrical power service to consumers as ordered by the system operator.
- (40) "School" means any public or private facility used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is conducted in private homes.
- (41) "Stationary CI Engine" means a CI engine that is
- (A) attached to a foundation, or if not so attached, will reside at the same location for more than 12 consecutive months. Any engine, such as an emergency standby engine, that replaces an engine at a location, and is intended to perform the same or similar function as the engine being replaced, will be included in calculating the consecutive time period. In that case, the cumulative time of all engines, including the time between the removal of the replacement engine, will be counted toward the consecutive time period; or
 - (B) residing or will reside at a location for less than 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 years) and that operates at that single location at least three months each year; or
 - (C) moved from one location to another in an attempt to circumvent the stationary CI engine residence time requirements.

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The period during which the engine is maintained at a storage facility is excluded from the residence time determination.

Examples of stationary CI engine applications include, but are not limited to: electric power generator sets, grinders, rock crushers, sand screeners, cranes, cement blowers, air compressors, and water pumps.

- (42) "Stationary Source" means an emission unit or aggregation of emission units which are located on the same or contiguous properties and which units are under common ownership or entitlement to use. Stationary sources also include those emission units or aggregation of emission units located in the California Coastal Waters. "Emission Unit" means any article, machine, equipment, contrivance, process, or process line which emit(s) or reduce(s), or may emit or reduce, the emissions of any air contaminant, except motor vehicles.
- (43) "System operator" means one of the several organizations that control energy distribution in California. System operators include, but are not limited to, the California Independent System Operator, the Los Angeles Department of Water and Power, the Imperial Irrigation District, the Sacramento Municipal Utility District.
- (44) "Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Verification Procedure)" means the ARB regulatory procedure (*Title 13 CCR sections 2700-2710*) which could be used to verify the reductions of diesel PM and/or NOx from in-use diesel engines using a particular emission control strategy.
- (45) "Verified Diesel Emission Control Strategy" means an emission control strategy designed primarily for the reduction of diesel PM emissions that has been verified per the Verification Procedure (see (e)(44)).

(f) Requirements

(1) Fuel and Fuel Additive Requirements for New and In-Use Stationary CI Engines That Have a Rated Brake Horsepower of Greater than 50

- (A) By no later than the effective date of this section, except as provided for in subsection (d), all new and in-use stationary CI engines shall only use:
- (i) CARB Diesel Fuel, or
 - (ii) alternative diesel fuel that meets the requirements of the Verification Procedure, or
 - (iii) alternative fuels that are not alternative diesel fuels, or

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- (iv) CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure, or
- (v) any combination of (i) through (iv).

(2) Operating Requirements and Emission Limits for New and In-Use Stationary Diesel-Fueled CI Engines, That Have a Rated Brake Horsepower of Greater than 50 (>50 hp).

(A) New and In-Use Emergency Standby Diesel-Fueled CI Engine (> 50 hp) Operating Requirements and Emission Limits

- (i) An owner or operator may only operate a new or in-use emergency standby diesel-fueled CI engine (> 50 hp) under the following circumstances:
 - (a) for emergency use, an unlimited number of hours; and
 - (b) for emission testing to show compliance with subsections (f)(2)(A)(iv) and (f)(2)(A)(v), an unlimited number of hours;
 - (c) for maintenance and testing, in accordance with the limits defined in subsections (f)(2)(A)(iv) and (f)(2)(A)(v), with the following limitation:
 - (1) an emergency standby diesel-fueled CI engine (> 50 hp) located within 1000 feet of a school may not operate when school activities are taking place and children are present.
- (ii) A new or in-use emergency standby diesel-fueled CI engine (> 50 hp) may not be operated to fulfill the requirements of an interruptible load contract.
- (iii) An owner or operator may operate a new or in-use emergency standby diesel-fueled CI engine (> 50 hp) up to 30 minutes prior to a rotating outage provided the following criteria is met:
 - (a) the engine's permit to operate allows for such operation, and
 - (b) the system operator has ordered rotating outages in the control area where the engine is located, or has indicated it expects to issue such an order at a certain time; and
 - (c) the emergency standby diesel-fueled engine is located in a utility service block that is subject to the rotating outage.
- (iv) Except as provided in subsection (d), no person shall sell, offer for sale, purchase, lease, or operate for use in California any new emergency standby stationary diesel-fueled CI engine that has a rated brake horsepower greater than 50, that does not meet all of the following emission performance standards:

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- (a) Diesel PM Limit: New emergency standby diesel-fueled CI engines (> 50 hp) shall be required to meet the applicable PM emission rates and maximum allowable annual hours of operation limits defined in the table below:

| DIESEL PM EMISSION RATE (g/bhp-hr) | MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION (Maintenance and Testing Operation) |
|--|---|
| 0.15* | 100 |
| 0.01* | >100 |

* or applicable off-road PM certification standards (title 13 CCR section 2423), whichever is more stringent

- (b) NMHC, NOx, and CO Limits: New emergency stand-by engines (> 50 hp) must meet, at a minimum, the appropriate model year NMHC+NOx and CO Off-Road Compression-Ignition Engine Standards, or Tier 1 NMHC+NOx (or NMHC and NOx) and CO off-road certification standards for the horsepower category of that engine (Title 13 CCR section 2423), whichever is more stringent; and
- (c) The District has the authority to establish more stringent diesel PM, NMHC+NOx, NMHC, NOx, and CO limits on a site-specific basis.
- (v) Except as provided in subsection (d), all in-use emergency standby stationary diesel-fueled CI engines (> 50 hp) operated in California must meet, in accordance with the appropriate compliance schedule as defined in subsection (g) or (h), the following requirements:
- (a) Diesel PM Limit: In-use emergency standby diesel-fueled CI engines (> 50 hp) shall be required to meet the applicable PM emission rates and maximum allowable annual hours of operation limits defined in the table below:

| DIESEL PM EMISSION RATE (g/bhp-hr) | MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION (Maintenance and Testing) |
|--|---|
| >0.50 | 15 |
| 0.50 | 30 |
| 0.40 | 40 |
| 0.15 | 100 |
| 0.01 | >100 |

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(b) Additional Limits:

- (1) Owners or operators that choose to meet the diesel PM limits defined in subsection (f)(2)(A)(v)(a) with emission control strategies that are not verified through the Verification Procedure are required to meet the following limits.
- (2) NMHC and NO_x Limits: Engines (> 50 hp) that operate more than 15 hours per year for maintenance and testing may not employ emission control strategies that will result in either:
 - (A) an increase in NMHC or NO_x emissions by greater than 10% from baseline levels, or
 - (B) an increase in the sum of NMHC and NO_x emissions greater than the baseline levels.
- (3) CO Limit: Engines (> 50 hp) that operate more than 15 hours per year for maintenance and testing may not employ emission control strategies that will result in an increase in CO emissions by greater than 10% from baseline levels.

- (c) The District has the authority to establish more stringent diesel PM, NMHC+NO_x, NMHC, NO_x, and CO limits on a site-specific basis.

(B) *New and In-Use Prime Stationary Diesel-Fueled CI Engine (> 50 hp) Emission Limits*

- (i) Except as provided in subsection (d), no person shall sell, purchase, lease, or operate for use in California any new stationary prime diesel-fueled CI engine that has a rated brake horsepower greater than 50, that does not meet all of the following emission performance standards:
 - (a) Diesel PM Limit: New prime engines (> 50 hp) must emit less than or equal to 0.01 grams PM per brake-horsepower-hour (g/bhp-hr), or the applicable off-road PM certification standard (Title 13 CCR section 2423), whichever is more stringent;
 - (b) NMHC, NO_x, and CO Limits: New prime engines (> 50 hp) must meet, at a minimum, the appropriate model year NMHC+NO_x and CO Off-Road Compression-Ignition Engine Standards, or Tier 1 NMHC+NO_x (or NMHC and NO_x) and CO off-road certification standards for the horsepower category of that engine, whichever is more stringent (Title 13 CCR section 2423); and

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- (c) The District has the authority to establish more stringent diesel PM, NMHC+NO_x, NMHC, NO_x, and CO limits on a site-specific basis.

- (ii) Except as provided in subsection (d), all in-use prime stationary diesel-fueled CI engines (> 50 hp) operated in California must meet, in accordance with the appropriate compliance schedule as defined in subsection (g) or (h), the following requirements:
 - (a) Diesel PM Limits: Prime engines (> 50 hp) must either reduce diesel PM emissions by greater than or equal to 85 percent, by weight, from baseline levels, or emit less than or equal to 0.01 g/bhp-hr of diesel PM.

 - (b) Additional Limits:
 - (1) Owners or operators that choose to meet the diesel PM limits defined in subsection (f)(2)(B)(ii)(a) with emission control strategies that are not verified through the Verification Procedure are required to meet the following limits.

 - (2) NMHC and NO_x Limits: Engines that operate more than 15 hours per year for maintenance and testing may not employ emission control strategies that will result in either:
 - (A) an increase in NMHC or NO_x emissions by greater than 10% from baseline levels, or
 - (B) an increase in the sum of NMHC and NO_x emissions greater than the baseline levels.

 - (3) CO Limit: Engines that operate more than 15 hours per year for maintenance and testing may not employ emission control strategies that will result in an increase in CO emissions by greater than 10% from baseline levels.

 - (c) The District has the authority to establish more stringent diesel PM, NMHC+NO_x, NMHC, NO_x, and CO limits on a site-specific basis.

(3) Recordkeeping, Reporting, and Monitoring Requirements

(A) Recordkeeping Requirements

- (i) Except as provided in subsection (d) and subsection (f)(3)(A)(v) prior to the installation of any new stationary CI engine having a rated horsepower greater than 50 at a facility, each owner or operator shall

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be required to provide the information identified in subsection (f)(3)(A)(iii) to the District APCO.

- (ii) Except as provided in subsection (d) and subsection (f)(3)(A)(v), and no later than 90 days after the effective date of this regulation, each owner or operator of an in-use stationary CI engine shall be required to provide the information identified in subsection (f)(3)(A)(iii) to the District APCO.

- (iii) The following information shall be submitted to the District APCO in accordance with the requirements of subsections (f)(3)(A)(i) and (f)(3)(A)(ii):
 - (a) Owner/Operator Contact Information
 - (1) Company name
 - (2) Contact name, phone number, e-mail address
 - (3) Address of engine(s)

 - (b) Engine Information
 - (1) Make
 - (2) Model
 - (3) Serial number
 - (4) Year of manufacture (if unable to determine, approximate age)
 - (5) Rated Brake Horsepower Rating
 - (6) Exhaust stack height from ground
 - (7) Engine Emission Factors and supporting data for PM, NO_x and NMHC separately or NMHC+NO_x, and CO, (if available)
 - (A) Manufacturers data
 - (B) Source test
 - (C) Other
 - (8) Control equipment (if applicable)
 - (A) Turbocharger
 - (B) Aftercooler
 - (C) Injection Timing Retard
 - (D) Catalyst
 - (E) Diesel Particulate Filter
 - (F) Other

 - (c) Fuel(s) Used
 - (1) CARB Diesel
 - (2) Jet fuel
 - (3) Diesel
 - (4) Alternative diesel fuel (specify)
 - (5) Alternative fuel (specify)

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- (6) Combination (Dual fuel) (specify)
- (7) Other (specify)

(d) Operation Information

- (1) Describe general use of engine
- (2) Typical load (percent of maximum bhp rating)
- (3) Typical annual hours of operation
- (4) If seasonal, months of year operated and typical hours per month operated
- (5) Fuel usage rate (if available)

(e) Distance to nearest offsite receptor location

(f) Identify if the engine is included in an existing AB2588 emission inventory

(iv) Except as provided in subsection (d), and no later than 90 days prior to the earliest applicable compliance date specified in subsection (g) or (h), whichever is applicable, each owner or operator of an in-use stationary diesel-fueled CI engine (> 50 hp) shall be required to provide the following additional information to the District APCO:

(a) identify the control strategy for each stationary diesel-fueled CI engine that when implemented will result in compliance with subsections (f)(2). If applicable, the information should include the diesel emission control strategy verification executive order number for control strategies that have been approved through the Verification Procedure.

(v) The District APCO may exempt the owner or operator from providing all or part of the information identified in subsection (f)(4)(A)(i) or (f)(4)(A)(ii), if there is a current record of the information in the owner or operators permit-to-operate.

(vi) Upon the written request by the Executive Officer, the District APCO shall provide to the Executive Officer a written report of all information identified in subsection (f)(3)(A)(iii), (f)(3)(A)(iv).

(B) Demonstration of Compliance

(i) Prior to installation of a new stationary diesel-fueled CI engine at a facility the owner or operator of the new stationary diesel-fueled CI engine(s) subject to the requirements of section (f)(2) shall provide emission data to the District APCO in accordance with the

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requirements of subsection (i) for purposes of demonstrating compliance.

- (ii) No later than the earliest applicable compliance date specified in subsection (g) or (h), an owner or operator of an in-use stationary diesel-fueled CI engine(s) subject to the requirements of subsection (f)(2) shall provide emission data to the District APCO in accordance with the requirements of subsection (i) for purposes of demonstrating compliance.

(C) Notification of Non-Compliance

- (i) Owners or operators that have determined that they are operating their new or in-use stationary diesel-fueled engine(s) in violation of the requirements defined in subsections (f)(2) shall notify the district APCO upon detection and be subject to district enforcement action.

(D) Notification of Loss of Exemption or Loss of Delay of Implementation

- (i) Owners or operators of in-use stationary diesel-fueled CI engines receiving a delay of implementation from the requirements of subsection (f)(2) pursuant to subsection (d)(9), that violate the receptor location distance limits specified in subsection (d)(9) shall notify the district APCO of the exceedence upon detection. No later than 180 days after notification, the owner or operator must demonstrate compliance with the requirements of subsection (f)(2). An owner or operator of an in-use stationary diesel-fueled CI engine(s) subject to the requirements of subsection (f)(2) shall provide emission data to the District APCO in accordance with the requirements of subsection (i) for purposes of demonstrating compliance.
- (ii) Owners or operators of in-use stationary diesel-fueled CI engines exempt from, or receiving a delay of implementation from, the requirements of subsections (f)(1) and (f)(2), or (f)(2) pursuant to subsections (d)(7) and (d)(9), respectively, shall be notified by the District APCO if the exemption/delay no longer applies. No later than 180 days after notification, the owner or operator must demonstrate compliance with the requirements of subsection (f)(1) and (f)(2), or (f)(2), whichever is applicable. An owner or operator of an in-use stationary diesel-fueled CI engine(s) subject to the requirements of subsection (f)(2) shall provide emission data to the District APCO in accordance with the requirements of subsection (i) for purposes of demonstrating compliance.

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(E) Exempted Engines

- (i) A non-resettable hour meter must be installed on all engines exempted from, or receiving a delay in implementation of, the requirements of subsections (f)(2) pursuant to subsections (d)(4), (d)(9), and (d)(11).
- (ii) An owner or operator of an engine exempted from the requirements of subsections (f)(2) pursuant to subsections (d)(4), (d)(9), and (d)(11) shall keep records of the number of hours the engines are operated on a monthly basis. Such records shall be retained for a minimum of 60 months from the date of entry. Record entries made within 24 months of the most recent entry shall be retained on-site and made immediately available to the District staff upon request. Record entries made from 25 to 60 months from most recent entry shall be made available to District staff 5 working days from request.

(F) Emergency Standby Engines

- (i) A non-resettable hour meter must be installed on all engines subject to the requirements of subsection (f)(2)(A). An owner or operator of an emergency standby diesel-fueled CI engine shall keep a monthly log of usage that shall indicate the following:
 - (a) hours of operation (total);
 - (b) hours of operation (maintenance and testing);
 - (c) hours of operation (emission testing to show compliance with subsections (f)(2)(A)(iv) and (f)(2)(A)(v));
 - (d) hours of operation (emergency use);
 - (e) hours of operation (prior to rotating outage); and
 - (f) for emergency use, the nature of use.

Log entries shall be retained for a minimum of 60 months from the date of entry. Log entries made within 24 months of the most recent entry shall be retained on-site and made immediately available to the District staff upon request. Log entries made from 25 to 60 months from most recent entry shall be made available to District staff 5 working days from request.

- (ii) All DPFs installed pursuant to the requirements in subsection (f)(2) must be installed with a backpressure monitor to notify the owner or operator when the high backpressure limit of the engine is approached.
- (iii) The district APCO reserves the right to require additional monitoring equipment dependent on the emission control strategy used to meet the requirements of subsection (f)(2).

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(g) Compliance Schedule

- (1) Except as provided in subsection (h), each owner or operator of an in-use stationary diesel-fueled CI engine (> 50 hp) shall be required to meet the requirements of subsection (f)(2) in accordance with the following schedule:
 - (A) All 1989 model year engines and pre-1989 model year engines must be in compliance by no later than January 1, 2006.
 - (B) All 1990 model year and post-1990 model year engines, to pre-1996 model year engines must be in compliance by no later than January 1, 2007.
 - (C) All 1996 model year engines and post-1996 model year engines must be in compliance by no later than January 1, 2008.

(h) Compliance Schedule for Owners or Operators of Four or More Engines

- (1) Owner or operators of four or more in-use stationary diesel-fueled CI engines (> 50 hp) subject to the requirements of subsections (f)(2) shall be required to meet the requirements of subsections (f)(2) in accordance with the following schedule:

| 1989 and Pre-1989 Model Year Engines | |
|--------------------------------------|-----------------|
| Percent of Engines | Compliance date |
| 25% | January 1, 2006 |
| 50% | January 1, 2007 |
| 75% | January 1, 2008 |
| 100% | January 1, 2009 |

| 1990, Post-1990 thru Pre-1996 Model Year Engines | |
|--|-----------------|
| Percent of Engines | Compliance date |
| 30% | January 1, 2007 |
| 60% | January 1, 2008 |
| 100% | January 1, 2009 |

| 1996 and Post-1996 Model Year Engines | |
|---------------------------------------|-----------------|
| Percent of Engines | Compliance date |
| 50% | January 1, 2008 |
| 100% | January 1, 2009 |

(i) Emissions Data

- (1) Upon approval by the District APCO, off-road engine certification test data for the new or in-use stationary diesel-fueled CI engine, engine manufacturer test data, emission test data from a similar engine, and emission test data used in meeting the requirements of the Verification Procedure for the emission control

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strategy implemented, can be used in whole or part to meet the emission data requirements of subsection (f)(2).

- (2) Emission testing of a new or in-use stationary diesel-fueled CI engine, for purposes of showing compliance with the requirements of subsection (f)(2), shall be done in accordance with the methods specified in subsection (j).
- (3) For purposes of emission testing, the particulate matter emissions from a dual-fueled new or in-use stationary CI engine that uses a fuel that is mixture of diesel fuel and another fuel(s) shall be considered to be 100% diesel PM.
- (4) Emission testing for the purposes of determining the percent increase/decrease from baseline shall include baseline and emission control strategy testing.
 - (A) Baseline testing may be conducted with the emission control strategy in place, if the emission control strategy is shown to the satisfaction of the district APCO not to influence the emission test results.
 - (B) Control strategy testing must be performed on the new or in-use stationary diesel-fueled CI engine with full implementation of the emission control strategy.
 - (C) Percent increase/decrease = $100 \times (\text{baseline emissions} - \text{control strategy emissions}) / \text{baseline emissions}$.
- (5) Emission testing for the purposes of demonstrating compliance with an emission level must be performed on the new or in-use stationary diesel-fueled CI engine with the emission control strategy fully implemented.

(j) Test Methods

[Note: Staff currently evaluating which test methods are most appropriate for in-use stationary diesel-fueled engines.]

- (1) The following test methods shall be used to determine diesel PM, NO_x, CO and NMHC emission rates:
 - (A) Diesel PM emission testing shall be done in accordance with ARB Method 5; NO_x, CO and NMHC emission testing shall be done in accordance with ARB Method 100.
 - (i) 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 district APCO. If an alternative cycle is requested, additional engine or operational duty cycle data may be required.

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- (ii) PM, NO_x, CO, and NMHC emissions shall be reported for each test mode and as a weighed average according to the provisions of ISO 8178 Part 4. Emissions must be reported in accordance with the applicable ARB Method and in gram per brake horsepower hour (g/bhp-hr).
 - (iii) The projected total diesel PM catch for any ARB Method 5 test run must be greater than or equal to 50 mg.
- (2) Alternatives to the test methods listed in subsection (j)(1), which are shown to accurately determine the emission rate of diesel PM, NO_x, NMHC, or CO may be used upon the approval of the District APCO.

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